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memorandum

date	September 8, 2022
to	Stefanie Edmonson, Senior Planner
cc	
from	Kimberly Comacho, Senior Managing Associate Jacqueline De La Rocha, Managing Associate
subject	21611 Perry Street Project – Revised Project

The 21611 Perry Street Project (proposed project) was analyzed in an Initial Study/Mitigated Negative Declaration (IS/MND). The Draft IS/MND was circulated for public review on May 26, 2022. A Final IS/MND was included as part of a staff report released on August 31, 2022. The proposed project analyzed in the IS/MND included the development of a self-storage facility with three buildings totaling approximately 113,714 square feet. The self-storage facility would consist of a mix of one- and two-story buildings with a maximum height of 31 feet. The self-storage facility would include 109,039 square feet of self-storage uses, a 2,425-square-foot lobby/self-storage office area, a 1,550-square-foot retail use for a cafe, and a 700-square-foot retail use (likely a mail service store such as United Postal Service [UPS] or Federal Express [FedEx]) comprising a total of 4,675 square feet for these uses. The proposed project would provide 41 parking spaces that would be accessed from one driveway providing ingress/egress off South Perry Street. The proposed project would provide approximately 12,134 square feet of landscaping around the perimeter of the project site.

Subsequent to the release of the Final IS/MND on August 31, 2022, the development plan for the proposed self-storage development was updated and resulted in an increase of 8,061 square feet of self-storage uses spread across the three proposed buildings, for a revised total building square footage of 121,775 square feet (revised project). The floor area ratio (FAR) would increase from 0.932 FAR to 0.998 FAR, an increase of 0.066 FAR. The square footages for the lobby/self-storage office area, cafe, and retail use would remain unchanged. The revised project would also include a minor increase in height of 5 feet (from 31 feet to 36 feet) to Building A, which is located along Carson Street. No changes to the number of parking spaces or landscaping area, are proposed. Access to and from the project site would also not change.

Given that the assumptions for building layout, footprint, massing, building materials, grading and excavation, and number of employees would not change, the impacts determined for aesthetics, agricultural and forestry resources, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, population and housing, public services, recreation, tribal cultural resources, and wildfire would remain less than significant or less than significant with mitigation as analyzed in the IS/MND. As the additional 8,061 square feet proposed for the revised project has the potential to affect analysis

related to construction of the proposed building and operation of the uses onsite, analysis related to air quality, energy, greenhouse gas (GHG) emissions, noise, transportation, and utilities and service systems are discussed in further detail, below.

Air Quality

As it relates to air quality during construction of the revised project, the development of an additional 8,061 square feet would equate to an increase in approximately 7 percent of building construction. The construction schedule is assumed to be extended to accommodate the construction of the additional building square footage. However, conservatively, if construction of the 8,061 square feet would occur within the construction schedule assumed in the IS/MND, air quality emissions for the phases associated with the building construction (i.e., foundations, building construction, architectural coating, and painting) would increase by approximately 7 percent. When applied to the construction emissions shown on **Table 2**, *Maximum Regional Construction Emissions – Without Mitigation*, on page 26 of the IS/MND, while the air quality emissions would marginally increase, air quality emissions would not exceed the South Coast Air Quality Management District (SCAQMD) threshold. A similar conclusion can be made as it relates to localized construction emission and toxic air contaminants during construction of the revised project.

Operation of the revised project would also similarly increase area emissions and energy usage by 7 percent. In the 21611 South Perry Street Self-Storage/Mixed-Use Project Revised Project Description Traffic and Parking Study (Traffic and Parking Study) prepared by Fehr & Peers, see Attachment A, daily trips would increase by 50 trips, which would also marginally increase mobile emissions. Overall, the operational emissions of the proposed project shown in **Table 3**, *Maximum Unmitigated Regional Operational Emissions*, on page 28 of the IS/MND, are well below the SCAQMD threshold under the proposed project and would continue to be even with the addition of 8,061 square feet of self-storage uses under the revised project. A similar conclusion can be made as it relates to localized operational emission and toxic air contaminants during operation of the revised project.

Therefore, construction and operational impacts related to air quality would remain the same as those in the IS/MND.

Energy

Similar to the air quality discussion above, electricity, natural gas, and transportation fuel usage would increase during construction of the revised project (assuming a longer construction schedule) and during operation (assuming an increase in building square footage and number of trips to the project site). However, given that the project characteristics of the revised project (e.g., location, proposed uses) would remain the same as those of the proposed project, the revised project would not result in wasteful, inefficient, and unnecessary consumption of transportation fuel, nor would the revised project conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

Therefore, construction and operational energy impacts would remain the same as those in the IS/MND.

GHG

GHG emissions would increase during construction of the revised project (assuming a longer construction schedule) and during operation of the revised project (assuming an increase in building square footage and number of trips to the project site) with the addition of 8,061 square feet of self-storage uses. However, given that the project

characteristics of the revised project (e.g., location, proposed uses) would remain the same as those of the proposed project, the revised project would not conflict with California Air Resources Board's implementation of the Low Carbon Fuel Standard or use of renewable energy sources, the City's Energy Efficiency Climate Action Plan, and it would not conflict with the Southern California Association of Government's 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy.

Therefore, GHG impacts would remain the same as those in the IS/MND.

Noise

While the revised project includes the construction of an additional 8,061 square feet, the construction schedule is assumed to be extended to accommodate the construction of the additional building square footage. However, conservatively, if construction of the 8,061 square feet would occur within the construction schedule assumed in the IS/MND, an increase in the amount of equipment and/or a change in the type of equipment used at a given time is not anticipated such that an increase in A-weighted decibels (dBA) would occur. In addition, the revised project would continue to implement Mitigation Measures MM-NOI-1 and MM-NOI-2.

With regard to operation, on-site noise with the addition of self-storage uses would only marginally change with a potential increase in vehicles driving in the parking area. However, this noise source does not result in a substantial increase in dBA. With regard to off-site traffic noise during operation, as noted above and in the Traffic and Parking Study provided in Attachment A, daily trips would increase by 50 trips. This increase is less than 10 percent of the overall project-generated trips. Even if all of the trips were distributed to the same roadway segment, it would add less than 0.5 dBA to the traffic noise levels. This is a less than perceptible increase.

Therefore, noise impacts would remain the same as those in the IS/MND.

Transportation

Fehr & Peers prepared the Traffic and Parking Study, as provided in Attachment A, that summarizes the findings of a transportation analysis for the revised project. As discussed therein, the revised project would generate 51 additional daily trips. As analyzed in the IS/MND, based on the proposed project characteristics, the proposed project was classified as local-serving retail, which can be screened from a quantitative VMT analysis for CEQA purposes. The revised project would continue to be classified as local-serving retail and no further VMT analysis is required.

Therefore, transportation impacts would remain the same as those in the IS/MND.

Utilities and Service Systems

With regard to water, the construction of an additional 8,061 square feet of building area would marginally increase demand for water during construction should the construction schedule be longer than analyzed in the IS/MND; however, it can be reasonability concluded that this incremental increase would not have an adverse impact on available water supplies as the increase in water demand from construction would be nominal. During operation, as the self-storage buildings would not contain water fixtures, the addition of 8,061 square feet of self-storage uses would not results in an increase in water demand.

Wastewater would not result in wastewater generation as construction workers would utilize portable restrooms, which would not contribute to wastewater flows to the local wastewater system. With regard to wastewater generated during operation, the wastewater generation was based on a factor that included wastewater generation for the self-storage uses. As such, with an increase in self-storage uses, the average daily wastewater generation would increase from 12,250 gallons per day (gpd) to 12,758 gpd. This would be an increase of 508 gpd. While there is an increase in wastewater generation under the revised project, the total wastewater generation would be negligible as compared to the available capacity at the Los Angeles County Sanitation Districts' Joint Water Pollution Control Plant.

With regard to solid waste generated during construction, similar to the proposed project, the revised project would be required to divert 65 percent of solid waste from landfills, the remaining capacity of County-operated landfills would be minimally affected due to construction. With regard to operation, the additional 8,061 square feet of self-storage uses are not anticipated to generate a significant increase in solid waste that would be in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.

Therefore, utility and service system impacts would remain the same as those in the IS/MND.

Attachment 1

Traffic and Parking Study

ESA

FEHR PEERS

Memorandum

Date: September 7, 2022

To: Darren Embry, Faring

From: Drew Heckathorn and Michael Kennedy, Fehr & Peers

Subject: 21611 South Perry Street Self-Storage/Mixed-Use Project Revised Project Description Traffic and Parking Study

LB21-0049

This memorandum summarizes the findings of a traffic and parking study for a revised project description for the 21611 South Perry Street self-storage/mixed-use project (the "Revised Project"). The original project description for the 21611 South Perry Street self-storage/mixed-use project (the "Original Project") was studied and documented in the *21611 South Perry Street – Local Transportation Assessment* report (the "LTA Report") prepared by Fehr & Peers in January 2022.

Revised Project Description

The Revised Project as analyzed in this study involves the construction of:

- 117,100 square feet (1,006 storage units) of self-storage warehouse space
- 2,425 square feet of self-storage office space
- 700 square feet of retail space
- 1,550 square feet of restaurant space

The Revised Project will have the same circulation system and driveway access as the Original Project.

Revised Project Trip Generation

Trip generation rates from *Trip Generation, 11th Edition* (Institute of Transportation Engineers [ITE], 2021) were used to estimate the number of trips associated with the Revised Project and are presented in **Table 1**. The Revised Project will generate 51 additional daily trips, 3 additional trips (1 inbound/2 outbound) during the AM peak hour, and 5 additional trips (3 inbound/2 outbound) during the PM peak hour beyond the trip generation estimated for the Original Project.

TABLE 1
PERRY STREET SELF-STORAGE REVISED PROJECT
ESTIMATED PROJECT TRIP GENERATION

Land Use	ITE Land Use Code	Size	Trip Generation Rates [a]							Estimated Trip Generation						
				AM Peak Hour			PM Peak Hour				AM Peak Hour Trips			PM Peak Hour Trips		
			Daily	Rate	In%	Out%	Rate	In%	Out%	Daily	In	Out	Total	In	Out	Total
PROPOSED PROJECT																
Mini-Warehouse	151	10.06 Units (100s) [b]	17.96	1.21	51%	49%	1.68	50%	50%	181	6	6	12	9	8	17
Less: Internal capture			*0%*		*0%*	*0%*		*0%*	*0%*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Less: Walk/Bike/Transit Credit [c]			*0%*	*0%*			*0%*			*0*	*0*	*0*	*0*	*0*	*0*	*0*
Net External Vehicle Trips										181	6	6	12	9	8	17
Coffee/Donut Shop without Drive-Through Window [d]	936	1.55 KSF	450.49	93.08	51%	49%	32.29	50%	50%	698	73	71	144	25	25	50
Less: Internal capture			*0%*		*0%*	*0%*		*0%*	*0%*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Less: Walk/Bike/Transit Credit [c]			*0%*	*0%*			*0%*			*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total Driveway Trips										698	73	71	144	25	25	50
Less: Pass-by			*43%*	*43%*			*43%*			*(300)*	*(31)*	*(31)*	*(62)*	*(11)*	*(11)*	*(22)*
Net External Vehicle Trips										398	42	40	82	14	14	28
Copy, Print, and Express Ship Store [e]	920	0.7 KSF	74.2	2.78	75%	25%	7.42	44%	56%	52	2	0	2	2	3	5
Less: Internal capture			*0%*		*0%*	*0%*		*0%*	*0%*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Less: Walk/Bike/Transit Credit [c]			*0%*	*0%*			*0%*			*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total Driveway Trips										52	2	0	2	2	3	5
Less: Pass-by			*0%*	*0%*			*0%*			*0*	*0*	*0*	*0*	*0*	*0*	*0*
Net External Vehicle Trips										52	2	0	2	2	3	5
TOTAL DRIVEWAY TRIPS										931	81	77	158	36	36	72
TOTAL PROJECT EXTERNAL VEHICLE TRIPS										631	50	46	96	25	25	50
EXISTING USE CREDIT																
Vacant Lot	-		-	-	-	-	-	-	-	0	0	0	0	0	0	0
TOTAL EXISTING DRIVEWAY TRIPS										0	0	0	0	0	0	0
NET INCREMENTAL EXTERNAL TRIPS										631	50	46	96	25	25	50

Notes:

[a] Source: Institute of Transportation Engineers (ITE), *Trip Generation, 11th Edition* , 2021

[b] The independent variable used to estimate trip generation for the self-storage use is total number of storage units. Trip generation for the self-storage office space is considered to be inclusive, per the ITE approach.

[c] A 0% Walk/Bike/Transit Credit was used based on the site's general suburban context.

[d] ITE use 933 - Fast-Food Restaurant without Drive-Through Window used for daily rate due to lack of daily rate data for ITE use 936 - Coffee/Donut Shop without Drive-Through Window.

[e] ITE use 920 does not have a daily rate. The daily rate is estimated to be 10 times greater than the PM peak hour traffic volume for the use.

Revised Intersection Traffic Analysis

Based on the project trip distribution described in the LTA Report and the additional trips generated by the Revised Project described in the previous section, the only two study intersections estimated to receive more than one additional peak hour trip for any turning movement are the following:

4. Perry Street & Project Driveway
5. Perry Street & Carson Street

Therefore, this revised intersection traffic analysis focuses on these two study intersections to evaluate the traffic operations effect of the additional trips from the Revised Project. **Table 1** summarizes the future LOS at these two study intersections with the addition of the Revised Project trips. Detailed LOS analysis sheets for the Future plus Revised Project scenario are provided as an attachment to this memorandum. These two study intersections are projected to operate at LOS D or better during the morning and evening peak hours under Future plus Revised Project conditions.

Table 1: Future Base and Future Plus Revised Project Levels of Service

Study Intersection	Period	Future Base		Future + Revised Project	
		Delay (s)	LOS	Delay (s)	LOS
4. Perry Street & Project Driveway	AM	Project Only Scenario		9.5	A
	PM			9.4	A
5. Perry Street & Carson Street	AM	21.8	C	31.5	D
	PM	27.2	D	31.9	D

Source: Fehr & Peers.

Revised Queuing Analysis

As shown in the LTA Report, minimal queueing is estimated at the two study intersections included in this Revised Project analysis (Intersections 4 and 5). The additional Revised Project trips are not significant enough to materially contribute to left-turn pocket queuing.

Revised Parking Demand Analysis

Table 2 provides a summary of estimated peak parking demand for the Revised Project using data from the *Parking Generation, Fifth Edition* (ITE, 2019) report. As shown in **Table 2**, the estimated peak parking demand for the Revised Project using the ITE method is 30 spaces. This

finding suggests that the 41 parking spaces proposed for the project will be more than adequate to accommodate peak parking demand for the Revised Project.

Table 2: Peak Parking Demand Estimate – ITE Method

ITE Land Use Code	Equation [2]	Project Size	Project Demand
151 – Mini-Warehouse [1]	P = 0.1x	119,525 SF	12
936 – Coffee/Donut Shop without Drive-Through Window	P = 10.49x	1,550 SF	16
920 – Copy, Print, and Express Ship Store	P = 3.01x	700 SF	2
		Total	**30**

[1] The ITE report specifies Mini-Warehouse to be "typically referred to as 'self-storage' facilities."
[2] P = Parked Vehicles, x = 1,000 square feet increments of gross floor area.
Source: Fehr & Peers.

VMT Analysis

The Revised Project can be classified as local-serving retail, and therefore based on standard OPR guidance can screen out from conducting VMT analysis for CEQA purposes. As described in the OPR technical advisory: "By adding retail opportunities into the urban fabric and thereby improving retail destination proximity, local-serving retail development tends to shorten trips and reduce VMT."

Summary and Conclusions

The following summarizes the results of the Revised Project's traffic and parking study analysis:

- The Revised Project consists of the proposed construction of 117,100 square feet (or 1,006 storage units) of self-storage warehouse space, 2,425 square feet of self-storage office space, 700 square feet of retail space, and 1,550 square feet of restaurant space.

- The Revised Project is expected to generate approximately 51 additional daily trips, 3 additional trips during the AM peak hour, and 5 additional trips during the PM peak hour beyond the trip generation estimated for the Original Project.

- The additional Revised Project trips do not cause average vehicle delay at any study intersection to worsen from LOS D or better to LOS E or F.

- The additional Revised Project trips do not cause spill over queuing at any study intersection.

- Using the ITE method for estimating parking demand, the proposed on-site parking supply of 41 spaces is more than adequate to accommodate the estimated peak parking demand of 30 spaces.

ATTACHMENT:
LOS ANALYSIS SHEETS

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	39	43	80	126	7
Future Vol, veh/h	7	39	43	80	126	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	42	47	87	137	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	322	141	145	0	-	0
Stage 1	141	-	-	-	-	-
Stage 2	181	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	672	907	1437	-	-	-
Stage 1	886	-	-	-	-	-
Stage 2	850	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	649	907	1437	-	-	-
Mov Cap-2 Maneuver	649	-	-	-	-	-
Stage 1	856	-	-	-	-	-
Stage 2	850	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	2.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1437	-	855	-	-
HCM Lane V/C Ratio	0.033	-	0.058	-	-
HCM Control Delay (s)	7.6	0	9.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	86	747	9	7	1097	36	6	0	4	18	0	147
Future Vol, veh/h	86	747	9	7	1097	36	6	0	4	18	0	147
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	75	-	-	-	-	-	-	-	30
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	99	859	10	8	1261	41	7	0	5	21	0	169

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1302	0	0	869	0	0	1709	2380	435	1926	2365	651
Stage 1	-	-	-	-	-	-	1062	1062	-	1298	1298	-
Stage 2	-	-	-	-	-	-	647	1318	-	628	1067	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	528	-	-	1080	-	-	94	35	*804	*57	36	411
Stage 1	-	-	-	-	-	-	450	450	-	*171	230	-
Stage 2	-	-	-	-	-	-	426	225	-	*758	447	-
Platoon blocked, %		-	-	1	-	-	1	1	1	1	1	
Mov Cap-1 Maneuver	528	-	-	1080	-	-	47	28	*804	*48	29	411
Mov Cap-2 Maneuver	-	-	-	-	-	-	47	28	-	*48	29	-
Stage 1	-	-	-	-	-	-	366	366	-	*139	228	-
Stage 2	-	-	-	-	-	-	249	223	-	*612	364	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0.1	61.5	31.5
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	75	528	-	-	1080	-	-	48	411
HCM Lane V/C Ratio	0.153	0.187	-	-	0.007	-	-	0.431	0.411
HCM Control Delay (s)	61.5	13.4	-	-	8.4	-	-	127.9	19.7
HCM Lane LOS	F	B	-	-	A	-	-	F	C
HCM 95th %tile Q(veh)	0.5	0.7	-	-	0	-	-	1.6	2

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	22	22	104	155	3
Future Vol, veh/h	3	22	22	104	155	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	24	24	113	168	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	331	170	171	0	-	0
Stage 1	170	-	-	-	-	-
Stage 2	161	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	664	874	1406	-	-	-
Stage 1	860	-	-	-	-	-
Stage 2	868	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	652	874	1406	-	-	-
Mov Cap-2 Maneuver	652	-	-	-	-	-
Stage 1	845	-	-	-	-	-
Stage 2	868	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	1.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1406	-	840	-	-
HCM Lane V/C Ratio	0.017	-	0.032	-	-
HCM Control Delay (s)	7.6	0	9.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	103	1234	5	3	857	28	5	0	11	72	0	105
Future Vol, veh/h	103	1234	5	3	857	28	5	0	11	72	0	105
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	75	-	-	-	-	-	-	-	30
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	107	1285	5	3	893	29	5	0	11	75	0	109

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	922	0	0	1290	0	0	1955	2430	645	1771	2418	461
Stage 1	-	-	-	-	-	-	1502	1502	-	914	914	-
Stage 2	-	-	-	-	-	-	453	928	-	857	1504	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	736	-	-	*897	-	-	90	34	*600	*158	35	547
Stage 1	-	-	-	-	-	-	382	370	-	*294	350	-
Stage 2	-	-	-	-	-	-	556	345	-	*565	369	-
Platoon blocked, %		-	-	1	-	-	1	1	1	1	1	
Mov Cap-1 Maneuver	736	-	-	*897	-	-	64	29	*600	*137	30	547
Mov Cap-2 Maneuver	-	-	-	-	-	-	64	29	-	*137	30	-
Stage 1	-	-	-	-	-	-	327	316	-	*251	349	-
Stage 2	-	-	-	-	-	-	443	344	-	*474	315	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0	29.1	31.9
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	166	736	-	-	* 897	-	-	137	547
HCM Lane V/C Ratio	0.1	0.146	-	-	0.003	-	-	0.547	0.2
HCM Control Delay (s)	29.1	10.7	-	-	9	-	-	59.2	13.2
HCM Lane LOS	D	B	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	0.3	0.5	-	-	0	-	-	2.7	0.7

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Final

21611 PERRY STREET SELF-STORAGE PROJECT

Initial Study/Mitigated Negative Declaration

Prepared for
City of Carson

August 2022

ESA

Final

21611 PERRY STREET SELF-STORAGE PROJECT

Initial Study/Mitigated Negative Declaration

Prepared for
City of Carson
Contact: Stefanie Edmondson, AICP, Senior Planner
701 East Carson Street
Carson, CA 90745
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August 2022

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ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
ADA	Americans with Disabilities Act
ADT	average daily traffic
AFY	acre feet per year
ANSI	American National Standard Institute
APN	Assessor's Parcel Number
AQMP	Air Quality Management Plan
AR4	Fourth Assessment Report
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
ATCM	Air Toxics Control Measure
BACT	Best Available Control Technology
BC3	Business Council on Climate Change
BERD	Built Environment Resources Directory
BMP	best management practices
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Division of Occupational Safety and Health
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CDC	California Department of Conservation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFC	California Fire Code
cfs	cubic feet per second
CH_4	methane
CIWMP	Countywide Integrated Waste Management Plan
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	CO_2 equivalents
CPA	Clean Power Alliance
dB	decibels
dBA	A-weighted decibels
DPM	diesel particulate matter
DTSC	California Department of Toxic Substances Control

Acronym/Abbreviation	Definition
EECAP	Energy Efficiency Climate Action Plan
EMFAC	CARB on-road vehicle emissions factor
EPA	Environmental Protection Agency
ESA	Environmental Science Associates
ET	evapotranspiration
FAR	Floor Area Ratio
FTA	Federal Transit Administration
GHG	greenhouse gas
GPD	gallons per day
GWh	gigawatt-hours
GWP	global warming potential
HAP	hazardous air pollutant
HFC	hydrofluorocarbon
HHD	heavy-heavy-duty
HVAC	heating, ventilation, and air conditioning
IPCC	Intergovernmental Panel on Climate Change
IS	Initial Study
JWPCP	Joint Water Pollution Control Plant
LACFD	Los Angeles County Fire Department
LACM	History Museum of Los Angeles County
LACMC	Los Angeles County Municipal Code
LACSD	Los Angeles County Sanitation Districts
LARWQCB	Los Angeles Regional Water Quality Control Board
LASD	Los Angeles County Sheriff
LCFS	Low Carbon Fuel Standard
LNAPL	light non-aqueous phase liquid
LOS	level of service
LST	localized significant threshold
LTA	Perry Street Local Transportation Assessment
LTA	proposed project's Local Transportation Assessment
MBTA	Federal Migratory Bird Treaty Act
MLD	Most Likely Descendent
ML-D	Manufacturing Light with a Design Overlay
MMT	million metric tons
MND	Mitigated Negative Declaration
MRZ-2	Mineral Resource Zone 2
MT	one metric ton
MTCO2e	25 MT of CO_2 equivalents
MWELO	Model Water Efficient Landscape Ordinances
MWh	megawatt-hours
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	California Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NFPA	National Fire Protection Association

Acronym/Abbreviation	Definition
NOX	nitrogen oxides
NPDES	National Pollution Elimination Discharge System
NRC	Noise Reduction Coefficient
OEHHA	Office of Environmental Health Hazard Assessment
OHP	California Office of Historic Preservation
PFC	perfluorocarbons
PPV	peak particle velocity
RCP	Regional Comprehensive Plan
RPS	California Renewables Portfolio Standard
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SCE	Southern California Edison
SF_6	sulfur hexafluoride
SIP	state implementation plan
SLF	Sacred Lands File
SLM	Sound Level Meter
SMP	Soil Management Plan
SO_2	sulfur dioxide
SoCalGas	Southern California Gas Company
SRA	Source Receptor Area
STC	Sound Transmission Class
SUSMP	Standard Urban Stormwater Mitigation Plan
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Regional Control Board
TAC	toxic air contaminants
TNM	Traffic Noise Model
USFWS	U.S. Fish and Wildlife Service
UWMP	Urban Water Management Plan
VdB	velocity in decibels
VMT	vehicle miles traveled
VOC	volatile organic compound

CHAPTER 1
Introduction

1. Project Title:	21611 Perry Street Self-Storage
2. Lead Agency Name and Address:	City of Carson Community Development Department 701 East Carson Street Carson, CA 90745
3. Contact Person and Phone Number:	Stefanie Edmondson, Senior Planner (310) 952-1761 x1322
4. Project Location:	21611 South Perry Street Carson, CA 90746
5. Project Sponsor's Name and Address:	21611 Perry Street, LLC 4132 Katella Avenue, #205B Los Alamitos, CA 90720
6. General Plan Designation(s):	Light Industrial
7. Zoning:	Manufacturing, Light – with Site Plan and Design Review Overlay (ML-D)

8. Description of Project:

The 21611 Perry Street Self-Storage project (proposed project) is located on a 2.80-acre site at 21611 South Perry Street (project site) in the City of Carson (City). The proposed project includes the development of a self-storage facility with three buildings totaling approximately 113,714 square feet. The self-storage facility would consist of a mix of one- and two-story buildings with a maximum height of 31 feet. The self-storage facility would include a 2,425-square-foot lobby/self-storage office area, a 1,550-square-foot retail use for a cafe, and a 700-square-foot retail use (likely a mail service store such as United Postal Service [UPS] or Federal Express [FedEx]) comprising a total of 4,675 square feet for these uses. The proposed project would provide 41 parking spaces that would be accessed from one driveway providing ingress/egress off South Perry Street. The proposed project would provide approximately 12,134 square feet of landscaping around the perimeter of the project site.

The buildings would house interior climate-controlled storage units and external non-climate-controlled storage units with ramp access to the second floors of the internal buildings. The building's architecture would incorporate a Spanish style with clay tile roofs and neutral toned

stucco. Access to the self-storage facility would be controlled via computerized access gates and would be under digital surveillance 24 hours a day, 7 days a week. The project site is zoned ML-D (Manufacturing, Light – with Site Plan and Design Review Overly) with a General Plan Land Use designation of Light Industrial. The proposed project would require a general plan amendment to allow for a 1:0 Floor Area Ratio (FAR).

9. Surrounding Land Uses and Setting:

The project site is bordered by East Carson Street to the south, South Perry Street to the east, residential uses to the north, and the Dominguez Flood Control Channel (Dominguez Channel) to the west. The project site is in a neighborhood characterized by a mix of residential and commercial uses. An auto repair facility and a truck dealer are located to the east and south across East Carson Street and South Perry Street. Two- and three-story multi-family housing is located directly across South Perry Street to the east with the Perry Mini-Park and single-family homes to the north and northeast of the project site. Additional single-family housing is located southeast of the project site across East Carson Street. The project site is currently vacant and undeveloped.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement)**:**

In order for the proposed project to be approved and in compliance with the City's Municipal Code, the Applicant would be required to obtain the following approvals from the City:

- General Plan Amendment (from Light Industrial to Heavy Industrial)
- Zone Change (from Manufacturing Light with a Design Overlay [ML-D] to Perry Street Specific Plan [PSSP])
- Specific Plan Approval
- Development Agreement
- Site Plan/Design Review Overlay
- CEQA Review

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun?

The City notified appropriate tribes regarding Assembly Bill (AB) 52 and Senate Bill (SB) 18 consultation). Refer to Section XVIII, *Tribal Cultural Resources*, for additional information.

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages:

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Energy
☐ Geology/Soils	☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials
☐ Hydrology/Water Quality	☐ Land Use/Planning	☐ Mineral Resources
☐ Noise	☐ Population/Housing	☐ Public Services
☐ Recreation	☐ Transportation	☐ Tribal Cultural Resources
☐ Utilities/Service Systems	☐ Wildfire	☐ Mandatory Findings of Significance

Determination

On the basis of this initial study:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Stefanie Edmondson
Signature

8/22/22
Date

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CHAPTER 2
Project Description

2.1 Project Overview

The proposed project is a self-storage facility consisting of approximately 113,714 square feet in a mix of one- and two-story buildings, with a maximum height of 31 feet. The 113,714-square-foot self-storage facility would include a lobby/self-storage office (2,425 square feet), cafe (1,550 square feet), and retail uses (700 square feet) totaling 4,675 square feet.

This Initial Study (IS) serves as the appropriate preliminary environmental documentation in accordance with the California Environmental Quality Act (CEQA) Guidelines to demonstrate the potential environmental impacts associated with the construction and operation of the proposed project. Based on the findings of this IS, the City has determined a Mitigated Negative Declaration (MND) is the appropriate CEQA document for the proposed project.

2.2 Project Location and Existing Setting

The project site is located on the northwest corner of East Carson Street and South Perry Street at 21611 South Perry Street in the City of Carson, California, Los Angeles County. The project site is approximately 2.80 acres (approximately 121,968 square feet) and includes Assessor's Parcel Numbers (APNs) 7327-010-014 and 7327-010-015. Refer to **Figure 2-1**, *Project Site and Regional Location*. The project site is currently one vacant and undeveloped parcel, as shown in **Figure 2-2**, *Aerial Photograph*. The project site was previously improved with a large single-story warehouse building that included commercial/industrial uses. These uses were demolished in 2011. There are no habitable structures present on the project site; however, remnant improvements are still present.

The project site is located in a neighborhood characterized by a mix of residential and commercial uses. A truck dealer is located south of the project site across East Carson Street. An auto repair facility and two- and three-story multi-family residential units are located directly across South Perry Street to the east with the Perry Street Mini-Park and single-family homes located to the north and northeast of the project site. Single-family residential units are located southeast of the project site across East Carson Street. The Dominguez Channel, a 15.7-mile-long drainage channel that runs north-south through the City of Carson, is located to the west of the project site and a flood control easement separates the Dominguez Channel from the project site. The project site is zoned ML-D (Manufacturing, Light – with Site Plan and Design Review Overly) with a General Plan Land Use designation of Light Industrial. The proposed project would require a general plan amendment to allow for a 1:0 FAR.

SOURCE: ESRI Imagery, 2021

21611 Perry Street Self-Storage

Figure 2-1
Project Site and Regional Location

ESA

SOURCE: ESRI Imagery, 2021

21611 Perry Street Self-Storage

Figure 2-2
Aerial Photograph

ESA

2.3 Project Site History and Existing Conditions

According to the Phase I Environmental Site Assessment (Phase I ESA), prepared for the project site, there are known groundwater impacts at the project site. In addition, in January 2011, light non-aqueous phase liquid (LNAPL) began appearing within the Dominguez Channel (west of the project site). The LNAPL was reportedly observed entering into channel waters from sediments within the bottom of the channel and within horizontal, perforated sub-drain pipe systems installed within both the west and east channel levees. In April 2011, the Los Angeles Regional Water Quality Control Board (LARWQCB) reportedly issued orders pursuant to Section 13267 of the California Water Code requiring potential responsible parties to assess contaminants of concern impacting soil, soil vapor, and groundwater at the Dominguez Channel and determine the extent that the nearby facilities may have contributed to the release. Upon completion of the required assessments, the LARWQCB determined that the project site (i.e., Carson Air Harbor property), was not a likely contributor to the LANPL release and was granted no further action status relative to the Dominguez Channel issues. However, a separate case for the project site was opened by the LARWQCB (Site Cleanup Program Case No. 0490C) due to other possible sources of contamination. There are 16 groundwater monitoring wells present at the project site that are used as part of the groundwater monitoring program. Primary groundwater contaminants of concern identified in these wells included total petroleum hydrocarbons in the gasoline range, benzene and diisopropyl ether. It was noted that concentrations in existing monitoring wells generally appeared to be stable or decreasing, with a few instances of fluctuation.

To address project site impacts to soil in order to redevelop the project site for commercial/industrial use, a Soil Excavation Workplan was developed by URS and subsequently approved by the LARWQCB on April 21, 2014. Between September 9 and October 8, 2014, 7,255.69 tons (approximately 4,837 in-place cubic yards assuming 1.5 tons per cubic yard) of impacted soil were excavated from the project site and disposed off-site. The impacted soil was removed from four distinct areas to depths ranging from approximately 5 to 8 feet (see Figure 2-5 in Section V, *Cultural Resources*). The excavated areas were then backfilled with imported clean fill or with an approximate 50:50 mix of crushed concrete and imported fill and a small amount of clean overburden soil.

URS concluded that based on confirmation soil sampling for each of the excavations, the cleanup criteria set out in the workplan had been met. URS also stated that a Soil Management Plan (SMP) for the project site was prepared to mitigate potential future exposure to residual petroleum hydrocarbons and odor generation during project site development. URS also stated that a deed restriction limiting project site use to commercial/industrial uses would be required. It was also noted in the report that a vapor barrier would be incorporated in the design of any future structures that are constructed at the project site. URS requested that the LARWQCB issue a no further action letter for vadose zone soils at the project site. The LARWQCB reviewed the report and concurred with its findings. A no further action letter for soil was issued by the LARWQCB on December 14, 2015.

2.4 Project Characteristics

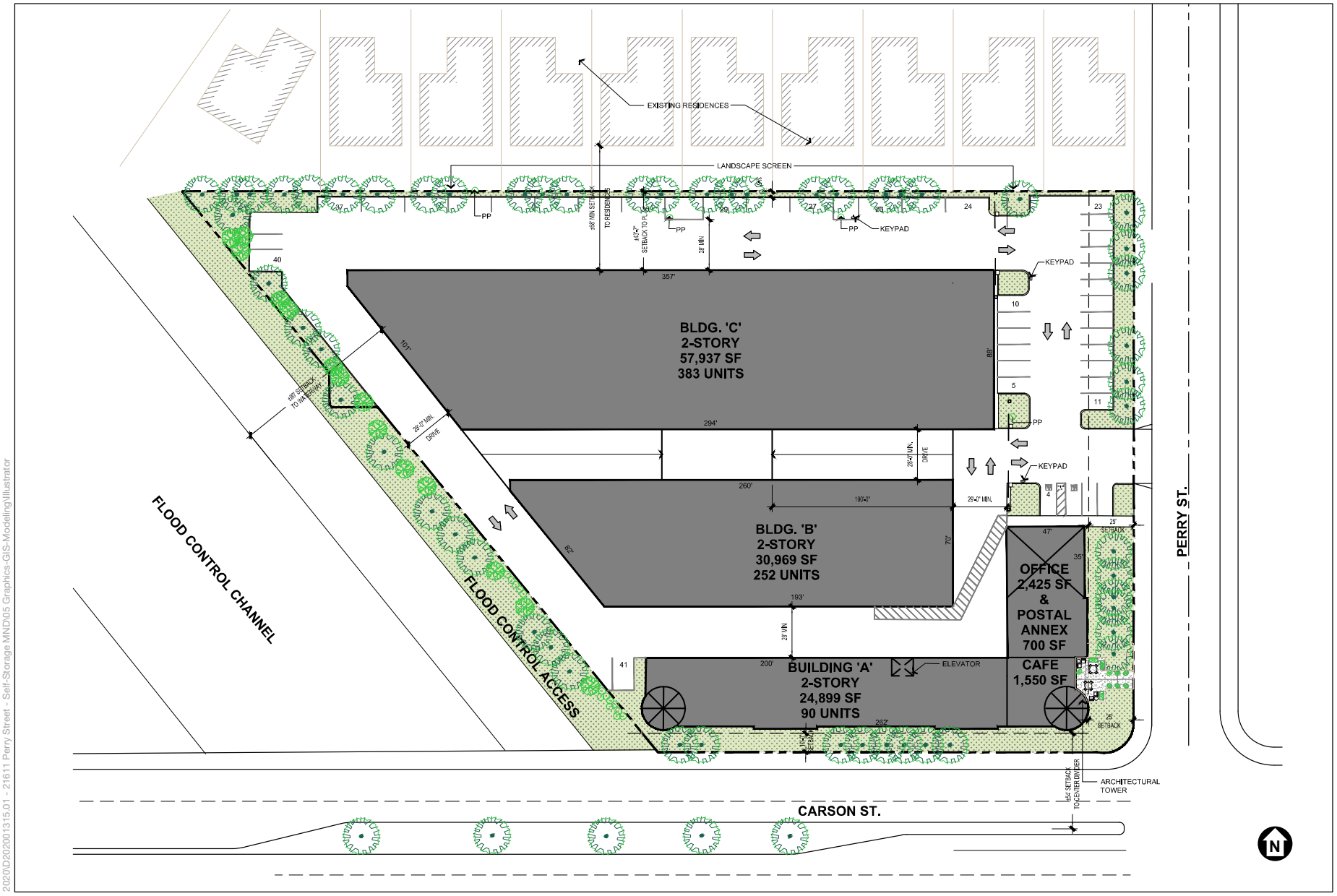
The proposed project is a self-storage facility consisting of approximately 113,714 square feet in a mix of three one- and two-story buildings, with a maximum height of 31 feet. Building A would total 24,808 square feet and would include a lobby/self-storage office and retail uses totaling 4,675 square feet. Specifically, the proposed project would include a 2,425-square-foot space for the lobby/self-storage office area, a 1,550-square-foot space for a cafe use, and a 700-square-foot space for a retail use (likely a mail service store occupied by operators such as UPS or FedEx). Building B would total 30,969 square feet and Building C would total 57,937 square feet. Buildings would house interior climate-controlled units and external non-climate self-storage rental units with ramp access to the second floors of the internal buildings. Ramp access to the second floors would be provided between Buildings B and C. **Figure 2-3**, *Conceptual Site Plan*, provides an illustration of the proposed project. Storage units would range in size from a 5-foot by 10-foot unit as the smallest unit for rent to a 10-foot by 38-foot unit as the largest unit for rent. Fire suppression within the proposed buildings would consist of a National Fire Protection Association (NFPA)-13 sprinkler system as well as surrounding fire hydrants. Construction type is to be Type-II non-combustible.

The proposed project would include approximately 12,134 square feet of landscaping, mostly occurring around the perimeter of the project site. Significant landscaping and plantings would be provided along the project site's northern edge to shield and provide a privacy screen for the residential neighbors. A variety of drought tolerant ornamental shrubs and medium size trees, which would be varying in height, would be included as a part of the proposed landscaping.

Landscape areas would be designed to receive stormwater runoff from the site and mitigate urban heat island effect through vegetated planting areas and tree canopies. The irrigation system would be a fully automatic underground drip system. Backflow prevention devices would be installed to meet all local and City applicable codes. The irrigation system would be designed and constructed to meet and/or exceed Model Water Efficient Landscape Ordinances (MWELO). Water conservation products (High efficiency / low precipitation) and an evapotranspiration (ET) weather-based control system would be incorporated into the irrigation system design.

As shown in **Figure 2-4**, *Conceptual Rendering*, the proposed project would consist of neutral-toned building materials in Spanish styled architecture, which include Spanish accents, Spanish tile roof, spandrel glazing, and landscaping. The proposed design would largely resemble a multi-family residential building in its aesthetics and massing.

As shown in Figure 2-3, the proposed project would include one main entrance to the project site on South Perry Street, which would allow self-storage customers, employees, and mail/delivery trucks such as those used by UPS or FedEx to enter and exit the project site. Specifically, to accommodate the entry to the new storage facility, the existing driveway would be demolished, and a new driveway would be constructed and located near the center of the eastern frontage along South Perry Street. Curb, gutter, sidewalks, and driveway would be designed and constructed with City Engineer review and approval.



SOURCE: Jordan Architects, 2021

21611 Perry Street Self-Storage

Figure 2-3
Conceptual Site Plan

ESA

2020\D2020013l5.01 - 21611 Perry Street - Self-Storage MND\05 Graphics-GIS-Modeling\Illustrator

SOURCE: Jordan Architects, 2021

21611 Perry Street Self-Storage

Figure 2-4
Conceptual Rendering

ESA

The proposed project would provide 22 public parking spaces outside the gates with an additional 19 spaces provided inside the gates for a total of 41 parking spaces. Of the total parking stalls, two stalls would be included as Americans with Disabilities Act (ADA)-accessible stalls, and seven stalls would be identified to accommodate clean air and/or vanpool EV vehicles.

New lighting would include building identification wayfinding and security lighting. Low emittance lighting would be provided on the walls of the buildings facing the internal drive aisles and mounted at a height of 12 to 13 feet. Pedestrian areas including entryways into the proposed project would be well-lit for security using ground-mounted fixtures. Light fixtures would be shielded and directed towards the areas to be lit and away from light-sensitive residential land uses located to the north and east of the project site. Various features included in the lighting fixtures would also help reduce light trespass including: target zone illumination, photo control occupancy sensing, zero up-light emissions, and best-in-class surge protection.

Proposed signage would include building identification signage, street address, and identification/wayfinding signage for the vehicular and pedestrian entries to the buildings. Signage would comply with City requirements and would not exceed two square feet for every 20 feet of business storefront and 1 square foot for each linear foot that exceeds the first 20 feet. The larger identifying signs would be approximately 26 feet 7.5 inches long and 2 feet 6 inches tall and provided in multiple high-visibility locations along the structure.

The self-storage facility would feature a contemporary 24-hour security system including keypad entry security gates, individually monitored and alarmed storage units, video surveillance monitoring, burglar alarms, as well as an intercom system. The manger and/or other office personnel would monitor these security systems on a control panel during hours of operation. Should there be a violation of any of the security systems when the management office is closed, an independent security firm would respond.

2.5 Project Construction

Project construction is anticipated to start in January 2023, commencing with removal of the existing driveways, followed by approximately 1 month of site preparation. Construction would be completed in 8 phases over an estimated 13-month period and would include the following construction activities: site preparation, grading and excavation, trenching, concrete pouring for the foundation, building construction, paving, architectural coatings and landscaping. Project construction would include the removal of the existing driveways, the excavation of approximately 906 cubic yards of soil and import approximately 257 cubic yards of soil. In addition, the upper 6 feet of existing earth materials within the proposed building footprint areas would be excavated and properly compacted for foundation and slab support.

The proposed project would generate off-site traffic during the initial delivery of construction vehicles and equipment to the project site, the daily arrival, and departure of construction workers, the delivery of materials throughout the construction period, the removal of soil and construction debris and the import of soil. Deliveries would generally include shipments of concrete, lumber,

other building materials for on-site structures, utilities (e.g., plumbing equipment and electrical supplies), and paving and landscaping materials.

2.6 Project Operations

During project operation, the proposed project would include 5 to 6 employees comprising two storage managers, two cafe employees, and one or two employees for the mail service store. Gate access would be provided from 6:00 a.m. to 10:00 p.m., 7 days a week. Management employees would be on-site during regular business hours, which are presumed to be 8 a.m. to 6 p.m., Monday through Sunday. Typical daily operational traffic would be low in frequency and significantly less than other commercial uses, a traditional warehouse, storage, or other manufacturing use. Operational traffic would consist of inbound and outbound delivery trucks and self-storage patrons arriving and departing the project site. Most traffic trips to the project site for the proposed project would occur at hours outside of the peak morning and afternoon commute periods.

2.7 Project Approvals and Discretionary Actions

The proposed project would require the discretionary approvals from the City of Carson City Council, with initial recommendations by the City of Carson Planning Commission. In consideration of the forthcoming General Plan Update, the Applicant will work closely with Planning staff to determine the ideal zoning and land use designations and standards of review. In order for the proposed project to be approved and in compliance with the City's Municipal Code, the Applicant would be required to obtain the following approvals from the City:

- General Plan Amendment (from Light Industrial to Heavy Industrial)
- Zone Change (from Manufacturing Light with a Design Overlay [ML-D] to Perry Street Specific Plan [PSSP])
- Specific Plan Approval
- Development Agreement
- Site Plan / Design Review Overlay
- CEQA Review

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CHAPTER 3
Environmental Checklist

I. Aesthetics

Issues (and Supporting Information Sources)	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
I. AESTHETICS—Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	☐	☐	☐	☒
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	☐	☐	☒	☐

Discussion

a) The project site is located on one parcel which is currently vacant and undeveloped. According to the City of Carson General Plan EIR, there are no officially designated scenic vistas within Carson (City of Carson 2002). In addition, the project site is within an established a neighborhood characterized by a mix of residential and commercial uses. While the proposed project would develop a currently vacant site, the proposed project would develop similar uses to those in the surrounding area. Therefore, no impacts to a scenic vista would occur.

b) According to the California Department of Transportation (Caltrans), there are no Officially Designated State or County Scenic Highways as defined by Caltrans, the County of Los Angeles, or any other local governing body adjacent to or within the vicinity of the project site (Caltrans 2021). Furthermore, according to the City of Carson General Plan EIR, there are no officially designated scenic vistas or scenic highways within Carson (City of Carson 2002). Therefore, no impact to scenic resources within a State scenic highway would occur.

c) The project site is considered to be located in an urbanized area. The project site is surrounded by urbanized uses. The project site is located in a neighborhood characterized by a mix of residential and commercial uses. A truck dealer is located on south of the project site across East Carson Street. An auto repair facility and two- and three-story

multi-family residential units are located directly across South Perry Street to the east with the Perry Mini-Park and single-family homes located to the north and northeast of the project site. Additional single-family residential units are located southeast of the project site across East Carson Street. The Dominguez Channel, a 15.7-mile-long drainage channel that runs north-south through the City of Carson, is located to the west of the project site and a flood control easement separates the Dominguez Channel from the project site. Given the proposed project's location in an urbanized area, project implementation may result in a significant impact if the proposed project would conflict with applicable zoning and other regulations governing scenic quality.

The project site is designated as Light Industrial land use and zoned as ML-D (Manufacturing, Light – with Site Plan and Design Review Overlay). The proposed project would require a zone change and adoption of a specific plan to allow implementation of the proposed self-storage facility. Approval of the proposed project would require Site Plan and Design review to ensure that the proposed project does not conflict with applicable zoning and other regulations governing scenic quality. The proposed project would be required to comply with City's Industrial Zone Site Development Standards (City of Carson Municipal Code [CMC] Section 9146), which contains building requirements for structures, frontages, and landscaping. As a result, the proposed project would be consistent with the CMC.

The City of Carson's General Plan Land Use Element contains policies and regulations governing scenic quality and visual aesthetics for the City. However, there are no aesthetic related regulations regarding industrial development within the General Plan. The proposed project would be designed to be compatible with zoning and design regulations as detailed in the specific plan and would adhere to all height, frontage, and zoning requirements that may be required to maintain aesthetic compatibility.

As discussed above, the proposed project would consist of neutral-toned building materials in Spanish styled architecture, which include Spanish accents, Spanish tile roof, spandrel glazing, and landscaping. The proposed design would largely resemble a multi-family residential building in its aesthetics and massing. The proposed project would include approximately 12,134 square feet of landscaping around the perimeter of the project site. The proposed design of the self-storage facility and landscaping would provide visual continuity within the area.

Therefore, based on the above, the proposed project would not conflict with zoning or regulations governing scenic quality and impacts would be less than significant.

d) The project site is located within an urbanized area where typical sources from glare are caused by the reflection of sunlight or artificial light by highly polished surfaces such as window glass or reflective materials. In addition, existing residential and commercial uses surrounding the project site typically include nighttime security and wayfinding lighting such that typically emanate from building interiors, passes through windows, and light from outdoor sources, such as street lighting, parking lot lighting, building illumination,

and vehicles. Light-sensitive residential uses are located directly across South Perry Street to the east and to the north and northeast of the project site. Additional light sensitive residential uses are located southeast of the project site across East Carson Street. Implementation of the proposed project would introduce new sources of nighttime lighting onto the project site as a result of installation of new exterior light fixtures that are generally required for security, wayfinding, and aesthetic purposes. Specifically, low emittance lighting would be provided on the walls of the buildings facing the internal drive aisles and mounted at a height of 12 to 13 feet. Pedestrian areas including entryways into the proposed project would be well-lit for security using ground-mounted fixtures. Pursuant to CMC Section 9127.1, all exterior lighting installed on the project site must be directed away from all adjoining and nearby residential property and arranged and controlled so it would not create a nuisance or hazard to traffic or to the living environment. As such, all exterior lighting would be shielded and/or recessed to reduce light trespass (i.e., excessive or unwanted light generated on one property illuminating another property). Therefore, based on compliance with local requirements, impacts associated with light and nighttime glare would be less than significant.

II. Agriculture and Forestry Resources

Issues (and Supporting Information Sources)	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
II. AGRICULTURE AND FORESTRY RESOURCES—In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Discussion

a) The project site is located within the City of Carson on one parcel that is currently vacant and undeveloped. The project site is not zoned for agricultural uses and no agricultural uses or related operations are present on the project site or in the surrounding urbanized area. The project site is not located on designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program (CDC 2021). Therefore, no impact would occur from conversion of Farmland to non-agricultural uses.

b) The project site is located in an urbanized area designated as Light Industrial in the City of Carson's General Plan Land Use Map with a corresponding zoning of ML-D (Manufacturing, Light – with Site Plan and Design Overlay) (City of Carson 2004). No agricultural zoning is present in the project vicinity, and no nearby lands are enrolled under the Williamson Act (CDC 2016). The California Department of Conservation, Division of Conservation, Division of Land Resource Protection does not identify the project site as being protected by the Williamson Act (CDC 2017). As such, the proposed project would not conflict with existing zoning for agricultural uses, or a Williamson Act contract and no impact would occur.

c) As discussed previously, the project site is designated as Light Industrial on the City of Carson's General Land Plan Land Use Map and is zoned ML-D (Manufacturing, Light – with Site Plan and Design Review Overlay) (City of Carson 2004). The project site includes one parcel that is currently vacant and undeveloped within an urbanized area. No forestland or timberland uses are located in the project site's urban setting or vicinity. Therefore, no impact would occur to zoning for forestland or timberland.

d) As discussed above, the project site is zoned for industrial uses and the surrounding areas are zoned for residential and commercial uses. No forestland or timberland uses are located at the project site or within the vicinity. Therefore, no impact would occur to forestland or timberland.

e) As discussed above, the proposed project would not involve changes to the existing environment that could result in the conversion of farmland or forestland and there are no farmland uses on or in the vicinity of the project site. Therefore, no impact would occur from a conversion of farmland to a non-agricultural use.

III. Air Quality

Issues (and Supporting Information Sources)	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
III. AIR QUALITY—Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people?	☐	☐	☒	☐

Discussion

a) *Regulatory Background*

The proposed project is located within the 6,745-square-mile South Coast Air Basin (Basin). Air quality planning for the Basin is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). SCAQMD is the agency principally responsible for comprehensive air pollution control in the Basin. The Basin is subject to the SCAQMD's Air Quality Management Plan (AQMP), which was created to meet the to meet the California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS) for criteria air pollutants. The AQMP contains a comprehensive list of pollution control strategies directed at reducing emissions from stationary sources and on-road and off-road mobile sources and achieving ambient air quality standards. These strategies are developed, in part, based on regional population, housing, and employment projections prepared by the Southern California Association of Governments (SCAG). As part of its air quality planning, SCAG has prepared the Regional Comprehensive Plan (RCP) and Guide and the Regional Transportation Program/Sustainable Communities Strategy (RTP/SCS), these plans provide the basis for the land use and transportation components of the AQMP and are used in the preparation of the air quality forecasts and the consistency analysis included in the AQMP.[1] Both the RCP and AQMP are based, in part, on projections originating with County of Los Angeles and City of Carson general plans. The proposed project would be subject to the SCAQMD's AQMP.

The SCAQMD's 2016 AQMP was prepared to accommodate growth, reduce the high levels of pollutants within the areas under the jurisdiction of SCAQMD, return clean air to the region, and minimize the impact on the economy (SCAQMD 2016). The SCAQMD is required, pursuant to the Clean Air Act, to reduce emissions of criteria pollutants for which

[1] The most recent version of the AQMP (2016 AQMD) is based on the 2016-2040 RTP/SCS and will therefore rely on the 2016-2040 RTP/SCS when discussing plan consistency.

the Basin is in non-attainment for the NAAQS (e.g., ozone [O_3], and particulate matter 2.5 microns in diameter or less [PM2.5]). Projects that are consistent with the assumptions used in the AQMP do not interfere with attainment because the associated growth with the projects are included in the projections utilized in the formulation of the AQMP. Projects that are consistent with the projections of employment and population forecasts identified in the RTP/SCS are considered consistent with the AQMP growth projections, since the RTP/SCS forms the basis of the land use and transportation control portions of the AQMP. The SCAQMD's 2016 AQMP contains a comprehensive list of pollution control strategies directed at reducing emissions and achieving the NAAQS and includes transportation control strategies designed to reduce vehicle miles traveled (VMT). SCAQMD's 2016 AQMP control strategies were developed, in part, based on regional growth projections prepared by SCAG through 2040. When determining consistency with AQMP growth assumptions, the projections in the AQMP for achieving air quality goals are based on assumptions in SCAG's 2016-2040 RTP/SCS regarding population, housing, and growth trends. Determining whether or not a project exceeds the assumptions reflected in the AQMP involves the evaluation of consistency with applicable population, housing, and employment growth projections and appropriate incorporation of AQMP control measures. While SCAG's Regional Council adopted the 2020–2045 RTP/SCS on September 3, 2020, SCAQMD's 2016 AQMP is based on growth projections and control strategies from the 2016–2040 RTP/SCS. The SCAQMD is currently working on a 2022 AQMP, which will base its analyses on the 2020–2045 RTP/SCS. However, until the 2022 AQMP is adopted, consistency with the 2016–2040 SCAG RTP/SCS is appropriate when discussing a project's consistency with the SCAQMD's 2016 AQMP.

The proposed project's consistency with applicable air quality plans is provided below. There are no applicable numerical thresholds of significance for this consistency analysis. In accordance with the SCAQMD's CEQA Air Quality Handbook, the following criteria were used to evaluate the proposed project's consistency with the SCAQMD's 2016 AQMP:

- Criterion 1: Will the project result in any of the following:
  - An increase in the frequency or severity of existing air quality violations; or
  - Cause or contribute to new air quality violations; or
  - Delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.
- Criterion 2: Will the project exceed the assumptions utilized in preparing the AQMP?

The proposed project's potential impacts with respect to these criteria are discussed to assess the consistency with the SCAQMD's 2016 AQMP.

Criterion 1

Consistent with the first criterion, the proposed project would not conflict with the ability of federal, State, and local agencies to implement fair-share emissions strategies or achieve compliance with criteria pollutant standards or other federal requirements. Specifically, the

proposed project's volatile organic compound (VOC), nitrogen oxides (NO_X), carbon monoxide (CO), sulfur dioxide (SO_2), respirable particulate matter (10 microns or smaller in diameter, PM10), and fine particulate matter (2.5 microns or smaller in diameter, PM2.5) emissions resulting from construction and operation were analyzed to ascertain any potential effects on regional and localized concentrations and determine the potential for such emissions to cause or contribute to a violation of the ambient air quality standards. As discussed under response to Section III (b) and response to Section III (c), the proposed project's construction and operational emissions would not exceed the SCAQMD's regional mass emissions thresholds for VOC, NO_X, CO, SO2, PM10 or PM2.5 or the localized significance thresholds (LSTs) for NO_X, CO, PM10 or PM2.5, or generate roadway traffic congestion at an intersection that would result in a CO hotspot in excess of the ambient air quality standards as a result of project motor vehicle operations. The proposed project's emissions would therefore not increase concentrations of criteria pollutants or their precursors in a manner that would conflict with or obstruct SCAQMD's efforts to achieve attainment of ambient air quality standards for any criteria pollutant for which it is currently not in attainment or jeopardize the current attainment status of the Basin for other criteria pollutants. Therefore, in response to Criterion 1, the proposed project would not result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new air quality violations, or delay timely attainment of air quality standards or the interim emissions reductions specified in the AQMP.

Criterion 2

With respect to the second criterion for determining consistency with AQMP growth assumptions, the projections in the AQMP for achieving air quality goals are based on assumptions in SCAG's 2016–2040 RTP/SCS regarding population, housing, and growth trends. Determining whether or not a project exceeds the assumptions reflected in the AQMP involves the evaluation of consistency with applicable population, housing, and employment growth projections and appropriate incorporation of AQMP control measures. The following discussion provides an analysis with respect to these criteria.

Air Quality Management Plan Consistency

The proposed project would not obstruct implementation of the 2016 AQMP for, as discussed below, its construction and operational emissions would be less than significant. The proposed project would comply with applicable required fleet rules and control strategies to reduce on-road truck emissions (i.e., 13 California Code of Regulations, Section 2025 [CARB Truck and Bus regulation]), and other applicable SCAQMD rules specified and incorporated in the 2016 AQMP. As discussed above, projects, uses, and activities that are consistent with the applicable growth projections and control strategies used in the development of the AQMP would not jeopardize attainment of the air quality levels identified in the AQMP. As discussed below, compliance with the applicable required fleet rules and control strategies and requirements would render it consistent with, and meet or exceed, the AQMP requirements for control strategies intended to reduce emissions from construction equipment and activities. Thus, the proposed project's criteria pollutant emissions would not cause the Basin's criteria pollutant emissions to worsen so as to impede the SCAQMD's efforts to achieve attainment with respect to any criteria

pollutant for which it is currently not in attainment of the NAAQS and CAAQS (e.g., ozone, PM10, and PM2.5),[2] or to cause the Basin to deteriorate from its current attainment status with respect to any other criteria pollutant emissions.

As further discussed below, the proposed project is also consistent with the 2016 AQMP. The proposed project incorporates into its design appropriate control strategies set forth in the 2016 AQMP for achieving its emission reduction goals and would be consistent with the demographic and economic assumptions upon which the plan is based.

Construction

Control Strategies

During its construction phase, the proposed project would ensure compliance with CARB's requirements to minimize short-term emissions from on-road and off-road diesel equipment, and with SCAQMD's regulations such as SCAQMD Rule 403 for controlling fugitive dust and SCAQMD Rule 1113 for controlling VOC emissions from architectural coatings. Compliance with these regulatory measures and requirements would be consistent with and meet or exceed the AQMP requirements for control strategies intended to reduce emissions from construction equipment and activities.

Growth Projections

The proposed project would generate short-term construction jobs, but these jobs would not necessarily bring new construction workers or their families into the region, since construction workers are typically drawn from an existing regional pool who travel among construction sites within the region. Construction workers are not typically brought from other regions to work on developments such as the proposed project. Moreover, these jobs would be relatively small in number and temporary in nature. Therefore, the proposed project's construction jobs would not conflict with the long-term employment or population projections upon which the 2016 AQMP is based.

Operations

Control Strategies and Policy Consistency

The 2016 AQMP was prepared to accommodate growth, reduce the levels of pollutants within the areas under the jurisdiction of SCAQMD, return clean air to the region, and minimize the impact on the economy. Projects that are considered consistent with the AQMP would not interfere with attainment because this growth is included in the projections used in the formulation of the AQMP. As mentioned above, for determining consistency with AQMP growth assumptions, the projections in the AQMP for achieving air quality goals are based on assumptions in SCAG's 2016-2040 RTP/SCS regarding population, housing, and employment growth trends.

[2] The Los Angeles County portion of the Basin is designated as nonattainment for the federal lead standard; however, this was due to localized emissions from two lead-acid battery recycling facilities in the City of Vernon and the City of Industry that are no longer operating. For reference refer to South Coast Air Quality Management District, Board Meeting, Agenda No. 30, Adopt the 2012 Lead State Implementation Plan for Los Angeles County, May 4, 2012.

The project site is zoned Manufacturing, Light – with Site Plan and Design Review Overlay with a General Plan land use designation of Light Industrial. The proposed project includes three two-story self-storage buildings with a total of approximately 113,714 square feet. The proposed project includes a 2,425-square-foot lobby/office area, 1,550 square feet to be used as a cafe area, and a 700-square-foot space for a mail service store (i.e., UPS or FedEx). The buildings would house interior climate-controlled units and external non-climate units with ramp access to the second floors of the internal buildings. The project site is in a neighborhood characterized by a mix of residential and commercial uses with single-family residences located to the north of the project site. An auto repair facility and a truck dealer are located on the east and south across East Carson Street and South Perry Street. The Perry Mini-Park and single-family homes are located to the northeast of the project site. Additional single-family housing is located southeast of the project site across East Carson Street.

Growth Projections

The proposed project would generate approximately five or six new employees, including two self-storage managers, two cafe employees, and one or two employees for the mail service store. These new employees are well within SCAG's employment growth assumptions for Carson. SCAG predicted Carson's employment growth between 2012 and 2040 to be 11,200 jobs (SCAG 2016). During each operation day, the proposed project has a maximum of 580 daily vehicle trips, which would include up to 93 AM peak hour trips, and 45 PM peak hour trips from employees and visitors to and from the project site (Fehr & Peers 2022). As discussed in Section XVII, *Transportation*, this proposed project does not have a significant impact on transportation. Mobile source emissions associated with the project site were calculated and are discussed in Threshold b, below.

Projects, uses, and activities that are consistent with the applicable growth projections and control strategies used in the development of the AQMP would not jeopardize attainment of the air quality reductions identified in the AQMP. Based on the above, the proposed project would not conflict with growth projections in the 2016 AQMP and impacts would be less than significant.

b) As indicated above, the project site is in the South Coast Air Basin. State and federal air quality standards are exceeded in many parts of the Basin for ozone (O_3) and PM2.5, including those monitoring stations nearest to the project area, and the Basin is designated a State and federal non-attainment area for these pollutants. The Basin is also designated as a State non-attainment area for PM10. The proposed project would contribute to local and regional air pollutant emissions during construction (short-term or temporary) and operation. However, based on the following analysis, construction and operation of the proposed project would result in less-than-significant impacts relative to the daily significance thresholds for criteria air pollutant emissions established by the SCAQMD for construction and operational phases.

Daily regional construction and operational source project ozone precursor and criteria pollutant emissions such as VOC, NO_X, CO, SO_2, PM10, and PM2.5 were estimated using

the California Emissions Estimator Model (CalEEMod) (Version 2020.4.0) software, an emissions inventory software program recommended by SCAQMD. CalEEMod is based on outputs from the CARB OFFROAD model and the CARB on-road vehicle emissions factor (EMFAC) model, which are emissions estimation models developed by CARB and used to calculate emissions from construction activities, heavy-duty off-road equipment, and on-road vehicles. Emissions from on-road vehicles were estimated outside of CalEEMod using EMFAC2021 emission factors for haul and material vendor trucks and worker vehicles, since the most current version of CalEEMod uses EMFAC2017. Activities parameters, such as number of pieces of equipment and equipment usage hours were provided by the Applicant.

Construction

Construction activities associated with the proposed project would generate temporary and short-term emissions of VOC, NO_X, CO, SO_2, PM10, and PM2.5. Construction related emissions are expected from site preparation, grading, trenching, foundations, paving, building construction, and architectural coating activities. During the site preparation approximately 150 cubic yards (cy) of concrete/asphalt debris would be generated. During the grading phase approximately 906 cy of soil would be generated with approximately 257 cy being imported as fill. Project construction is expected to commence in January 2023 and would last through February 2024. If project construction commences later than the anticipated start date, air quality impacts would be less than those analyzed herein, because a more energy-efficient and cleaner burning construction equipment fleet mix would be expected in the future, pursuant to State regulations that require construction equipment fleet operators to phase-in less polluting heavy-duty equipment. Therefore, air quality impacts would generally be less than those analyzed herein due to the likelihood of less emissions generated in a day.

The duration of construction activity and associated equipment represents a reasonable approximation of the expected construction fleet as required per CEQA guidelines. Site specific construction fleet may vary due to specific project needs at the time of construction. The duration of construction activity and associated construction equipment was estimated based on consultation with the Applicant. A detailed summary of construction equipment assumptions by phase is provided in the modeling files in **Appendix A** of this IS/MND.

Construction of the proposed project is estimated to last approximately 13 months. Construction duration by phase is provided in **Table 1**, *Estimated Construction Schedule*.

The maximum daily regional emissions from these activities are estimated by construction phase and compared to the SCAQMD significance thresholds. Maximum daily emissions are calculated by taking the sum of the overlapping phases for each criteria pollutant. As shown in **Table 2**, *Maximum Regional Construction Emissions – Without Mitigation (Pounds per Day)*, emissions resulting from project construction would not exceed any criteria pollutant thresholds established by the SCAQMD (SCAQMD 2015). Therefore, impacts would be considered less than significant, and no mitigation is required.

TABLE 1
ESTIMATED CONSTRUCTION SCHEDULE

Activity	Start Date	End Date	Duration (Work Days)
Site Preparation	01/2023	02/2023	23
Grading/Excavation	02/2023	03/2023	21
Drainage/Utilities/Trenching	03/2023	05/2023	44
Foundations/Concrete Pour	05/2023	06/2023	24
Building Construction	06/2023	02/2024	176
Paving	01/2024	01/2024	23
Architectural Coatings	11/2023	02/2024	67
Landscaping	11/2023	02/2024	67

SOURCE: City of Carson 2021, in consultation with the Applicant

TABLE 2
MAXIMUM REGIONAL CONSTRUCTION EMISSIONS – WITHOUT MITIGATION (POUNDS PER DAY)

	Emissions (pounds per day)					
Year	**VOC**	**NO_X**	**CO**	**SO_X**	**PM10**	**PM2.5**
Construction Phases						
Demolition & Site Preparation – 2023	2	18	24	<1	1	1
Grading/Excavation – 2023	5	60	47	<1	5	2
Drainage/Utilities/Trenching – 2023	2	20	29	<1	1	1
Foundations/Concrete Pour – 2023	2	18	25	<1	1	1
Building Construction – 2023	3	29	42	<1	2	1
Building Construction – 2024	3	27	41	<1	2	1
Architectural Coating – 2023	16	3	5	<1	<1	<1
Architectural Coating – 2024	16	3	5	<1	<1	<1
Landscaping – 2023	<1	1	3	<1	<1	<1
Landscaping – 2024	<1	1	2	<1	<1	<1
Paving – 2024	2	21	29	<1	1	1
Overlapping Phases						
Building Construction – 2023 + Architectural Coatings – 2023 + Landscaping – 2023	20	33	49	<1	2	2
Building Construction – 2024 + Paving – 2024 + Architectural Coating 2024 + Landscaping – 2024	21	52	77	<1	3	2
Building Construction – 2024 + Architectural Coating 2024 + Landscaping – 2024	19	31	48	<1	2	1
Maximum Daily Regional Emissions	***21***	***60***	***77***	***<1***	***5***	***2***
SCAQMD Regional Threshold	75	100	550	150	150	55
Threshold Exceeded?	No	No	No	No	No	No

NOTE:
Totals may not add up exactly due to rounding in the modeling calculations. Refer to **Appendix A** of this IS/MND for details.
SOURCE: ESA 2022

Operation

The proposed project is a self-storage facility with ancillary office and retail uses. The proposed project would include a surface parking lot with 41 parking spaces. During operation of the proposed project, the primary emission sources would consist of mobile sources, including visitors loading and unloading to the storage units, visitors traveling to and from the retail uses, and employees driving to and from the project site. Energy usage would come in the form of electricity and natural gas for building heating, ventilation, and air conditioning (HVAC) systems, lighting, cooking in the cafe, and area sources such as landscaping equipment and the use of consumer products for routine cleaning and maintenance. The proposed project can expect most of the energy usage to come from lighting and the HVAC system required to provide air conditioning of the building.

Operational emissions for the proposed project were estimated using CalEEMod for the land uses that would be developed under the proposed project (2024 project buildout) (refer to **Appendix A** of this IS/MND for compiled detailed assumptions, calculations, and modeling outputs). Mobile source emissions are based on the vehicle emission factors from EMFAC2021 and the default trip length values for the project land uses in CalEEMod, which are Air District-wide average trip distance values. Daily trip generation from the proposed project's Local Transportation Assessment (LTA), provided in **Appendix L** of this IS/MND, were used to estimate the total VMT for the project trips (Fehr & Peers 2022).

The proposed project would also include landscaping equipment such as lawnmower and trimmers to maintain the approximately 12,134 square feet of landscaping proposed around the perimeter of the project site. The CalEEMod tool uses landscaping equipment greenhouse gas (GHG) emission factors from the CARB OFFROAD model and the CARB Technical Memo: Change in Population and Activity Factors for Lawn and Garden Equipment (CARB 2003). The CalEEMod software estimates that landscaping equipment operate for 250 days per year in the Basin. Emissions of VOCs from the use of consumer products and architectural coatings are based on SCAQMD-specific emission factors for land uses in the Basin.

Operational-source emissions are summarized in **Table 3**, *Maximum Unmitigated Regional Operational Emissions (Pounds per Day)*. As shown, project operational-source emissions are below the applicable SCAQMD regional thresholds of significance (SCAQMD 2015). Therefore, impacts would be considered less than significant, and no mitigation is required.

The SCAQMD's approach for assessing cumulative impacts related to operations is based on attainment of ambient air quality standards in accordance with the requirements of the federal and California Clean Air Acts. As discussed earlier, the SCAQMD has developed a comprehensive plan, the 2016 AQMP, which addresses the region's cumulative air quality condition.

TABLE 3
MAXIMUM UNMITIGATED REGIONAL OPERATIONAL EMISSIONS (POUNDS PER DAY)

	Emissions (pounds per day)					
Source	**VOC**	**NO_X**	**CO**	**SO_X**	**PM10**	**PM2.5**
Area (Consumer Products, Landscaping)	3	<1	<1	<1	<1	<1
Energy (Natural Gas)	<1	<1	<1	<1	<1	<1
Motor Vehicles	1	1	14	<1	<1	<1
Total Project On-Site and Off-Site Emissions	**4**	**2**	**14**	**<1**	**<1**	**<1**
SCAQMD Regional Threshold	55	55	550	150	150	55
Threshold Exceeded?	No	No	No	No	No	No

NOTES:
Totals may not add up exactly due to rounding in the modeling calculations. Refer to **Appendix A** of this IS/MND for details.
SOURCE: ESA 2022

A significant impact may occur if a project were to add a cumulatively considerable contribution of a federal or State non-attainment pollutant. The Basin is currently in non-attainment for ozone (federal and State standards), PM10 (State standards only) and PM2.5 (federal and State standards); therefore, related projects could cause ambient concentrations to exceed an air quality standard or contribute to an existing or projected air quality exceedance. Cumulative impacts to air quality are evaluated under two sets of thresholds for CEQA and SCAQMD. In particular, CEQA Guidelines Section 15064(h)(3) provides guidance in determining the significance of cumulative impacts. Specifically, CEQA Guidelines Section 15064(h)(3) states in part that:

> *A lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program which provides specific requirements that will avoid or substantially lessen the cumulative problem (e.g., water quality control plan, air quality plan, integrated waste management plan) within the geographic area in which the project is located. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency …*

For purposes of the cumulative air quality analysis with respect to CEQA Guidelines Section 15064(h)(3), the proposed project's incremental contribution to cumulative air quality impacts is determined based on compliance with the SCAQMD adopted 2016 AQMP. As discussed previously under Section III (a) above, the proposed project would be consistent with the 2016 AQMP and would not have a cumulatively considerable air quality impact. Although the proposed project's employment would increase compared to existing conditions, this growth would be well within the employment projections for the City.

As the proposed project is not part of an ongoing regulatory program, the SCAQMD also recommends that project-specific air quality impacts be used to determine the potential cumulative impacts to regional air quality. As shown in **Table 2** and **Table 3**, peak daily emissions of construction and operation-related pollutants would not exceed SCAQMD regional significance thresholds. By applying SCAQMD's cumulative air quality impact methodology, even though implementation of the proposed project would result in an addition of criteria pollutants, in conjunction with related projects in the region, cumulatively significant impacts would not occur. Therefore, the emissions of non-attainment pollutants and precursors generated by the proposed project would be less than significant and would not result in a cumulatively considerable air quality impact.

c) According to the SCAQMD CEQA Air Quality Handbook, sensitive receptors include residences, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes.

The localized effects from the on-site portion of the emissions were evaluated at nearby sensitive receptor locations potentially impacted by the proposed project according to the SCAQMD's Localized Significance Threshold Methodology (June 2003, revised July 2008), which relies on on-site mass emission rate screening tables and project-specific dispersion modeling, which may be used for sites greater than 5 acres or for projects that exceed the screening tables, as appropriate (SCAQMD 2008). LSTs represent the maximum emissions from a project site that are not expected to result in an exceedance of a NAAQS or CAAQS.

The LSTs are applicable to NO_X, CO, PM10, and PM2.5. For NO_X and CO, the thresholds are based on the ambient air quality standards. For PM10 and PM2.5, the thresholds are based on requirements in SCAQMD Rule 403 (Fugitive Dust) for construction and Rule 1303 (New Source Review Requirements) for operations. The SCAQMD has established screening criteria that can be used to determine the maximum allowable daily emissions that would satisfy the LSTs and, therefore, not cause or contribute to an exceedance of the applicable ambient air quality standards without project-specific dispersion modeling. The screening criteria depend on: (1) the area in which the project is located, (2) the size of the project area, and (3) the distance between the project area and the nearest sensitive receptor (e.g., residences, schools, hospitals). For the proposed project, the appropriate Source Receptor Area (SRA) for the LSTs is the South Los Angeles County Coastal monitoring station (SRA 4). The nearest sensitive receptors to the proposed project are the residential uses located 50 feet to the north of the project site. Since the total acreage disturbed is less than 5 acres, the LST analysis were based on the SCAQMD's look-up tables for a 2.80-acre site in SRA 4 with sensitive receptors located 25 meters (82 feet) from the project site (June 2003, revised July 2008).[3]

[3] SCAQMD's Localized Significance Threshold Methodology (refer to page 3-3) states for project boundaries located closer than 25 meters (82 feet) to the nearest receptor, such as the proposed project where the nearest receptors are located approximately 50 feet to the north of the project site, should use the LSTs for receptors located at 25 meters.

The localized effects from the on-site portion of the proposed project's daily emissions were evaluated at the sensitive receptor locations that would be potentially impacted by the proposed project according to the SCAQMD's LST methodology. SCAQMD's Methodology clearly states that "off-site mobile emissions from the project should not be included in the emissions compared to LSTs." Therefore, for purposes of the LST analysis, only emissions included in the CalEEMod "on-site" emissions outputs were considered, plus the truck idling emissions (e.g., haul trucks and vendor trucks) that were calculated separately using the EMFAC emission factors for heavy-heavy-duty (HHD) vehicles. Daily localized emissions caused by the proposed project were compared to the LSTs in the SCAQMD's look-up tables to determine whether the emissions would cause violations of ambient air quality standards.

Construction Emissions

Localized Construction Emissions

Table 4, *Maximum Daily Localized Construction Emissions*, presents the localized emissions from on-site equipment during the construction of the proposed project, located 25 meters (82 feet) north of the project site, in the vicinity of the project area without mitigation.

TABLE 4
MAXIMUM DAILY LOCALIZED CONSTRUCTION EMISSIONS

	Emissions (pounds per day)			
Year	**NO_X**	**CO**	**PM10**	**PM2.5**
Construction Phases				
Demolition & Site Preparation – 2023	15	21	1	1
Grading/Excavation – 2023	52	42	4	2
Drainage/Utilities/Trenching – 2023	19	26	1	1
Foundations/Concrete Pour – 2023	15	21	1	1
Building Construction – 2023	29	36	1	1
Building Construction – 2024	27	36	1	1
Architectural Coating – 2023	3	4	<1	<1
Architectural Coating – 2024	3	4	<1	<1
Landscaping – 2023	<1	2	<1	<1
Landscaping – 2024	<1	2	<1	<1
Paving – 2024	18	26	1	1
Overlapping Phases				
Building Construction – 2023 + Architectural Coatings – 2023 + Landscaping – 2023	32	42	2	1
Building Construction – 2024 + Paving – 2024 + Architectural Coating 2024 + Landscaping – 2024	48	67	2	2
Building Construction – 2024 + Architectural Coating 2024 + Landscaping – 2023	48	42	2	1
Project Maximum Daily Emissions	***52***	***67***	***4***	***2***
SCAQMD LST Significance Thresholds	*82*	*842*	*7*	*5*
Exceeds Thresholds	*No*	*No*	*No*	*No*

NOTE:
Totals may not add up exactly due to rounding in the modeling calculations. Refer to **Appendix A** of this IS/MND for details.
SOURCE: ESA 2022

Based on the results summarized in Table 4, the unmitigated project impacts would not exceed the LSTs.

Operational Emissions

According to SCAQMD LST methodology, LSTs would apply to the operational phase of a project, if the project includes stationary sources, or attracts mobile sources. With regard to on-site sources of emissions, the proposed project would generate emissions from area sources located on-site such as natural gas combustion from water heaters, cooking stoves, landscaping equipment, and use of consumer products. **Table 5**, *Maximum Daily Localized Operational Emissions*, presents the localized emissions from on-site equipment during the operation of the proposed project.

TABLE 5
MAXIMUM DAILY LOCALIZED OPERATIONAL EMISSIONS

Operational Activity	NO_x	CO	PM10	PM2.5
Area	<1	<1	<1	<1
Energy (Natural Gas)	<1	<1	<1	<1
Project Maximum Daily Emissions	<1	<1	<1	<1
SCAQMD LST Significance Thresholds	*82*	*842*	2	1
Exceeds Thresholds	*No*	*No*	*No*	*No*

NOTE:
Totals may not add up exactly due to rounding in the modeling calculations. Refer to **Appendix A** of this IS/MND for details.
SOURCE: ESA 2022

CO "Hot Spot" Analysis

A CO hotspot is an area of localized CO pollution that is caused by severe vehicle congestion on major roadways, typically near intersections. While construction-related traffic on the local roadways would occur during construction, the net increase of construction worker vehicle trips to the existing daily traffic volumes on the local roadways would be relatively small and would not result in CO hotspots. Additionally, the construction-related vehicle trips would be short-term, and ceased once construction activities are completed. During operation, as presented in the proposed project's LTA, the proposed project would include a total of 580 trips to the project site per day. Overall, the proposed project would not cause or contribute to the formation of CO hotspots based on the AQMP's 2003 study, which estimates 100,000 vehicles per day could cause the formation of a CO hotspot (SCAQMD 2003a). Therefore, impacts would be less than significant.

Toxic Air Contaminants

Concentrations of toxic air contaminants (TACs), or in federal parlance, hazardous air pollutants (HAPs), are also used as indicators of ambient air quality conditions. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in

minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations.

Intermittent construction activities associated with the proposed project would result in short-term emissions of diesel particulate matter, which the State has identified as a TAC. During construction, the exhaust of off-road heavy-duty diesel equipment would emit diesel particulate matter (DPM) during general construction activities, such as excavation, materials transport and handling, and building construction. During operational activities DPM would be emitted by the diesel trucks traveling to, on, and from the project site.

Diesel particulate matter poses a carcinogenic health risk that is generally measured using an exposure period of 30 years for sensitive residential receptors, according to the California Environmental Protection Agency, Office of Environmental Health Hazard Assessment (OEHHA) Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments (OEHHA Guidance), which was updated in 2015 with new exposure parameters including age sensitivity factors (OEHHA 2015). Sensitive receptors include residential uses located approximately 50 feet north of the project site, the Perry Street Mini-Park located approximately 100 feet to the northeast, residences located approximately 65 feet east and additional residences located approximately 252 feet southeast of the project site across East Carson Street.

Construction

Temporary TAC emissions associated with DPM emissions from heavy construction equipment would occur during construction activities. According to OEHHA and the SCAQMD's Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis, (SCAQMD 2003b) health effects from TACs are described in terms of individual cancer risk based on a lifetime (i.e., 70-year) resident exposure duration. Given the temporary and short-term construction schedule (approximately 13 months), the proposed project would not result in a long-term (i.e., lifetime or 70-year) exposure as a result of construction activities.

The proposed project would be consistent with the applicable 2016 AQMP requirements for control strategies intended to reduce emissions from construction equipment and activities. The proposed project would comply with regulatory control measures including the CARB Air Toxics Control Measure (ATCM) that limits diesel powered equipment and vehicle idling to no more than 5 minutes at a location, and the CARB In-Use Off-Road Diesel Vehicle Regulation that requires fleets to retire, replace, or repower of older, dirtier engines with newer emission-controlled models; compliance with these would minimize emissions of TACs during construction. SCAQMD recommends that construction health risk assessments be conducted for substantial sources of DPM emissions (e.g., earth-moving construction activities) in proximity to sensitive receptors and has provided guidance for analyzing mobile source diesel emissions. Although, sensitive receptors, including single-residential uses, are located to the north of the project site, localized DPM emissions (strongly correlated with PM2.5 emissions) are less than significant (as shown in Table 4, above). Although the localized analysis does not directly measure health risk

impacts, it does provide data that can be used to evaluate the potential to cause health risk impacts. The low level of PM2.5 emissions coupled with the relatively short-term duration of construction activity anticipated at 13 months resulted in an overall low level of DPM concentrations in the project area. Furthermore, compliance with the aforementioned CARB ATCM anti-idling measure further minimizes DPM emissions in the project area. Thus, although there are sensitive receptors located within proximity to the project site, compliance with regulatory control measures and the limited duration of construction activities would minimize exposures.

Operations

SCAQMD recommends that health risk assessments be conducted for substantial sources of operational DPM emissions (e.g., truck stops and warehouse distribution facilities that generate more than 100 trucks per day or more than 40 trucks with operating transport refrigeration units) and has provided guidance for analyzing mobile source diesel emissions (SCAQMD 2003b). During operational activities DPM would be emitted by the diesel trucks traveling to, on, and from the site. However, the land uses that would be developed under the proposed project are not considered a substantial source of operational DPM as described by the SCAQMD. Therefore, the project operations associated with the storage facility or retail uses would generate only minor amounts of diesel emissions from mobile sources, such as delivery/box trucks and occasional maintenance activities that would not exceed 100 trucks per day or more than 40 trucks with operating transport refrigeration units. Furthermore, project trucks would be required to comply with the applicable provisions of the CARB 13 California Code of Regulations, Section 2025 (Truck and Bus regulation) to minimize and reduce PM and NO_X emissions from existing diesel trucks. Therefore, project operations would not be considered a substantial source of diesel particulates. Furthermore, typical sources of hazardous TACs include industrial manufacturing processes and automotive repair facilities. The proposed project would not include any of these potential sources, although minimal emissions may result from the use of consumer products (e.g., aerosol sprays). Project operations would only result in minimal emissions of toxic air contaminants from the use of architectural coatings and other products. The use of consumer products and architectural coatings from the office use would be expected to generate minimal emissions. The proposed project's land uses would not include installation of industrial-sized equipment (i.e., paint booths) or require extensive use of commercial or household cleaning products. Based on this, the proposed project is not expected to release substantial amounts of TACs.

Therefore, based on the limited activity of TAC sources and TAC concentrations at off-site sensitive receptors relative to existing conditions, the proposed project would not warrant the need for a health risk assessment associated with on-site activities, and potential TAC impacts would be less than significant.

d) Potential sources that may emit odors during construction activities include construction equipment exhaust and the use of architectural coatings and solvents. According to the SCAQMD CEQA Air Quality Handbook, construction equipment is not a typical source of odors. SCAQMD Rule 1113 limits the amount of VOCs from architectural coatings and

solvents. Further, construction odor emissions would be temporary, short-term, and intermittent in nature and would cease upon completion of construction. Through adherence with mandatory compliance with SCAQMD Rules, no construction activities or materials would create objectionable odors. The nearest sensitive receptors are single-family residences located approximately 50 feet to the north of the project site along East 215th Place. The proposed project's uses would not typically generate nuisance odors at nearby sensitive receptors.

According to the SCAQMD CEQA Air Quality Handbook, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting operations, refineries, landfills, dairies, and fiberglass molding facilities. The proposed project does not include any of the land uses associated with odor complaints.

Furthermore, as discussed in Thresholds b and c, above, construction and operational emissions would not exceed the SCAQMD regional significance thresholds for attainment, maintenance, or unclassifiable criteria air pollutants (i.e., CO and SO_2).

Therefore, impacts related to other emissions, including those that would lead to odors adversely affecting a substantial number of people, would be less than significant.

IV. Biological Resources

Issues (and Supporting Information Sources)	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
IV. BIOLOGICAL RESOURCES—Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

This section is based in part on the 21611 Perry Street Self Storage Project Memorandum (Biological Resources Memorandum), prepared by Environmental Science Associates (ESA), dated December 2021 (refer to **Appendix B** of this IS/MND).

Discussion

a) The project site is located within the City of Carson in an urbanized area on one parcel, which is currently vacant and undeveloped. The project site consists of sparse ruderal vegetation with plantings of carrotwood (*Cupaniopsis anacardioides*) as street trees along South Perry Street. A California Natural Diversity Database (CNDDB) and California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants records search was conducted for the project site and the results are summarized in the Biological Resources Memorandum. As discussed therein, the project site does not contain suitable habitat for any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Project. The Biological Resources Memorandum found that only two special-status plant species were determined to have a low potential to occur within the project site. Therefore, less than significant impacts to candidate, sensitive, or special-status species would occur, and no mitigation measures are required.

b) The project site and surrounding area are located in an urbanized setting. There are no drainage channels on the project site to the adjacent Dominguez Channel. In addition, the project site does not contain riparian habitat and there are no other sensitive natural

communities as indicated in the City or regional plans or in regulations by the California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS). Therefore, no impact would occur to riparian habitat or a natural community.

c) As discussed above, in the response to Threshold (a), the project site is located in an urbanized area on one parcel, which is currently vacant and undeveloped. The surrounding area has been fully developed with urban uses and associated infrastructure. The project site does not contain any wetlands as defined by Clean Water Act Section 404. Thus, because the project site does not contain any wetland features no impact would occur.

d) The project site is located within the City of Carson in an urbanized area on one parcel, which is currently vacant and undeveloped. As described above under response to Threshold (a), above, the project site consists of sparse ruderal vegetation with plantings of carrotwood (*Cupaniopsis anacardioides*) as street trees along South Perry Street. The street tree, which are not native or protected as defined by CMC Section 3901, may be removed as part of this proposed project. However, these street trees have the potential to provide suitable nesting habitat for migratory birds and raptors protected under the Federal Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code. The MBTA and California Fish and Game Code prohibit the take or destruction of migratory birds/raptors, their nests, and/or eggs. Impacts on nesting birds protected by the MBTA and similar provisions of the Fish and Game Code could occur if work is conducted during the breeding season (February 1 through August 15). However, the proposed project would adhere to all existing laws and regulations, including compliance with the MBTA as provided in Mitigation Measure MM-BIO-1, which would minimize any potential impacts to migratory birds or raptors as a result of tree removal.

In addition, due to the urbanized nature of the project site and surrounding area, the lack of a major water body, and the lack of natural open space area on the project site, the project site does not otherwise contain substantial habitat for native resident or migratory species, or native nursery sites. Therefore, the proposed project would not interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites, and no impact would occur. Mitigation Measure MM-BIO-1 is identified to ensure that potentially significant impacts to migratory birds or raptors are reduced to a less-than-significant level.

Mitigation Measure

MM-BIO-1. Pre-construction (vegetation removal) avian nesting surveys shall be conducted during the breeding season. A qualified avian biologist shall conduct these surveys within 7 days of vegetation and tree removal. The surveying biologist must be qualified to determine the species, status, and nesting stage without causing intrusive disturbance. The survey shall cover all reasonably potential nesting locations on and within 300 feet of the project site. If active nests are found, a no-disturbance buffer (300 feet for raptors and 50 feet for other birds, or as otherwise determined in consultation with CDFW shall be created around the active nests. If construction is scheduled to occur during the

non-nesting season (August 16 to January 31), no preconstruction surveys or additional measures are required.

e) As discussed above, the project site is located in an urbanized area of the City of Carson in an urbanized area, on one parcel, which is currently vacant and undeveloped. The potential removal of the non-protected and non-native existing street trees would occur in compliance with all existing laws and regulations, including the MBTA. Thus, the proposed project would not interfere with local biological preservation policies or ordinances and no impact would occur.

f) As discussed above, the project site is located in an urbanized area of the City of Carson on one parcel, which is currently vacant and undeveloped. No candidate, sensitive, or special-status species habitats occur on or in proximity to the project site. The project site is not located within an area designated within a habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan (CDFW 2022). Thus, the proposed project would not conflict with the provisions of any adopted conservation plan and no impact would occur.

V. Cultural Resources

Issues (and Supporting Information Sources)	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
V. CULTURAL RESOURCES—Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

This section is based on the 21611 Perry Street Self Storage, Cultural Resources Assessment Report, located in **Appendix C** of this IS/MND. Appendix C is confidential and not for public distribution.

Discussion

a) A historical resource is defined in CEQA Guidelines Section 15064.5(a)(3) as any object, building, structure, site, area, place, record, or manuscript determined to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California. Historical resources are further defined as those associated with significant events, important persons, or distinctive characteristics of a type, period or method of construction; representing the work of an important creative individual; or possessing high artistic values. Resources listed in or determined eligible for the California Register, included in a local register, or identified as significant in a historic resource survey are also considered historical resources under CEQA. The site is currently one vacant parcel and therefore no historic-age architectural resources exist within the project site; therefore, the proposed project would have no direct impact on known historical resources. No known significant archaeological resources that could be historical resources under CEQA are known to exist within the project site. The potential for impacts to significant archaeological resources is further addressed below in Section V (b). The records search revealed that one cultural resource has been previously recorded within the 0.5-mile radius of the project site. This resource is a historic-period built environmental resource consisting of the Shell Oil Refinery complex located approximately 0.20 miles north of the project site. The record search results did not indicate that any recorded historical resources were located in the immediate project vicinity, and no structures meeting the 45-year California Office of Historic Preservation (OHP) threshold for historic resources were found in the immediate vicinity of the project site. As such, the proposed project would not have indirect impacts to any known historical resources. The adjacent Dominguez Channel is listed in the Built Environment Resources Directory (BERD) for potential eligibility as a District. There was no additional information available on the District. However, the proposed project would not impact the Dominguez Channel or related flood control components such as access roads as there would not be any project components within these areas. Further, as described above, the project site was formerly developed with a large single-story warehouse building that included

commercial/industrial uses next to the Dominguez Channel and the proposed project would have a similar development consisting of a mix of one- and two-story buildings of similar size and massing to the former development, which was present after the channel was developed until the warehouse complex was demolished in 2011, and did not impact the Dominguez Channel's potential eligibility (refer to Appendix C of this IS/MND). The channel passes through a heavily developed urban and industrial area and the addition of the proposed project would not change the landscape surrounding the Dominguez Channel and would not impact the potential eligibility of a District nor would it impact the portion of the channel that passes by the project site. Therefore, no impact would occur.

b) CEQA Guidelines Section 15064.5(a)(3)(D) generally defines archaeological resources as any resource that "has yielded, or may be likely to yield, information important in prehistory or history." Archaeological resources are features, such as tools, utensils, carvings, fabric, building foundations, etc., that document evidence of past human endeavors and that may be historically or culturally important to a significant earlier community.

A records search for the project site was received from the South Central Coastal Information Center (SCCIC) on December 7, 2021. The records search included a review of all recorded archaeological resources and previous studies within a 0.5-mile radius of the project site. The records search results indicate five cultural resources studies have been conducted within the records search radius. The entirety of the 0.5-mile records search radius has been included in previous cultural resources studies. Of the five previous studies, one (LA-04512) overlaps the entirety of the project site. This study is a cultural resources inventory of the City conducted in 1977 and included extensive archival research and field survey of accessible parcels within the City. In reviewing the report, it is difficult to discern if the project site was included as part of the inventory's field survey. The records search revealed that one cultural resource (P-19-188395) has been previously recorded within the 0.5-mile radius of the project site. This resource is a historic-period built environment resource consisting of the Shell Oil Refinery complex located approximately 0.20 miles north of the project site. No resources have been recorded within the project site. A survey of the project site further did not result in the recordation of any additional resources.

The project site has been subject to a number of previous disturbances, which is reflected by the presence of artificial fill as identified as a result of geotechnical borings. Additionally, a remediation program was carried out in 2014 to remediate 7,255.69 tons of contaminated soil from four discrete locations within the project site (**Figure 2-5,** *Remediation Areas*). These four areas were excavated to depths ranging from 5 to 8 feet deep to remove petroleum hydrocarbons and volatile organic compounds from the project site. Following the removal of the contaminated soils, the excavated areas were backfilled with imported clean fill or with a mix of crushed concrete and imported fill. Project-related ground disturbance within the artificial fill is not likely to encounter subsurface archaeological resources; however, there may exist pockets of undisturbed sediments within the project site, outside of the remediation areas or below the remediation areas that may contain subsurface archaeological deposits.

SOURCE: Mapbox, 2021

21611 Perry Street - Self-Storage MND

Figure 2-5
Remediation Areas

ESA

Should these potential deposits be present they may qualify as historical resources or unique archaeological resources pursuant to CEQA.

In order to avoid significant impacts to any historical or unique archaeological resources that may be present, it is recommended that an archaeological monitor be present during initial ground-disturbing activities, including grubbing and other methods of de-vegetation, in order to assess surface and subsurface conditions outside or below the remediation areas. Based on observations made by the archaeological monitor, monitoring activities may be modified or discontinued at the recommendation of the archaeologist. Additionally, it is recommended that protocols for work stoppage in the event that archaeological resources or human remains are encountered during construction should be implemented.

Based on these results, Mitigation Measure MM-CULT-1 is identified to ensure that potentially significant impacts to archaeological resources are reduced to a less-than-significant level.

Mitigation Measure

MM-CULT-1. Prior to issuance of demolition permit, the Applicant shall retain a qualified Archaeologist who meets the Secretary of the Interior's Professional Qualifications Standards (Qualified Archaeologist) to oversee an archaeological monitor who shall be present during construction excavations such as demolition, clearing/grubbing, grading, trenching, or any other construction excavation activity associated with the proposed project that occur outside or below the remediation areas. The frequency of monitoring shall be based on the rate of excavation and grading activities, proximity to known archaeological resources, the materials being excavated (younger alluvium vs. older alluvium), and the depth of excavation, and if found, the abundance and type of archaeological resources encountered, as determined by the Qualified Archaeologist. Full-time field observation can be reduced to part-time inspections or ceased entirely if determined appropriate by the Qualified Archaeologist. Prior to commencement of excavation activities, an Archaeological and Cultural Resources Sensitivity Training shall be given for construction personnel. The training session, shall be carried out by the Qualified Archaeologist and shall focus on how to identify archaeological and cultural resources that may be encountered during earthmoving activities and the procedures to be followed in such an event.

In the event that historic or prehistoric archaeological resources (e.g., bottles, foundations, refuse dumps, Native American artifacts or features, etc.) are unearthed, ground-disturbing activities shall be halted or diverted away from the vicinity of the find so that the find can be evaluated. An appropriate buffer area shall be established by the Qualified Archaeologist around the find where construction activities shall not be allowed to continue. Work shall be allowed to continue outside of the buffer area. All archaeological resources unearthed by project construction activities shall be evaluated by the Qualified Archaeologist and a Gabrieleño Band of Mission Indians – Kizh Nation Monitor. If the resources are Native American in origin, the Kizh Nation shall consult with the City and Qualified Archaeologist regarding the treatment and curation of any prehistoric archaeological resources. If a resource is determined by the Qualified Archaeologist to constitute a "historical resource" pursuant to CEQA Guidelines Section 15064.5(a) or a "unique archaeological resource" pursuant to Public Resources Code Section 21083.2(g), the Qualified Archaeologist shall coordinate with the Applicant and the City to develop a

formal treatment plan that would serve to reduce impacts to the resources. The treatment plan established for the resources shall be in accordance with CEQA Guidelines Section 15064.5(f) for historical resources and Public Resources Code Section 21083.2(b) for unique archaeological resources. The treatment plan shall incorporate the Kizh Nation's treatment and curation recommendations. Preservation in place (i.e., avoidance) is the preferred manner of treatment. If preservation in place is not feasible, treatment may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis. The treatment plan shall include measures regarding the curation of the recovered resources that may include curation at a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County or the Fowler Museum, if such an institution agrees to accept the material and/or the Kizh Nation. If no institution or the Kizh Nation accepts the resources, they may be donated to a local school or historical society in the area (such as the Culver City Historical Society) for educational purposes.

Prior to the release of the grading bond, the Qualified Archaeologist shall prepare a final report and appropriate California Department of Parks and Recreation Site Forms at the conclusion of archaeological monitoring. The report shall include a description of resources unearthed, if any, treatment of the resources, results of the artifact processing, analysis, and research, and evaluation of the resources with respect to the California Register of Historical Resources and CEQA. The report and the Site Forms shall be submitted by the Applicant to the City, the South Central Coastal Information Center, and representatives of other appropriate or concerned agencies to signify the satisfactory completion of the proposed project and required mitigation measures.

c) The California Native American Heritage Commission (NAHC) was contacted on November 2, 2021, to request a search of the Sacred Lands File (SLF). The NAHC responded to the request in a letter dated December 16, 2021, with the results of the SLF search conducted by the NAHC, which indicated a negative search result. The NAHC provided a list of tribes who could be contacted for information regarding known and recorded sites.

Archival research did not reveal any evidence that human remains could be found at the project site or in the area adjacent to the project site. Even so, construction of the proposed project could potentially disturb previously unknown human remains. Implementation of Mitigation Measures MM-CULT-2 and MM-CULT-3 would ensure impacts related to the discovery of human remains would be reduced to a less than significant level.

Mitigation Measure

MM-CULT-2. If human remains are encountered unexpectedly during implementation of the proposed project, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the NAHC. The NAHC shall then identify the person(s) thought to be the Most Likely Descendent (MLD). The MLD may, with the permission of the land owner, or his or her authorized representative, inspect the site of the discovery of the Native American remains and may recommend to the owner or the person responsible for the excavation work means for treating or disposing, with appropriate dignity, the human remains and any associated grave goods.

The MLD shall complete their inspection and make their recommendation within 48 hours of being granted access by the land owner to inspect the discovery. The recommendation may include the scientific removal and nondestructive analysis of human remains and items associated with Native American burials. Upon the discovery of the Native American remains, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in this mitigation measure, with the MLD regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. The landowner shall discuss and confer with the descendants all reasonable options regarding the descendants' preferences for treatment.

If the NAHC is unable to identify a MLD, or the MLD identified fails to make a recommendation, or the landowner rejects the recommendation of the MLD and the mediation provided for in Public Resources Code Section 5097.94, subdivision (k), if invoked, fails to provide measures acceptable to the landowner, the landowner or his or her authorized representative shall inter the human remains and items associated with Native American human remains with appropriate dignity on the facility property in a location not subject to further and future subsurface disturbance.

MM-CULT-3. In the case of human remains findings (as mitigated under MM-CULT-2), should the remains be determined to be Native American and should the Kizh Nation be recommended by the NAHC as Most Likely Descendant (MLD), then the following policy shall apply. Should the Kizh Nation not be named MLD by the NAHC other procedures may be required by the assigned MLD. As the MLD, the Koo-nas-gna Burial Policy shall be implemented. To the Kizh Nation, the term "human remains" encompasses more than human bones. In ancient as well as historic times, Tribal Traditions included, but were not limited to, the preparation of the soil for burial, the burial of funerary objects with the deceased, and the ceremonial burning of human remains. If the discovery of human remains includes four or more burials, the discovery location shall be treated as a cemetery and a separate treatment plan shall be created. The prepared soil and cremation soils are to be treated in the same manner as bone fragments that remain intact. Associated funerary objects are objects that, as part of the death rite or ceremony of a culture, are reasonably believed to have been placed with individual human remains either at the time of death or later; other items made exclusively for burial purposes or to contain human remains can also be considered as associated funerary objects. Cremations will either be removed in bulk or by means as necessary to ensure complete recovery of all sacred materials. In the case where discovered human remains cannot be fully documented and recovered on the same day, the remains will be covered with muslin cloth and a steel plate that can be moved by heavy equipment placed over the excavation opening to protect the remains. If this type of steel plate is not available, a 24-hour guard should be posted outside of working hours. The Kizh Nation will make every effort to recommend diverting the project and keeping the remains in situ and protected. If the project cannot be diverted, it may be determined that burials will be removed. In the event preservation in place is not possible despite good faith efforts by the project applicant/developer and/or landowner, before ground-disturbing activities may resume on the project site, the landowner shall arrange a designated site location within the footprint of the project for the respectful reburial of the human remains and/or ceremonial objects. Each occurrence of human remains and associated funerary objects will be stored using opaque cloth bags. All human remains, funerary objects, sacred objects and objects of cultural patrimony will be removed to a secure container on-site if possible. These items should be retained and reburied within 6 months of recovery. The

site of reburial/repatriation shall be on the project site but at a location agreed upon between the Kizh Nation and the landowner at a site to be protected in perpetuity. There shall be no publicity regarding any cultural materials recovered. The Kizh Nation will work closely with the project's qualified archaeologist to ensure that the excavation is treated carefully, ethically and respectfully. If data recovery is approved by the Kizh Nation, documentation shall be prepared and shall include (at a minimum) detailed descriptive notes and sketches. All data recovery data recovery-related forms of documentation shall be approved in advance by the Kizh Nation. If any data recovery is performed, once complete, a final report shall be submitted to the Kizh Nation and the NAHC. The Kizh Nation does NOT authorize any scientific study or the utilization of any invasive and/or destructive diagnostics on human remains.

VI. Energy

Issues (and Supporting Information Sources)	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
VI. ENERGY—Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a State or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

Discussion

a) The proposed project would consume energy during construction activities primarily from on- and off-road vehicle fuel consumption in the form of diesel and gasoline and electricity from water conveyance for dust control. Project operation would consume energy from energy use from general building operations, including HVAC systems and lighting, and from mobile sources. The analysis below includes the proposed project's energy requirements and energy use efficiencies by energy type for each stage of the proposed project (construction and operations).

Construction

Construction of the proposed project would result in energy demand primarily from off-road equipment and on-road vehicle fuel consumption (diesel and gasoline) and secondarily from electricity for conveying water used for dust suppression and for a temporary on-site construction office/trailer. The analysis below includes the proposed project's energy requirements and energy use efficiencies by energy type for each stage of the proposed project.

The estimated fuel usage for off-road equipment is based on the number and type of equipment that would be used during construction activities, hour usage estimates, the total duration of construction activities, and hourly equipment fuel consumption factors from the California Air Resources Board (CARB) OFFROAD model, which was used in the proposed project's air quality analysis. On-road vehicles would include trucks to haul material to and from the project site, vendor trucks to deliver supplies necessary for project construction, water trucks for dust control, and fuel used for employee commute trips. The estimated fuel usage for on-road vehicles is based on the number of trucks and employee commute trips that would occur during construction activities and per mile fuel consumption factors from the CARB on-road vehicle emissions factor (EMFAC) model, which was used in the proposed project's air quality analysis. Electricity used for a portable construction office was calculated using energy intensity factors from CalEEMod and electricity from water conveyance for dust control was calculated using assumptions for gallons used per acre per day and CalEEMod water conveyance intensity factors applied to calculate total construction electricity consumption. Construction activities typically do not involve the consumption of natural gas. **Table 6**, *Summary of Energy Consumption*

During Project Construction, summarizes the proposed project's total and annual fuel and electricity consumption from construction activities.

TABLE 6
SUMMARY OF ENERGY CONSUMPTION DURING PROJECT CONSTRUCTION

Fuel Type	Quantity
Gasoline	gallons
On-Road Construction (Workers)	18,942
Total Gasoline (13 months)	
Diesel	gallons
On-Road Construction Equipment	4,132
Off-Road Construction Equipment	83,758
Total Diesel (13 months)	***87,890***
Electricity	MWh
Water Conveyance for Dust Control	3.5
Total Electricity (13 months)	3.5
Annualized Gasoline Use (gal)	**17,459**
Annualized Diesel Use (gal)	**81,010**
Annualized Electricity (MWh)	**3.5**

NOTES:
gal = gallons; MWh = megawatt-hours
SOURCE: ESA 2022

As shown in Table 6**,** annual average construction electricity usage would be approximately 3.5 megawatt-hours (MWh). This amount is within the supply and infrastructure capabilities of Southern California Edison (SCE), the electricity provider for the project site, which had a net energy load of 87,143 gigawatt-hours (GWh) in 2020 (SCE 2019).[4] The electricity demand at any given time would vary throughout the construction period based on the construction activities being performed, and would cease upon completion of construction. Electricity use from construction would be short-term, limited to working hours, used for necessary construction-related activities, and represent a small fraction of the proposed project's annual operational electricity. Construction electricity usage of the proposed project would consume approximately 0.004 percent of SCE's total load and would not cause additional strain on SCE's electricity load. When not in use, electric equipment would be powered off so as to avoid unnecessary energy consumption. Furthermore, the electricity used for off-road light construction equipment would have the co-benefit of reducing construction-related air pollutant and GHG emissions from more traditional construction-related energy in the form of diesel fuel. Therefore, impacts from construction electrical demand would be less than significant and would not result in the wasteful, inefficient, and unnecessary consumption of energy.

4 The most recent year that SCE data was available.

The energy use summary provided above in Table 6 represents the amount of energy that could potentially be consumed during project construction based on a conservative set of assumptions, provided in **Appendix D** of this IS/MND. As shown, on- and off-road vehicles would consume an estimated annual average of 17,459 gallons of gasoline and approximately 81,010 gallons of diesel fuel throughout the proposed project's construction. For comparison purposes, the fuel usage during project construction would represent approximately 0.00015 percent of the 2020 annual on-road gasoline-related energy consumption and 0.005 percent of the 2019 annual diesel fuel-related energy consumption in California.

Operations

During operation of the proposed project, energy would be consumed for multiple purposes, including, but not limited to HVAC equipment, lighting, and the use of electronics. Energy would also be consumed during project operations related to water usage, solid waste disposal, and vehicle trips. **Table 7**, *Project Operational Energy Usage*, summarizes the proposed project's operational energy consumption.

TABLE 7
PROJECT OPERATIONAL ENERGY USAGE

Energy Type[a]	Annual Quantity[b]
Electricity	
Proposed Project:	
Building Energy	530 MWh
Water Conveyance	353 MWh
Total Electricity	***883 MWh***
Natural Gas	
Proposed Project:	
Building Energy	0.46 million cf
Total Natural Gas	***0.46 million cf***
Transportation	
Proposed Project:	
Gasoline	44,972 gallons
Diesel	4,509 gallons
Natural Gas	71 gallons
Total Transportation – Gasoline	***44,972 gallons***
Total Transportation – Diesel	***4,509 gallons***
Total Transportation – Natural Gas	***71 gallons***

NOTES:
MWh = megawatt-hours; million cf = million cubic feet
Detailed calculations are provided in **Appendix D** of this IS/MND.
[a] Project electricity and natural gas estimates assume compliance with applicable 2019 Title 24 and CALGreen requirements.
[b] Totals may not add up due to rounding of decimals.
SOURCE: ESA 2022

The proposed project would increase demand for electricity including what is needed to support building operations. As shown in Table 7, the proposed project would result in an annual consumption of electricity of approximately 883 MWh per year, which would represent approximately 0.001 percent of SCE's total sales of 87,143 GWh in 2020 (SCE 2019).

The proposed project has been evaluated for consistency with the Energy Efficiency Climate Action Plan (EECAP). According to the EECAP, the City is in the process of implementing strategies to reduce energy consumption across sections, which includes promoting commercial energy retrofits, increasing energy efficiency through water efficiency, and decreasing energy demand through reducing the urban heat island effect (City of Carson 2015). Consistent with this strategy, the proposed project would install lighting and a ventilation system that conforms to the CALGreen Code and 2019 Title 24 Standards. In addition, the proposed project would include approximately 12,134 square feet of landscaping around the perimeter of the project site. These features would be consistent with energy reduction strategies in the City's EECAP. Therefore, with the incorporation of these features, operation of the proposed project would not result in the wasteful, inefficient, and unnecessary consumption of electricity, and impacts would be less than significant.

The proposed project would increase the demand for natural gas resources. As shown in Table 7, the proposed project's estimated operational natural gas demand is 0.46 million cubic feet, which represents 0.019 percent of Southern California Gas Company's (SoCalGas's) projected supply of 2,462 million cubic feet in 2024 (California Gas and Electric Utilities 2020). As would be the case with electricity, the proposed project would comply with the applicable provisions of Title 24, City of Carson's EECAP, and the CALGreen Code in effect at the time of building occupancy to minimize natural gas demand. As such, the proposed project would minimize energy demand. Therefore, with the incorporation of these features, operation of the proposed project would not result in the wasteful, inefficient, and unnecessary consumption of natural gas, and impacts would be less than significant.

The proposed project would increase demand for transportation fuels relative to existing site conditions for gasoline and diesel. During daily operations, the proposed project would have a maximum of 580 vehicle trips. The proposed project's annual gasoline consumption would be approximately 44,972 gallons, which represents 0.001 percent of Los Angeles County's 2019 consumption of 3.6 billion gallons (CEC 2019). The proposed project's annual diesel consumption would be approximately 4,509 gallons, which represents 0.001 percent of Los Angeles County's 2019 consumption of 584.7 million gallons (CEC 2019).

The project site is one vacant parcel that consists of approximately 2.8 acres located to the east of Interstate (I)-405 interchange with East Carson Street. The project site is located adjacent to a variety of existing transportation facilities. The proposed project does not propose to change any roadway classifications or established truck routes. The project site

is served by one public transit route, Long Beach Transit Route 4, which provides connections to the Los Angeles Metropolitan Transportation Authority (Metro) J Line bus rapid transit at Carson Station and the Metro A Line light rail at Del Amo Station. Implementation of the proposed project would not remove or impede access to existing bicycle facilities, sidewalks, or transit services adjacent to the project site, nor would it affect future planned bicycle facility improvements along other nearby roadways or the Dominguez Channel.

Based on the proposed project characteristics, it is classified as local-serving retail pursuant to the Technical Advisory on Evaluating Transportation Impacts in CEQA (Office of Planning and Research 2018). As described in the Technical Advisory, "By adding retail opportunities into the urban fabric and thereby improving retail destination proximity, local-serving retail development tends to shorten trips and reduce VMT." Based on the above, operation of the proposed project would not result in the wasteful, inefficient, and unnecessary consumption of transportation fuel, and impacts would be less than significant.

b) The proposed project would use construction contractors who demonstrate compliance with applicable regulations. Construction equipment would comply with federal, State, and regional requirements where applicable. With respect to truck fleet operators, the USEPA and NHSTA have adopted fuel efficiency standards for medium- and heavy-duty trucks. The Phase 1 heavy-duty truck standards apply to combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles for model years 2014 through 2018 and result in a reduction in fuel consumption from 6 to 23 percent over the 2010 baseline, depending on the vehicle type (USEPA 2011). USEPA and NHTSA also adopted the Phase 2 heavy-duty truck standards, which cover model years 2021 through 2027 and require the phase-in of a 5 to 25 percent reduction in fuel consumption over the 2017 baseline depending on the compliance year and vehicle type (USEPA 2016). The energy modeling for trucks does not take into account specific fuel reductions from these regulations, since they would apply to fleets as they incorporate newer trucks meeting the regulatory standards; however, these regulations would have an overall beneficial effect on reducing fuel consumption from trucks over time as older trucks are replaced with newer models that meet the standards.

In addition, construction equipment and trucks are required to comply with CARB regulations regarding heavy-duty truck idling limits of 5 minutes at a location and the phase-in of off-road emission standards that result in an increase in energy savings in the form of reduced fuel consumption from more fuel-efficient engines. Although these regulations are intended to reduce criteria pollutant emissions, compliance with the anti-idling and emissions regulations would also result in the efficient use of construction-related energy.

The State and the City have implemented energy policies relevant to the proposed project. The California Renewables Portfolio Standard (RPS) was established in 2002 and required retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2013. Senate Bill (SB) 350 (Chapter 547, Statues of 2015) is the most recent update to the State's

RPS requirements. The RPS requires publicly owned utilities and retail sellers of electricity in California to procure 33 percent of their electricity sales from eligible renewable sources by 2020 and 50 percent by the end of 2030. The proposed project would comply with the applicable provisions of the 2019 Title 24 standards and the CALGreen Code in effect at the time of building permit issuance. As of February 2019, the City receives electricity from Clean Power Alliance (CPA) and is enrolled in their 50 percent renewable electricity option. Customers have the choice to opt for a lower renewable energy mix (36 percent), opt for a higher renewable energy mix (100 percent), or opt out and receive electricity from SCE (CPA 2018). The energy analysis conservatively assumes the proposed project would remain with SCE as their electricity provider and does not take additional credit for renewable energy beyond the expected SCE renewable energy percentage for year 2024 based on the required renewables by year 2024 under SB 100.[5] Therefore, the electricity provided to the City meets or exceeds RPS requirements depending on what rate option is chosen by individual customers.

As discussed above, the proposed project would comply with the applicable provisions of 2019 Title 24 Standards, City of Carson's EECAP, and the CALGreen Code in effect at the time of building occupancy. As such, the proposed project would minimize energy demand. Further, as discussed in Section III, *Air Quality*, of this IS/MND, SCAG predicted Carson's employment growth between 2012 and 2040 to be approximately 11,200 new jobs (SCAG 2020). The estimated five or six new employees generated by the proposed project would be well within SCAG's employment growth assumptions for Carson. As discussed in Section XVII, *Transportation*, of this IS/MND, the proposed project would not have a significant impact on transportation in the project vicinity. Additionally, the project site is located in a neighborhood characterized by a mix of residential and commercial uses. The proposed project is consistent with SCAG growth projections and would comply with State and local regulations to reduce energy consumption, the proposed project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency and impacts would be less than significant.

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[5] For the purposes of estimating energy demand, the analysis conservatively assumes the proposed project would not switch electricity providers from SCE to the CPA (i.e., does not take any credit for 36 percent, 50 percent, or 100 percent renewable electricity, depending on the selected CPA plan). Should the proposed project switch electricity providers from SCE to the CPA, the proposed project's electricity-related emissions would be lower than those disclosed in this section.

VII. Geology and Soils

Issues (and Supporting Information Sources)	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
VII. GEOLOGY AND SOILS—Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒

This section is based in part on the Geotechnical Investigation, Proposed Commercial Development 21611 South Perry Street, Carson, California, APN: 7327-010-014 (Geotechnical Investigation), prepared by Geocon West, Inc., dated April 23, 2021 (refer to **Appendix E** of this IS/MND). Additionally, this section is based on the Paleontological Resources Assessment Report, prepared by ESA, dated January 2022 (refer to **Appendix F** of this IS/MND). Appendix F is confidential and not for public distribution.

Discussion

a.i) The project site is located in the seismically active Southern California Region; however, it is not within an Alquist-Priolo Zone. The City's General Plan Regional Fault Map indicates that the project site is within the Avalon-Compton fault zone, which is part of the larger Newport Inglewood fault zone (City of Carson 2004). The Avalon-Compton fault zone is located approximately 2.69 miles north of the project site; however, as stated in the City's General Plan and the California Geological Survey (CGS 2021), surface faulting is not considered a significant potential hazard for properties located within the City.

Furthermore, the proposed project's building design and construction would be required to conform to the current seismic design provisions of the City's Building Code, which incorporates relevant provisions of the 2019 California Building Code (CBC). The 2019

CBC, as amended by the City's Building Code, incorporates the latest seismic design standards for structural loads and materials to provide for the latest in earthquake safety. With adherence to the latest CBC, the latest California seismic design requirements would be included in the proposed project's building design and inspected by the City during construction; therefore, impacts would be less than significant.

a.ii) The entire Southern California region including the project site, is susceptible to strong ground shaking from severe earthquakes. The level of ground shaking that would be experienced at the project site from active or potentially active faults or blind thrust faults in the region would be a function of several factors including earthquake magnitude, type of faulting, rupture propagation path, distance from the epicenter, earthquake depth, duration of shaking, site topography, and site geology. As discussed above, the building design would be reviewed and approved by the City's building inspectors before construction permits are issued to ensure the proposed project is constructed in accordance with the CBC, and thereby the City's Building Code, which includes requirements for structures that reduce the potential for exposure of people or structures to seismic risks to the maximum extent possible. Therefore, a less-than-significant impact associated with strong seismic ground shaking would occur.

a.iii) Liquefaction is a seismic phenomenon in which loose, saturated, granular soils behave similarly to a fluid when subject to high-intensity ground shaking. Specifically, liquefaction occurs when the shock waves from an earthquake of sufficient magnitude and duration compact and decrease the volume of the soil; if drainage cannot occur, this reduction in soil volume will increase the pressure exerted on the water contained in the soil, forcing it upward to the ground surface. This process can transform stable soil material into a fluid-like state. This fluid-like state can result in horizontal and vertical movements of soils and building foundations from lateral spreading of liquefied materials and post-earthquake settlement of liquefied materials. Liquefaction occurs when three general conditions exist: (1) shallow groundwater; (2) low-density non-cohesive (granular) soils; and (3) high-intensity ground motion.

A review of the State of California Seismic Hazard Zone Map for the Torrance Quadrangle (CDMG 1999) indicates that the project site is located in an area designated as having a potential for liquefaction. Furthermore, the City of Carson (City of Carson 2002) indicates the project site is located within an area that has a potential for liquefaction. The Geotechnical Investigation prepared for the proposed project performed a liquefaction analysis. The analysis indicates that the alluvial soils could be susceptible to the liquefaction induced settlements. The foundation design recommendations that would be implemented based on a Final Geotechnical Report would minimize the effects of settlement from liquefaction. In addition, the proposed project would be constructed in accordance with the CBC, and thereby the City's Building Code, which includes requirements for structures that reduce the potential for exposure of people or structures to seismic risks to the maximum extent possible, including liquefaction. As such, the proposed project would not expose additional people or structures to potential substantial

adverse effects associated with liquefaction. Therefore, a less-than-significant impact associated with liquefaction would occur.

a.iv) Due to the relatively flat topography of the project site and surrounding area, the project site would not expose people or structures to potential landslides. Furthermore, the proposed project would be constructed in accordance with the CBC, and thereby the City's Building Code. As such, no impacts would occur regarding the potential for landslides.

b) The project site is currently undeveloped with exposed soil. Under the proposed project, the project site would drain from east to west via gutters that wrap around the proposed buildings. The runoff generated would be treated by a 10-foot by 20-foot Modular Wetland System that would discharge via an 18-inch pipe to the existing 5-foot storm drain inlet and ultimately the Dominguez Channel. During project operation, the project site would be fully developed with buildings and landscaping and would not contain exposed soils. As the proposed project would disturb more than 1 acre of soil, the proposed project would be subject to the requirements of the National Pollution Elimination Discharge System (NPDES), which would require preparation of a Stormwater Pollution Prevention Plan (SWPPP) for approval by the Los Angeles Regional Water Quality Control Board prior to construction. The SWPPP would identify best management practices (BMPs) to be implemented with the proposed project in order to prevent erosion, minimize siltation impacts, and protect water quality. In addition, the proposed project would also be subject to CMC Chapter 8, which contains the City's Stormwater Management and Discharge Control Ordinance. This ordinance is the City's tool to ensure the future health, safety, and general welfare of the citizens of the City and the water quality of the receiving waters of the County of Los Angeles and surrounding coastal areas. Therefore, with implementation of the NPDES and CMC requirements, soil erosion or loss of topsoil impacts would be less than significant.

c) The project site currently contains no existing buildings in a fully urbanized area with relatively flat topography. As discussed previously, the project site is relatively flat and is not located within an area susceptible to landslides.

With regard to liquefaction, while the project site is located within an area that has a potential for liquefaction, the proposed project's building foundation would be designed to minimize the effects of settlement from liquefaction. In addition, the proposed project would be constructed in accordance with the CBC, and thereby the City's Building Code, which includes requirements for structures that reduce the potential for exposure of people or structures to seismic risks to the maximum extent possible, including liquefaction.

With regard to lateral spreading, the Geotechnical Investigation performed an analysis for lateral spreading that indicated that up to 10 inches of lateral displacement toward the Dominguez Channel could occur. As with liquefaction, the grading and foundation design as well as implementation of the City's Building Code, would minimize the effects of lateral spreading.

With regard to subsidence, the project site is not located within an area of known ground subsidence and no large-sale extraction of groundwater, gas, oil, or geothermal energy that would result in subsidence would occur. As such, there is no potential for subsidence on the project site.

Soil collapse is a phenomenon where the soils undergo a significant decrease in volume upon increase in moisture content, with or without an increase in external loads. The Geotechnical Investigation indicates that the upper alluvial soils that underlie the project site are relatively soft and compressible, potentially leading to collapse. As with liquefaction and lateral spreading, the foundation design recommendations as well as implementation of the City's Building Code, would minimize the effects of collapse. As such, conformance with standard engineering practices and design criteria would ensure that the proposed project does not exacerbate existing conditions. Therefore, impacts related to geologic unit or soil that is unstable are less than significant.

d) Expansive soils are typically associated with fine-grained clayey soils that have the potential to shrink and swell with repeated cycles of wetting and drying. Such soils can expose overlying buildings to differential settlement and other structural damage. According to the Geotechnical Investigation, the upper 5 feet of existing soils encountered during the site investigation performed for the Geotechnical Investigation are considered to have a "medium" expansive potential and are classified as "expansive" in accordance with the CBC. The Geotechnical Investigation provides recommendations for the building foundations and slabs that would minimize impacts from expansive soils. Conformance with standard engineering practices and design criteria as recommended in the Final Geotechnical Report, as well as with the CBC, and thereby the City's Building Code, would reduce the potential for substantial risks to life or property as a result of expansive soils to a minimal level and the associated impacts would be less than significant.

e) The project site is located in an urbanized area and is served by community water and sewer service. Furthermore, no septic tanks or alternative wastewater disposal systems are in use or would be required under the proposed project. Therefore, no impact would occur.

f) A review of geologic mapping indicates the entire project lies upon young Quaternary alluvium composed of fine sand and loamy clays. A geotechnical study prepared for the proposed project identified two subsurface sediments within the project site including: (1) artificial fill extending from the surface to 3 to 9 feet deep; and (2) Holocene alluvium consisting of light brown to brown, olive brown, or gray to dark gray interbedded clay, sandy clay, silt, sandy silt, silty sand and clayey underlying the artificial fill to a depth of 51 feet. A database search from the Natural History Museum of Los Angeles County (LACM) identified no fossil localities within the project site or its immediate vicinity.

Project ground disturbing activities would extend to a depth of 6 feet below the ground surface and are unlikely to disturb sediments containing significant paleontological resources. The geologic map and literature review indicates the project site is underlain by artificial fill to a depth of 3–6 feet and Holocene-age alluvial deposits to a depth of 51 feet. These two geologic units have no and low potential to contain intact paleontological resources, respectively. Given the shallow depth of proposed project excavation, coupled

with low paleontological sensitivity of the geologic units within the project site, project implementation is unlikely to impact significant paleontological resources or unique geologic resources. Therefore, no impact would occur and no mitigation measures regarding paleontological resources are needed.

VIII. Greenhouse Gas Emissions

Issues (and Supporting Information Sources)	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
VIII. GREENHOUSE GAS EMISSIONS—Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Discussion

a,b) Gases that trap heat in the atmosphere are called greenhouse gases (GHGs). The major concern with GHGs is that increases in their concentrations are causing global climate change. Global climate change is a change in the average weather on Earth that can be measured by wind patterns, storms, precipitation, and temperature. Although there is disagreement as to the rate of global climate change and the extent of the impacts attributable to human activities, most in the scientific community agree that there is a direct link between increased emissions of GHGs and long-term global temperature increases.

The State of California defines GHGs as carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), perfluorocarbons (PFCs), and hydrofluorocarbons (HFCs). Because different GHGs have different global warming potentials (GWPs) and CO_2 is the most common reference gas for climate change, GHG emissions are often quantified and reported as CO_2 equivalents (CO_2e). For example, CH_4 has a GWP of 25 (over a 100-year period); therefore, 1 metric ton (MT) of CH_4 is equivalent to 25 MT of CO_2 equivalents ($MTCO_2e$). The State uses the GWP ratios available from the United Nations Intergovernmental Panel on Climate Change (IPCC) and published in the *Fourth Assessment Report* (AR4). By applying the GWP ratios, project-related CO_2e emissions can be tabulated in metric tons (MT) per year. Large emission sources are reported in million metric tons (MMT) of CO_2e.[6]

Some of the potential effects of global warming in California may include loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more forest fires, and more drought years (CARB 2008). Globally, climate change has the potential to impact numerous environmental resources through potential, though uncertain, impacts related to future air temperatures and precipitation patterns. The projected effects of global warming on weather and climate are likely to vary regionally, but are expected to include the following direct effects (IPCC 2001):

- Higher maximum temperatures and more hot days over nearly all land areas
- Higher minimum temperatures, fewer cold days and frost days over nearly all land areas
- Reduced diurnal temperature range over most land areas

6 A metric ton is 1,000 kilograms; it is equal to approximately 1.1 U.S. tons and approximately 2,204.6 pounds.

- Increase of heat index over land areas
- More intense precipitation events

Also, there are many secondary effects that are projected to result from global warming, including global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity. While the possible outcomes and the feedback mechanisms involved are not fully understood and much research remains to be done, the potential for substantial environmental, social, and economic consequences over the long term may be great.

California generated 418.2 $MMTCO_2e$ in 2019, the latest year for which data are available from CARB (CARB 2021a). Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2019, accounting for almost 40 percent of total GHG emissions in the State. This sector was followed by the electric power sector (14 percent) and the residential emissions (7 percent) (CARB 2021a).

Impacts of GHGs are borne globally, as opposed to localized air quality effects of criteria air pollutants and toxic air contaminants. The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; however, it is clear that the quantity is enormous, and no single project would measurably contribute to a noticeable incremental change in the global average temperature, or to global, local, or micro climates. From the standpoint of CEQA, GHG impacts to global climate change are inherently cumulative.

The City of Carson has not adopted a threshold of significance for GHG emissions that would be applicable to this project. In December 2008, the SCAQMD adopted a 10,000 $MTCO_2e$ per year significance threshold for industrial facilities for projects in which the SCAQMD is the lead agency. SCAQMD has not formally adopted a significance threshold for GHG emissions generated by a project for which SCAQMD is not the lead agency, nor a uniform methodology for analyzing impacts related to GHG emissions on global climate change. In the absence of any applicable adopted or accepted numerical threshold of significance for GHG emissions, the methodology for evaluating the proposed project's impacts related to GHG emissions focuses on its consistency with State, regional, and local plans adopted for the purpose of reducing and/or mitigating GHG emissions. This evaluation of consistency with such plans is the sole basis for determining the significance of the proposed project's GHG-related impacts on the environment. Notwithstanding, for informational purposes, the analysis also calculates the amount of GHG emissions that would be attributable to the proposed project using recommended air quality models, as described below. The primary purpose of quantifying the proposed project's GHG emissions is to satisfy CEQA Guidelines Section 15064.4(a), which calls for a good-faith effort to describe and calculate emissions. However, the significance of the proposed project's GHG emissions impacts is not based on the amount of GHG emissions resulting from the proposed project. Consistent with SCAQMD guidance, total emissions from construction are amortized over an assumed project lifetime of 30 years and added to operational emissions (SCAQMD 2008).

CEQA Guidelines 15064.4 (b)(1) states that a lead agency may use a model or methodology to quantify GHGs associated with a project. In June 2021, the SCAQMD in conjunction with CAPCOA released the latest version of the CalEEMod (Version 2020.4.0). The purpose of this model is to estimate construction-source and operational-source emissions from direct and indirect sources. Accordingly, the latest version of CalEEMod has been used for this proposed project to estimate the proposed project's emissions. Construction and operations mobile emissions were estimated outside of CalEEMod to account for EMFAC2021 because EMFAC2021 has not yet been incorporated in the current version of CalEEMod (refer to **Appendix G** of this IS/MND for additional details).

Construction Emissions

Construction activities associated with the proposed project would result in emissions of CO_2 and, to a lesser extent, CH_4 and N_2O. Construction-period GHG emissions were quantified based on the same construction schedule and activities as described above in Section III (b). To amortize the emissions over the life of a project, the SCAQMD recommends calculating the total GHG emissions attributable to construction activities, dividing it by a 30-year project life, and then adding that number to a project's annual operational-phase GHG emissions. As such, construction emissions were amortized over a 30-year period and included in the proposed project's annual operational-phase GHG emissions.

Operational Emissions

GHG Emissions

Operational activities associated with the proposed project would result in emissions of CO_2 and, to a lesser extent CH_4 and N_2O. Operational sources of GHG emissions would include mobile sources from vehicles traveling to and from the site, and indirect GHG emissions from export of electricity, water consumption, and waste generation.

A maximum of 580 trips per day are expected (Fehr & Peers 2022). GHG emissions from mobile sources are based on the vehicle emission factors from EMFAC2021 and the default trip length and trip distribution values for the project land uses in CalEEMod, which are Air District-wide average trip distance and trip distribution values. Daily trip generation from the proposed project's LTA, provided in **Appendix L** of this IS/MND, were used to estimate the total VMT for the project trips (Fehr & Peers 2022).

Emissions of GHGs also resulted from the consumption of fossil fuels to generate electricity and to provide heating and hot water to the project site. The project electricity demands are supplied by SCE, which indicates their renewable power accounted for 30.9 percent in 2020.

GHG emissions from solid waste disposal are also calculated using CalEEMod. Emissions are based on solid waste calculated for the proposed project and the GHG emission factors for solid waste decomposition. The GHG emission factors, particularly for CH_4, depend on characteristics of the landfill, such as the presence of a landfill gas capture system and

subsequent flaring or energy recovery. The default values, as provided in CalEEMod, for landfill gas capture (e.g., no capture, flaring, energy recovery) are statewide averages and are used in this assessment.

Emissions Summary

The proposed project's annual GHG emissions are shown in **Table 8**, *Annual Project Greenhouse Gas Emissions*. As shown, the proposed project's total GHG emissions would be 876 $MTCO_2e$. GHG emission calculations are provided in **Appendix G** of this IS/MND.

TABLE 8
ANNUAL PROJECT GREENHOUSE GAS EMISSIONS

Emissions Sources	CO_2e (Metric Tons per Year)[a]
Area	<1
Energy (Electricity, Natural Gas)	77
Mobile	640
EV Charging	1
Waste	62
Water	69
Construction[b]	27
Project Total GHG Emissions	***876***

NOTES:

[a] Totals may not add up exactly due to rounding in the modeling calculations. Refer to **Appendix G** of this IS/MND for details.
[b] Construction emissions are amortized over 30 years.

SOURCE: ESA 2022

The City of Carson General Plan does not identify specific GHG or climate change policies or goals. In the absence of any adopted, quantitative threshold, the proposed project would not have a significant effect on the environment if the proposed project is found to be consistent with the applicable regulatory plans and policies to reduce GHG emissions, including CARB's 2017 Climate Scoping Plan, SCAG's 2020–2045 RTP/SCS, and the City's Energy Efficiency Climate Action Plans (EECAP).

The EECAP, developed by the South Bay Cities Council of Governments, aims to implement energy efficiency and GHG reduction efforts (City of Carson 2015). The proposed project has been evaluated for consistency with the EECAP. According to the EECAP, the City is in the process of implementing strategies to reduce energy consumption across sections, which includes promoting commercial energy retrofits (City of Carson 2015). Consistent with the strategies identified in the EECAP, the proposed project would install lighting and a ventilation system that conforms to the California Green Building Code and include approximately 12,134 square feet of landscaping around the perimeter of the project site. Therefore, the proposed project would be consistent with the applicable GHG reduction strategies in the City's EECAP.

As shown in Table 8 above, the proposed project's highest GHG contributors are from mobile and energy sources. These are highly regulated sources with measures implemented in CARB's 2017 Climate Scoping Plan to reduce GHG emissions from each sector. With respect to relevant statewide GHG reduction strategies, in January 2007, the California Governor enacted Executive Order S-01-07, which mandates the following: (1) establish a statewide goal to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020; and (2) adopt a Low Carbon Fuel Standard (LCFS) for transportation fuels in California. CARB identified the LCFS as one of the nine discrete early actions in the Climate Change Scoping Plan. The LCFS regulations were approved by CARB in 2009 and established a reduction in the carbon intensity of transportation fuels by 10 percent by 2020 with implementation beginning on January 1, 2011. In September 2015, CARB approved the re-adoption of the LCFS, which became effective on January 1, 2016, to address procedural deficiencies in the way the original regulation was adopted. In the proposed 2017 Climate Change Scoping Plan Update, CARB's preferred recommendation includes increasing the stringency of the LCFS by reducing the carbon intensity of transportation fuels by 18 percent by 2030, up from the current target of 10 percent by 2020 (CARB 2017). In April 2017, the LCFS was brought before the Court of Appeal challenging the analysis of potential nitrogen dioxide impacts from biodiesel fuels. The Court directed CARB to conduct an analysis of nitrogen dioxide impacts from biodiesel fuels and froze the carbon intensity targets for diesel and biodiesel fuel provisions at 2017 levels until CARB has completed this analysis. On March 6, 2018, CARB issued its Draft Supplemental Disclosure Discussion of Oxides of Nitrogen Potentially Caused by the Low Carbon Fuel Standard Regulation (CARB 2021a). CARB posted modifications to the amendments on August 13, 2018, with a public comment period through August 30, 2018. Final approval of regulatory changes from CARB's analysis of nitrogen dioxide impacts from biodiesel fuels was made on January 4, 2019 (CARB 2021b). The LCFS was amended in September 2018 to require a reduction of at least 7.5 percent in the carbon intensity of California's transportation fuels by 2020 and a 20 percent reduction in carbon intensity from a 2010 baseline by 2030 (CARB 2021c). The 2017 Climate Change Scoping Plan also calls for increasing the mandatory reduction in carbon intensity of transportation fuels from 10 percent to 18 percent by 2030.

As previously stated, the RPS requires publicly owned utilities and retail sellers of electricity in California to procure 33 percent of their electricity sales from eligible renewable sources by 2020 and 50 percent by the end of 2030. SCE, the utility provider for the project site, reported 30.9 percent of their power from renewable sources (SCE 2020). Therefore, GHG emissions from electricity consumption would decrease in future years.

Additionally, SCAG Regional Council adopted the 2020–2045 RTP/SCS on September 3, 2020. The 2020–2045 RTP/SCS includes "more compact, infill, walkable and mixed-use development strategies to accommodate new region's growth would be encouraged to accommodate increases in population, households, employment, and travel demand." Moreover, the 2020–2045 RTP/SCS states the focus would be "growth in existing urban regions and opportunity areas, where transit and infrastructure are already in place. Locating new growth near bikeways, greenways, and transit would increase active

transportation options and the use of other transit modes, thereby reducing number of vehicle trips and trip lengths and associated emissions."

The proposed project would not conflict with the 2020–2045 RTP/SCS goals and benefits intended to improve mobility and access to diverse destinations, provide better "placemaking," provide more transportation choices, and reduce vehicular demand and associated emissions. Therefore, the proposed project would not conflict with the GHG reduction-related actions and strategies contained in the 2020–2045 RTP/SCS.

The project site is located in a neighborhood characterized by a mix of residential and commercial uses. As previously stated, the project site is a proposed self-storage facility with ancillary office and retail uses (likely a mail service store such as a UPS or FedEx). These uses would support measures related to reducing vehicle trips by locating additional retail uses near existing residents and commercial uses.

Overall, the proposed project would not conflict with CARB's implementation of the LCFS or use of renewable energy sources, the City's EECAP, and it would not conflict with SCAG's 2020–2045 RTP/SCS. Therefore, the proposed project would not conflict with an applicable plan, policy, or regulation to reduce GHG emissions. As such, impacts would be less than significant.

IX. Hazards and Hazardous Materials

Issues (and Supporting Information Sources)	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
IX. HAZARDS AND HAZARDOUS MATERIALS—Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	☐	☒

This section is based in part on the Phase I Environmental Site Assessment (Phase I ESA), prepared by Weis Environmental, dated January 25, 2021 (refer to **Appendix H** of this IS/MND).

As discussed above, there are known groundwater impacts at the project site. As such, 16 groundwater monitoring wells were installed on the project site and are used as part of the groundwater monitoring program. The Phase I ESA notes that concentrations in existing monitoring wells generally appeared to be stable or decreasing, with a few instances of fluctuation. As it relates to soil impacts, a Soil Excavation Workplan was developed by URS and 7,255.69 tons (approximately 4,837 in-place cubic yards assuming 1.5 tons per cubic yard) of impacted soil were excavated from the project site and disposed off-site. The impacted soil was removed from four distinct areas to depths ranging from approximately 5 to 8 feet. URS concluded that based on confirmation soil sampling for each of the excavations, the cleanup criteria set out in the workplan had been met. URS also stated that a SMP for the project site was prepared to mitigate potential future exposure to residual petroleum hydrocarbons and odor generation during project site development. URS requested that the LARWQCB issue a no further action letter for vadose zone soils at the project site. The LARWQCB reviewed the report and concurred with its findings. A no further action letter for soil was issued by the LARWQCB on December 14, 2015.

With the exception of the known residual petroleum hydrocarbon impacts in soil beneath the project site (below commercial/industrial screening levels) and the known groundwater impacts that have resulted from off-site sources, the Phase I ESA did not identify features and/or conditions indicating the presence or likely presence of hazardous substances and/or petroleum products at the project site.

Discussion

a) Exposure of the public or the environment to hazardous materials can occur through transportation accidents; environmentally unsound disposal methods; improper handling of hazardous materials or hazardous wastes (particularly by untrained personnel) during construction or operation. The severity of these potential effects varies by type of activity, concentration and/or type of hazardous materials or wastes, and proximity to sensitive receptors.

Construction

The project site is located in an urbanized area of the City of Carson, on one parcel, which is currently vacant and undeveloped. Project construction activities would involve minimal use and transport of hazardous materials. Construction would involve the use of some heavy equipment, which use small amounts of oil and fuels. Construction activities that involve hazardous materials are governed by several agencies, including the Environmental Protection Agency (EPA), Caltrans, California Division of Occupational Safety and Health (Cal/OSHA), and the California Department of Toxic Substances Control (DTSC). As required by these regulatory agencies, construction contractors would be required to implement BMPs for handling hazardous materials during construction activities, including following manufacturers' recommendations and regulatory requirements for use, storage, and disposal of chemical products and hazardous materials used in construction; avoiding overtopping construction equipment fuel tanks; routine maintenance of construction equipment; and properly disposing of discarded containers of fuels and other chemicals. Construction contractors are required to implement safety measures in accordance with the General Industry Safety Orders of the California Code of Regulations. Therefore, all construction-related hazardous materials would be transported and disposed of in accordance with applicable codes and regulations. Compliance with applicable federal, State, and local standards is required; therefore, construction-related impacts in regards to the transport, use, or disposal of hazardous materials during construction are less than significant.

Operation

The proposed project would operate as a self-storage facility with ancillary office and retail uses and associated landscaping and facility maintenance. None of the proposed land uses are typically considered a source of hazardous materials. Hazardous materials would be limited to private use of commercially available cleaning products, landscaping chemicals and fertilizers, and various other commercially available substances. In addition, operation of the proposed project would be required to adhere to the environmental covenant recorded against the project site, which requires a vapor barrier to be incorporated in the design of proposed buildings. Furthermore, all future project tenants would be required to

sign a rental agreement that prohibits the storage of hazardous materials and chemicals. Therefore, operational impacts associated with the proposed project related to use, transport, storage, or disposal of hazardous materials would be less than significant.

b) ***Construction***

Construction of the proposed project would require minimal use of hazardous materials typical to construction, including gasoline, motor oils, paints, solvents, and other miscellaneous materials (e.g., engine oil, etc.). All potentially hazardous materials would be used and stored in accordance with manufacturers' instructions and handled in compliance with applicable standards and regulations. The construction phase would involve the use of heavy equipment, which require small amounts of oil and fuels and other potential flammable substances. During construction, equipment would require refueling and minor maintenance on location that could lead to fuel and oil spills. The contractor would be required to identify a staging area for storing materials. Additionally, operators of heavy-duty equipment are required to remain alert, and nearby during fueling of equipment and spills, should they occur, so their spills do not reach the off-site environment. Construction contractors would be required to implement safety measures in accordance with the General Industry Safety Orders of the California Code of Regulations. All construction-related materials would be transported and disposed of in accordance with applicable codes and regulations. Compliance with applicable federal, State, and local standards is required.

As it relates to the petroleum hydrocarbon-impacted soil identified at the project site, impacted soil was removed from the project site and subsequently LARWQCB issued a no further action letter for vadose zone soils at the project site. In addition, as it relates to the petroleum hydrocarbon-impacted groundwater, as noted above, concentrations in existing monitoring wells generally appeared to be stable or decreasing, with a few instances of fluctuation. While the proposed project would excavate the upper 6 feet of existing earth materials, the soils encountered during excavation would be the clean import soils that was backfilled as part of the remediation on the project site. Furthermore, as groundwater was encountered at depths of 12.5 and 17.6 feet beneath the existing ground surface, proposed excavation would not impact the petroleum hydrocarbon-impacted groundwater. Construction would be required to adhere to the SMP and environmental covenant recorded against the site. As such, construction activities would not result in accidental conditions involving existing on-site contamination.

Based on the above, construction-related impacts in regards to significant risk of upset or accidental release of hazardous materials would be less than significant.

Operation

As discussed above, hazardous materials used during operation would be limited to private use of commercially available cleaning products, landscaping chemicals and fertilizers, and various other commercially available substances.

As it relates to the petroleum hydrocarbon-impacted soil identified at the project site, impacted soil was removed from the project site and subsequently LARWQCB issued a no further action letter for vadose zone soils at the project site. In addition, as it relates to the petroleum hydrocarbon-impacted groundwater, as noted above, concentrations in existing monitoring wells generally appeared to be stable or decreasing, with a few instances of fluctuation. Operation of the proposed project would be required to adhere to the environmental covenant recorded against the site, which requires a vapor barrier to be incorporated in the design of future structures. Furthermore, all future storage tenants would be required to sign a rental agreement that prohibits the storage of hazardous materials and chemicals. As such, project operation would not result in upset or accident conditions involving existing on-site contamination. Based on the above, impacts in regards to significant risk of upset or accidental release of hazardous materials during operation of the proposed project would be less than significant.

c) The nearest school to the project site is the Carnegie Middle School, located approximately 0.37 miles southwest. As such, the project site and would not be within 0.25 miles of a school. Therefore, no impacts to existing schools would occur.

d) Based on a review of the databases, as provided in the Phase I ESA, the project site was identified in the RCRA SQG, CLEANUP SITES and DEED State regulatory databases. The project site is referenced with a closed regulatory status as of October 23, 2015, and with a Covenant and Environmental Restriction recorded on the project site. The project site is also listed on the local LA County CUPA and LA HMS regulatory databases. No details are provided in the LA County CUPA database listing. The LA HMA database listing pertains to closed permits pertaining to waste generation and stormwater. In addition, the project site is listed on the non-ASTM FINDS/FRS, HAZNET and HIST MANIFEST regulatory databases. The listings pertain to the manifesting and removal of various wastes. As discussed above, contaminated soils were removed and LARWQCB issued a no further action letter for vadose zone soils at the project site. In addition, as it relates to the petroleum hydrocarbon-impacted groundwater, as noted above, concentrations in existing monitoring wells generally appeared to be stable or decreasing, with a few instances of fluctuation. The site is also subject to a SMP and environmental deed restriction. Furthermore, groundwater monitoring would continue during operation of the proposed project. Therefore, the proposed project would not create a significant hazard to the public or the environment, and impacts would be less than significant.

e) The project site is approximately 3.3 miles from the Compton/Woodley Airport, 4 miles from Long Beach International Airport and Torrance/Zamperini Field.. Based on the Los Angeles County Airport Land Use Plan, the project site is located outside of the Airport Influence Area for the Compton/Woodley Airport and the Long Beach International Airport and Torrance/Zamperini Field (Los Angeles County Airport Land Use Commission 2004). Therefore, the proposed project would not pose any airport safety hazards for people residing or working in the project area, and no impacts would occur.

f) The City has prepared a Multi-Hazard Functional Plan (1996) for emergency response within the City (City of Carson 2004). The plan identifies emergency protocol, critical meeting areas, and emergency evacuation routes. The four major freeways (I-405, State Route [SR]-91, I-110, and I-710) as well as arterial streets with right-of-way widths from 80 to 100 feet at 0.5-mile intervals would serve as potential evacuation routes during a disaster. Potential evacuation routes that occur near the project site include Carson Street, Wilmington Street, Avalon Boulevard, and 223rd Street. While primary access to the project site would be provided from South Perry Street, vehicles travelling to the project site during construction or operation would do so via East Carson Street. During construction, East Carson Street may require temporary partial lane closures. The Applicant would be required to implement a traffic management plan that would ensure that at least one lane remains open and emergency access is maintained during construction. In addition, the vehicle trips generated is not anticipated to impact emergency access provided from East Carson Street and operations are not likely to interfere with an adopted emergency response plan or emergency evacuation plan. Therefore, impacts regarding impairing an emergency response or evacuation plan would be less than significant.

g) The project site is located in an urbanized area and would continue to be served by the Los Angeles County Fire Department (LACFD). According to the California Department of Forestry and Fire Protection (CAL FIRE), the proposed project is not located within a Very High Fire Hazard Severity Zone (CAL FIRE 2022). Construction of the proposed project would be in accordance with the 2019 CBC, 2019 California Fire Code (CFC), which include mandatory measures for fire prevention and emergency access. Therefore, the proposed project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires, and no impacts would occur.

X. Hydrology and Water Quality

Issues (and Supporting Information Sources)	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
X. HYDROLOGY AND WATER QUALITY—Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of imperious surfaces, in a manner which would:				
i) result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
iii) create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv) impede or redirect flood flows?	☐	☐	☒	☐
d) In flood hazard, tsunami, or seiche zones, risk or release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

This section is based in part on the Carson Self-Storage Preliminary Utilities Technical Memorandum (Utilities Memorandum), prepared by Omega Engineering Consultants, dated March 9, 2022 (refer to **Appendix I** of this IS/MND) and Low Impact Development Plan (LID Plan), also prepared by Omega Engineering Consultants, dated October 5, 2021 (refer to **Appendix J** of this IS/MND).

Discussion

a) The project site is located in an urbanized area of the City of Carson and is currently one vacant undeveloped parcel. As part of Clean Water Act Section 402, the Environmental Protection Agency has established regulations under the NPDES program to control direct stormwater discharges. In California, the State Water Regional Control Board (SWRCB) administers the NPDES permitting program and is responsible for developing NPDES permitting requirements. The NPDES program regulates industrial pollutant discharges, which include construction activities. The SWRCB works in coordination with the nine Regional Water Quality Control Boards (RWQCBs) to preserve, protect, enhance, and restore water quality. The project site is within the jurisdiction of the Los Angeles RWQCB. Impacts related to water quality typically range over three different periods: (1) during the earthwork and construction phase, when the potential for erosion, siltation, and sedimentation would be the greatest; (2) following construction, prior to the establishment of ground cover, when the erosion potential may remain relatively high;

and (3) following completion of a project, when impacts related to sedimentation would decrease markedly, but those associated with urban runoff would increase.

Construction

Project construction could result in short-term impacts to water quality due to the handling, storage, and disposal of construction materials, maintenance and operation of construction equipment, and earthmoving activities. Potential pollutants associated with these activities could damage downstream waterbodies. Dischargers whose projects disturb 1 acre or more of soil or whose projects disturb less than 1 acre but are part of a larger common plan of development that in total disturbs 1 acre or more, are required to obtain coverage under the SWRCB's General Permit for Discharges of Stormwater Associated with Construction Activity Construction General Permit Order 2009- 0009-DWQ (General Construction Permit). The General Construction Permit requires the Applicant to prepare and implement a SWPPP. The SWPPP would specify BMPs to be used during construction of the proposed project to minimize or avoid water pollution, thereby reducing potential short-term impacts to water quality. Upon completion of the proposed project, the Applicant would be required to submit a Notice of Termination to the SWRCB to indicate that construction has been completed. Further, project construction activities would be required to comply with the water quality BMPs set forth in CMC Chapter 8, Storm Water and Urban Runoff Pollution Control. This chapter contains the City's Storm Water Management and Discharge Control Ordinance and includes conditions and requirements established to control urban pollutant runoff into the City's stormwater system. Compliance with the General Construction Permit requirements and CMC Chapter 8, Storm Water and Urban Runoff Pollution Control, would reduce the proposed project's short-term impacts to surface water quality to less-than-significant levels.

As it relates to groundwater quality, as noted above, there are known groundwater impacts at the project site. Concentrations of petroleum hydrocarbon in the groundwater, as monitored in existing monitoring wells on the project site, generally appeared to be stable or decreasing, with a few instances of fluctuation. As groundwater was encountered at depths of 12.5 and 17.6 feet beneath the existing ground surface, the proposed excavation of a maximum of 6 feet would not impact the petroleum hydrocarbon-impacted groundwater. Therefore, the proposed project's short-term impacts to groundwater quality would be less than significant.

Operation

The primary constituents of concern during the operational phase of the proposed project would be solids, oils, and greases from parking areas, driveways, and truck loading bays that could be carried off-site. Project design features would address the anticipated and expected pollutants of concern during the proposed project's operational phase. On-site landscaping, which would comprise approximately 10.2 percent of the total project site after construction of the proposed project, would assist in minimizing the amount of runoff from the project site by providing permeable areas for water infiltration and decreasing runoff volume. Infiltration through landscaped areas would also serve as a water treatment function.

Requirements for waste discharges potentially affecting stormwater from project operations are set forth in CMC Chapter 8, Storm Water and Urban Runoff Pollution Control. Standard Urban Stormwater Mitigation Plan (SUSMP) requirements include minimizing stormwater pollutants and limiting peak post-project stormwater runoff rates to no greater than predevelopment rates where increased runoff could increase downstream erosion.

As described in the LID Plan, as provided in **Appendix J** of this IS/MND, the project site is relatively level with drainage consisting of surface flow. The project site drains towards the west to an existing 5-foot storm drain inlet that outlets directly to the Dominguez Channel. Under the proposed project, the project site would drain from east to west via gutters that wrap around the proposed buildings. The runoff generated would be treated by a 10-foot by 20-foot Modular Wetland System that would discharge via an 18-inch pipe to the existing 5-foot storm drain inlet, as under existing conditions. As such, surface water quality would not be degraded.

As noted above in Section IX, *Hazards and Hazardous Materials*, there are known groundwater impacts at the project site. There are 16 groundwater monitoring wells present at the project site that are used as part of the groundwater monitoring program. Primary groundwater contaminants of concern identified in these wells included total petroleum hydrocarbons in the gasoline range, benzene and diisopropyl ether. It was noted that concentrations in existing monitoring wells generally appeared to be stable or decreasing, with a few instances of fluctuation. Groundwater monitoring would continue during operation of the proposed project.

In general, projects control pollutants, pollutant loads, and runoff volume from the project site by minimizing the impervious surface area and controlling runoff through infiltration, bioretention, or rainfall harvest and use. Additionally, projects are required to incorporate BMPs as outlined in the SWPPP and in accordance with the requirements of the municipal NPDES permit. Compliance with these water quality and water discharge standards would ensure that the proposed project would not degrade surface or ground water quality, and impacts would be less than significant.

b) The project site is located in an urbanized area of the City of Carson and is currently one vacant undeveloped parcel. The project site consists of mostly pervious surfaces. As described in the Utilities Memorandum, as provided in **Appendix I** of this IS/MND, the project site is approximately 3.5 percent impervious. With development of the proposed project, as analyzed in the Utilities Memorandum, the project site would be 89.8 percent impervious. However, while under the proposed condition impervious surfaces would increase, the project site is not located near groundwater recharge wells and no groundwater recharge facilities exist downstream of the project site.

In addition, no new sources of water supply, such as groundwater, are required to meet the proposed project's water demand. Potable water would be supplied by the California Water Service (Cal Water) Dominguez District. Based on the 2020 Urban Water Management

Plan (UWMP), the Cal Water Dominguez District receives its water from 17 percent groundwater, 15 percent recycled water, and 68 percent purchased water (California Water Service 2020). The proposed project uses would not result in a substantial increase in demand as the self-storage units would not generate a demand for water and the proposed office and retail uses would generate minimal water use. Therefore, implementation of the proposed project would not significantly affect groundwater supplies. Furthermore, as noted above, the project site is not located near groundwater recharge wells and no groundwater recharge facilities exist downstream of the project site. Therefore, the proposed project would not substantially deplete groundwater supplies or interfere with groundwater recharge that may impede sustainable groundwater management of the basin and, thus, impacts would be less than significant.

c.i) While no streams, rivers, or natural drainages occur on the project site, the Dominguez Channel is located to the west of the project site; a flood control easement separates the Dominguez Channel from the project site. The project site is located in an urban area and is currently one vacant undeveloped parcel. Existing surface runoff from the project site is currently directed to an existing 5-foot storm drain inlet that outlets directly to the Dominguez Channel. Under the proposed project, the project site would drain from east to west via gutters that wrap around the proposed buildings. The runoff generated would be treated by a 10-foot by 20-foot Modular Wetland System that would discharge via an 18-inch pipe to the existing 5-foot storm drain inlet, as under existing conditions. As described above, impervious surfaces would increase from approximately 3.5 percent impervious to 89.8 percent impervious in the proposed condition. As discussed above, during construction, the proposed project would be required to comply with BMP's identified in the RWQCB issued SWPPP, which would reduce the potential for erosion or siltation to occur. During project operation, the project site would be fully developed with buildings and landscaping and would not contain exposed soils. Therefore, compliance with BMPs would ensure that the proposed project would not substantially alter the drainage pattern of the project site in a manner that would result in the substantial erosion or siltation on- or off-site and impacts would be less than significant.

c.ii) While no streams, rivers, or natural drainages occur on the project site, the Dominguez Channel is located to the west of the project site. The project site is located in an urban area and is currently one vacant undeveloped parcel. As described above, surface runoff is currently directed to an existing 5-foot storm drain inlet that outlets directly to the Dominguez Channel. Under the proposed project, the project site would drain from east to west via gutters that wrap around the proposed buildings. The runoff generated would be treated by a 10 foot by 20-foot Modular Wetland System that would discharge via an 18-inch pipe to the existing 5-foot storm drain inlet, as under existing conditions. As described above, impervious surfaces would increase from approximately 3.5 percent impervious to 89.8 percent impervious in the proposed condition. As further analyzed in the drainage report, under the proposed project, peak flowrates would increase from 3.12 cubic feet per second (cfs) to 6.74 cfs. As detailed in the Utilities Memorandum, all proposed on-site conveyances for the proposed project were designed to safely convey the

flowrates generated by a 100-year storm and flooding on-site is not anticipated. Therefore, a less-than-significant impact resulting from flooding would occur.

c.iii) The project site is located in an urban area and is currently one vacant undeveloped parcel. As described above, surface runoff is currently directed to an existing 5-foot storm drain inlet that outlets directly to the Dominguez Channel. Under the proposed project, the project site would drain from east to west via gutters that wrap around the proposed buildings. The runoff generated would be treated by a 10 foot by 20-foot Modular Wetland System that would discharge via an 18-inch pipe to the existing 5-foot storm drain inlet, as under existing conditions. As discussed above, the Applicant would be required to comply with the standard BMPs in the SWPPP, as identified by the RWQCB. Therefore, the proposed project would not provide substantial additional sources of polluted runoff, and potential impacts to surface water quality would be less than significant. Furthermore, the existing drainage pattern would remain largely the same under the proposed project, and thus, the proposed project would be adequately served by the existing 5-foot storm drain inlet during project operations. Therefore, the proposed project would not exceed the capacity of existing or planned storm drain systems and impacts would be less than significant.

c.iv) The project site is not within 100-year flood hazard area as indicated by the Federal Emergency Management Agency (FEMA 2020). In addition, the proposed project would adhere to all standards and requirements identified in the CMC Chapter 8 and project specific SWPPP, which would require implementation of measures that reduce the potential for flooding on- or off-site. Thus, adherence with these measures would ensure that impacts are less than significant.

d) As discussed above, the project site is not within 100-year flood hazard area as indicated by the Federal Emergency Management Agency (FEMA 2020). In addition, the proposed project would adhere to all standards and requirements identified in the CMC Chapter 8 and project specific SWPPP, which would require implementation of measures that reduce the potential for flood hazards.

Due to the distance of the City to the Pacific Ocean, located approximately 5.58 miles west of the City, the potential for tsunami effects within the City is negligible. Furthermore, the absence of any large bodies of water within Carson preclude the possibility of damage from seiche effects on the project site (City of Carson 2004). Given the lack of flood hazard, tsunami, or seiche risk in the project area, there would be no impacts anticipated.

e) There are no applicable water quality control plan or sustainable groundwater management plans for the project site. As stated above, the project site is located in an urbanized area and is currently one vacant undeveloped parcel. The project site has been previously developed and does not serve as a source of groundwater. Therefore, the proposed project would not conflict with or obstruct the implementation of a water quality control plan or sustainable groundwater management plan and there would be no impacts anticipated.

XI. Land Use and Planning

Issues (and Supporting Information Sources)	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
XI. LAND USE AND PLANNING—Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

Discussion

a) The project site is located in an urbanized area of the City of Carson and is currently vacant and undeveloped. Development of the proposed project would not physically divide an established community as the proposed project would develop one vacant parcel surrounded by urbanized uses with uses similar to those in the surrounding area. Thus, the proposed project would not divide an established community and no impacts would occur.

b) According to the City of Carson General Plan, the project site has a General Plan land use designation of Light Industrial and a zoning code designation of Manufacturing Light – with Site Plan and Design Review Overlay (ML-D). The proposed project would require a general plan amendment (from Light Industrial to Heavy Industrial), zone change, adoption of a specific plan for specific uses and deviations from the development standards that may not apply, and a development agreement.

Table 9, *General Plan Consistency Analysis*, analyzes the proposed project's consistency with relevant General Plan Land Use Element goals and policies. As demonstrated in Table 9, the proposed project is consistent with the General Plan Land Use Element.

The City uses the specific plan process to establish type, location, and character of development to take place on a property (City of Carson 2002). Although a specific plan allows flexibility of development in regard to land use and design concepts, the overall design guidelines are required to follow City standards. The proposed project would be designed to be compatible with zoning and design regulations as detailed in the specific plan and would adhere to allowable building height and setbacks.

Based on the analysis above and upon approval of the requested entitlements, the proposed project would not conflict with applicable goals and policies in the General Plan or applicable regulations under the Zoning Code. Therefore, the proposed project would result in less-than-significant impacts.

TABLE 9
GENERAL PLAN CONSISTENCY ANALYSIS

Relevant Policies	Project Consistency Analysis
Goal LU-2: Rehabilitation and/or removal of abandoned buildings and facilities.	As discussed in the Phase I ESA, the project site formerly was improved with commercial/industrial uses. These uses were demolished between 2009 and 2012. There are no habitable structures present on the project site, however, remnant improvements are still present on the project site. Under the proposed project, the remnant structures would be removed, and a self-storage facility would be developed. The redevelopment of the project site would not conflict with this goal.
Goal LU-6: A sustainable balance of residential and non-residential development and a balance of traffic circulation throughout the City.	The proposed project would be developed on a site that was previously developed with commercial/industrial uses. The proposed uses include a self-storage facility which would be in keeping with the previous uses on the project site as well as the surrounding existing commercial uses along East Carson Street. As such, development of the proposed project would not conflict with this goal.
Policy LU-12.3: Review landscape plans for new development to ensure that landscaping relates well to the proposed land use, the scale of structures, and the surrounding area. Policy LU-12.5: Improve City appearance requiring landscaping to screen, buffer, and unify new and existing development. Mandate continued upkeep of landscaped areas.	As described in Chapter 2, Project Description, the proposed project would include approximately 12,134 square feet of landscaping around the perimeter of the project site. A variety of drought tolerant ornamental shrubs and medium size trees, which would be varying in height, would be included as a part of the proposed landscaping. In addition, a landscape screen would be installed on the northern boundary of the project site, which would serve to screen the self-storage facility from the residential uses directly to the north of the project site. These landscape features would not conflict with these policies.
Policy LU-13.4: Encourage architectural variation of building and parking setbacks along the streetscape to create visual interest, avoid monotony and enhance the identity of individual areas. Encourage pedestrian orientation by appropriate placement of buildings.	As described further in Chapter 2, Project Description, the proposed project would consist of neutral-toned building materials in Spanish styled architecture, which include Spanish accents, Spanish tile roof, spandrel glazing, and landscaping. The proposed design would largely resemble a multi-family residential building in its aesthetics and massing. This design would provide for architectural variation along Carson Street, creating visual interest and avoiding monotony and would not conflict with this policy.
Policy LU-15.1: Encourage the location of housing, jobs, shopping, services, and other activities within easy walking distance of each other.	The proposed project includes cafe/retail uses totaling 4,675 square feet in proximity to residential uses and the nearby Perry Street Mini-Park. The location of the cafe/retail uses would serve to encourage residents to the north and southeast of the project site to walk to the project site. As such, the proposed project would not conflict with this policy.
Policy LU-15.7: Provide for efficient use of water through the use of drainage, drought tolerant landscaping, and use of reclaimed water, efficient appliances, and water conserving plumbing fixtures.	As described above, a variety of drought tolerant ornamental shrubs and medium size trees, which would be varying in height, would be included as a part of the proposed landscaping. The use of drought tolerant landscaping would provide for efficient use of water and would not conflict with this policy.

SOURCE: ESA 2022.

XII. Mineral Resources

Issues (and Supporting Information Sources)	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
XII. MINERAL RESOURCES—Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

Discussion

a) The project site is located in the City of Carson in an urbanized area, on one vacant parcel with surrounding residential and commercial uses. According to the Los Angeles County Conservation and Natural Resources Element and the California Department of Conservation (CDC), the project site is not in Mineral Resource Zone 2 (MRZ-2), as identified in Figure 9.6, Mineral Resources (County of Los Angeles 2015), and the CDC Mineral Lands Classification Map (CDC 2022). MRZ-2 zones are characterized as areas that are underlain by significant measured or indicated mineral resources. Additionally, according to the City's General Plan Safety Element, the City does not contain any known mineral resources (City of Carson 2004). No mineral extraction or other mining operations have historically or currently occur within the project site, nor would the proposed project result in the loss of availability of any known mineral resource. Therefore, no impact to a known mineral resource would occur.

b) No mineral extraction or other mining operations have historically or currently occurred within the project site, nor would the proposed project result in the loss of availability of any locally important mineral resource. In addition, the project site is not identified as an area that contains known mineral resources in the City's General Plan (City of Carson 2004). Therefore, no impacts would occur to a locally important mineral resources.

XIII. Noise

Issues (and Supporting Information Sources)	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
XIII. NOISE—Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐

Discussion

a) Noise is defined as unwanted sound; however, not all unwanted sound rises to the level of a potentially significant noise impact. To differentiate unwanted sound from potentially significant noise impacts, the City of Carson has established noise regulations that take into account noise-sensitive land uses. The following analysis evaluates potential noise impacts at nearby noise-sensitive land uses that may result from construction and operation of the proposed project.

Noise Principles and Descriptors

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air). Noise is generally defined as unwanted sound (i.e., loud, unexpected, or annoying sound). Acoustics is defined as the physics of sound. In acoustics, the fundamental scientific model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receiver determines the sound level and characteristics of the noise perceived by the receiver. Acoustics addresses primarily the propagation and control of sound (Caltrans 2013a, Section 2.2.1).

Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as sound level) that is measured in decibels (dB), which is the standard unit of sound amplitude measurement. The dB scale is a logarithmic scale (i.e., not linear) that describes the physical intensity of the pressure vibrations that make up any sound, with 0 dB corresponding roughly to the threshold of human hearing and 120 to 140 dB corresponding to the threshold of feeling and pain, respectively. In a non-controlled environment, a change in sound level of 3 dB is considered "just perceptible," a change in sound level of 5 dB is considered "clearly noticeable," and a change in 10 dB is perceived as a doubling of sound volume (Caltrans 2013a, Section 2.1.3). Pressure waves traveling through air exert a force registered by the human ear as sound (Caltrans 2013a, Section 2.1.3).

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that deemphasizes the frequencies below 1,000 hertz (Hz) and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to extremely low and extremely high frequencies. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA). A-weighting follows an international standard methodology of frequency de-emphasis and is typically applied to community noise measurements (Caltrans 2013a, Section 2.1.3).

An individual's noise exposure is a measure of noise over a period of time, whereas a noise level is a measure of noise at a given instant in time. Community noise varies continuously over a period of time with respect to the contributing sound sources of the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with the individual contributors unidentifiable. The background noise level changes throughout a typical day, but does so gradually, corresponding with the addition and subtraction of distant noise sources such as traffic. What makes community noise variable throughout a day, besides the slowly changing background noise, is the addition of short-duration, single-event noise sources (e.g., aircraft flyovers, motor vehicles, sirens), which are readily identifiable to the individual. These successive additions of sound to the community noise environment change the community noise level from instant to instant, requiring the measurement of noise exposure over a period of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts (Caltrans 2013a, Section 2.2.2.1).

The time-varying characteristic of environmental noise over specified periods of time is described using statistical noise descriptors in terms of a single numerical value, expressed as dBA. The most frequently used noise descriptors are summarized below (Caltrans 2013a, Section 2.2.2.2):

L_{eq}: The L_{eq}, or equivalent continuous sound level, is used to describe the noise level over a specified period of time, typically 1-hour, i.e., $L_{eq(1)}$, expressed as L_{eq}. The L_{eq} may also be referred to as the "average" sound level.

L_{max}: The maximum, instantaneous noise level.

L_{min}: The minimum, instantaneous noise level.

L_X: The noise level exceeded for specified percentage (x) over a specified time period; i.e., L_{50} and L_{90} represent the noise levels that are exceeded 50 and 90 percent of the time specified, respectively.

L_{dn}: The L_{dn} is the average noise level over a 24-hour day, including an addition of 10 dBA to the measured hourly noise levels between the hours of 10 p.m. to 7 a.m. to account for nighttime noise sensitivity. L_{dn} is also termed the day-night average noise level or DNL.

CNEL: Community Noise Equivalent Level (CNEL), is the average noise level over a 24-hour day that includes an addition of 5 dBA to the measured hourly noise levels

between the evening hours of 7 p.m. to 10 p.m. and an addition of 10 dBA to the measured hourly noise levels between the nighttime hours of 10 p.m. to 7 a.m. to account for noise sensitivity during the evening and nighttime hours, respectively. CNEL and L_{dn} noise levels typically differ by less than 1 dBA and are generally interchangeable.

City of Carson Municipal Code

CMC Article 5, Chapter 5, details the City's approach to noise control and standards. CMC Section 5500 states the City's intent to adopt the Los Angeles County Municipal Code (LACMC) Noise Control Ordinance (Title 12, Chapter 12.08) as the CMC's own noise control ordinance with some key amendments. LACMC Section 12.08.390(B) sets standards for acceptable exterior noise levels. The standards are intended to protect the community from excessive noise levels that have the potential to: (i) interfere with sleep, communication, relaxation, and enjoyment of property; (ii) contribute to hearing impairment; and (iii) adversely affect the value of property. The standards for exterior noise levels are summarized in **Table 10**, *City of Carson Exterior Noise Level Standards*. Noise measurement calculations are provided in **Appendix K** of this IS/MND.

TABLE 10
CITY OF CARSON EXTERIOR NOISE LEVEL STANDARDS

Zone	Time Interval	Hourly Equivalent Sound Level (dBA, L_{eq})
I. Noise Sensitive Area	Anytime	45 dBA
II. Residential Properties (nighttime)	10 p.m. to 7 a.m.	45 dBA
Residential Properties (daytime)	7 a.m. to 10 p.m.	50 dBA
III. Commercial Properties (nighttime)	10 p.m. to 7 a.m.	55 dBA
Commercial Properties (daytime)	7 a.m. to 10 p.m.	60 dBA
IV. Industrial Properties	Anytime	70 dBA

SOURCE: LACMC Section 12.08.390.

CMC Article 5, Chapter 5, Section 5502, provides a list of amendments added to the LACMC for application in the City of Carson. Section 5502 amends CMC Chapter 12.08, Part 4, to address noise standards for construction activities with nearby residential land uses. Long-term construction (defined as more than 21 days of scheduled work) is permitted Monday through Saturday from 7 a.m. to 8 p.m. given construction does not exceed 65 dBA in single-family residential areas, 70 dBA in multi-family residential areas, and 70 dBA in semi-residential/commercial areas. Construction noise levels take precedence over the noise standards listed in Table 10, above. Section 5502(h) lists amendments to the LACMC for procedures for obtaining a variance from the requirements of CMC Article 5, Chapter 5, which may be granted by the Planning Commission for a period not to exceed 2 years, subject to such terms, conditions and requirements as may be reasonable under the circumstances.

City of Carson General Plan Noise Element

In addition to the previously described CMC provisions, the City has also established noise guidelines in the Noise Element of the City's General Plan that are used for planning purposes (City of Carson 2002). These guidelines are based in part on the community noise compatibility guidelines established by the California State Governor's Office of Planning and Research and are intended for use in assessing the compatibility of various land use types with a range of noise levels (Office of Planning and Research 2017). **Table 11**, *City of Carson Guidelines for Noise Compatible Land Use*, provides the guidelines of land use compatibility for community noise sources. The CNEL noise levels for specific land uses are classified into four categories: (1) "normally acceptable"; (2) "conditionally acceptable"; (3) "normally unacceptable"; and (4) "clearly unacceptable." A CNEL value of 65 dBA is considered the dividing line between a "conditionally acceptable" and "normally unacceptable" noise environment for noise sensitive land uses, including residences, and schools. A CNEL value of 70 dBA is considered the dividing line between a "normally acceptable" and "normally unacceptable" noise environment for noise sensitive land uses, including neighborhood parks.

Thresholds of Significance

The City of Carson's noise ordinances regulate construction and operational noise. With respect to the community noise assessment, changes in noise levels of less than 3 dBA are generally not discernable to most people, while changes greater than 5 dBA are readily noticeable and would be considered a significant increase. Therefore, the significance threshold for mobile source noise is based on human perceptibility to changes in noise levels (increases) with consideration of existing ambient noise conditions and City's land use noise compatibility guidelines. Therefore, the proposed project would result in a significant noise impact if:

- For sensitive receptors located in the City of Carson, project construction activities would generate noise levels in one of the following two conditions: (a) in single-family residential areas that exceed a maximum of 65 dBA for single-family residential uses or a maximum of 70 dBA for multi-family residential, semi-residential, or commercial uses between the hours of 7 a.m. and 8 p.m., Monday through Saturday; or (b) in residential areas that exceed the ambient noise-based threshold (ambient noise + 5 dBA) between the hours of 7 a.m. and 8 p.m., Monday through Saturday.
- Project on-site stationary sources (i.e., air conditioning units, pumps) increase existing ambient noise levels at adjacent sensitive receptors by 5 dBA or more if the existing noise levels do not already exceed the City's exterior noise standards, or by 3 dBA or more if the existing noise levels already exceed the City's exterior noise standards or if the resulting noise levels would result in the exceedance of the City's exterior noise standards.
- Project-related off-site traffic increases ambient noise levels by 5 dBA CNEL or more along roadway segments with sensitive receptors, and the resulting noise level occurs on a noise-sensitive land use within an area categorized as "normally acceptable;" or causes ambient noise levels to increase by 3 dBA CNEL or more and the resulting noise occurs on a noise-sensitive land use within an area categorized as "conditionally acceptable," "normally unacceptable," or "clearly unacceptable."

TABLE 11
CITY OF CARSON GUIDELINES FOR NOISE COMPATIBLE LAND USE

Land Use Categories	Community Noise Exposure (CNEL, dB)			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential – Low Density	50–60	60–65	65–75	75–85
Residential Multi-Family	50–60	60–65	65–75	75–85
Transient Lodging, Hotel, Motel	50–65	65–70	70–80	80–85
School, Library, Church, Hospital, Nursing Home	50–60	60–65	65–80	80–85
Auditorium, Concert Hall, Amphitheater	N/A	50–65	N/A	65–85
Sports Arena, Outdoor Spectator Sports	N/A	50–70	N/A	70–85
Playground, Neighborhood Park	50–70	N/A	70–75	75–85
Golf Course, Riding Stable, Water Recreation, Cemetery	50–70	N/A	70–80	80–85
Office Building, Business, Commercial, Professional	50–67.5	67.5–75	75–85	N/A
Agriculture, Industrial, Manufacturing, Utilities	50–70	70–75	75–85	N/A

NOTES:

Based on the Governor's Office of Planning and Research, "General Plan Guidelines" 1990. To help guide determination of appropriate land use and mitigation measures vis-a-vis existing or anticipated ambient noise levels.

A = Normally Acceptable: Specified land use is satisfactory, based upon the assumption buildings involved are conventional construction, without any special noise insulation.

C = Conditionally Acceptable: New construction or development only after a detailed analysis of noise mitigation is made and needed noise insulation features are included in project design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will suffice.

N = Normally Unacceptable: New construction or development generally should be discouraged. A detailed analysis of the noise reduction requirements must be made and noise insulation features included in the design of a project.

U = Clearly Unacceptable: New construction or development should generally not be undertaken.

SOURCE: City of Carson 2002

Noise Sensitive Receptors

The project area is located at 21611 South Perry Street on the north side of East Carson Street east of I-405 and Dominguez Channel. The following land uses are located in proximity to the project area:

- **West** – Land use immediately west of the project area is the Dominguez Channel. Further west of the project area there is the I-405.
- **North** – Land uses north of the project area consists of single-family residential uses approximately 50 feet from the project site.
- **East** – Land uses to the east of the project area consists of non-noise-sensitive commercial uses and noise-sensitive residential uses.
- **South** – Land uses to the south of the project site across East Carson Street consists of non-noise-sensitive commercial uses.

Existing Conditions

The proposed project is located in an area surrounded by a mixture of land uses including residential and commercial uses. The project site is located north of East Carson Street,

east of I-405 and the Dominguez Channel, west of South Perry Street, and south/southwest of Perry Street Mini-Park and single-family residential neighborhoods. An auto repair facility and a truck dealer are located to the east and south across South Perry and East Carson Streets. The City of Carson's General Plan designates the project site as Light Industrial.

To quantify the existing noise environment of the project site, four short-term (15-minute) noise measurements were conducted at locations R1 through R4, located around the project site to the north, northwest, east, and southeast along South Perry Street and East Carson Street. Ambient sound measurements were conducted on Thursday, October 21, 2021, to characterize the existing noise environment in the project vicinity.

The ambient noise measurement was conducted in accordance with the City's standards. The ambient noise measurement was conducted using a Larson-Davis Model LxT Sound Level Meter (SLM). The Larson-Davis LxT SLM is a Type 1 standard instrument, as defined in the American National Standard Institute (ANSI) S1.4. The SLM was calibrated and operated according to manufacturer specifications. The SLM microphone was placed at a height of 5 feet above ground level.

This monitoring location provides a representative characterization of the existing noise conditions within the vicinity of the project site. The results of the ambient noise measurement data are summarized in **Table 12**, *Summary of Ambient Noise Measurements*. As shown in Table 12, the measured L_{eq} ranges from 56.5 to 72.0 dBA. Vehicular traffic is the dominant source for noise in the project area.

TABLE 12
SUMMARY OF AMBIENT NOISE MEASUREMENTS

Site ID	Monitoring Date(s)	Start Time	End Time	L_{eq}	L_{max}	L_{min}
R1 north of project site along residential property line	10/21/2021	8:55 a.m.	9:10 a.m.	58.6	63.1	53.8
R2 at northeast corner of South Perry Street and East 216th Street	10/21/2021	9:17 a.m.	9:32 a.m.	56.5	68.7	50.6
R3 east of project site along South Perry Street	10/21/2021	9:33 a.m.	9:48 a.m.	57.1	70.2	52.3
R4 southeast of project site along and south of East Carson Street	10/21/2021	10:02 a.m.	10:17 a.m.	72.0	82.9	54.0

SOURCE: ESA 2022

Construction Noise

Project construction is expected to commence in first quarter of 2023 and would last through third quarter of 2024. The proposed project consists of (1) site preparation, (2) grading/excavation, (3) drainage/utilities/trenching, (4) foundations/concrete pour, (5) building construction, (6) paving, (7) architectural coating, and (8) landscaping.

On-Site Construction Activities

Noise from construction activities would be generated by the operation of vehicles and equipment involved during various stages of construction: site preparation, building construction, etc. The noise levels generated by construction equipment would vary depending on factors such as the type and number of equipment, the specific model (horsepower rating), the construction activities being performed, and the maintenance condition of the equipment. To more accurately characterize construction-period noise levels, the average (Hourly L_{eq}) noise level associated with each construction phase is estimated based on the quantity, type, and usage factors for each type of equipment used during each construction phase and are typically attributable to multiple pieces of equipment operating simultaneously. Over the course of a construction day, the highest noise levels would be generated when multiple pieces of construction equipment are operated concurrently.

Consistent with LACMC Section 12.08.440 (which was adopted by reference by the City of Carson), the construction noise levels were estimated at the property line of the closest sensitive receptor location. As previously stated, the project site is surrounded by a mix of land uses, including residential and commercial uses. The closest sensitive receptors to the project site are the single-family residences to the north located approximately 50 feet from the project site. It is conservatively assumed that multiple equipment would operate simultaneously. In reality, equipment would likely be dispersed throughout the project site; therefore, the noise levels represent a conservative maximum and actual noise levels could be lower. Further, the closest sensitive receptors in each affected area were analyzed and it is assumed that sensitive receptors located at further distances would experience lower noise levels than those disclosed below. Generally, noise attenuates at a rate of 6 dBA for every doubling of distance from the noise source.[7] **Table 13**, *Construction Equipment and Estimated Noise Levels*, presents the list of construction equipment including approximate quantities per construction phase with reference noise levels.

The estimated noise levels, shown in Table 13**,** assumes the project contractor(s) would equip the construction equipment, stationary or mobile, with properly operating and maintained noise mufflers, consistent with the manufacturers' standard operation procedures. These assumptions represent a worst-case noise scenario as all construction equipment used in a given phase would not typically operate concurrently and at full power, and the location of activities is routinely spread across the construction site, rather than concentrated close to the nearest noise-sensitive receptors.

7 Noise from a localized source (i.e., point source) propagates uniformly outward in a spherical pattern, referred to as "spherical spreading." Stationary point sources of noise, including stationary mobile sources such as idling vehicles, attenuate (i.e., reduce) at a rate between 6 dBA for acoustically "hard" sites for each doubling of distance from the reference measurement, Caltrans, Technical Noise Supplement, September, 2013.

TABLE 13
CONSTRUCTION EQUIPMENT AND ESTIMATED NOISE LEVELS

Construction Phase and Equipment	Noise Level L_{max} at 50 feet (dBA)	Hourly Quantity	Estimated Hourly Noise Level L_{eq} at Residences (dBA)			
Site Preparation						
Air Compressors	80	2	R1	R2	R3	R4
Loaders	80	2				
Skid Steer Loaders	80	1				
Sweepers	85	1				
Dumpers/Tenders	84	2	74	71	73	67
Generator	82	1				
Excavator	85	1				
Backhoes	80	1				
Grading/Excavation						
Excavator	85	1	R1	R2	R3	R4
Graders	85	1				
Loaders	80	2				
Rollers	85	1				
Scrapers	85	3	79	76	78	71
Sweepers/Scrubbers	85	1				
Crawler Tractors	80	2				
Backhoes	80	1				
Concrete/Industrial Saw	90	1				
Dumpers/Tenders	84	2				
Compactors	80	1				
Drainage/Utilities/Trenching						
Air Compressors	80	1	R1	R2	R3	R4
Pumps	77	2				
Rough Terrain Forklifts	75	1				
Sweepers/Scrubbers	85	1	76	74	76	69
Backhoes	80	2				
Compactors	80	1				
Dumpers/Tenders	84	2				
Excavators	85	1				
Generator	82	2				
Foundations/Concrete Pour						
Air Compressors	80	1	R1	R2	R3	R4
Loaders	80	2				
Pumps	77	1				
Rough Terrain Forklifts	75	1	78	75	77	70

TABLE 13
CONSTRUCTION EQUIPMENT AND ESTIMATED NOISE LEVELS

Construction Phase and Equipment	Noise Level L_{max} at 50 feet (dBA)	Hourly Quantity	Estimated Hourly Noise Level L_{eq} at Residences (dBA)			
Sweepers/scrubber	85	1				
Backhoes	80	1				
Concrete/Industrial Saws	90	1				
Compactors	80	1				
Dumpers/Tenders	84	2				
Building Construction						
Air Compressors	80	2	R1	R2	R3	R4
Pumps	77	1				
Rough Terrain Forklifts	75	2				
Cement/Mortar Mixers	80	2	78	76	78	71
Concrete/Industrial Saws	90	2				
Cranes	85	1				
Dumpers/Tenders	84	2				
Forklifts	75	4				
Generator	82	1				
Paving						
Backhoes	80	1	R1	R2	R3	R4
Loaders	80	2				
Pavers	85	1				
Paving Equipment	85	3				
Rollers	85	2	78	75	77	70
Sweepers/Scrubbers	85	1				
Dumpers/Tenders	84	2				
Architectural Coatings						
Air Compressors	80	1	R1	R2	R3	R4
Rough Terrain Forklifts	75	2				
Cement/Mortar Mixers	80	1	72	68	70	64
Landscaping						
Forklifts	75	2	R1	R2	R3	R4
Skid Steer Loaders	80	1				
Dumpers/Tenders	84	1	67	63	65	59
Maximum Combined Noise Levels	**—**	**—**	**81.8**	**79.0**	**80.9**	**74.2**

NOTE:

Noise Levels at 50 feet and Usage Factor are derived from Federal Highway Administration's Roadway Construction Noise Model User's Guide. Usage factors are the ratio of the time that a piece of equipment is in use to the total time that it could be in use. Usage factors are typically attributable to multiple pieces of equipment operating simultaneously.

SOURCE: ESA 2022

As shown in Table 13**,** estimated construction noise levels at the off-site receptors in the vicinity of the project site range from 59 to 81.8 dBA L_{eq}. CMC Section 12.08, Part 4, limits construction noise levels to 65 dBA L_{eq} for semi-residential receptors between the hours of 7 a.m. and 8 p.m. The project construction noise levels per phase would exceed 65 dBA L_{eq} at the nearest sensitive source and impacts would be significant without mitigation. Because it would take a buffer zone of 400 feet from the residences to reduce the construction noise level to 65 dBA Leq (maximum combined construction noise levels range from 82 and 81 dBA Leq, respectively from R1 and R3), it is not feasible or practical to implement a buffer zone for on-site construction activity.

As stated earlier, CMC Article 5, Chapter 5, Section 5502, provides a list of amendments added to the LACMC for application in the City of Carson. Section 5502(c) amends CMC Chapter 12.08, Part 4, to address noise standards for construction activities with nearby residential land uses. Long-term construction (defined as more than 21 days of scheduled work) is permitted Monday through Saturday from 7 a.m. to 8 p.m. given construction does not exceed 65 dBA in single-family residential areas, 70 dBA in multi-family residential areas, and 70 dBA in semi-residential/commercial areas. Construction noise levels take precedence over the noise standards listed in Table 10, above.

In order to meet the criteria of the ambient noise-based threshold (ambient noise + 5 dBA) between the hours of 7 a.m. and 8 p.m., Monday through Saturday, temporary construction noise barriers would be implemented for residences to the north and east of the project site, as described in Mitigation Measure MM-NOI-1. In addition, as stated previously, it is conservatively assumed that multiple equipment would operate simultaneously near the project boundary. In reality, equipment would likely be dispersed throughout the project site; as such, the noisiest equipment, such as paving equipment or concrete saws, would be restricted to have no more than two pieces of the heavy-duty equipment use at the same time within a 50-foot distance of the project site boundary, as described in Mitigation Measure MM-NOI-2. **Table 14**, *Construction Noise Levels with Mitigation,* shows the reduced construction noise levels at the off-site sensitive receivers. Noise levels attributable to on-site construction activity would be reduced, with attenuation provided by the temporary construction noise barriers and the added distance from the sensitive receptors, to comply with the threshold of ambient noise levels plus 5 dBA. With the implementation of Mitigation Measures MM-NOI-1 and MM-NOI-2, Project construction noise would also comply with the City's 65 dBA Leq noise threshold for single-family residences.

TABLE 14
CONSTRUCTION NOISE LEVELS WITH MITIGATION

Sensitive Receptor Location	Estimated Construction Noise (Leq, dBA)	Construction Noise Levels with Mitigation (Leq, dBA)	Construction Noise Threshold (Ambient + 5 dBA)	Significant?
R1	81.8	62.8	63.6	No
R2	79.0	60.5	61.5	No
R3	80.9	58.5	62.1	No
R4	74.2	73.3	77.0	No

SOURCE: ESA 2022

The proposed project would comply with LACMC Section 12.08.440 and CMC Section 7-12.22; the proposed project's construction activities, including delivery and haul routes, would be prohibited between the hours of 7 p.m. and 7 a.m. Monday through Saturday or any time on Sundays or holidays.

Therefore, with respect to a violation of the noise standards and regulations established in the CMC, noise impacts during project construction would be less than significant with implementation of Mitigation Measures MM-NOI-1 and MM-NOI-2.

Off-Site Construction Activities

During all phases of construction, haul and vendor truck trips would be required to bring construction materials and building debris to and from the project site. The temporary addition of the number of trips required per day during construction activities would not result in a doubling of trips along access roads leading to the project site. Therefore, the increase in noise level would be substantially less than the threshold of a 5 dBA increase in an area characterized by normally acceptable and conditionally acceptable noise levels or a 3 dBA increase in an area characterized by conditionally unacceptable or normally unacceptable noise levels. In order to increase traffic noise levels by 3 dBA, the traffic volumes with the proposed project would need to double from the "Existing" to the "with Project" conditions. The proposed project would not cause traffic volumes to double as a result of implementation and operation. Additionally, the off-site haul truck activities are temporary in nature and would only take place for 13 months after which the proposed project would cease to have any significant lasting noise impact on the surrounding areas. Therefore, off-site construction traffic noise impacts would be less than significant and no mitigation measures would be required.

Operational Noise

The existing noise environment in the project vicinity is dominated by traffic noise from nearby roadways, as well as nearby commercial activities. Long-term operation of the proposed project would have a minimal effect on the noise environment in proximity to the project area. Noise generated by the proposed project would result primarily from the added off-site traffic.

Off-Site Traffic Noise

Vehicle trips attributed to operation of the proposed project would increase average daily traffic (ADT) volumes along the major thoroughfares within the project vicinity, which was analyzed to determine if any traffic-related noise impacts would result from project development. Typically, a doubling of traffic volumes increases the hourly equivalent sound level by approximately 3 dBA (FHWA 2018). The proposed project would not double existing daily trips along access roads leading to the project site and traffic noise from the proposed project would generate less than a 3 dBA increase. Therefore, operation of the proposed project would not result in a substantial increase in project-related traffic noise levels over existing traffic noise levels in the project vicinity. The increase in noise level would be substantially less than threshold of a 5 dBA increase in an area characterized by normally acceptable and conditionally acceptable noise levels or 3 dBA increase in an area characterized by conditionally unacceptable or normally unacceptable noise levels. In order to increase traffic noise levels by 3 dBA, the traffic volumes with the proposed project would need to double from the "Existing" to the "With Project" conditions. The proposed project would not cause traffic volumes to double as a result of implementation and operation. As a result, project-related operational traffic noise impacts would be less than significant.

To predict the noise increase due to vehicular traffic, the Federal Highway Administration's Traffic Noise Model (TNM), Version 2.5, was used to predict vehicular traffic noise levels at off-site noise-sensitive receivers based on peak hour trip rates and trip distribution from the traffic study. The estimated noise contribution from project trips was then compared to existing noise levels. The project noise contribution, existing noise levels, and estimated combined noise levels are shown in **Table 15**, *Predicted Existing Traffic Noise Levels*.

TABLE 15
PREDICTED EXISTING TRAFFIC NOISE LEVELS

Roadway Segment	Existing Traffic Noise (CNEL, dBA)	Existing with Project Traffic Noise Level (CNEL, dBA)	Existing with Project Increase over Existing Noise Level	Significant?
Avalon Blvd				
n/o Carson St	70.9	70.9	0.0	No
s/o Carson St	71.1	71.1	0.0	No
Carson St				
btwn Avalon Blvd and I-405 SB Ramps	73.0	73.0	0.0	No
btwn I-405 NB Ramps and Perry St	71.9	71.9	0.0	No
btwn I-405 SB Ramps and I-405 NB Ramps	72.7	72.7	0.0	No
btwn Perry St and Wilmington Ave	71.6	71.7	0.1	No
e/o Wilmington Ave	71.0	71.0	0.0	No
w/o Avalon Blvd	72.0	72.0	0.0	No
I-405 NB Ramps				
n/o Carson St	68.8	68.9	0.1	No
s/o Carson St	61.0	61.0	0.0	No

Roadway Segment	Existing Traffic Noise (CNEL, dBA)	Existing with Project Traffic Noise Level (CNEL, dBA)	Existing with Project Increase over Existing Noise Level	Significant?
I-405 SB Ramps				
n/o Carson St	47.3	47.3	0.0	No
s/o Carson St	69.1	69.1	0.0	No
Perry St				
btwn Project Driveway and Carson St	58.4	59.0	0.6	No
n/o Project Driveway	58.3	58.4	0.1	No
Wilmington Ave				
n/o Carson St	71.1	71.1	0.0	No
s/o Carson St	69.3	69.3	0.0	No

SOURCE: ESA 2022

As shown in Table 15, the predicted project-related traffic noise level increase over existing baseline noise levels along the analyzed roadways by up to 0.6 dBA. A change of less than 1 dBA in sound levels generally cannot be perceived by the human ear and an increase of 3 dBA would be barely perceivable (Caltrans 2013b). As the increase in traffic noise levels generated by the proposed project would not exceed the 3 dBA thresholds barely perceivable by the human ear, the proposed project's traffic noise impact would be less than significant.

Table 16, *Predicted Future Traffic Noise Levels*, lists the future traffic noise levels and future with project traffic noise levels. As shown in Table 16, the predicted project-related traffic noise level increase over future baseline noise levels along the analyzed roadways by up to 0.5 dBA. A change of less than 1 dBA in sound levels generally cannot be perceived by the human ear and an increase of 3 dBA would be barely perceivable (Caltrans 2013b). As the increase in traffic noise levels generated by the proposed project would not exceed the 3 dBA thresholds barely perceivable by the human ear, the proposed project's future traffic noise impact would be less than significant.

TABLE 16
PREDICTED FUTURE TRAFFIC NOISE LEVELS

Roadway Segment	Future Traffic Noise (CNEL, dBA)	Future with Project Traffic Noise Level (CNEL, dBA)	Future with Project Increase over Future Noise Level	Significant?
Avalon Blvd				
n/o Carson St	72.3	72.3	0.0	No
s/o Carson St	71.7	71.7	0.0	No
Carson St				
btwn Avalon Blvd and I-405 SB Ramps	73.6	73.6	0.0	No
btwn I-405 NB Ramps and Perry St	72.5	72.5	0.0	No
btwn I-405 SB Ramps and I-405 NB Ramps	73.3	73.3	0.0	No

Roadway Segment	Future Traffic Noise (CNEL, dBA)	Future with Project Traffic Noise Level (CNEL, dBA)	Future with Project Increase over Future Noise Level	Significant?
btwn Perry St and Wilmington Ave	72.2	72.2	0.0	No
e/o Wilmington Ave	71.7	71.7	0.0	No
w/o Avalon Blvd	72.9	72.9	0.0	No
I-405 NB Ramps				
n/o Carson St	69.1	69.2	0.1	No
s/o Carson St	61.1	61.1	0.0	No
I-405 SB Ramps				
n/o Carson St	47.4	47.4	0.0	No
s/o Carson St	69.3	69.3	0.0	No
Perry St				
btwn Project Driveway and Carson St	58.5	59.0	0.5	No
n/o Project Driveway	58.4	58.5	0.1	No
Wilmington Ave				
n/o Carson St	71.2	71.2	0.0	No
s/o Carson St	69.4	69.4	0.0	No

SOURCE: ESA 2022

On-Site Operational Noise

Project operations include five or six employees on-site throughout the course of the week. There would be two storage managers in the first few months of opening, two employees in the cafe and one or two employees in the mail room. However, none of these employees would be living on–site. Therefore, no noise-sensitive area would be located on the project site. Storage managers and on-site employees in the cafe and the mail room would not generate any substantial noise and there would not be any noise impacts on noise sensitive land uses in proximity of the project site.

Mechanical Equipment

The operation of mechanical equipment that would be installed for the new facility, such as air conditioners, fans, generators, and related equipment, would generate audible noise levels in proximity to the equipment. Mechanical equipment would typically be located on rooftops or within buildings, shielded from nearby land uses by parapet or building walls to attenuate noise and avoid conflicts with noise sensitive land uses in proximity of the project site. All building outdoor mounted mechanical and electrical equipment would be designed to meet the requirements of Municipal Code Section 12.08.390. A conservative exterior noise level reference for air condenser units, the primary source of noise from fixed mechanical equipment, is 81.9 dBA L_{eq} measured at a distance of 5 feet based on a review of noise data from several large shopping center projects in Southern California (Moreno Valley 2015; Pomona 2014).

The analysis conservatively assumes mechanical equipment would be mounted on the building rooftop at the closest edge to the sensitive receptors to the north and east. The sensitive receptors would be approximately 200 feet from the mechanical equipment (or

160 feet from the project site's property line) and the noise level would attenuate by 32 dBA from distance divergence to 49.9 dBA L_{eq}. Since the ambient noise levels in the project vicinity near this sensitive receiver (refer to ambient noise measurement R1) already exceeded the City of Carson's noise standards for stationary operational noise sources, the determination of noise impact is then to compare project-related noise levels to the prevailing ambient noise levels at the sensitive receiver site. The projected noise level of 49.9 dBA Leq would not exceed the significant threshold of 62.1 dBA or 63.6 dBA (ambient noise plus 5 dBA) Leq at the sensitive receptors to the east and north, respectively. Therefore, environmental impacts related to the exposure of persons to or generation of noise levels in excess of established standards during long-term operation of the proposed project would be less than significant.

Loading Activity and Refuse Collection

The proposed project would have on-site refuse collection areas located at the back of the building near the western project site and would be accessed from East Carson Street to the south of the project site boundary.

Refuse collection vehicles would travel on East Carson Street for refuse pickup; however, refuse pickup generally lasts for several minutes similar to refuse pickup services for all other uses in the area, which would generate an incidental amount of noise and would not significantly contribute to permanent noise increases in the area.

Loading activities, such as truck movements/idling and loading/unloading operations, would generate noise levels of approximately 70 dBA Leq at a reference distance of 50 feet from the noisiest portion of the truck (i.e., to the side behind the cab and in line with the engine and exhaust stacks), based on a noise survey that was conducted by ESA at a loading dock facility, which shows that loading dock activity (namely idling semi-trucks and backup alarm beeps) would generate such noise levels. Delivery truck idling is restricted to no more than 5 consecutive minutes in the loading area pursuant to State regulation (Title 13 California Code of Regulations, Section 2485). Pursuant to Title 13 California Code of Regulations, Section 2485, signs would be posted in delivery loading areas specifying this idling restriction. Loading area noise levels at the noise sensitive receptors are summarized in **Table 17**, *Estimated Loading Area Noise Levels (L_{EQ})*. As shown, the proposed project's loading area noise contribution would not increase the ambient noise by more than 5 dBA; therefore, impacts would be less than significant.

TABLE 17
ESTIMATED LOADING AREA NOISE LEVELS (L_{EQ})

Receptor Location	Distance to Receptor Property Line (feet)	Existing Ambient Noise Levels, dBA (L_{eq})[a]	Estimated Loading Area Noise Levels, dBA (L_{eq})	Ambient + Project Noise Levels, dBA (L_{eq})	Significance Threshold, dBA (L_{eq})	Exceed Significance Threshold
Residential uses to the north	160	58.6	59.9	62.3	63.6	No

NOTE:

[a] Existing ambient noise measurement was taken along the project site's northern boundary along the residential property line and is representative of the noise environment in the surrounding area. Noise measurement data is provided as part of **Appendix K** of this IS/MND.

SOURCE: ESA 2022

Composite Noise Impacts from Project Operations

An evaluation of the combined noise from the proposed project's various operational noise sources (i.e., composite noise level) was conducted to conservatively ascertain the potential maximum project-related noise level increase that may occur at the noise-sensitive receptor locations included in this analysis. Noise sources associated with the proposed project would include on-site mechanical equipment, loading/refuse area, and parking area.

Composite noise levels at the noise sensitive receptors are summarized in **Table 18**, *Estimated Composite Noise Levels from Project Operations*. As shown, the proposed project's composite noise contribution would not increase the ambient noise by more than 5 dBA; therefore, impacts would be less than significant.

TABLE 18
ESTIMATED COMPOSITE NOISE LEVELS FROM PROJECT OPERATIONS

	Residential Sensitive Receptors (160 feet north)
Operational Noise Sources	**Noise Levels, dBA Leq**
Existing (Ambient) Noise Level (A)	58.6
Project Composite Noise Sources	
Mechanical equipment	49.9
Loading Area	59.1
Parking Area	34.1
Project Composite Noise Level (B)	**59.6**
Existing Plus Project Composite Noise Level (C) = (A) + (B)[a]	**62.3**
Project Increment (C minus A)	3.7
Exceeds Threshold?	No

NOTE:

[a] Values are added logarithmically (not linearly).

SOURCE: ESA 2022

Mitigation Measure

MM-NOI-1. Temporary construction noise barriers, with a minimum rating of Sound Transmission Class (STC) 30 and Noise Reduction Coefficient (NRC) 0.7, shall be

implemented prior to grading/site preparation beginning on–site near the northern and northeastern project boundaries (R1, R2, and R3) as follows:

- Along the northern project boundary: A noise barrier with a minimum height of 15 feet above grade.
- Beginning at the northeast corner of the subject site and continuing south along the eastern project boundary to 15 feet beyond the southern edge of the multi-family complex located at 21610 S. Perry Street: A noise barrier with a minimum height of 18 feet above grade.

MM-NOI-2. No more than two pieces of the following specific off-road construction equipment shall be used at the same time within 50 feet the north and north-eastern boundary of the project site. Such equipment includes the following:

- Concrete Saws
- Pavers
- Paving Equipment
- Generators
- Pumps

These pieces of equipment have the highest reference noise level as indicated by the Federal Highway Administration's Roadway Construction Noise Model User's Guide. By limiting the number of noisy equipment operating at the same time within 50 feet of the north and north-eastern boundary of the project site, the cumulative noise effect from multiple equipment will be reduced.

b) The project improvements would be constructed using typical construction techniques. As such, it is anticipated that the equipment to be used during construction would not expose persons to or generate excessive groundborne vibration. Post-construction on-site activities would be limited to commercial uses that would not generate excessive groundborne vibration.

Vibration Principles and Descriptors

Groundborne vibration from development is primarily generated from the operation of construction equipment and from vehicle traffic. Groundborne vibration propagates from the source through the ground to adjacent buildings by surface waves. Vibration energy dissipates as it travels through the ground, causing the vibration amplitude to decrease with distance away from the source. Vibration in buildings is typically perceived as rattling of windows, shaking of loose items, or the motion of building surfaces. The vibration of building surfaces also can be radiated as sound and heard as a low-frequency rumbling noise, known as groundborne noise. Vibration levels for potential structural damage is described in terms of the peak particle velocity (PPV) measured in inches per second (in/sec).

Groundborne vibration is generally limited to areas within a few hundred feet of certain types of industrial operation and construction activities such as pile driving. Road vehicles

rarely create enough groundborne vibration amplitude to be perceptible to humans unless the receiver is in immediate proximity to the source or the road surface is poorly maintained and has potholes or bumps. If traffic, typically heavy trucks, does induce perceptible building vibration, it is most likely an effect of low-frequency airborne noise or ground characteristics.

Building structural components also can be excited by high levels of low-frequency airborne noise (typically less than 100 Hz). The many structural components of a building, excited by low-frequency noise, can be coupled together to create complex vibrating systems. The low-frequency vibration of the structural components can cause smaller items such as ornaments, pictures, and shelves to rattle, which can cause annoyance to building occupants.

Human sensitivity to vibration varies by frequency and by receiver. Generally, people are more sensitive to low-frequency vibration. Human annoyance also is related to the number and duration of events; the more events or the greater the duration, the more annoying it becomes. Groundborne vibration related to human annoyance is generally related to root mean square (rms) velocity levels, and expressed as velocity in decibels (VdB).

Regulatory Framework

The City of Carson does not address vibration either in its respective municipal codes or in the Noise Element of the General Plans. With respect to groundborne vibration from construction activities, Caltrans has adopted guidelines/recommendations to limit groundborne vibration based on the age and/or condition of the structures that are located in close proximity to construction activity. With respect to residential and commercial structures, Caltrans' technical publication, titled Transportation- and Construction-Induced Vibration Guidance Manual, provides a vibration damage potential threshold criteria of 0.5 inches per second PPV for historic and older buildings, 1.0 inch-per-second PPV for newer residential structures, and 2.0 inches per second PPV for modern industrial/commercial buildings. In addition, the guidance also sets 0.035 PPV as the threshold for "distinctly perceptible" human response to steady state vibration (Caltrans 2013b).

According to the Federal Transit Administration, ground vibrations from construction activities very rarely reach the level that can damage structures. A possible exception is the case of old, fragile buildings of historical significance where special care must be taken to avoid damage. The construction activities that typically generate the most severe vibrations are blasting and impact pile driving, which would not be used for the proposed project. The proposed project would use construction equipment such as skid steer loaders and excavators, which would generate groundborne vibration during excavation and foundation activities. Based on the vibration data by the Federal Transit Administration, typical vibration velocities from the operation of a large bulldozer would be approximately 0.089 inches per second PPV at 25 feet from the source of activity, 0.031 inches per second PPV at 50 feet distance, and 0.011 inches per second PPV at 100 feet distance.

Construction Vibration

The nearest off-site single-family residential buildings are located to the north of the project site, which are approximately 50 feet from the project site. At a distance of 50 feet, the maximum vibration level (using large bulldozer as an example, as shown above) would be reduced from the level measured at 25 feet and would be well below the Caltrans construction vibration structure damage criteria as the proposed project would not generate vibration levels at nearby buildings that would exceed the 0.5 inches per second PPV structural damage threshold or the 0.035 inches per second PPV "distinctly perceptible" human response threshold. Therefore, construction vibration impacts would be less than significant and mitigation measures are not required.

Operational Vibration

Once construction activities have been completed, there would be no substantial sources of vibration activities from the project area. The proposed project's operations would include industrial-grade stationary mechanical and electrical equipment, such as pumps, compressor units, and exhaust fans, which would produce limited levels of vibration.

Groundborne vibration generated by each of the above-mentioned equipment and activities would generate approximately up to 0.0014 inches per second PPV at locations adjacent (within 50 feet) to the project site (ASHRAE 1999). The potential vibration levels from all project operational sources at the closest existing building and human annoyance receptor locations would be less than the significance criteria for building damage and human annoyance of 0.5 inches per second PPV and 0.035 inches per second PPV, respectively as the closest sensitive receptors are approximately 50 feet away from the project site. As such, vibration impacts associated with operation of the proposed project would be less than significant, and no mitigation measures are required.

c) The project area is located approximately 3.3 miles from the Compton/Woodley Airport, 4 miles from Long Beach International Airport and Torrance/Zamperini Field. However, the project site is located outside of these airports' 65 dBA CNEL noise contour and outside of the airport influence area. Therefore, construction or operation of the proposed project would not expose people to excessive airport related noise levels and impacts would be less than significant.

XIV. Population and Housing

Issues (and Supporting Information Sources)	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
XIV. POPULATION AND HOUSING—Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion

a) A project could induce population growth in an area directly or indirectly. For example, direct population growth can occur by introducing new businesses or residential areas and indirect growth by extending roads or other infrastructure. The project site is located in an urbanized area and is currently vacant and undeveloped. The proposed project would develop a self-storage facility with ancillary office and retail uses. Given these uses, which are not residential in nature, the proposed project would not induce direct population growth.

Employment opportunities during operation of the proposed project are not anticipated to substantially increase the population or housing in the area, since the employees would likely already live in or near the existing urbanized project area or consist of regional commuters. The proposed project would not contribute to employment growth in the City of Carson forecasted by the 2020–2045 RTP/SCS (SCAG 2020). Based on SCAG's forecast, the anticipated 5 to 6 employees that would be generated under the proposed project would account for 0.009 percent of the employee forecast for 2024, which is the proposed project's expected year of operation. Further, indirect growth from extension of roads and infrastructure would not be anticipated, as the proposed project would not add any new roadways, and would be served by existing infrastructure with minor proposed upgrades and connections to accommodate the proposed project. Therefore, the proposed project would not introduce unplanned infrastructure that was not previously evaluated in the adopted General Plan. The proposed project would introduce a self-storage facility that would serve the area population; however, the provision of storage services is not anticipated to induce population growth as these services are already widely available and the availability of these services does not determine housing growth. Therefore, the proposed project would not result in a substantial population increase during operation, and impacts would be less than significant.

b) The project site is located in an urbanized area of the City of Carson and is currently vacant and undeveloped. No residential uses are located on the project site. Therefore, no impacts related to the displacement of substantial quantity of existing residences would occur.

XV. Public Services

Issues (and Supporting Information Sources)	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
XV. PUBLIC SERVICES—Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:				
i) Fire protection?	☐	☐	☒	☐
ii) Police protection?	☐	☐	☒	☐
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

Discussion

a.i) LACFD serves the City of Carson and responds from six fire stations located within the City. The closest station to the project site is LACFD Station 127, approximately 1.6 miles southwest from the project site at 127 West 223rd Street. In conformance with the California Constitution Article XIII, Section 35(a)(2) and *City of Hayward v. Trustee of California State University*, 242 Cal. App. 4th 833 (2015), the City has and will continue to meet its legal obligations to provide adequate public safety services, including fire protection and emergency medical services, and the need for additional fire protection and emergency medical services is not an environmental impact that CEQA requires a project proponent to mitigate.

Construction

Construction of the proposed project could increase the potential for on-site fires from such sources as the operation of mechanical equipment, the use of flammable construction materials, or the careless disposal of cigarettes. However, implementation of "good housekeeping" procedures by the construction contractors and the work crews would minimize fire hazards associated with the construction of the proposed project. Such measures would be in effect during construction of the proposed project.

Construction activities could also have the potential to affect fire protection services, such as emergency vehicle response times, by adding construction traffic to the street network and by partial lane closures during street improvements, utility installations, and construction staging. However, these impacts would be less than significant, as the Applicant would be required to implement a traffic management plan that would ensure that at least one lane remains open and emergency access is maintained during construction. In addition, any lane closures that would occur would require review and approval by the LACFD. Implementation of a traffic management plan would minimize

the effects of construction on vehicular traffic, including emergency vehicles, and assist in the orderly flow of vehicular circulation in the area of the proposed project.

In summary, project construction would be temporary in nature and, thus, would not require additional fire protection and emergency services to the extent that there would be a need for new or expanded fire facilities in order to maintain acceptable service ratios, response times, or other performance objectives of the LACFD. Therefore, construction-related impacts to fire protection services would be less than significant.

Operation

The proposed project would develop a currently vacant site with a self-storage facility and ancillary office and retail uses. The proposed project would be served by the LACFD Station 36, approximately 1.46 miles southwest from the project site at 127 West 223rd Street. While the proposed project would introduce new uses to a currently vacant site, the proposed buildings would include installation of an automatic fire sprinkler system. Specifically, fire suppression within the proposed buildings would consist of an NFPA-13 sprinkler system. In addition, construction type is to be Type-II non-combustible. Furthermore, as required by the California Health and Safety Code, the proposed project would be required to comply with all requirements pertaining to fire protection systems, such as the adequate provisions of smoke alarms, fire extinguishers, building access, emergency response notification systems, and fire flows. With adherence to California Health and Safety Code, LACFD standards and regulations, the proposed project would install adequate fire protection systems and, thus, would not result in the need for new or physically altered governmental facilities, the construction of which could cause a significant environmental impact. Furthermore, a regional fire Hydrant Flow Test was performed by Cal Water for the existing hydrant on the west side of Perry Street, within the immediate vicinity of the project site, which confirms the available pressure and capacity of the existing fire hydrant is sufficient (refer to **Appendix I** of this IS/MND). Therefore, impacts to fire protection services would be less than significant.

a.ii) The project site is in the City of Carson, which is under the Los Angeles County Sheriff (LASD)'s Carson Station jurisdiction. The project site is within the Carson Station's service area and is approximately located 0.56 miles north of the project site at 21356 S. Avalon Boulevard. In conformance with the California Constitution Article XIII, Section 35(a)(2) and the *City of Hayward v. Trustee of California State University* ruling, the City has and will continue to meet its legal obligations to provide adequate public safety services, including police protection, and the need for additional police protection is not an environmental impact that CEQA requires a project proponent to mitigate.

The self-storage facility would feature a contemporary 24-hour security system including keypad entry security gates, individually monitored and alarmed storage units, video surveillance monitoring, burglar alarms, as well as an intercom system. The on-site manger and/or other office personnel would monitor these security systems on a control panel during hours of operation. Should there be a violation of any of the security systems when the management office is closed, an independent security firm will respond. Thus,

implementation of the proposed project would not significantly increase demand for police protection services provided by the LASD. In addition, the proposed project would be subject to site plan review by the City prior to project approval to ensure that it meets City requirements in regard to safety (e.g., nighttime security lighting); thus, discouraging criminal activity and reducing demand for police protection services. As such, the proposed project would not require LASD to expand or construct new stations to serve the project site and impacts would be less than significant.

a.iii) The proposed project does not include a residential component, which would create housing or any other facility that would increase the local population that would require an increase of student at local schools. Therefore, no impact would occur.

a.iv) The City of Carson contains approximately 599 acres of open space and parkland. This includes Neighborhood and Community Parks, Golf Courses, a Blimp Port, as well as drainage courses and utility transmission corridors (City of Carson 2004). Further, 243 acres of recreational open space is provided by both California State University Dominguez Hills and public schools located in the City (City of Carson 2004). The City's standard for permanent public open space is 4 acres per 1,000 residents. The closest park to the project site is Perry Street Mini-Park, located approximately 32 feet northeast of the project site at the corner of 215th Place and South Perry Street. Project visitors are not anticipated to make use of the Perry Street Mini-Park to an extent that would affect its performance. The proposed project would develop commercial uses and would result in a minimal increase in employees at the project site. The proposed project would not introduce inhabitants to the project area that would require the use of parks or recreational facilities in the vicinity of the project site. Therefore, no impact would occur.

a.v) The proposed project would not introduce inhabitants to the project area that would require the use of library facilities in the vicinity of the project site. Therefore, no impact would occur.

XVI. Recreation

Issues (and Supporting Information Sources)	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
XVI. RECREATION				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion

a) As the proposed project does not include residential uses, the proposed project would not result in increased use of recreational facilities. Project visitors are not anticipated to make use of the Perry Street Mini-Park to an extent that would cause or accelerate its substantial physical deterioration. Therefore, no impacts to neighborhood and regional parks or other recreational facilities would occur.

b) The proposed project would not include the construction or expansion of recreational facilities. In addition, the proposed project does not include residential uses which would require the construction or expansion of recreation facilities. Therefore, no impacts related to the adverse physical effect on the environment due to the construction or expansion of recreation facilities would occur.

XVII. Transportation

Issues (and Supporting Information Sources)	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
XVII. TRANSPORTATION—Would the project:				
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b) Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
d) Result in inadequate emergency access?	☐	☐	☒	☐

Background

This impact analysis presented in this section is informed, in part, by the 21611 South Perry Street Local Transportation Assessment (LTA) for the proposed project prepared by Fehr & Peers on January 18, 2022, which is included as **Appendix L** of this IS/MND. The LTA addresses the proposed project's operational impacts on traffic operations at nearby intersections as well as site access (i.e., driveway queuing, parking supply/demand). Parking is not an environmental impact requiring evaluation under CEQA, and therefore is not discussed in the analysis below.

Discussion

a) The project site is one vacant parcel that consists of approximately 2.8 acres located to the east of the I-405 interchange with East Carson Street. The project site is bounded by a single-family residential neighborhood to the north, a mix of residential and commercial uses to the east, a truck dealership to the south, and the Dominguez Channel to the west. Access to the project site would be provided by a new driveway on South Perry Street between East 216th Street and East Carson Street.

The project site is located adjacent to a variety of existing transportation facilities. I-405 provides the primary regional access to the project site; major arterials that would be used for local access to the project site include East Carson Street in the east/west direction and Avalon Boulevard and Wilmington Avenue in the north/south direction. With respect to roadways, the Transportation and Infrastructure Element of the City of Carson General Plan mainly considers roadway classifications as defined in the Carson Master Plan of Streets (e.g., local streets, collector streets), designated truck facilities, and traffic operations standards based on the concept of level of service (LOS). The proposed project does not propose to change any roadway classifications or established truck routes. Furthermore, the LOS measure used to govern roadway operations in the General Plan is no longer used in CEQA to determine the significance of a transportation impact. CEQA Guidelines Section 15064.3(b), which was adopted in December 2018 by the California Natural Resources Agency, require lead agencies to evaluate transportation impacts based

on VMT. Project consistency with CEQA Guidelines Section 15074.3(b) is discussed below under Issue b).

The project site is served by one public transit route, Long Beach Transit Route 4, which provides connections to the Los Angeles Metropolitan Transportation Authority (Metro) J Line bus rapid transit at Carson Station and the Metro A Line light rail at Del Amo Station. There are limited bicycle facilities located near the project site; East Carson Street is designated as a Class III bike route west of I-405. Roadways adjacent to the project site generally have of 4- to 8-foot-wide sidewalks, but there are no marked crosswalks or pedestrian signals. As detailed in the City of Carson Master Plan of Bikeways and Metro's Active Transportation Strategic Plan, there are several bike lanes and bike routes planned near the project site as well as a planned extension of the bike path along both sides of the Dominguez Channel, east of I-405. There is an existing flood control easement that separates the Dominguez Channel from the project site where the bike path could be located. Implementation of the proposed project would not remove or impede access to existing bicycle facilities, sidewalks, or transit services adjacent to the project site, nor would it affect future planned bicycle facility improvements along other nearby roadways or the Dominguez Channel.

Therefore, based on the above, impacts to program plans, ordinances, or policies addressing the circulation system would be less than significant.

b) The Technical Advisory on Evaluating Transportation Impacts in CEQA (Office of Planning and Research 2018) was used to conduct the VMT analysis pursuant to CEQA Guidelines Section 15064.3, Subdivision (b). Based on the proposed project characteristics, it can be classified as local-serving retail. As described in the Technical Advisory, local-serving retail can be screened from a quantitative VMT analysis for CEQA purposes:

> *"By adding retail opportunities into the urban fabric and thereby improving retail destination proximity, local-serving retail development tends to shorten trips and reduce VMT."*

Based on the above, the proposed project would not conflict with CEQA Guidelines Section 15064.3, Subdivision (b), and the impact would be less than significant.

c) An impact would occur if the proposed project substantially increased hazards due to a design feature. A review of existing site conditions and nearby roadways determined that there are no existing hazardous design features, such as sharp curves, non-standard driveways, or dangerous intersections, on–site or within the vicinity of the project site. The site was previously developed with commercial/industrial uses, and the proposed project would not introduce any such design hazards or include any uses that are incompatible with normal traffic operations. The proposed project would provide direct access to and from South Perry Street from a new driveway between East 216th Street and East Carson Street. The project driveway approach would be stop-controlled (i.e., not signalized). The LTA prepared for the proposed project (refer to **Appendix L** of this IS/MND) evaluated

operating conditions for the proposed project driveway, and concluded that no potential safety issues would result from queueing at the driveway.

Impacts related to traffic hazards or incompatible uses would be expected to be similar and as such, would be less than significant.

d) A significant impact would occur if the design of the proposed project would not satisfy local emergency access requirements. As analyzed in Section IX, *Hazards and Hazardous Materials*, above, while primary access to the project site would be provided from South Perry Street, vehicles travelling to the project site during construction or operation would do so via East Carson Street, a City designated evacuation route as identified in the Multi-Hazard Functional Plan for emergency response within the City (City of Carson 2004). During construction, East Carson Street may require temporary partial lane closures. As part of the project entitlement process, the Applicant would be required to implement a traffic management plan, which would ensure that at least one lane remains open and emergency access is maintained during construction. In addition, based on the operational analysis conducted in the LTA (refer to **Appendix L** of this IS/MND), additional traffic generated by the proposed project is not anticipated to result in a noticeable increase in roadway congestion that would affect emergency access provided from East Carson Street, and operations are not likely to interfere with an adopted emergency response plan or emergency evacuation plan. Therefore, impacts related to emergency access would be less than significant.

XVIII. Tribal Cultural Resources

Issues (and Supporting Information Sources)	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
XVIII. TRIBAL CULTURAL RESOURCES—Would the project:				
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or	☐	☒	☐	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

Discussion

The following discussion is based on the 21611 Perry Street Self-Storage Project, Cultural Resources Assessment Report, located in **Appendix C** of this IS/MND, as well as consultation conducted between tribes requesting consultation and the City, as provided in **Appendix M** of this IS/MND. **Appendix C** is confidential and not for public distribution.

a.i, a.ii) The NAHC maintains a confidential SLF, which contains records of sites of traditional, cultural, or religious value to the Native American community. The NAHC was contacted on November 2, 2021, to request a search of the SLF. The NAHC responded to the request in a letter dated December 16, 2021, with the results of the SLF search conducted by the NAHC, which indicated a negative search result. The NAHC provided a list of tribes who could be contacted for information regarding known and recorded sites.

Additionally, a records search was received from the SCCIC on December 7, 2021, and archival research was done in house to determine whether the study area contains any recorded cultural resources that have been previously identified or evaluated. This includes data on prehistoric sites, historic sites, multicomponent sites, prehistoric isolates, historic period isolates, and historic built resources within the project site and a 0.5-mile radius around it.

The records search included a review of all recorded archaeological resources and previous studies within a 0.5-mile radius of the project site. The records search results indicate five cultural resources studies have been conducted within the records search radius. The entirety of the 0.5-mile records search radius has been included in previous cultural resources studies. Of the five previous studies, one (LA-04512) overlaps the entirety of the project site. This study is a cultural resources inventory of the City conducted in 1977 and included extensive archival research and field survey of accessible parcels within the City.

In reviewing the report, it is difficult to discern if the project site was included as part of the inventory's field survey. The records search revealed that one cultural resource (P-19-188395) has been previously recorded within the 0.5-mile radius of the project site. This resource is a historic-period built environment resource consisting of the Shell Oil Refinery complex located approximately 0.20 miles north of the project site. No resources have been recorded within the project site. A survey of the project site further did not result in the recordation of any additional resources.

Pursuant to the requirements of AB 52 requiring government-to-government consultation, the City, as the lead agency, sent consultation notification letters via e-mail and certified U.S. mail to Native American groups geographically and culturally affiliated with the project site on October 28, 2021. The letters included a description of the proposed project, the description of the project location, and a notification of the type of consultation being initiated. To date, the City has received one response from the Native American groups regarding consultation, the details of which are provided below.

Pursuant to SB 18, the City contacted the NAHC to request the list of tribes who should be consulted regarding the proposed projects. The City has reached out to the list of tribes and is engaging in consultation with any tribes requesting SB 18 consultation.

As indicated above, only one response was received. The Gabrieleño Band of Mission Indians-Kizh Nation responded on November 10, 2021, stating that the project site is located within the tribe's traditional ancestral territory and requested formal government-to-government consultation. The Gabrieleño Band of Mission Indians-Kizh Nation provided in a subsequent email and during phone call consultations historic topo maps of the project site as well as information regarding the Rancho San Pedro, local Native American villages, and information regarding the Dominguez Wash. The Gabrieleño Band of Mission Indians-Kizh Nation indicated that the project site is archaeologically sensitive, but did not identify any known tribal cultural resources (as defined in Public Resources Code Section 21074) within the project site. The Tribe recommended monitoring during construction and the City agreed with this recommendation and the Tribe and the City agreed to monitoring mitigation. The Tribe provided mitigation measures for tribal cultural resources as well as human remains they would like used for the project and the City adapted for the project. Upon approval from the Tribe of the mitigation measures, the City closed consultation on Monday, March 28, 2022.

Although no substantial evidence was provided to support the Kizh Tribal claim that any known sacred lands or tribal cultural resources overlap with or occur within the project site outside of the previously remediated areas, the City's review of the Kizh Tribal information concludes that the project site has potentially high sensitivity for buried archaeological resources (outside or below the previous remediation areas) that, once encountered, could potentially be considered a tribal cultural resource as defined in Public Resources Code Sections 21074, 5020.1(k), or 5024.1.

Should any unanticipated prehistoric archaeological resources be determined during consultation between the Tribes and the City to potentially be tribal cultural resources, Public Resources Code Section 21084.3 would apply. Should the lead agency (City) determine that the project may cause a substantial adverse change to a tribal cultural resource, the agency will need to consider avoidance and preservation of the resources as well as mitigation measures outlined in Public Resources Code Section 21084.3(b)(1)–(4), which can be considered to avoid or minimize the significant adverse impacts. As stated above, as required by AB 52, consultation between the City and the Gabrieleño Band of Mission Indians-Kizh Nation was conducted. No identified tribal cultural resources as defined in Public Resources Code Section 21074(a)(1) that are listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1 (k) have been identified within the project site. However, implementation of Mitigation Measure MM-TCR-1 would avoid and/or substantially lessen the above impact by ensuring that any unanticipated tribal cultural resources are appropriately identified, documented, evaluated, and treated promptly, so they are not inadvertently damaged or destroyed. With implementation of Mitigation Measure MM TCR-1, the impact to any unanticipated tribal cultural resources would be less than significant.

The following mitigation measures are also required to address potentially significant impacts to tribal cultural resources.

Mitigation Measure

MM-TCR-1. Retain a Native American Monitor Prior to Commencement of Ground-Disturbing Activities.

A. The project applicant/lead agency shall retain a Native American Monitor from or approved by the Gabrieleño Band of Mission Indians – Kizh Nation. The monitor shall be retained prior to the commencement of any "ground-disturbing activity" for the subject project at all project locations (i.e., both on-site and any off-site locations that are included in the project description/definition and/or required in connection with the project, such as public improvement work) outside or below the previous remediation areas. "Ground disturbing activity" shall include, but is not limited to, demolition, pavement removal, potholing, auguring, grubbing, tree removal, boring, grading, excavation, drilling, and trenching.

B. A copy of the executed monitoring agreement shall be submitted to the lead agency prior to the commencement of any ground-disturbing activity, or the issuance of any permit necessary to commence a ground-disturbing activity.

C. The monitor will complete daily monitoring logs that will provide descriptions of the relevant ground-disturbing activities, the type of construction activities performed, locations of ground disturbing activities, soil types, cultural-related materials, and any other facts, conditions, materials, or discoveries of significance to the Tribe. Monitor logs will identify and describe any discovered tribal cultural resources (TCRs), including but not limited to, Native American cultural and historical artifacts, remains, places of significance, etc., (collectively, tribal cultural resources, or "TCR"), as well as any

discovered Native American (ancestral) human remains and burial goods. Copies of the monitor logs will be provided to the project applicant/lead agency.

D. On-site tribal monitoring shall conclude upon the latter of the following (1) written confirmation to the Kizh Nation from a designated point of contact for the project applicant/lead agency that all ground-disturbing activities and phases that may involve ground-disturbing activities on the project site or in connection with the project are complete; or (2) a determination and written notification by the Kizh Nation to the project applicant/lead agency that no future, planned construction activity and/or development/construction phase at the project site possesses the potential to impact Kizh Nation TCRs.

E. Upon discovery of any TCRs, all construction activities in the immediate vicinity of the discovery shall cease (i.e., not less than the surrounding 50 feet) and shall not resume until the discovered TCR has been fully assessed by the Kizh Nation monitor. A meeting shall take place between the Applicant, the qualified Archaeologist, the Kizh Nation, and the City to discuss the significance of the find and whether it qualifies as a tribal cultural resource pursuant to Public Resources Code Section 21074(a) and appropriate treatment under CEQA. The Project Archaeologist shall provide a treatment plan as recommended in Mitigation Measure CUL-MM-1, that shall incorporate the monitoring Kizh Nation's treatment and curation recommendations. The preferred treatment under CEQA is avoidance, but if not feasible, may include, but would not be limited to, capping in place, excavation and removal of the resource and follow-up laboratory processing and analysis, interpretive displays, sensitive area signage, or other mutually agreed upon measures. The Kizh Nation will recover and retain all discovered TCRs in the form and/or manner the Kizh Nation deems appropriate, at the Kizh Nation's sole discretion, and for any purpose the Kizh Nation deems appropriate, including for educational, cultural, and/or historic purposes.

XIX. Utilities and Service Systems

Issues (and Supporting Information Sources)	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
XIX. UTILITIES AND SERVICE SYSTEMS—Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the project and responsibly foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, State, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

This impact analysis presented in this section is informed, in part, by the Utilities Memorandum provided in **Appendix I** of this IS/MND.

Discussion

a) ***Water***

Construction

During construction activities, there would be a temporary, intermittent demand for water for such activities as soil watering for site preparation, fugitive dust control, concrete preparation, painting, cleanup, and other short-term activities. Construction-related water usage is not expected to have an adverse impact on available water supplies, and impacts would be less than significant.

As detailed in the Utilities Memorandum, the proposed project would require the installation of water distribution lines and minor work associated with lateral connections to the public water main. Project contractors would be required to coordinate with Cal Water Dominguez District and the County of Los Angeles prior to construction. Ground disturbance associated with the expansion of these water distribution lines is analyzed throughout this environmental document. With implementation of mitigation measures within this document, construction impacts associated with the proposed expanded water lines would be less than significant.

Operation

No new sources of water supply, such as groundwater, are required to meet the proposed project's water demand. Potable water would be supplied by the Cal Water Dominguez

District. Based on the 2020 Urban Water Management Plan (UWMP), the Cal Water Dominguez District receives its water from 17 percent groundwater, 15 percent recycled water, and 68 percent purchased water (California Water Service 2020).

While the self-storage facilities would not contain any water fixtures, the proposed retail uses and landscaping would contribute to the proposed project's operational water demand. As detailed in the Utilities Memorandum, the total water demand generated by the proposed project would be 1.85 acre-feet per year (AFY). However, as fire water demand will create a much greater immediate impact on the water network as compared to the proposed project's domestic uses, the primary means for analyzing infrastructure capacity is based on fire water demand. As further described in the Utilities Memorandum, Furthermore, a regional fire Hydrant Flow Test was performed by Cal Water for the existing hydrant on the west side of Perry Street, within the immediate vicinity of the project site, which confirms the available pressure and capacity of the existing fire hydrant is sufficient (refer to **Appendix I** of this IS/MND). Furthermore, Cal Water has confirmed that adequate water services are available to serve the proposed project from existing commitments (refer to **Appendix I** of this IS/MND). Therefore, operation-related water usage would not have an adverse impact on available water supplies, and impacts would be less than significant.

Wastewater Treatment

Construction

Construction activities for the proposed project would not result in wastewater generation as construction workers would utilize portable restrooms, which would not contribute to wastewater flows to the local wastewater system. Therefore, no impact would occur related to wastewater treatment generation during construction.

As detailed in the Utilities Memorandum, the proposed project would require construction of new wastewater infrastructure to serve the proposed buildings, consisting of minor work to connect to the public sewer main. Ground disturbance associated with the expansion of these sewer lines is analyzed throughout this environmental document. With implementation of mitigation measures within this document, construction impacts associated with the proposed expanded sewer lines would be less than significant.

Operation

The Los Angeles County Sanitation Districts (LACSD) provide wastewater treatment for much of Los Angeles County including the project site. LACSD has confirmed service to the project site via a will serve letter provided in **Appendix I** of this IS/MND. Wastewater generated by the proposed project would be treated at the LACSD's Joint Water Pollution Control Plant (JWPCP) located in the City of Carson, which has a capacity of 400 million gallons per day (mgd) and currently processes an average flow of 261.1 mgd (LACSD 2008). The capacity of this facility is limited to levels associated with approved growth identified by the SCAG. In addition, payment of a standard sewer connection fee and ongoing user fees would be required to ensure that sufficient capacity is available.

As detailed in the Utilities Memorandum, the proposed project would contribute 12,250 gallons per day (GPD) of wastewater, which is a negligible wastewater generation compared to the available capacity at the JWPCP. In addition, payment of standard sewer connection fees and ongoing user fees would ensure that sufficient capacity is available. Therefore, it is not anticipated that project implementation would require construction of new or the expansion of existing wastewater facilities and impacts would be less than significant.

Stormwater

As discussed above in Section X, *Hydrology and Water Quality*, the project site drains towards the west to an existing 5-foot storm drain inlet that outlets directly to the Dominguez Channel. Under the proposed project, the project site would drain from east to west via gutters that wrap around the proposed buildings. The runoff generated would be treated by a 10 foot by 20-foot Modular Wetland System that would discharge via an 18-inch pipe to the existing 5-foot storm drain inlet, as under existing conditions In addition, the proposed project would be required to complete a SWPPP in accordance with the NPDES, which would reduce the potential for stormwater impacts on- and off-site. Furthermore, once implementation of the proposed project is complete, the project site would contain approximately 10.2 percent landscaped areas. Therefore, impacts related to stormwater drainage would be less than significant.

Electric Power, Natural Gas, and Telecommunications

The project site is located in an urbanized area of the City of Carson and is currently vacant and undeveloped. The project site was previously developed and historically served by electric power, natural gas, and telecommunications providers that still exist in the vicinity of the project site. With regard to existing electrical distribution lines, the proposed project would be required to coordinate electrical infrastructure removals or relocations with SCE and comply with site-specific requirements set forth by SCE, which would ensure that service disruptions and potential impacts associated with grading, construction, and development within SCE easements would be minimized. As described in the Utilities Memorandum, development of the proposed project would require the construction of a transformer pad. In addition, the proposed project would also be required to coordinate with SoCalGas to identify the locations and depth of all existing gas lines and avoid disruption of gas service to other properties. Furthermore, the proposed project would implement any necessary connections and upgrades required by SoCalGas to ensure that SoCalGas would be able to adequately serve the proposed project. With regard to telecommunication, the proposed project would be required to coordinate with AT&T to connect services to the project site. Specifically, a tie in overhead at the existing overhead line on East Carson Street would be required. Well serve letters from these utilities are provided in **Appendix I** of this IS/MND. Implementation of the proposed project would not require the extension of or new electric power, natural gas, and telecommunication infrastructure and there would be no impact.

b) The proposed project would have sufficient water supplies available to serve the project site and responsibly foreseeable future development during normal, dry and multiple dry

years. As detailed above in Section XIX (a) and as detailed in the Utilities Memorandum, the total water demand for the proposed project would be 1.85 AFY Cal Water has confirmed that adequate water services are available to serve the proposed project from existing commitments (refer to **Appendix I** of this IS/MND). Therefore, water usage would not have an adverse impact on available water supplies, and impacts would be less than significant.

c) The JWPCP serves the project site and the capacity of this facility is limited to levels associated with approved growth identified by the SCAG. As discussed above in response to Section XIX (a), the proposed project would contribute 12,250 GPD of wastewater, which is a negligible increase compared to the available capacity of 138.9 mgd at the JWPCP.[8] In addition, payment of standard sewer connection fees and ongoing user fees would ensure that sufficient capacity is available. Therefore, a less-than-significant impact would occur.

d) A substantial amount of solid waste is disposed of throughout the region, requiring ongoing landfill expansions. According to the City of Carson General Plan, solid waste generated by industrial, commercial, and residential uses in the City is collected by Waste Management. Waste Management collects an estimated 153,500 tons from commercial and industrial customers per year. Solid waste collected by Waste Management is transported to the Carson Transfer Station and Materials Recovery where it is sorted by material type. The 10-acre facility has a permitted capacity of 5,300 tons per day. Once the materials have been sorted, tires, green waste, steel, and wood are diverted to special facilities for disposal and recycling. Excess solid waste is sent to El Sobrante Landfill in Riverside County, approximately 75 miles from the City. Waste Management also disposes solid waste to Lancaster Landfill and Simi Valley Landfill as alternates. The total permitted throughput for all landfills is 30,404 tons per day, and approximately 249 million cubic yards of capacity remain (CalRecycle 2022). As under existing conditions, solid waste would be collected by Waste Management and taken to the appropriate Sanitation Districts of Los Angeles County landfill with remaining capacity. Landfills operated by Sanitation Districts of Los Angeles County are subject to federal and State programs that regulate operations and capacity in consideration of solid waste reduction goals.

In addition, according to the 2021 Annual Report for the Countywide Integrated Waste Management Plan (CIWMP), the remaining capacity at County-operated landfills is 129.19 million tons (County of Los Angeles 2021). Construction of the proposed project would generate solid waste including wood, metals, soils, and other construction-related materials. However, as required by the Construction and Demolition Debris Recycling and Reuse Program (C&D) Program, the proposed project would be required to divert a minimum of 65 percent of C&D waste from landfills. As the proposed project would be required to divert 65 percent of solid waste from landfills, the remaining capacity of County-operated landfills would be minimally affected due to construction.

[8] Available capacity derived from the total capacity of 400 million mgd subtracted by 261.1 mgd average flow currently processed at the JWPCP.

All collection, transportation, and disposal of any solid waste generated by the proposed project during construction and operation would comply with all applicable federal, State, and local statutes and regulations. In particular, AB 939 requires that at least 50 percent of solid waste generated by a jurisdiction be diverted from landfill disposal through source reduction, recycling, or composting. Cities, counties, and regional agencies are required to develop a waste management plan that would achieve a 50 percent diversion from landfills (Public Resources Code Section 40000 et seq.). Furthermore, as required by existing regulations, any hazardous materials collected on the project site during demolition, construction, or operational activities would be transported and disposed of by a permitted and licensed hazardous materials service provider at a facility permitted to accept such hazardous materials. As such, the proposed project is not anticipated to generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. Therefore, this impact would be less than significant.

e) The project site is subject to State and City mandates with respect to solid waste, such as implementation of the City's Diversion and Recycling Program. The proposed project would comply with all federal, State, and local statutes and regulations related to solid waste, including the California Integrated Waste Management Act and City requirements for solid waste generated during project construction and operation. Compliance with these regulations would ensure that a less-than-significant impact would occur.

XX. Wildfire

Issues (and Supporting Information Sources)	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
XX. WILDFIRE—If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

Discussion

a) As noted previously, the project site is not within a Very High Fire Hazard Severity Zone. As analyzed in Section IX, *Hazards and Hazardous Materials*, above, while primary access to the project site would be provided from South Perry Street, vehicles travelling to the project site during construction or operation would do so via East Carson Street, a City designated evacuation route as identified in the Multi-Hazard Functional Plan for emergency response within the City (City of Carson 2004). During construction, East Carson Street may require temporary partial lane closures. The Applicant would be required to implement a traffic management plan, which would ensure that at least one lane remains open and emergency access is maintained during construction. In addition, the vehicle trips generated are not anticipated to impact emergency access provided from East Carson Street, and operations are not likely to interfere with an adopted emergency response plan or emergency evacuation plan. Therefore, impacts related to impairing an emergency response or evacuation plan would be less than significant.

b) The project site is located in an urbanized area and would continue to be served by the LACFD. According to CAL FIRE, the proposed project is not located within a Very High Fire Hazard Severity Zone (CAL FIRE 2022). Therefore, the proposed project would not expose people to significant pollutant concentrations resulting from wildland fires, or the uncontrolled spread of a wildfire. Therefore, no impacts related to exacerbating wildfire risks due to slope, prevailing winds, and other factors would occur.

c) As described above, the proposed project would not require the installation or maintenance of associated infrastructure that may exacerbate fire risk. While the project site is currently vacant and undeveloped, the project site would connect to existing power lines and utilities already in the vicinity of the project site. As the proposed project would be constructed in

compliance with the CBC and CFC, and given that the project site is not located in a Very High Fire Hazard Severity Zone (CAL FIRE 2022), project implementation would not exacerbate fire risks or result in ongoing environmental impacts. Therefore, no impacts related to exacerbating wildfire risks as a result of installation or maintenance of associated infrastructure would occur.

d) As described above, the project site is located in an urbanized area, and would continue to be served by the LACFD. Additionally, according to CAL FIRE, the project site is not located within a Very High Fire Hazard Severity Zone (CAL FIRE 2022). Given the local topographic and environmental characteristics of the project site, the proposed project would not increase the possibility of wildland fire in the project vicinity.

Additionally, no streams, rivers or natural drainages occur on the project site. Due to the relatively flat topography of the project site and surrounding area, the project site would not expose people or structures to flooding or potential landslides. Therefore, no impacts would occur related to exposing people or structures to significant risk.

XXI. Mandatory Findings of Significance

Issues (and Supporting Information Sources)	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
XXI. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Discussion

a) The proposed project is a self-storage facility consisting of approximately 113,714 square feet in a mix of one- and two-story buildings. As discussed in Section IV, *Biological Resources*, the proposed project does not have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish and wildlife species, cause a fish, or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of rare or endangered plant or animals. As indicated in Section V, *Cultural Resources*, in the event that historical resources, archaeological resources, or human remains are encountered during construction, Mitigation Measures MM-CULT-1 and MM-CULT-2 would require all project construction activities to halt until qualified experts identify the significance of the find and recommend a course of action. Furthermore, to reduce impacts to tribal cultural resources, the proposed project would implement Mitigation Measure MM-TCR-1. Therefore, the proposed project would not potentially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory. Therefore, a less-than-significant impact would occur with mitigation.

b) A significant impact may occur if the proposed project, in conjunction with the related projects, would result in impacts that are significant when taken together. With the incorporation of mitigation, the proposed project would have less-than-significant or no impacts with respect to all environmental topics, as discussed in the above checklist. Related projects would also be required to mitigate any impacts to the maximum extent

feasible. Therefore, with mitigation incorporated, the proposed project together with related projects would not result in significant cumulative impacts.

c) A significant impact may occur if the proposed project has the potential to result in significant impacts, as discussed in the preceding sections. All potential impacts of the proposed project have been identified, and mitigation measures have been prescribed, where applicable, to reduce all potential impacts to less-than-significant levels. The proposed project would comply with all applicable permits, regulations, and other conditions imposed by the City of Carson and responsible agencies. Therefore, impacts associated with the proposed project would be less than significant.

CHAPTER 4
Response to Comments

4.1 Introduction

The City of Carson (City) prepared a Draft Initial Study/Mitigated Negative Declaration (IS/MND) for the 21611 Perry Street Self-Storage project (proposed project) (State Clearinghouse [SCH] No. 2022050571), which was circulated for a 30-day public review period pursuant to requirements of the California Environmental Quality Act (CEQA) Guidelines Chapter 3, Section 15073(a). The review period gives agencies, organizations, and members of the public the opportunity to review the Draft IS/MND and provide comments on the document and the environmental analysis presented therein. The 30-day review period commenced on May 26, 2022, and ended on June 27, 2022. During the review period, the City received one letter from a state agency commenting on the Draft IS/MND. The comment letter was provided by the California Department of Transportation (Caltrans) on June 17, 2022.

4.2 Comment Letters

Comment Letter A: California Department of Transportation

Comment Letter A

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY GAVIN NEWSOM, Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 7
100 S. MAIN STREET, MS 16
LOS ANGELES, CA 90012
PHONE (213) 269-1124
FAX (213) 897-1337
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life

June 17, 2022

Stefanie Edmondson, Senior Planner
Community Development Department
City of Carson
701 East Carson street
Carson, CA 90745

RE: 21611 Perry Street Self-Storage Project
SCH # 2022050571
Vic. LA-405/PM 10.56
GTS # LA-2021-03966-MND

Dear Stefanie Edmondson:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above referenced environmental document. The proposed project includes the development of a self-storage facility with three buildings totaling approximately 113,714 square feet. The self-storage facility would be comprised of a mix of one- and two-story buildings with a maximum height of 31 feet. The self-storage facility would include a 2,425 square foot lobby/self-storage office area, a 1,550 square foot retail use for a cafe, and a 700 square foot retail use (likely a mail service store such as a UPS or FedEx) comprising a total of 4,675 square feet for these uses. The proposed project would provide 41 parking spaces that would be accessed from one driveway providing ingress/egress off South Perry Street. A-1

The mission of Caltrans is to provide a safe and reliable transportation network that serves all people and respects the environment. Senate Bill 743 (2013) has codified into CEQA law and mandated that CEQA review of transportation impacts of proposed development be modified by using Vehicle Miles Traveled (VMT) as the primary metric in identifying transportation impacts for all future development projects. You may reference the Governor's Office of Planning and Research (OPR) for more information: A-2

http://opr.ca.gov/ceqa/updates/guidelines/

As a reminder, VMT is the standard transportation analysis metric in CEQA for land use projects after July 1, 2020, which is the statewide implementation date.

"Provide a safe and reliable transportation network that serves all people and respects the environment"

Letter A: California Department of Transportation

Comment Letter A

Stefanie Edmondson, Senior Planner
June 17, 2022
Page 2 of 3

Caltrans is aware of challenges that the region faces in identifying viable solutions to alleviating congestion on State and Local facilities. With limited room to expand vehicular capacity, all future developments should incorporate multi-modal and complete streets transportation elements that will actively promote alternatives to car use and better manage existing parking assets. Prioritizing and allocating space to efficient modes of travel such as bicycling and public transit can allow streets to transport more people in a fixed amount of right-of-way.

Caltrans supports the implementation of complete streets and pedestrian safety measures such as road diets and other traffic calming measures. Please note the Federal Highway Administration (FHWA) recognizes the road diet treatment as a proven safety countermeasure, and the cost of a road diet can be significantly reduced if implemented in tandem with routine street resurfacing. Overall, the environmental report should ensure all modes are served well by planning and development activities. This includes reducing single occupancy vehicle trips, ensuring safety, reducing vehicle miles traveled, supporting accessibility, and reducing greenhouse gas emissions.

A-3

The Technical Advisory on Evaluating Transportation Impacts in CEQA (Office of Planning and Research 2018) was used to conduct the VMT analysis pursuant to CEQA Guidelines Section 15064.3, Subdivision (b). Based on the proposed project characteristics, it can be classified as local-serving retail. As described in the Technical Advisory, local-serving retail can be screened from a quantitative VMT analysis for CEQA purposes:

"By adding retail opportunities into the urban fabric and thereby improving retail destination proximity, local-serving retail development tends to shorten trips and reduce VMT."

Based on the above, the proposed project would not conflict with CEQA Guidelines Section 15064.3, Subdivision (b), and the impact would be less than significant.

Given the above finding of less than significant Project VMT impact, Caltrans concurs the finding at this time. However, a post-development VMT analysis for this land use with additional mitigation measures is highly recommended for monitoring/validation purpose and for future project thresholds in the area. Additional mitigation measure should be implemented when the post-development VMT analysis discloses any traffic significant impact.

A-4

Storm water run-off is a sensitive issue for Los Angeles and Ventura counties. Please be mindful that projects should be designed to discharge clean run-off water. Additionally, discharge of storm water run-off is not permitted onto State highway facilities without any storm water management plan.

A-5

"Provide a safe and reliable transportation network that serves all people and respects the environment"

Letter A: California Department of Transportation

Comment Letter A

As a reminder, any transportation of heavy construction equipment and/or materials which requires use of oversized-transport vehicles on State highways will need a Caltrans transportation permit. We recommend large size truck trips be limited to off-peak commute periods. A-6

If you have any questions, please feel free to contact Mr. Alan Lin the project coordinator at (213) 269-1124 and refer to GTS # LA-2021-03966-MND. A-7

Sincerely,

Miya Edmonson

MIYA EDMONSON
LDR/CEQA Branch Chief

email: State Clearinghouse

4.3 Response to Comments

Comment Letter A: California Department of Transportation

Response to Comment A-1

This comment thanks the lead agency for the being able to review the 21611 Perry Street Self-Storage MND. The comment includes a description of the proposed project and does not specifically address the adequacy of the Draft IS/MND; therefore, no specific response is required.

Response to Comment A-2

This comment introduces the mission of Caltrans in providing a safe and reliable transportation network and the CEQA mandated review of VMT in determining transportation impacts. As the comment does not raise any specific issues regarding the content or adequacy of the Draft EIR, no further response is warranted.

Response to Comment A-3

This comment discusses the challenges in identifying viable solutions to alleviating congestion on State and Local facilities and recommends the incorporation of multi-modal and complete streets transportation elements that will actively promote alternatives to car use and better management existing parking assets. Measures to implement complete streets include road diets and other traffic calming measures. As the comment does not raise any specific issues regarding the content or adequacy of the Draft EIR, no further response is warranted.

Response to Comment A-4

This comment concurs with the findings provided in the Draft IS/MND as it relates to the analysis for Threshold b), which relates to CEQA Guidelines Section 15064.3, Subdivision (b). A discussed on page 100 of the Draft IS/MND, based on the proposed project characteristics, the proposed project can be classified as local-serving retail. As described in Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA, local-serving retail can be screened from a quantitative VMT analysis for CEQA purposes. As such, the proposed project would not conflict with CEQA Guidelines Section 15064.3, Subdivision (b), and the impact would be less than significant This comment also suggests that a post-development VMT analysis is recommended for monitoring/validation purposes and future project thresholds in the area. While this comment does not address the adequacy of the Draft IS/MND, the City will consider the request for post-development VMT analysis.

Response to Comment A-5

This comment states that storm water run-off is a sensitive issue and that projects should be designed to discharge clean run-off water. As stated in the Draft IS/MND, under the proposed project, the project site would drain from east to west via gutters that wrap around the proposed buildings. The runoff generated would be treated by a 10 foot by 20-foot Modular Wetland System that would discharge via an 18-inch pipe to the existing 5-foot storm drain inlet, as under existing conditions. Storm water would not drain onto any State highways facilities.

Response to Comment A-6

This comment regarding oversized trucks requiring a permit is noted. Because this comment does not raise a substantive issue on the content of the Draft EIR, no further response is warranted.

Response to Comment A-7

This comment provides Caltrans contact information in the event additional information is needed. As the comment does not raise any specific issues regarding the content or adequacy of the Draft IS/MND, no further response is warranted.

CHAPTER 5
Mitigation Monitoring and Reporting Program

5.1 Introduction

This Mitigation Monitoring and Reporting Program (MMRP) has been prepared in accordance with Public Resources Code Section 21081.6 and CEQA Guidelines Section 15091(d), which require a public agency to adopt a program for monitoring or reporting on the changes it has required in the project or conditions of approval to substantially lessen significant environmental effects. Specifically, Public Resources Code Section 21081.6 states: "… the [lead] agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment … The … program … shall be designed to ensure compliance during project implementation." The City of Carson, specifically the Planning Division of the Community Development Department, is the Lead Agency for the proposed project.

The MMRP describes the procedures for the implementation of all of the mitigation measures identified in the IS/MND for the proposed project. Mitigation measures set forth in the MMRP are specific and enforceable and are capable of being fully implemented by the City of Carson, the various applicants, and/or other identified public agencies of responsibility.

5.2 Mitigation Measures

Mitigation Measures	Monitoring Phase	Implementing Party	Enforcement Agency	Responsible Monitoring Agency
BIOLOGICAL RESOURCES				
MM-BIO-1: Pre-construction (vegetation removal) avian nesting surveys shall be conducted during the breeding season. A qualified avian biologist shall conduct these surveys within 7 days of vegetation and tree removal. The surveying biologist must be qualified to determine the species, status, and nesting stage without causing intrusive disturbance. The survey shall cover all reasonably potential nesting locations on and within 300 feet of the project site. If active nests are found, a no-disturbance buffer (300 feet for raptors and 50 feet for other birds, or as otherwise determined in consultation with CDFW shall be created around the active nests. If construction is scheduled to occur during the non-nesting season (August 16 to January 31), no preconstruction surveys or additional measures are required.	Prior to construction during the bird nesting season/ Pre-Construction	Applicant	City of Carson Department of Community Development, Planning Division	City of Carson Department of Community Development, Planning Division
CULTURAL RESOURCES				
MM-CULT-1: Prior to issuance of demolition permit, the Applicant shall retain a qualified Archaeologist who meets the Secretary of the Interior's Professional Qualifications Standards (Qualified Archaeologist) to oversee an archaeological monitor who shall be present during construction excavations such as demolition, clearing/grubbing, grading, trenching, or any other construction excavation activity associated with the proposed project that occur outside or below the remediation areas. The frequency of monitoring shall be based on the rate of excavation and grading activities, proximity to known archaeological resources, the materials being excavated (younger alluvium vs. older alluvium), and the depth of excavation, and if found, the abundance and type of archaeological resources encountered, as determined by the Qualified Archaeologist. Full-time field observation can be reduced to part-time inspections or ceased entirely if determined appropriate by the Qualified Archaeologist. Prior to commencement of excavation activities, an Archaeological and Cultural Resources Sensitivity Training shall be given for construction personnel. The training session, shall be carried out by the Qualified Archaeologist and shall focus on how to identify archaeological and cultural	Prior to issuance of a demolition permit/Pre-Construction	Applicant	City of Carson Department of Community Development, Building and Safety Division	City of Carson Department of Community Development, Building and Safety Division

Mitigation Measures	Monitoring Phase	Implementing Party	Enforcement Agency	Responsible Monitoring Agency
resources that may be encountered during earthmoving activities and the procedures to be followed in such an event. In the event that historic or prehistoric archaeological resources (e.g., bottles, foundations, refuse dumps, Native American artifacts or features, etc.) are unearthed, ground-disturbing activities shall be halted or diverted away from the vicinity of the find so that the find can be evaluated. An appropriate buffer area shall be established by the Qualified Archaeologist around the find where construction activities shall not be allowed to continue. Work shall be allowed to continue outside of the buffer area. All archaeological resources unearthed by project construction activities shall be evaluated by the Qualified Archaeologist and a Gabrieleño Band of Mission Indians – Kizh Nation Monitor. If the resources are Native American in origin, the Kizh Nation shall consult with the City and Qualified Archaeologist regarding the treatment and curation of any prehistoric archaeological resources. If a resource is determined by the Qualified Archaeologist to constitute a "historical resource" pursuant to CEQA Guidelines Section 15064.5(a) or a "unique archaeological resource" pursuant to Public Resources Code Section 21083.2(g), the Qualified Archaeologist shall coordinate with the Applicant and the City to develop a formal treatment plan that would serve to reduce impacts to the resources. The treatment plan established for the resources shall be in accordance with CEQA Guidelines Section 15064.5(f) for historical resources and Public Resources Code Section 21083.2(b) for unique archaeological resources. The treatment plan shall incorporate the Kizh Nation's treatment and curation recommendations. Preservation in place (i.e., avoidance) is the preferred manner of treatment. If preservation in place is not feasible, treatment may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis. The treatment plan shall include measures regarding the curation of the recovered resources that may include curation at a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County or the Fowler Museum, if such an institution agrees to accept the material and/or the Kizh Nation. If no institution or the Kizh Nation accepts the resources, they may be donated to a local school or historical society in the area (such as the Culver City Historical Society) for educational purposes.				

Mitigation Measures	Monitoring Phase	Implementing Party	Enforcement Agency	Responsible Monitoring Agency
Prior to the release of the grading bond, the Qualified Archaeologist shall prepare a final report and appropriate California Department of Parks and Recreation Site Forms at the conclusion of archaeological monitoring. The report shall include a description of resources unearthed, if any, treatment of the resources, results of the artifact processing, analysis, and research, and evaluation of the resources with respect to the California Register of Historical Resources and CEQA. The report and the Site Forms shall be submitted by the Applicant to the City, the South Central Coastal Information Center, and representatives of other appropriate or concerned agencies to signify the satisfactory completion of the proposed project and required mitigation measures.				
MM-CULT-2: If human remains are encountered unexpectedly during implementation of the proposed project, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the NAHC. The NAHC shall then identify the person(s) thought to be the Most Likely Descendent (MLD). The MLD may, with the permission of the land owner, or his or her authorized representative, inspect the site of the discovery of the Native American remains and may recommend to the owner or the person responsible for the excavation work means for treating or disposing, with appropriate dignity, the human remains and any associated grave goods. The MLD shall complete their inspection and make their recommendation within 48 hours of being granted access by the land owner to inspect the discovery. The recommendation may include the scientific removal and nondestructive analysis of human remains and items associated with Native American burials. Upon the discovery of the Native American remains, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in this mitigation measure, with the MLD regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. The landowner shall discuss and confer with the descendants all reasonable options regarding the descendants' preferences for treatment.	During Construction	Applicant	City of Carson Department of Community Development, Building and Safety Division	City of Carson Department of Community Development, Building and Safety Division

Mitigation Measures	Monitoring Phase	Implementing Party	Enforcement Agency	Responsible Monitoring Agency
If the NAHC is unable to identify a MLD, or the MLD identified fails to make a recommendation, or the landowner rejects the recommendation of the MLD and the mediation provided for in Public Resources Code Section 5097.94, subdivision (k), if invoked, fails to provide measures acceptable to the landowner, the landowner or his or her authorized representative shall inter the human remains and items associated with Native American human remains with appropriate dignity on the facility property in a location not subject to further and future subsurface disturbance.				
MM-CULT-3. In the case of human remains findings (as mitigated under MM-CULT-2), should the remains be determined to be Native American and should the Kizh Nation be recommended by the NAHC as Most Likely Descendant (MLD), then the following policy shall apply. Should the Kizh Nation not be named MLD by the NAHC other procedures may be required by the assigned MLD. As the MLD, the Koo-nas-gna Burial Policy shall be implemented. To the Kizh Nation, the term "human remains" encompasses more than human bones. In ancient as well as historic times, Tribal Traditions included, but were not limited to, the preparation of the soil for burial, the burial of funerary objects with the deceased, and the ceremonial burning of human remains. If the discovery of human remains includes four or more burials, the discovery location shall be treated as a cemetery and a separate treatment plan shall be created. The prepared soil and cremation soils are to be treated in the same manner as bone fragments that remain intact. Associated funerary objects are objects that, as part of the death rite or ceremony of a culture, are reasonably believed to have been placed with individual human remains either at the time of death or later; other items made exclusively for burial purposes or to contain human remains can also be considered as associated funerary objects. Cremations will either be removed in bulk or by means as necessary to ensure complete recovery of all sacred materials. In the case where discovered human remains cannot be fully documented and recovered on the same day, the remains will be covered with muslin cloth and a steel plate that can be moved by heavy equipment placed over the excavation opening to protect the remains. If this type of steel plate is not available, a 24-hour guard should be posted outside of working hours. The Kizh Nation will make every effort to recommend diverting the project and keeping the remains in situ and protected. If the project cannot be diverted, it may be determined that burials will be removed. In the event preservation in place is not possible despite good faith efforts by the project	During Construction	Applicant	City of Carson Department of Community Development, Building and Safety Division	City of Carson Department of Community Development, Building and Safety Division

Mitigation Measures	Monitoring Phase	Implementing Party	Enforcement Agency	Responsible Monitoring Agency
applicant/developer and/or landowner, before ground-disturbing activities may resume on the project site, the landowner shall arrange a designated site location within the footprint of the project for the respectful reburial of the human remains and/or ceremonial objects. Each occurrence of human remains and associated funerary objects will be stored using opaque cloth bags. All human remains, funerary objects, sacred objects and objects of cultural patrimony will be removed to a secure container on-site if possible. These items should be retained and reburied within 6 months of recovery. The site of reburial/repatriation shall be on the project site but at a location agreed upon between the Kizh Nation and the landowner at a site to be protected in perpetuity. There shall be no publicity regarding any cultural materials recovered. The Kizh Nation will work closely with the project's qualified archaeologist to ensure that the excavation is treated carefully, ethically and respectfully. If data recovery is approved by the Kizh Nation, documentation shall be prepared and shall include (at a minimum) detailed descriptive notes and sketches. All data recovery data recovery-related forms of documentation shall be approved in advance by the Kizh Nation. If any data recovery is performed, once complete, a final report shall be submitted to the Kizh Nation and the NAHC. The Kizh Nation does NOT authorize any scientific study or the utilization of any invasive and/or destructive diagnostics on human remains.				
Noise				
MM-NOI-1. Temporary construction noise barriers, with a minimum rating of Sound Transmission Class (STC) 30 and Noise Reduction Coefficient (NRC) 0.7, shall be implemented prior to grading/site preparation beginning on–site near the northern and northeastern project boundaries (R1, R2, and R3) as follows: • Along the northern project boundary: A noise barrier with a minimum height of 15 feet above grade. • Beginning at the northeast corner of the subject site and continuing south along the eastern project boundary to 15 feet beyond the southern edge of the multi-family complex located at 21610 S. Perry Street: A noise barrier with a minimum height of 18 feet above grade.	Pre-Construction	Applicant	City of Carson Department of Community Development, Planning Division	City of Carson Department of Community Development, Building and Safety Division
MM-NOI-2. No more than two pieces of the following specific off-road construction equipment shall be used at the same time within 50 feet the north and north-eastern boundary of the project site. Such equipment includes the following: • Concrete Saws	During Construction	Applicant	City of Carson Department of Community	City of Carson Department of Community

Mitigation Measures	Monitoring Phase	Implementing Party	Enforcement Agency	Responsible Monitoring Agency
• Pavers • Paving Equipment • Generators • Pumps These pieces of equipment have the highest reference noise level as indicated by the Federal Highway Administration's Roadway Construction Noise Model User's Guide. By limiting the number of noisy equipment operating at the same time within 50 feet of the north and north-eastern boundary of the project site, the cumulative noise effect from multiple equipment will be reduced.			Development, Planning Division	Development, Building and Safety Division
Tribal Cultural Resources				
MM-TCR-1: Retain a Native American Monitor Prior to Commencement of Ground-Disturbing Activities. A. The project applicant/lead agency shall retain a Native American Monitor from or approved by the Gabrieleño Band of Mission Indians – Kizh Nation. The monitor shall be retained prior to the commencement of any "ground-disturbing activity" for the subject project at all project locations (i.e., both on-site and any off-site locations that are included in the project description/definition and/or required in connection with the project, such as public improvement work) outside or below the previous remediation areas. "Ground disturbing activity" shall include, but is not limited to, demolition, pavement removal, potholing, auguring, grubbing, tree removal, boring, grading, excavation, drilling, and trenching. B. A copy of the executed monitoring agreement shall be submitted to the lead agency prior to the commencement of any ground-disturbing activity, or the issuance of any permit necessary to commence a ground-disturbing activity. C. The monitor will complete daily monitoring logs that will provide descriptions of the relevant ground-disturbing activities, the type of construction activities performed, locations of ground disturbing activities, soil types, cultural-related materials, and any other facts, conditions, materials, or discoveries of significance to the Tribe. Monitor logs will identify and describe any discovered tribal cultural resources (TCRs), including but not limited to, Native American cultural and historical artifacts, remains, places of significance, etc., (collectively, tribal cultural resources, or "TCR"), as well	Prior to issuance of a demolition permit/Pre-Construction	Applicant	City of Carson Department of Community Development, Building and Safety Division	City of Carson Department of Community Development, Building and Safety Division

Mitigation Measures	Monitoring Phase	Implementing Party	Enforcement Agency	Responsible Monitoring Agency
as any discovered Native American (ancestral) human remains and burial goods. Copies of the monitor logs will be provided to the project applicant/lead agency. D. On-site tribal monitoring shall conclude upon the latter of the following (1) written confirmation to the Kizh Nation from a designated point of contact for the project applicant/lead agency that all ground-disturbing activities and phases that may involve ground-disturbing activities on the project site or in connection with the project are complete; or (2) a determination and written notification by the Kizh Nation to the project applicant/lead agency that no future, planned construction activity and/or development/construction phase at the project site possesses the potential to impact Kizh Nation TCRs. E. Upon discovery of any TCRs, all construction activities in the immediate vicinity of the discovery shall cease (i.e., not less than the surrounding 50 feet) and shall not resume until the discovered TCR has been fully assessed by the Kizh Nation monitor. A meeting shall take place between the Applicant, the qualified Archaeologist, the Kizh Nation, and the City to discuss the significance of the find and whether it qualifies as a tribal cultural resource pursuant to Public Resources Code Section 21074(a) and appropriate treatment under CEQA. The Project Archaeologist shall provide a treatment plan as recommended in Mitigation Measure CUL-MM-1, that shall incorporate the monitoring Kizh Nation's treatment and curation recommendations. The preferred treatment under CEQA is avoidance, but if not feasible, may include, but would not be limited to, capping in place, excavation and removal of the resource and follow-up laboratory processing and analysis, interpretive displays, sensitive area signage, or other mutually agreed upon measures. The Kizh Nation will recover and retain all discovered TCRs in the form and/or manner the Kizh Nation deems appropriate, at the Kizh Nation's sole discretion, and for any purpose the Kizh Nation deems appropriate, including for educational, cultural, and/or historic purposes.				

CHAPTER 6
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Appendix A
Air Quality Modeling Files

ESA

21611 South Perry Street

Construction Assumptions

Project Site Acreage 2.8

Project Summary

Land Use	CalEEMod Landuse Type	Unit Amount	Size Metrics	Lot Acreage	Square Feet	
Commercial	General Office Building	2.425	1000sqft	0.2	700	Postal Annex
Recreational	High Turnover (Sit Down Restaurant)	1.55	1000sqft	0.2	1,550	Café
Retail	Strip Mall	0.7	1000sqft	0.2	2,425	elf-Storage Office
Industrial	Unrefrigerated Warehouse-No Rail	109.039	1000sqft	0.5	109,039	Storage Area
Parking	Parking Lot	41	Space	0.2	16,400	Parking
Recreational	City Park	0.528	Acre	1.5	23,000	Landscape Area
				2.8	153114	

Notes

1 Land use acreage is an estimate of the total site acreage of 5 acres

Project Description

Location	CEC Forecasting Climate Zone	Start of Construction	Operational Year	Utility Company
Los Angeles County	11	1-Jan-23	2024	Southern California Edison Company

Construction Schedule

Phase Name	CalEEMod Phase Type	Start Date	End Date	Total Days	# of Workers per day	Total One-way Worker Trips per day	Trip Length	Vendor Trips per day	Total One-Way Vendor Trips per day	Trip Length	Total Haul Trucks	Total One-way Haul Trips	Trucks per day	Trip Length
Demo & Site Preparation		1/1/2023	2/1/2023	23	8	16	14.7		0	6.9	115	230	5	42
Grading/Excavation		2/1/2023	3/1/2023	21	10	20	14.7		0	6.9	315	630	15	20
Drainage/Utilities/Trenching		3/1/2023	5/1/2023	44	20	40	14.7		0	6.9	132	264	3	20
Foundations/Concrete Pour		5/1/2023	6/1/2023	24	30	60	14.7	9	18	6.9	48	96	2	20
Building Construction		6/1/2023	2/1/2024	176	75	150	14.7		0	6.9	0	0	0	20
Paving		1/1/2024	1/31/2024	23	10	20	14.7	4	8	6.9	115	230	5	20
Architectural Coatings		11/1/2023	2/1/2024	67	8	16	14.7		0	6.9	0	0	0	20
Other 1: Landscaping		11/1/2023	2/1/2024	67	8	16	14.7		0	6.9	67	134	1	20

Note: Foundation/Concrete Pour Vendor Truck assumes 10 cy/truck for concrete spread throughout the 24 days of the phase.

Building Construction Vendor Trucks taken from CalEEMod Defaults 0

21611 South Perry Street

Regional Emissions

Air Quality Construction Analysis

Regional Maximums Source	ROG	NOX	CO	SO2 lb/day	Total PM10	Total PM2.5
3.2 Demo & Site Preparation - 2023	1.8	17.8	23.6	0.05	1.0	0.8
3.3 Grading/Excavation - 2023	5.1	60.1	47.2	0.14	4.7	2.4
3.4 Drainage/Utilities/Trenching - 2023	2.2	20.5	28.6	0.06	1.1	0.9
3.5 Foundations/Concrete Pour - 2023	1.8	17.6	25.0	0.05	1.0	0.8
3.6 Building Construction - 2023	3.3	29.0	41.5	0.08	1.7	1.4
3.6 Building Construction - 2024	3.1	27.3	40.9	0.08	1.6	1.2
3.7 Architectural Coating - 2023	16.2	3.1	5.0	0.01	0.2	0.1
3.7 Architectural Coating - 2024	16.2	3.0	5.0	0.01	0.2	0.1
3.8 Landscaping - 2023	0.1	0.6	2.5	0.01	0.1	0.1
3.8 Landscaping - 2024	0.1	0.5	2.4	0.01	0.1	0.1
3.9 Paving - 2024	2.0	20.8	28.6	0.06	1.1	0.9
Overlapping Phases						
	ROG	**NOX**	**CO**	**SO2**	**Total PM10**	**Total PM2.5**
3.6 Building Construction - 2023 and 3.8 Architectural Coatings - 2023 and 3.9 Landscaping - 2023	19.6	32.7	49.0	0.1	2.0	1.6
3.6 Building Construction - 2024 and 3.7 Paving - 2024 and 3.8 Architectural Coatings - 2024 and 3.9 Landscaping - 2024	21.4	51.6	76.9	0.2	3.0	2.3
3.6 Building Construction - 2024 and 3.8 Architectural Coatings - 2024 and 3.9 Landscaping - 2024	19.4	30.8	48.4	0.1	1.9	1.4
Project Daily Maximum Emissions	**21.4**	**60.1**	**76.9**	**0.2**	**4.7**	**2.4**
SCAQMD Regional Significance Threshold	75	100	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No

21611 South Perry Street

Summer

Air Quality Construction Analysis

Summer Regional Emissions	Onsite Emissions						Offsite Emissions					
Source	ROG	NOX	CO	SO2	Total PM10	Total PM2.5	ROG	NOX	CO	SO2	Total PM10	Total PM2.5
	lb/day						lb/day					
3.2 Demo & Site Preparation - 2023	1.80	15.27	21.42	0.03	0.76	0.73	0.03	2.58	2.14	0.02	0.24	0.08
3.3 Grading/Excavation - 2023	5.07	52.41	41.85	0.09	4.03	2.21	0.06	7.65	5.33	0.05	0.64	0.21
3.4 Drainage/Utilities/Trenching - 2023	2.16	18.83	26.12	0.04	0.91	0.88	0.04	1.64	2.47	0.01	0.23	0.06
3.5 Foundations/Concrete Pour - 2023	1.73	15.13	20.88	0.03	0.70	0.68	0.06	2.45	4.12	0.02	0.29	0.08
3.6 Building Construction - 2023	3.21	28.55	35.65	0.06	1.32	1.27	0.11	0.46	5.86	0.02	0.42	0.08
3.6 Building Construction - 2024	3.03	26.86	35.55	0.06	1.16	1.12	0.10	0.41	5.40	0.01	0.42	0.08
3.7 Architectural Coating - 2023	16.16	3.07	4.41	0.01	0.13	0.13	0.01	0.05	0.62	0.00	0.04	0.01
3.7 Architectural Coating - 2024	16.14	2.94	4.41	0.01	0.12	0.11	0.01	0.04	0.58	0.00	0.04	0.01
3.8 Landscaping - 2023	0.12	0.00	1.57	0.00	0.04	0.04	0.01	0.55	0.93	0.00	0.08	0.02
3.8 Landscaping - 2024	0.12	0.00	1.57	0.00	0.04	0.04	0.01	0.53	0.87	0.00	0.08	0.02
3.9 Paving - 2024	1.98	17.79	25.84	0.04	0.87	0.81	0.03	3.03	2.72	0.02	0.27	0.08

Regional Emissions	ROG	NOX	CO	SO2	Total PM10	Total PM2.5
3.2 Demo & Site Preparation - 2023	1.82	17.85	23.56	0.05	1.01	0.81
3.3 Grading/Excavation - 2023	5.13	60.06	47.17	0.14	4.67	2.42
3.4 Drainage/Utilities/Trenching - 2023	2.20	20.47	28.59	0.06	1.14	0.94
3.5 Foundations/Concrete Pour - 2023	1.79	17.57	25.00	0.05	1.00	0.76
3.6 Building Construction - 2023	3.32	29.01	41.51	0.08	1.74	1.36
3.6 Building Construction - 2024	3.13	27.27	40.95	0.08	1.58	1.21
3.7 Architectural Coating - 2023	16.17	3.12	5.03	0.01	0.18	0.14
3.7 Architectural Coating - 2024	16.15	2.98	4.98	0.01	0.16	0.12
3.8 Landscaping - 2023	0.13	0.55	2.50	0.01	0.13	0.06
3.8 Landscaping - 2024	0.13	0.53	2.45	0.01	0.12	0.06
3.9 Paving - 2024	2.02	20.82	28.57	0.06	1.14	0.90

Overlapping Phases

	ROG	NOX	CO	SO2	Total PM10	Total PM2.5
3.6 Building Construction - 2023 and 3.8 Architectural Coatings - 2023 and 3.9 Landscaping - 2023	19.6	32.7	49.0	0.1	2.0	1.6
3.6 Building Construction - 2024 and 3.7 Paving - 2024 and 3.8 Architectural Coatings - 2024 and 3.9 Landscaping - 2024	21.4	51.6	76.9	0.2	3.0	2.3
3.6 Building Construction - 2024 and 3.8 Architectural Coatings - 2024 and 3.9 Landscaping - 2024	19.4	30.8	48.4	0.1	1.9	1.4
Project Daily Maximum Emissions	**21.43**	**60.06**	**76.95**	**0.15**	**4.67**	**2.42**

21611 South Perry Street

Winter

Air Quality Construction Analysis

Winter Regional Emissions	Onsite Emissions						Offsite Emissions					
Source	ROG	NOX	CO	SO2	Total PM10	Total PM2.5	ROG	NOX	CO	SO2	Total PM10	Total PM2.5
	lb/day						lb/day					
3.2 Demo & Site Preparation - 2023	1.80	15.27	21.42	0.034	0.76	0.73	0.03	2.58	2.14	0.02	0.24	0.08
3.3 Grading/Excavation - 2023	5.07	52.41	41.85	0.095	4.03	2.21	0.06	7.65	5.33	0.05	0.64	0.21
3.4 Drainage/Utilities/Trenching - 2023	2.16	18.83	26.12	0.043	0.91	0.88	0.04	1.64	2.47	0.01	0.23	0.06
3.5 Foundations/Concrete Pour - 2023	1.73	15.13	20.88	0.034	0.70	0.68	0.06	2.45	4.12	0.02	0.29	0.08
3.6 Building Construction - 2023	3.21	28.55	35.65	0.061	1.32	1.27	0.11	0.46	5.86	0.02	0.42	0.08
3.6 Building Construction - 2024	3.03	26.86	35.55	0.061	1.164	1.12	0.10	0.41	5.40	0.01	0.42	0.08
3.7 Architectural Coating - 2023	16.16	3.07	4.41	0.007	0.130	0.13	0.01	0.05	0.62	0.00	0.04	0.01
3.7 Architectural Coating - 2024	16.14	2.94	4.41	0.007	0.116	0.11	0.01	0.04	0.58	0.00	0.04	0.01
3.8 Landscaping - 2023	0.12	0.00	1.57	0.003	0.042	0.04	0.01	0.55	0.93	0.00	0.08	0.02
3.8 Landscaping - 2024	0.12	0.00	1.57	0.003	0.040	0.04	0.01	0.53	0.87	0.00	0.08	0.02
3.9 Paving - 2024	1.98	17.79	25.84	0.040	0.873	0.81	0.03	3.03	2.72	0.02	0.27	0.08

Regional Emissions	ROG	NOX	CO	SO2	Total PM10	Total PM2.5
3.2 Demo & Site Preparation - 2023	1.8	17.8	23.6	0.1	1.0	0.8
3.3 Grading/Excavation - 2023	5.1	60.1	47.2	0.1	4.7	2.4
3.4 Drainage/Utilities/Trenching - 2023	2.2	20.5	28.6	0.1	1.1	0.9
3.5 Foundations/Concrete Pour - 2023	1.8	17.6	25.0	0.1	1.0	0.8
3.6 Building Construction - 2023	3.3	29.0	41.5	0.1	1.7	1.4
3.6 Building Construction - 2024	3.1	27.3	40.9	0.1	1.6	1.2
3.7 Architectural Coating - 2023	16.2	3.1	5.0	0.0	0.2	0.1
3.7 Architectural Coating - 2024	16.2	3.0	5.0	0.0	0.2	0.1
3.8 Landscaping - 2023	0.1	0.6	2.5	0.0	0.1	0.1
3.8 Landscaping - 2024	0.1	0.5	2.4	0.0	0.1	0.1
3.9 Paving - 2024	2.0	20.8	28.6	0.1	1.1	0.9

Overlapping Phases

	ROG	NOX	CO	SO2	Total PM10	Total PM2.5
3.6 Building Construction - 2023 and 3.8 Architectural Coatings - 2023 and 3.9 Landscaping - 2023	19.6	32.7	49.0	0.1	2.0	1.6
3.6 Building Construction - 2024 and 3.7 Paving - 2024 and 3.8 Architectural Coatings - 2024 and 3.9 Landscaping - 2024	21.4	51.6	76.9	0.2	3.0	2.3
3.6 Building Construction - 2024 and 3.8 Architectural Coatings - 2024 and 3.9 Landscaping - 2024	19.4	30.8	48.4	0.1	1.9	1.4
Project Daily Maximum Emissions	**21.43**	**60.06**	**76.95**	**0.15**	**4.67**	**2.42**

21611 South Perry Street

Air Quality Construction Analysis

Localized Emissions Source	NOX	CO	Total PM10	Total PM2.5
3.2 Demo & Site Preparation - 2023	15.27	21.42	0.76	0.73
3.3 Grading/Excavation - 2023	52.41	41.85	4.03	2.21
3.4 Drainage/Utilities/Trenching - 2023	18.83	26.12	0.91	0.88
3.5 Foundations/Concrete Pour - 2023	15.13	20.88	0.70	0.68
3.6 Building Construction - 2023	28.55	35.65	1.32	1.27
3.6 Building Construction - 2024	26.86	35.55	1.16	1.12
3.7 Architectural Coating - 2023	3.07	4.41	0.13	0.13
3.7 Architectural Coating - 2024	2.94	4.41	0.12	0.11
3.8 Landscaping - 2023	0.00	1.57	0.04	0.04
3.8 Landscaping - 2024	0.00	1.57	0.04	0.04
3.9 Paving - 2024	17.79	25.84	0.87	0.81

Localized Emissions	NOX	CO	Total PM10	Total PM2.5
3.2 Demo & Site Preparation - 2023	15	21	1	1
3.3 Grading/Excavation - 2023	52	42	4	2
3.4 Drainage/Utilities/Trenching - 2023	19	26	1	1
3.5 Foundations/Concrete Pour - 2023	15	21	1	1
3.6 Building Construction - 2023	29	36	1	1
3.6 Building Construction - 2024	27	36	1	1
3.7 Architectural Coating - 2023	3	4	0	0
3.7 Architectural Coating - 2024	3	4	0	0
3.8 Landscaping - 2023	0	2	0	0
3.8 Landscaping - 2024	0	2	0	0
3.9 Paving - 2024	18	26	1	1
Overlapping Phases				
	NOX	**CO**	**Total PM10**	**Total PM2.5**
3.6 Building Construction - 2023 and 3.8 Architectural Coatings - 2023 and 3.9 Landscaping - 2023	31.6	41.6	1.5	1.4
3.6 Building Construction - 2024 and 3.7 Paving - 2024 and 3.8 Architectural Coatings - 2024 and 3.9 Landscaping - 2024	47.6	67.4	2.2	2.1
3.6 Building Construction - 2024 and 3.8 Architectural Coatings - 2024 and 3.9 Landscaping - 2024	47.6	41.5	2.1	1.3
Project Daily Maximum Emissions	**52.4**	**67.4**	**4.0**	**2.2**
SCAQMD LST Significance Threshold	82.0	842.0	7.0	5.0
Exceeds Threshold?	No	No	No	No

21611 Perry Street

Total On-Road Emissions

260 Max construction days per year

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Idling per Day (minutes)
Demo & Site Preparation	2023				
Total Haul Trips	230				
Hauling	10	23	8	42	15
Vendor	0	23	8	6.9	15
Worker	16	23	8	14.7	0
					Total:
Grading/Excavation	2023				
Total Haul Trips	630				
Hauling	30	21	8	42	15
Vendor	0	21	8	6.9	15
Worker	20	21	8	14.7	0
					Total:
Drainage/Utilities/Trenching	2023				
Total Haul Trips	264				
Hauling	6	44	8	42	15
Vendor	0	44	8	6.9	15
Worker	40	44	8	14.7	0
					Total:
Foundations/Concrete Pour	2023				
Total Haul Trips	96				
Hauling	4	24	8	42	15
Vendor	18	24	8	6.9	15
Worker	60	24	8	14.7	0
					Total:
Building Construction	2023				
Total Haul Trips	0				
Hauling	0	152	8	42	15
Vendor	0	152	8	6.9	15
Worker	150	152	8	14.7	0
					Total:
Building Construction	2024				
Total Haul Trips	0				
Hauling	0	24	8	42	15
Vendor	0	24	8	6.9	15
Worker	150	24	8	14.7	0
					Total:
Architectural Coatings	2023				
Total Haul Trips	0				
Hauling	0	43	8	42	15
Vendor	0	43	8	6.9	15
Worker	16	43	8	14.7	0
					Total:
Architectural Coatings	2024				
Total Haul Trips	0				
Hauling	0	24	8	42	15
Vendor	0	24	8	6.9	15
Worker	16	24	8	14.7	0
					Total:
Landscaping	2023				
Total Haul Trips	86				
Hauling	2	43	8	42	15
Vendor	0	43	8	6.9	15
Worker	16	43	8	14.7	0
					Total:

21611 Perry Street

Total On-Road Emissions

260 Max construction days per year

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Idling per Day (minutes)
Landscaping	2024				
Total Haul Trips	48				
Hauling	2	24	8	42	15
Vendor	0	24	8	6.9	15
Worker	16	24	8	14.7	0
					Total:
Paving	2024				
Total Haul Trips	230				
Hauling	10	23	8	42	15
Vendor	8	23	8	6.9	15
Worker	20	23	8	14.7	0
					Total:

21611 Perry Street

Total On-Road Emissions

Construction Phase	Regional Emissions (pounds/day)										(MT/yr)
	ROG	NOX	CO	SO2	PM10 Dust	PM10 Exh	Total PM10	PM2.5 Dust	PM2.5 Exh	Total PM2.5	Total CO2e
Demo & Site Preparation											
Total Haul Trips											
Hauling	0.02	2.53	1.51	0.01	0.17	0.02	0.20	0.04	0.02	0.07	17.83
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.05	0.62	0.00	0.04	0.00	0.04	0.01	0.00	0.01	1.73
	0.03	2.58	2.14	0.02	0.22	0.02	0.24	0.05	0.02	0.08	19.56
Grading/Excavation											
Total Haul Trips											
Hauling	0.05	7.58	4.54	0.04	0.52	0.07	0.59	0.13	0.06	0.20	48.83
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.06	0.78	0.00	0.05	0.00	0.06	0.01	0.00	0.01	1.97
	0.06	7.65	5.33	0.05	0.58	0.07	0.64	0.14	0.06	0.21	50.80
Drainage/Utilities/Trenching											
Total Haul Trips											
Hauling	0.01	1.52	0.91	0.01	0.10	0.01	0.12	0.03	0.01	0.04	20.46
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.03	0.12	1.56	0.00	0.11	0.00	0.11	0.02	0.00	0.02	8.27
	0.04	1.64	2.47	0.01	0.21	0.02	0.23	0.05	0.01	0.06	28.73
Foundations/Concrete Pour											
Total Haul Trips											
Hauling	0.01	1.01	0.61	0.01	0.07	0.01	0.08	0.02	0.01	0.03	7.44
Vendor	0.01	1.25	1.17	0.01	0.04	0.01	0.05	0.01	0.01	0.02	6.33
Worker	0.04	0.18	2.34	0.01	0.16	0.00	0.17	0.03	0.00	0.03	6.77
	0.06	2.45	4.12	0.02	0.28	0.02	0.29	0.06	0.02	0.08	20.53
Building Construction											
Total Haul Trips											
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.11	0.46	5.86	0.02	0.41	0.01	0.42	0.07	0.01	0.08	107.13
	0.11	0.46	5.86	0.02	0.41	0.01	0.42	0.07	0.01	0.08	107.13
Building Construction											
Total Haul Trips											
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.10	0.41	5.40	0.01	0.41	0.01	0.42	0.07	0.01	0.08	16.50
	0.10	0.41	5.40	0.01	0.41	0.01	0.42	0.07	0.01	0.08	16.50
Architectural Coatings											
Total Haul Trips											
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.05	0.62	0.00	0.04	0.00	0.04	0.01	0.00	0.01	3.23
	0.01	0.05	0.62	0.00	0.04	0.00	0.04	0.01	0.00	0.01	3.23
Architectural Coatings											
Total Haul Trips											
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.04	0.58	0.00	0.04	0.00	0.04	0.01	0.00	0.01	1.76
	0.01	0.04	0.58	0.00	0.04	0.00	0.04	0.01	0.00	0.01	1.76
Landscaping											
Total Haul Trips											
Hauling	0.00	0.51	0.30	0.00	0.03	0.00	0.04	0.01	0.00	0.01	6.67
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.05	0.62	0.00	0.04	0.00	0.04	0.01	0.00	0.01	3.23
	0.01	0.55	0.93	0.00	0.08	0.01	0.08	0.02	0.01	0.02	9.90

21611 Perry Street

Total On-Road Emissions

Construction Phase	Regional Emissions (pounds/day)										(MT/yr)
	ROG	NOX	CO	SO2	PM10 Dust	PM10 Exh	Total PM10	PM2.5 Dust	PM2.5 Exh	Total PM2.5	Total CO2e
Landscaping											
Total Haul Trips											
Hauling	0.00	0.49	0.30	0.00	0.03	0.00	0.04	0.01	0.00	0.01	3.66
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.04	0.58	0.00	0.04	0.00	0.04	0.01	0.00	0.01	1.76
	0.01	0.53	0.87	0.00	0.08	0.01	0.08	0.02	0.01	0.02	5.42
Paving											
Total Haul Trips											
Hauling	0.01	2.44	1.49	0.01	0.17	0.02	0.20	0.04	0.02	0.07	17.53
Vendor	0.01	0.54	0.51	0.00	0.02	0.00	0.02	0.00	0.00	0.01	2.65
Worker	0.01	0.05	0.72	0.00	0.05	0.00	0.06	0.01	0.00	0.01	2.11
	0.03	3.03	2.72	0.02	0.25	0.03	0.27	0.06	0.02	0.08	22.30

21611 Perry Street

Total On-Road Emissions

260 Max construction days per year

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Idling per Day (minutes)
Demo & Site Preparation	2023				
Total Haul Trips	230				
Hauling	10	23	8	42	15
Vendor	0	23	8	6.9	15
Worker	16	23	8	14.7	0
Grading/Excavation	2023				
Total Haul Trips	630				
Hauling	30	21	8	42	15
Vendor	0	21	8	6.9	15
Worker	20	21	8	14.7	0
Drainage/Utilities/Trenching	2023				
Total Haul Trips	264				
Hauling	6	44	8	42	15
Vendor	0	44	8	6.9	15
Worker	40	44	8	14.7	0
Foundations/Concrete Pour	2023				
Total Haul Trips	96				
Hauling	4	24	8	42	15
Vendor	18	24	8	6.9	15
Worker	60	24	8	14.7	0
Building Construction	2023				
Total Haul Trips	0				
Hauling	0	152	8	42	15
Vendor	0	152	8	6.9	15
Worker	150	152	8	14.7	0
Building Construction	2024				
Total Haul Trips	0				
Hauling	0	24	8	42	15
Vendor	0	24	8	6.9	15
Worker	150	24	8	14.7	0
Architectural Coatings	2023				
Total Haul Trips	0				
Hauling	0	43	8	42	15
Vendor	0	43	8	6.9	15
Worker	16	43	8	14.7	0
Architectural Coatings	2024				
Total Haul Trips	0				
Hauling	0	24	8	42	15
Vendor	0	24	8	6.9	15
Worker	16	24	8	14.7	0

21611 Perry Street

Total On-Road Emissions

260 Max construction days per year

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Idling per Day (minutes)
Landscaping	2023				
Total Haul Trips	86				
Hauling	2	43	8	42	15
Vendor	0	43	8	6.9	15
Worker	16	43	8	14.7	0
Landscaping	2024				
Total Haul Trips	48				
Hauling	2	24	8	42	15
Vendor	0	24	8	6.9	15
Worker	16	24	8	14.7	0
Paving	2024				
Total Haul Trips	230				
Hauling	10	23	8	42	15
Vendor	8	23	8	6.9	15
Worker	20	23	8	14.7	0

21611 Perry Street

Total On-Road Emissions

Construction Phase	Regional Emissions (Tons/year)										(MT/yr)
	ROG	NOX	CO	SO2	PM10 Dust	PM10 Exh	Total PM10	PM2.5 Dust	PM2.5 Exh	Total PM2.5	Total CO2e
Demo & Site Preparation											
Total Haul Trips											
Hauling	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.83
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.73
Grading/Excavation											
Total Haul Trips											
Hauling	0.00	0.08	0.05	0.00	0.01	0.00	0.01	0.00	0.00	0.00	48.83
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.97
Drainage/Utilities/Trenching											
Total Haul Trips											
Hauling	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.46
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.27
Foundations/Concrete Pour											
Total Haul Trips											
Hauling	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.44
Vendor	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.33
Worker	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.77
Building Construction											
Total Haul Trips											
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.03	0.45	0.00	0.03	0.00	0.03	0.01	0.00	0.01	107.13
Building Construction											
Total Haul Trips											
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.06	0.00	0.00	0.00	0.01	0.00	0.00	0.00	16.50
Architectural Coatings											
Total Haul Trips											
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.23
Architectural Coatings											
Total Haul Trips											
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.76

21611 Perry Street

Total On-Road Emissions

Construction Phase	Regional Emissions (Tons/year)										(MT/yr)
	ROG	NOX	CO	SO2	PM10 Dust	PM10 Exh	Total PM10	PM2.5 Dust	PM2.5 Exh	Total PM2.5	Total CO2e
Landscaping											
Total Haul Trips											
Hauling	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.67
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.23
Landscaping											
Total Haul Trips											
Hauling	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.66
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.76
Paving											
Total Haul Trips											
Hauling	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.53
Vendor	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.65
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.11

21611 Perry Street
Idling Emissions

		Idling Emissions Factor (grams/minute)						Idling Emissions Factor (grams/minute)		
	ROG	NOX	CO	SO2	PM10	PM2.5	CO2	CH4	N2O
2023Hauling Hauling	0.00153219	2.475440914	3.09007671	0.00445539	0.00146199	0.00139636	501.459269	0.09222066	0.08043855
2023Vendor Vendor	0.00873855	1.452222429	1.72640023	0.00258336	0.00124295	0.00118783	289.393152	0.05139395	0.0460508
2023Worker Worker	0	0	0	0	0	0	0	0	0
2024Hauling Hauling	0.0020895	2.445312655	3.07903027	0.00435308	0.00137735	0.00131528	490.827049	0.0905213	0.07877141
2024Vendor Vendor	0.00870264	1.431440263	1.72000292	0.00253055	0.00112049	0.0010706	283.971879	0.05066755	0.04521769
2024Worker Worker	0	0	0	0	0	0	0	0	0
2025Hauling Hauling	0.00332165	2.416878954	3.06623505	0.00425044	0.00130967	0.00125041	480.185746	0.0891488	0.07710399
2025Vendor Vendor	0.00900196	1.411456643	1.71231511	0.00247621	0.00101449	0.00096912	278.397376	0.05008131	0.04436118
2025Worker Worker	0	0	0	0	0	0	0	0	0
2026Hauling Hauling	0.00482353	2.390354593	3.05359376	0.00415118	0.00124574	0.00118913	469.943227	0.08803578	0.07550138
2026Vendor Vendor	0.00946874	1.392752914	1.70465807	0.00242296	0.00092072	0.00087934	272.952852	0.0496051	0.04352444
2026Worker Worker	0	0	0	0	0	0	0	0	0
GWP	N/A	N/A	N/A	N/A	N/A	N/A	1	25	290

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	Idling minutes per Day (miles)	Regional Emissions (pounds/day) ROG	NOX	CO	SO2	PM10	PM2.5	Regional Emissions (MT/year) CO2	CH4	N2O	CO2e
Demo & Site Preparation	2023													
Total Haul Trips	230													
Hauling	10	23	8	15	0.00	0.82	1.02	0.00	0.00	0.00	1.73	0.01	0.08	1.82
Vendor	0	23	8	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	16	23	8	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	2023													
Total Haul Trips	630													
Hauling	30	21	8	15	0.00	2.46	3.07	0.00	0.00	0.00	4.74	0.02	0.22	4.98
Vendor	0	21	8	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	20	21	8	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Trenchir	2023													
Total Haul Trips	264													
Hauling	6	44	8	15	0.00	0.49	0.61	0.00	0.00	0.00	1.99	0.01	0.09	2.09
Vendor	0	44	8	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	40	44	8	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Foundations/Concrete Pou	2023													
Total Haul Trips	96													
Hauling	4	24	8	15	0.00	0.33	0.41	0.00	0.00	0.00	0.72	0.00	0.03	0.76
Vendor	18	24	8	15	0.01	0.86	1.03	0.00	0.00	0.00	1.88	0.01	0.09	1.97
Worker	60	24	8	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	2023													
Total Haul Trips	0													
Hauling	0	152	8	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0	152	8	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	150	152	8	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	2024													
Total Haul Trips	0													
Hauling	0	24	8	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0	24	8	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	150	24	8	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coatings	2023													
Total Haul Trips	0													
Hauling	0	43	8	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0	43	8	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	16	43	8	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coatings	2024													
Total Haul Trips	0													
Hauling	0	24	8	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0	24	8	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	16	24	8	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	2023													
Total Haul Trips	86													
Hauling	2	43	8	15	0.00	0.16	0.20	0.00	0.00	0.00	0.65	0.00	0.03	0.68
Vendor	0	43	8	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	16	43	8	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	2024													
Total Haul Trips	48													
Hauling	2	24	8	15	0.00	0.16	0.20	0.00	0.00	0.00	0.35	0.00	0.02	0.37
Vendor	0	24	8	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	16	24	8	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	2024													
Total Haul Trips	230													
Hauling	10	23	8	15	0.00	0.81	1.02	0.00	0.00	0.00	1.69	0.01	0.08	1.78
Vendor	8	23	8	15	0.00	0.38	0.46	0.00	0.00	0.00	0.78	0.00	0.04	0.82
Worker	20	23	8	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

21611 Perry Street
Running Emissions

	Running Emissions Factor (grams/mile)						Running Emissions Factor (grams/mile)		
	ROG	NOX	CO	SO2	PM10	PM2.5	CO2	CH4	N2O
2023Hauling Hauling	0.01583726	1.846349092	0.53216798	0.01440181	0.02335548	0.02234022	1582.16594	0.07485845	0.25204854
2023Vendor Vendor	0.02517402	1.413009631	0.53163708	0.01304101	0.01704589	0.01630115	1404.04014	0.0416683	0.1941139
2023Worker Worker	0.02253027	0.09409696	1.20532597	0.00313687	0.00190111	0.00175	317.32672	0.00530072	0.00752789
2024Hauling Hauling	0.01500166	1.757966945	0.5097505	0.01416696	0.02319781	0.02218961	1557.21286	0.07114403	0.24811684
2024Vendor Vendor	0.02221033	1.324663487	0.47751009	0.01284951	0.01640294	0.01568629	1384.23319	0.03949423	0.19181212
2024Worker Worker	0.01996092	0.084125691	1.11121797	0.00306134	0.00178709	0.00164482	309.685005	0.0047538	0.0069466
2025Hauling Hauling	0.01431182	1.682904108	0.49345533	0.01390961	0.02282737	0.02183543	1529.97223	0.06799383	0.24382581
2025Vendor Vendor	0.01962764	1.243630697	0.43346534	0.01262634	0.01566747	0.01498289	1361.14553	0.03768321	0.189104
2025Worker Worker	0.01787186	0.075802473	1.03210504	0.00299115	0.00169862	0.00156324	302.584557	0.00430196	0.00645241
2026Hauling Hauling	0.01368221	1.614053992	0.47684787	0.01364538	0.0226378	0.02165426	1501.9816	0.06476403	0.23941148
2026Vendor Vendor	0.01750743	1.169214075	0.39765668	0.0123973	0.01509905	0.01443925	1337.37545	0.03590634	0.1862605
2026Worker Worker	0.01606854	0.068748951	0.96388598	0.00292729	0.0016094	0.00148096	296.123967	0.00390838	0.00603404
GWP	N/A	N/A	N/A	N/A	N/A	N/A	1	25	290

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Regional Emissions (pounds/day)						Regional Emissions (MT/year)			
					ROG	NOX	CO	SO2	PM10	PM2.5	CO2	CH4	N2O	CO2e
Demo & Site Preparation	2023													
Total Haul Trips	230													
Hauling	10	23	8	42	0.01	1.71	0.49	0.01	0.02	0.02	15.28	0.02	0.71	16.01
Vendor	0	23	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	16	23	8	14.7	0.01	0.05	0.62	0.00	0.00	0.00	1.72	0.00	0.01	1.73
Grading/Excavation	2023													
Total Haul Trips	630													
Hauling	30	21	8	42	0.04	5.13	1.48	0.04	0.06	0.06	41.86	0.05	1.93	43.85
Vendor	0	21	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	20	21	8	14.7	0.01	0.06	0.78	0.00	0.00	0.00	1.96	0.00	0.01	1.97
Drainage/Utilities/Trenchi	2023													
Total Haul Trips	264													
Hauling	6	44	8	42	0.01	1.03	0.30	0.01	0.01	0.01	17.54	0.02	0.81	18.37
Vendor	0	44	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	40	44	8	14.7	0.03	0.12	1.56	0.00	0.00	0.00	8.21	0.00	0.06	8.27
Foundations/Concrete Pou	2023													
Total Haul Trips	96													
Hauling	4	24	8	42	0.01	0.68	0.20	0.01	0.01	0.01	6.38	0.01	0.29	6.68
Vendor	18	24	8	6.9	0.01	0.39	0.15	0.00	0.00	0.00	4.19	0.00	0.17	4.36
Worker	60	24	8	14.7	0.04	0.18	2.34	0.01	0.00	0.00	6.72	0.00	0.05	6.77
Building Construction	2023													
Total Haul Trips	0													
Hauling	0	152	8	42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0	152	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	150	152	8	14.7	0.11	0.46	5.86	0.02	0.01	0.01	106.36	0.04	0.73	107.13
Building Construction	2024													
Total Haul Trips	0													
Hauling	0	24	8	42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0	24	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	150	24	8	14.7	0.10	0.41	5.40	0.01	0.01	0.01	16.39	0.01	0.11	16.50

21611 Perry Street
Running Emissions

		Running Emissions Factor (grams/mile)						Running Emissions Factor (grams/mile)		
	ROG	NOX	CO	SO2	PM10	PM2.5	CO2	CH4	N2O
2023Hauling Hauling	0.01583726	1.846349092	0.53216798	0.01440181	0.02335548	0.02234022	1582.16594	0.07485845	0.25204854
2023Vendor Vendor	0.02517402	1.413009631	0.53163708	0.01304101	0.01704589	0.01630115	1404.04014	0.0416683	0.1941139
2023Worker Worker	0.02253027	0.09409696	1.20532597	0.00313687	0.00190111	0.00175	317.32672	0.00530072	0.00752789
2024Hauling Hauling	0.01500166	1.757966945	0.5097505	0.01416696	0.02319781	0.02218961	1557.21286	0.07114403	0.24811684
2024Vendor Vendor	0.02221033	1.324663487	0.47751009	0.01284951	0.01640294	0.01568629	1384.23319	0.03949423	0.19181212
2024Worker Worker	0.01996092	0.084125691	1.11121797	0.00306134	0.00178709	0.00164482	309.685005	0.0047538	0.0069466
2025Hauling Hauling	0.01431182	1.682904108	0.49345533	0.01390961	0.02282737	0.02183543	1529.97223	0.06799383	0.24382581
2025Vendor Vendor	0.01962764	1.243630697	0.43346534	0.01262634	0.01566747	0.01498289	1361.14553	0.03768321	0.189104
2025Worker Worker	0.01787186	0.075802473	1.03210504	0.00299115	0.00169862	0.00156324	302.584557	0.00430196	0.00645241
2026Hauling Hauling	0.01368221	1.614053992	0.47684787	0.01364538	0.0226378	0.02165426	1501.9816	0.06476403	0.23941148
2026Vendor Vendor	0.01750743	1.169214075	0.39765668	0.0123973	0.01509905	0.01443925	1337.37545	0.03590634	0.1862605
2026Worker Worker	0.01606854	0.068748951	0.96388598	0.00292729	0.0016094	0.00148096	296.123967	0.00390838	0.00603404
GWP	N/A	N/A	N/A	N/A	N/A	N/A	1	25	290

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Regional Emissions (pounds/day)						Regional Emissions (MT/year)			
					ROG	NOX	CO	SO2	PM10	PM2.5	CO2	CH4	N2O	CO2e
Architectural Coatings	2023													
Total Haul Trips	0													
Hauling	0	43	8	42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0	43	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	16	43	8	14.7	0.01	0.05	0.62	0.00	0.00	0.00	3.21	0.00	0.02	3.23
Architectural Coatings	2024													
Total Haul Trips	0													
Hauling	0	24	8	42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0	24	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	16	24	8	14.7	0.01	0.04	0.58	0.00	0.00	0.00	1.75	0.00	0.01	1.76
Landscaping	2023													
Total Haul Trips	86													
Hauling	2	43	8	42	0.00	0.34	0.10	0.00	0.00	0.00	5.71	0.01	0.26	5.99
Vendor	0	43	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	16	43	8	14.7	0.01	0.05	0.62	0.00	0.00	0.00	3.21	0.00	0.02	3.23
Landscaping	2024													
Total Haul Trips	48													
Hauling	2	24	8	42	0.00	0.33	0.09	0.00	0.00	0.00	3.14	0.00	0.15	3.29
Vendor	0	24	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	16	24	8	14.7	0.01	0.04	0.58	0.00	0.00	0.00	1.75	0.00	0.01	1.76
Paving	2024													
Total Haul Trips	230													
Hauling	10	23	8	42	0.01	1.63	0.47	0.01	0.02	0.02	15.04	0.02	0.70	15.75
Vendor	8	23	8	6.9	0.00	0.16	0.06	0.00	0.00	0.00	1.76	0.00	0.07	1.83
Worker	20	23	8	14.7	0.01	0.05	0.72	0.00	0.00	0.00	2.09	0.00	0.01	2.11

21611 Perry Street

Road Dust, Break Wear, and Tire wear Emissions

	Emission Factors (grams/mile)					
	PM10			PM2.5		
	RD	BW	TW	RD	BW	TW
2023Hauling Hauling	6.72E-02	0.084714206	0.03543552	1.01E-02	0.02964997	0.00885888
2023Vendor Vendor	6.72E-02	0.064163683	0.02371776	1.01E-02	0.02245729	0.00592944
2023Worker Worker	6.72E-02	0.009477692	0.008	1.01E-02	0.00331719	0.002
2024Hauling Hauling	6.72E-02	0.08427948	0.03543928	1.01E-02	0.02949782	0.00885982
2024Vendor Vendor	6.72E-02	0.063890978	0.02371964	1.01E-02	0.02236184	0.00592991
2024Worker Worker	6.72E-02	0.009419633	0.008	1.01E-02	0.00329687	0.002
2025Hauling Hauling	6.72E-02	0.084162962	0.03544313	1.01E-02	0.02945704	0.00886078
2025Vendor Vendor	6.72E-02	0.063767774	0.02372157	1.01E-02	0.02231872	0.00593039
2025Worker Worker	6.72E-02	0.009385513	0.008	1.01E-02	0.00328493	0.002
2026Hauling Hauling	6.72E-02	0.084352575	0.03544711	1.01E-02	0.0295234	0.00886178
2026Vendor Vendor	6.72E-02	0.063787152	0.02372356	1.01E-02	0.0223255	0.00593089
2026Worker Worker	6.72E-02	0.009353635	0.008	1.01E-02	0.00327377	0.002

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Regional Emissions (pounds/day) PM10 RD	PM10 BW	PM10 TW	PM2.5 RD	PM2.5 BW	PM2.5 TW
Demo & Site Preparation	2023									
Total Haul Trips	230									
Hauling	10	23	8	42	0.06	0.08	0.03	0.01	0.03	0.01
Vendor	0	23	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00
Worker	16	23	8	14.7	0.03	0.00	0.00	0.01	0.00	0.00
Grading/Excavation	2023									
Total Haul Trips	630									
Hauling	30	21	8	42	0.19	0.24	0.10	0.03	0.08	0.02
Vendor	0	21	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00
Worker	20	21	8	14.7	0.04	0.01	0.01	0.01	0.00	0.00
Drainage/Utilities/Trenchin	2023									
Total Haul Trips	264									
Hauling	6	44	8	42	0.04	0.05	0.02	0.01	0.02	0.00
Vendor	0	44	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00
Worker	40	44	8	14.7	0.09	0.01	0.01	0.01	0.00	0.00
Foundations/Concrete Pour	2023									
Total Haul Trips	96									
Hauling	4	24	8	42	0.02	0.03	0.01	0.00	0.01	0.00
Vendor	18	24	8	6.9	0.02	0.02	0.01	0.00	0.01	0.00
Worker	60	24	8	14.7	0.13	0.02	0.02	0.02	0.01	0.00
Building Construction	2023									
Total Haul Trips	0									
Hauling	0	152	8	42	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0	152	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00
Worker	150	152	8	14.7	0.33	0.05	0.04	0.05	0.02	0.01

21611 Perry Street

Road Dust, Break Wear, and Tire wear Emissions

	Emission Factors (grams/mile)					
	PM10			PM2.5		
	RD	BW	TW	RD	BW	TW
2023Hauling Hauling	6.72E-02	0.084714206	0.03543552	1.01E-02	0.02964997	0.00885888
2023Vendor Vendor	6.72E-02	0.064163683	0.02371776	1.01E-02	0.02245729	0.00592944
2023Worker Worker	6.72E-02	0.009477692	0.008	1.01E-02	0.00331719	0.002
2024Hauling Hauling	6.72E-02	0.08427948	0.03543928	1.01E-02	0.02949782	0.00885982
2024Vendor Vendor	6.72E-02	0.063890978	0.02371964	1.01E-02	0.02236184	0.00592991
2024Worker Worker	6.72E-02	0.009419633	0.008	1.01E-02	0.00329687	0.002
2025Hauling Hauling	6.72E-02	0.084162962	0.03544313	1.01E-02	0.02945704	0.00886078
2025Vendor Vendor	6.72E-02	0.063767774	0.02372157	1.01E-02	0.02231872	0.00593039
2025Worker Worker	6.72E-02	0.009385513	0.008	1.01E-02	0.00328493	0.002
2026Hauling Hauling	6.72E-02	0.084352575	0.03544711	1.01E-02	0.0295234	0.00886178
2026Vendor Vendor	6.72E-02	0.063787152	0.02372356	1.01E-02	0.0223255	0.00593089
2026Worker Worker	6.72E-02	0.009353635	0.008	1.01E-02	0.00327377	0.002

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Regional Emissions (pounds/day) PM10 RD	PM10 BW	PM10 TW	PM2.5 RD	PM2.5 BW	PM2.5 TW
Building Construction	2024									
Total Haul Trips	0									
Hauling	0	24	8	42	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0	24	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00
Worker	150	24	8	14.7	0.33	0.05	0.04	0.05	0.02	0.01
Architectural Coatings	2023									
Total Haul Trips	0									
Hauling	0	43	8	42	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0	43	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00
Worker	16	43	8	14.7	0.03	0.00	0.00	0.01	0.00	0.00
Architectural Coatings	2024									
Total Haul Trips	0									
Hauling	0	24	8	42	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0	24	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00
Worker	16	24	8	14.7	0.03	0.00	0.00	0.01	0.00	0.00
Landscaping	2023									
Total Haul Trips	86									
Hauling	2	43	8	42	0.01	0.02	0.01	0.00	0.01	0.00
Vendor	0	43	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00
Worker	16	43	8	14.7	0.03	0.00	0.00	0.01	0.00	0.00
Landscaping	2024									
Total Haul Trips	48									
Hauling	2	24	8	42	0.01	0.02	0.01	0.00	0.01	0.00
Vendor	0	24	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00
Worker	16	24	8	14.7	0.03	0.00	0.00	0.01	0.00	0.00
Paving	2024									
Total Haul Trips	230									
Hauling	10	23	8	42	0.06	0.08	0.03	0.01	0.03	0.01
Vendor	8	23	8	6.9	0.01	0.01	0.00	0.00	0.00	0.00
Worker	20	23	8	14.7	0.04	0.01	0.01	0.01	0.00	0.00

21611 Perry Street

Total On-Road Fuel Consumption

		gal/mile	gal/min
2023Hauling	Hauling	0.16744049	2.63411E-07
2023Vendor	Vendor	0.140008299	7.56451E-07
2023Worker	Worker	0.039164184	9.57885E-07
2024Hauling	Hauling	0.165344566	1.98496E-07
2024Vendor	Vendor	0.138767125	6.53915E-07
2024Worker	Worker	0.038437414	8.66366E-07
2025Hauling	Hauling	0.163051712	1.95685E-07
2025Vendor	Vendor	0.137362721	6.50149E-07
2025Worker	Worker	0.037780897	8.51473E-07
2026Hauling	Hauling	0.160756677	2.00057E-07
2026Vendor	Vendor	0.135957296	6.52676E-07
2026Worker	Worker	0.037118687	8.35632E-07

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Idling per Day (minutes)
Demo & Site Preparation	2023				
Total Haul Trips	230				
Hauling	10	23	8	42	15
Vendor	0	23	8	6.9	15
Worker	16	23	8	14.7	0
Grading/Excavation	2023				
Total Haul Trips	630				
Hauling	30	21	8	42	15
Vendor	0	21	8	6.9	15
Worker	20	21	8	14.7	0
Drainage/Utilities/Trenching	2023				
Total Haul Trips	264				
Hauling	6	44	8	42	15
Vendor	0	44	8	6.9	15
Worker	40	44	8	14.7	0
Foundations/Concrete Pour	2023				
Total Haul Trips	96				
Hauling	4	24	8	42	15
Vendor	18	24	8	6.9	15
Worker	60	24	8	14.7	0
Building Construction	2023				
Total Haul Trips	0				
Hauling	0	152	8	42	15
Vendor	0	152	8	6.9	15
Worker	150	152	8	14.7	0
Building Construction	2024				
Total Haul Trips	0				
Hauling	0	24	8	42	15
Vendor	0	24	8	6.9	15
Worker	150	24	8	14.7	0

21611 Perry Street

Total On-Road Fuel Consumption

		gal/mile	gal/min
2023Hauling	Hauling	0.16744049	2.63411E-07
2023Vendor	Vendor	0.140008299	7.56451E-07
2023Worker	Worker	0.039164184	9.57885E-07
2024Hauling	Hauling	0.165344566	1.98496E-07
2024Vendor	Vendor	0.138767125	6.53915E-07
2024Worker	Worker	0.038437414	8.66366E-07
2025Hauling	Hauling	0.163051712	1.95685E-07
2025Vendor	Vendor	0.137362721	6.50149E-07
2025Worker	Worker	0.037780897	8.51473E-07
2026Hauling	Hauling	0.160756677	2.00057E-07
2026Vendor	Vendor	0.135957296	6.52676E-07
2026Worker	Worker	0.037118687	8.35632E-07

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Idling per Day (minutes)
Architectural Coatings	2023				
Total Haul Trips	0				
Hauling	0	43	8	42	15
Vendor	0	43	8	6.9	15
Worker	16	43	8	14.7	0
Architectural Coatings	2024				
Total Haul Trips	0				
Hauling	0	24	8	42	15
Vendor	0	24	8	6.9	15
Worker	16	24	8	14.7	0
Landscaping	2023				
Total Haul Trips	86				
Hauling	2	43	8	42	15
Vendor	0	43	8	6.9	15
Worker	16	43	8	14.7	0
Landscaping	2024				
Total Haul Trips	48				
Hauling	2	24	8	42	15
Vendor	0	24	8	6.9	15
Worker	16	24	8	14.7	0
Paving	2024				
Total Haul Trips	230				
Hauling	10	23	8	42	15
Vendor	8	23	8	6.9	15
Worker	20	23	8	14.7	0

21611 Perry Street

Total On-Road Fuel Consumption

Source	Fuel Type	Total Fuel Use (gal)
Hauling	Diesel	11,115
Vendor	Diesel	594
Worker	Gasoline	18,942

Fuel Type	Total Fuel Use	Annual Fuel Use
Diesel	11,709	10,792
Gasoline	18,942	17,459

Duration of Construction	
1.1	years

Construction Phase	Regional Emissions (gallons)			
	gal/mile	gal/min	gal/day	Total Gallons/yr
Demo & Site Preparation				
Total Haul Trips				
Hauling	0.17	2.63E-07	70	1,617
Vendor	0.14	7.56E-07	0	0
Worker	0.04	9.58E-07	9	212
Grading/Excavation				
Total Haul Trips				
Hauling	0.17	2.63E-07	211	4,430
Vendor	0.14	7.56E-07	0	0
Worker	0.04	9.58E-07	12	242
Drainage/Utilities/Trenching				
Total Haul Trips				
Hauling	0.17	2.63E-07	42	1,857
Vendor	0.14	7.56E-07	0	0
Worker	0.04	9.58E-07	23	1,013
Foundations/Concrete Pour				
Total Haul Trips				
Hauling	0.17	2.63E-07	28	675
Vendor	0.14	7.56E-07	17	417
Worker	0.04	9.58E-07	35	829
Building Construction				
Total Haul Trips				
Hauling	0.17	2.63E-07	0	0
Vendor	0.14	7.56E-07	0	0
Worker	0.04	9.58E-07	86	13,126
Building Construction				
Total Haul Trips				
Hauling	0.17	1.98E-07	0	0
Vendor	0.14	6.54E-07	0	0
Worker	0.04	8.66E-07	85	2,034

21611 Perry Street

Total On-Road Fuel Consumption

Source	Fuel Type	Total Fuel Use (gal)
Hauling	Diesel	11,115
Vendor	Diesel	594
Worker	Gasoline	18,942

Fuel Type	Total Fuel Use	Annual Fuel Use
Diesel	11,709	10,792
Gasoline	18,942	17,459

Duration of Construction	
1.1	years

Construction Phase	Regional Emissions (gallons)			
	gal/mile	gal/min	gal/day	Total Gallons/yr
Architectural Coatings				
Total Haul Trips				
Hauling	0.17	2.63E-07	0	0
Vendor	0.14	7.56E-07	0	0
Worker	0.04	9.58E-07	9	396
Architectural Coatings				
Total Haul Trips				
Hauling	0.17	1.98E-07	0	0
Vendor	0.14	6.54E-07	0	0
Worker	0.04	8.66E-07	9	217
Landscaping				
Total Haul Trips				
Hauling	0.17	2.63E-07	14	605
Vendor	0.14	7.56E-07	0	0
Worker	0.04	9.58E-07	9	396
Landscaping				
Total Haul Trips				
Hauling	0.17	1.98E-07	14	333
Vendor	0.14	6.54E-07	0	0
Worker	0.04	8.66E-07	9	217
Paving				
Total Haul Trips				
Hauling	0.17	1.98E-07	69	1,597
Vendor	0.14	6.54E-07	8	176
Worker	0.04	8.66E-07	11	260

21611 Perry Street
Road Dust

Paved Road Dust Emission Factors (Assumes No Precipitation)

Formula: $EF_{Dust,P} = (k\ (sL)^{0.91} \times (W)^{1.02})$

Where:

$EF_{Dust,P}$ =	Paved Road Dust Emission Factor (having the same units as k)
k =	particle size multiplier
sL =	road surface silt loading (g/m^2)
W =	average fleet vehicle weight (tons) (CARB uses 2.4 tons as a fleet average vehicle weight factor)

Emission Factor (grams per VMT)			
	PM10	PM2.5	
k	1.0000	0.1500	
sL	0.0200	0.0200	weighted average silt loading factor used
W	2.4	2.4	
P	46	46	Table 5 of CARB Miscellaneous Process Methodology 7.9 for Los Angeles County
N	365	365	
$EF_{Dust,P}$	0.0672	0.0101	← use in off-model calculation as EF

Silt Loading Factor

Source: CARB, 2021.

Table 3: California Default Statewide and Local Silt Loading Values (Los Angeles County)

Silt Loadings (g/m2)			
Freeway	**Major**	**Collector**	**Local**
0.015	0.013	0.013	0.135

Table 2: Roadway Travel Fractions (Los Angeles County)

2008 HPMS Travel Fractions			
0.44	0.44	0.07	0.05

Unpaved Road Dust Emission Factors (Assumes No Precipitation)

Formula: $EF_{Dust,U} = (k\ (\ s / 12)^{1} \times (Sp / 30)^{0.5} / (M / 0.5)^{0.2}) - C)$

Where:

$EF_{Dust,U}$ =	Unpaved Road Dust Emission Factor (having the same units as k)
k =	particle size multiplier
s =	surface material silt content (%)
Sp =	mean vehicle speed (mph)
M =	surface material moisture content (%)
C =	Emission Factor for 1980s vehicle fleet exhaust, brake wear, and tire wear

Emission Factor (grams per VMT)		
	PM10	PM2.5
k	816.47	81.65
s	4.3%	4.3%
Sp	15	15
M	0.5%	0.5%
C	0.00047	0.00036
$EF_{Dust,U}$	5.20E+00	5.19E-01

Sources:
SCAQMD, CalEEMod, Version 2011.1.
CARB, *Entrained Dust from Paved Road Travel: Emission Estimation Methodology Background Document* , (1997).
USEPA, *AP-42* , Fifth Edition, Volume I, Chapter 13.2.1 - Paved Roads, (2011).
PCR Services Corporation, 2013.

21611 Perry Street
Operational Air Quality Assessment

Regional Operational Emissions

Maximum Unmitigated Regional Operational Emissions (pounds per day)

Source	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Area (Consumer Products, Landscaping)	3	<1	<1	<1	<1	<1
Energy (Natural Gas)	<1	<1	<1	<1	<1	<1
Motor Vehicles	1	2	14	<1	<1	<1
Total Project On-Site and Off-Site Emissions	**4**	**2**	**14**	**0**	**1**	**0**
SCAQMD Numeric Indicators	**55**	**55**	**550**	**150**	**150**	**55**
Over/(Under)	(51)	(53)	(536)	(150)	(149)	(55)
Exceeds Thresholds?	**No**	**No**	**No**	**No**	**No**	**No**

Net Regional Operations

Maximum Unmitigated Regional Operational Emissions (pounds per day)

Source	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Area (Consumer Products, Landscaping)	3	<1	<1	<1	<1	<1
Energy (Natural Gas)	<1	<1	<1	<1	<1	<1
Motor Vehicles	1	2	14	<1	<1	<1
Total Project On-Site and Off-Site Emissions	**4**	**2**	**14**	**<1**	**1**	**0**
Existing On-Site and Off-Site Emissions	<1	<1	<1	<1	<1	<1
Net On-Site and Off-Site Emissions	**4**	**2**	**14**	**<1**	**<1**	**<1**
SCAQMD Numeric Indicators	**55**	**55**	**550**	**150**	**150**	**55**
Over/(Under)	(51)	(53)	(536)	(150)	(149)	(55)
Exceeds Thresholds?	**No**	**No**	**No**	**No**	**No**	**No**

21611 Perry Street
Operational Air Quality Assessment

Localized Operational Emissions

Maximum Unmitigated Localized Operational Emissions (pounds per day)

Source	NO_X	CO	PM_{10}	$PM_{2.5}$
Area (Consumer Products, Landscaping)	0.0	0.0	0.0	0.0
Energy (Natural Gas)	0.1	0.1	0.0	0.0
Total Project On-Site Emissions	**0**	**0**	**0.0**	**0.0**
SCAQMD Numeric Indicators	**82**	**842**	**2.0**	**1.0**
Exceeds Thresholds?	**No**	**No**	**No**	**No**

Localized significance thresholds from SCAQMD Look-Up tables, 5 acre site; SRA 4 (Carson) area; sensitive receptors 25 m away

21611 Perry Street

Greenhouse Gas Emissions Summary

Project Operations Summary (Full Buildout Year 2024)	
Category	**$MTCO_2e/yr$**
Mobile	640
From CalEEMod:	
Area	0
Energy	77
Waste	62
Water	69
External spreadsheet calcs:	
EV Charging	1
Construction Emissions	
2023	685
2024	120
Construction Total	805
Construction Amortized (30 years)	27
Project Subtotal	**876**
Existing	-
Project Net Total GHG Emissions	**876**

$MTCO_2e$=Metric Tons Carbon Dioxide equivalents

21611 Perry Street
Air Quality and GHG Assessment
Operational Mobile Emissions

			Criteria Pollutant Emission Factors (lb/mile)									GHG Emissions (metric tons/mile)				Criteria Pollutant Emissions (pounds/day)									GHG Emissions (metric tons/year)			
	Year	Weekday Daily VMT	ROG	NOx	CO	SOx	PM10 Road Dust	PM10	PM10 Total	PM2_5 Road Dust	PM2_5	PM2.5 Tota	CO2	CH4	N2O	CO2e	ROG	NOx	CO	SOx	PM10 Road Dust	PM10	PM10 Total	PM2_5 Road Dust	PM2_5	PM2.5 Total	CO2	CH4	N2O	CO2e
																											1	*25*	*298*	
Project	2024	4,466	3.26E-04	4.55E-04	3.09E-03	8.24E-06	1.48E-04	5.67E-05	2.05E-04	2.22E-05	2.15E-05	4.37E-05	3.86E-04	2.00E-08	2.04E-08	3.93E-04	1.46	2.03	13.80	0.04	0.66	0.25	0.92	0.10	0.10	0.20	629.60	0.03	0.03	640.34

Source: Fehr and Peers MOU

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	2.42	1000sqft	0.20	2,425.00	0
Unrefrigerated Warehouse-No Rail	109.04	1000sqft	0.50	109,039.00	0
Parking Lot	41.00	Space	0.20	16,400.00	0
City Park	0.53	Acre	1.50	22,999.68	0
High Turnover (Sit Down Restaurant)	1.55	1000sqft	0.20	1,550.00	0
Strip Mall	0.70	1000sqft	0.20	700.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	210.1	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Updated CO2e

Land Use - See Construction Assumptions

Construction Phase - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

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Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Trips and VMT -

Grading -

Architectural Coating - Landscaping has no VOCs

Vehicle Trips - no VMT for City Park

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	56,857.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	170,571.00	0.00
tblArchitecturalCoating	ConstArea_Parking	984.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	0.00
tblArchitecturalCoating	EF_Parking	100.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	50.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	50.00	0.00
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	67.00
tblConstructionPhase	NumDays	10.00	67.00
tblConstructionPhase	NumDays	220.00	176.00
tblConstructionPhase	NumDays	6.00	21.00
tblConstructionPhase	NumDays	10.00	23.00
tblConstructionPhase	NumDays	3.00	23.00
tblLandUse	LandUseSquareFeet	2,420.00	2,425.00
tblLandUse	LandUseSquareFeet	109,040.00	109,039.00
tblLandUse	LandUseSquareFeet	23,086.80	22,999.68

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblLandUse	LotAcreage	0.06	0.20
tblLandUse	LotAcreage	2.50	0.50
tblLandUse	LotAcreage	0.37	0.20
tblLandUse	LotAcreage	0.53	1.50
tblLandUse	LotAcreage	0.04	0.20
tblLandUse	LotAcreage	0.02	0.20
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblProjectCharacteristics	CO2IntensityFactor	390.98	210.1
tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	WD_TR	0.78	0.00

2.0 Emissions Summary

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.7611	3.6781	4.6219	8.6500e-003	0.1406	0.1648	0.3054	0.0297	0.1583	0.1880	0.0000	753.3342	753.3342	0.1255	6.6000e-003	758.4373
2024	0.2590	0.5917	0.8464	1.5000e-003	0.0179	0.0260	0.0439	4.7900e-003	0.0248	0.0296	0.0000	130.8445	130.8445	0.0245	1.0800e-003	131.7803
Maximum	**0.7611**	**3.6781**	**4.6219**	**8.6500e-003**	**0.1406**	**0.1648**	**0.3054**	**0.0297**	**0.1583**	**0.1880**	**0.0000**	**753.3342**	**753.3342**	**0.1255**	**6.6000e-003**	**758.4373**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.7611	3.6781	4.6219	8.6500e-003	0.1100	0.1648	0.2748	0.0264	0.1583	0.1847	0.0000	753.3335	753.3335	0.1255	6.6000e-003	758.4365
2024	0.2590	0.5917	0.8464	1.5000e-003	0.0179	0.0260	0.0439	4.7900e-003	0.0248	0.0296	0.0000	130.8443	130.8443	0.0245	1.0800e-003	131.7801
Maximum	**0.7611**	**3.6781**	**4.6219**	**8.6500e-003**	**0.1100**	**0.1648**	**0.2748**	**0.0264**	**0.1583**	**0.1847**	**0.0000**	**753.3335**	**753.3335**	**0.1255**	**6.6000e-003**	**758.4365**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**19.29**	**0.00**	**8.75**	**9.57**	**0.00**	**1.52**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2023**	**3-31-2023**	1.0291	1.0291
2	**4-1-2023**	**6-30-2023**	0.7831	0.7831
3	**7-1-2023**	**9-30-2023**	1.0874	1.0874
4	**10-1-2023**	**12-31-2023**	1.5411	1.5411
5	**1-1-2024**	**3-31-2024**	0.8128	0.8128
		Highest	1.5411	1.5411

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4653	2.0000e-005	1.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.8500e-003	3.8500e-003	1.0000e-005	0.0000	4.1000e-003
Energy	2.5700e-003	0.0234	0.0196	1.4000e-004		1.7800e-003	1.7800e-003		1.7800e-003	1.7800e-003	0.0000	75.9490	75.9490	8.4200e-003	1.4300e-003	76.5851
Mobile	0.2000	0.2186	1.9778	4.1800e-003	0.4410	3.1100e-003	0.4442	0.1177	2.8900e-003	0.1206	0.0000	393.5968	393.5968	0.0279	0.0174	399.4829
Waste						0.0000	0.0000		0.0000	0.0000	25.1689	0.0000	25.1689	1.4874	0.0000	62.3548
Water						0.0000	0.0000		0.0000	0.0000	8.3019	33.4849	41.7868	0.8579	0.0208	69.4252
Total	**0.6679**	**0.2420**	**1.9994**	**4.3200e-003**	**0.4410**	**4.9000e-003**	**0.4459**	**0.1177**	**4.6800e-003**	**0.1223**	**33.4707**	**503.0345**	**536.5053**	**2.3817**	**0.0396**	**607.8520**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4653	2.0000e-005	1.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.8500e-003	3.8500e-003	1.0000e-005	0.0000	4.1000e-003
Energy	2.5700e-003	0.0234	0.0196	1.4000e-004		1.7800e-003	1.7800e-003		1.7800e-003	1.7800e-003	0.0000	75.9490	75.9490	8.4200e-003	1.4300e-003	76.5851
Mobile	0.2000	0.2186	1.9778	4.1800e-003	0.4410	3.1100e-003	0.4442	0.1177	2.8900e-003	0.1206	0.0000	393.5968	393.5968	0.0279	0.0174	399.4829
Waste						0.0000	0.0000		0.0000	0.0000	25.1689	0.0000	25.1689	1.4874	0.0000	62.3548
Water						0.0000	0.0000		0.0000	0.0000	8.3019	33.4849	41.7868	0.8579	0.0208	69.4252
Total	**0.6679**	**0.2420**	**1.9994**	**4.3200e-003**	**0.4410**	**4.9000e-003**	**0.4459**	**0.1177**	**4.6800e-003**	**0.1223**	**33.4707**	**503.0345**	**536.5053**	**2.3817**	**0.0396**	**607.8520**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demo & Site Preparation	Site Preparation	1/1/2023	2/1/2023	5	23	
2	Grading/Excavation	Grading	2/1/2023	3/1/2023	5	21	
3	Drainage/Utilities/Trenching	Trenching	3/1/2023	5/1/2023	5	44	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Foundations/Concrete Pour	Trenching	5/1/2023	6/1/2023	5	24	
5	Building Construction	Building Construction	6/1/2023	2/1/2024	5	176	
6	Architectural Coating	Architectural Coating	11/1/2023	2/1/2024	5	67	
7	Landscaping	Architectural Coating	11/1/2023	2/1/2024	5	67	
8	Paving	Paving	1/1/2024	1/31/2024	5	23	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 94.5

Acres of Paving: 0.2

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 170,571; Non-Residential Outdoor: 56,857; Striped Parking Area: 984 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demo & Site Preparation	Air Compressors	2	8.00	78	0.48
Demo & Site Preparation	Dumpers/Tenders	2	8.00	16	0.38
Demo & Site Preparation	Excavators	1	8.00	158	0.38
Demo & Site Preparation	Generator Sets	1	8.00	84	0.74
Demo & Site Preparation	Skid Steer Loaders	1	8.00	65	0.37
Demo & Site Preparation	Sweepers/Scrubbers	1	8.00	64	0.46
Demo & Site Preparation	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading/Excavation	Concrete/Industrial Saws	1	8.00	81	0.73
Grading/Excavation	Crawler Tractors	2	8.00	212	0.43
Grading/Excavation	Dumpers/Tenders	2	8.00	16	0.38
Grading/Excavation	Excavators	1	8.00	158	0.38
Grading/Excavation	Graders	1	8.00	187	0.41
Grading/Excavation	Plate Compactors	1	8.00	8	0.43
Grading/Excavation	Rollers	1	8.00	80	0.38
Grading/Excavation	Scrapers	3	8.00	367	0.48

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Grading/Excavation	Sweepers/Scrubbers	1	8.00	64	0.46
Grading/Excavation	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Drainage/Utilities/Trenching	Air Compressors	1	8.00	78	0.48
Drainage/Utilities/Trenching	Dumpers/Tenders	2	8.00	16	0.38
Drainage/Utilities/Trenching	Excavators	1	8.00	158	0.38
Drainage/Utilities/Trenching	Generator Sets	2	8.00	84	0.74
Drainage/Utilities/Trenching	Plate Compactors	1	8.00	8	0.43
Drainage/Utilities/Trenching	Pumps	1	8.00	84	0.74
Drainage/Utilities/Trenching	Rough Terrain Forklifts	1	8.00	100	0.40
Drainage/Utilities/Trenching	Sweepers/Scrubbers	1	8.00	64	0.46
Drainage/Utilities/Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Foundations/Concrete Pour	Air Compressors	1	8.00	78	0.48
Foundations/Concrete Pour	Concrete/Industrial Saws	1	8.00	81	0.73
Foundations/Concrete Pour	Dumpers/Tenders	2	8.00	16	0.38
Foundations/Concrete Pour	Plate Compactors	1	8.00	8	0.43
Foundations/Concrete Pour	Pumps	1	8.00	84	0.74
Foundations/Concrete Pour	Rough Terrain Forklifts	1	8.00	100	0.40
Foundations/Concrete Pour	Skid Steer Loaders	1	8.00	65	0.37
Foundations/Concrete Pour	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Air Compressors	2	8.00	78	0.48
Building Construction	Cement and Mortar Mixers	2	8.00	9	0.56
Building Construction	Concrete/Industrial Saws	2	8.00	81	0.73
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Dumpers/Tenders	2	8.00	16	0.38
Building Construction	Forklifts	4	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Pumps	1	8.00	84	0.74
Building Construction	Rough Terrain Forklifts	4	8.00	100	0.40
Architectural Coating	Air Compressors	1	6.00	78	0.48

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Architectural Coating	Cement and Mortar Mixers	1	8.00	9	0.56
Architectural Coating	Rough Terrain Forklifts	1	8.00	100	0.40
Landscaping	Dumpers/Tenders	1	6.00	16	0.38
Landscaping	Skid Steer Loaders	1	8.00	65	0.37
Paving	Air Compressors	1	8.00	78	0.48
Paving	Dumpers/Tenders	2	8.00	16	0.38
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	3	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Sweepers/Scrubbers	1	8.00	64	0.46
Paving	Tractors/Loaders/Backhoes	3	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demo & Site Preparation	11	28.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading/Excavation	16	40.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Drainage/Utilities/Trenching	12	30.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Foundations/Concrete Pour	11	28.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	19	64.00	25.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	3	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping	2	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	13	33.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demo & Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0207	0.1756	0.2463	3.9000e-004		8.7900e-003	8.7900e-003		8.4100e-003	8.4100e-003	0.0000	33.7375	33.7375	6.7600e-003	0.0000	33.9065
Total	**0.0207**	**0.1756**	**0.2463**	**3.9000e-004**	**0.0000**	**8.7900e-003**	**8.7900e-003**	**0.0000**	**8.4100e-003**	**8.4100e-003**	**0.0000**	**33.7375**	**33.7375**	**6.7600e-003**	**0.0000**	**33.9065**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0200e-003	8.1000e-004	0.0110	3.0000e-005	3.5300e-003	2.0000e-005	3.5500e-003	9.4000e-004	2.0000e-005	9.6000e-004	0.0000	2.8438	2.8438	7.0000e-005	7.0000e-005	2.8675
Total	**1.0200e-003**	**8.1000e-004**	**0.0110**	**3.0000e-005**	**3.5300e-003**	**2.0000e-005**	**3.5500e-003**	**9.4000e-004**	**2.0000e-005**	**9.6000e-004**	**0.0000**	**2.8438**	**2.8438**	**7.0000e-005**	**7.0000e-005**	**2.8675**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demo & Site Preparation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0207	0.1756	0.2463	3.9000e-004		8.7900e-003	8.7900e-003		8.4100e-003	8.4100e-003	0.0000	33.7375	33.7375	6.7600e-003	0.0000	33.9064
Total	**0.0207**	**0.1756**	**0.2463**	**3.9000e-004**	**0.0000**	**8.7900e-003**	**8.7900e-003**	**0.0000**	**8.4100e-003**	**8.4100e-003**	**0.0000**	**33.7375**	**33.7375**	**6.7600e-003**	**0.0000**	**33.9064**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0200e-003	8.1000e-004	0.0110	3.0000e-005	3.5300e-003	2.0000e-005	3.5500e-003	9.4000e-004	2.0000e-005	9.6000e-004	0.0000	2.8438	2.8438	7.0000e-005	7.0000e-005	2.8675
Total	**1.0200e-003**	**8.1000e-004**	**0.0110**	**3.0000e-005**	**3.5300e-003**	**2.0000e-005**	**3.5500e-003**	**9.4000e-004**	**2.0000e-005**	**9.6000e-004**	**0.0000**	**2.8438**	**2.8438**	**7.0000e-005**	**7.0000e-005**	**2.8675**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading/Excavation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0501	0.0000	0.0501	5.4100e-003	0.0000	5.4100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0533	0.5503	0.4394	9.9000e-004		0.0228	0.0228		0.0211	0.0211	0.0000	86.7657	86.7657	0.0262	0.0000	87.4205
Total	**0.0533**	**0.5503**	**0.4394**	**9.9000e-004**	**0.0501**	**0.0228**	**0.0729**	**5.4100e-003**	**0.0211**	**0.0265**	**0.0000**	**86.7657**	**86.7657**	**0.0262**	**0.0000**	**87.4205**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3300e-003	1.0600e-003	0.0144	4.0000e-005	4.6000e-003	3.0000e-005	4.6300e-003	1.2200e-003	3.0000e-005	1.2500e-003	0.0000	3.7093	3.7093	1.0000e-004	1.0000e-004	3.7402
Total	**1.3300e-003**	**1.0600e-003**	**0.0144**	**4.0000e-005**	**4.6000e-003**	**3.0000e-005**	**4.6300e-003**	**1.2200e-003**	**3.0000e-005**	**1.2500e-003**	**0.0000**	**3.7093**	**3.7093**	**1.0000e-004**	**1.0000e-004**	**3.7402**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading/Excavation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0195	0.0000	0.0195	2.1100e-003	0.0000	2.1100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0533	0.5503	0.4394	9.9000e-004		0.0228	0.0228		0.0211	0.0211	0.0000	86.7656	86.7656	0.0262	0.0000	87.4204
Total	**0.0533**	**0.5503**	**0.4394**	**9.9000e-004**	**0.0195**	**0.0228**	**0.0423**	**2.1100e-003**	**0.0211**	**0.0232**	**0.0000**	**86.7656**	**86.7656**	**0.0262**	**0.0000**	**87.4204**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3300e-003	1.0600e-003	0.0144	4.0000e-005	4.6000e-003	3.0000e-005	4.6300e-003	1.2200e-003	3.0000e-005	1.2500e-003	0.0000	3.7093	3.7093	1.0000e-004	1.0000e-004	3.7402
Total	**1.3300e-003**	**1.0600e-003**	**0.0144**	**4.0000e-005**	**4.6000e-003**	**3.0000e-005**	**4.6300e-003**	**1.2200e-003**	**3.0000e-005**	**1.2500e-003**	**0.0000**	**3.7093**	**3.7093**	**1.0000e-004**	**1.0000e-004**	**3.7402**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Drainage/Utilities/Trenching - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0476	0.4142	0.5746	9.5000e-004		0.0201	0.0201		0.0194	0.0194	0.0000	81.5081	81.5081	0.0133	0.0000	81.8408
Total	**0.0476**	**0.4142**	**0.5746**	**9.5000e-004**		**0.0201**	**0.0201**		**0.0194**	**0.0194**	**0.0000**	**81.5081**	**81.5081**	**0.0133**	**0.0000**	**81.8408**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-003	1.6600e-003	0.0226	6.0000e-005	7.2300e-003	4.0000e-005	7.2800e-003	1.9200e-003	4.0000e-005	1.9600e-003	0.0000	5.8290	5.8290	1.5000e-004	1.5000e-004	5.8775
Total	**2.1000e-003**	**1.6600e-003**	**0.0226**	**6.0000e-005**	**7.2300e-003**	**4.0000e-005**	**7.2800e-003**	**1.9200e-003**	**4.0000e-005**	**1.9600e-003**	**0.0000**	**5.8290**	**5.8290**	**1.5000e-004**	**1.5000e-004**	**5.8775**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Drainage/Utilities/Trenching - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0476	0.4142	0.5746	9.5000e-004		0.0201	0.0201		0.0194	0.0194	0.0000	81.5080	81.5080	0.0133	0.0000	81.8407
Total	**0.0476**	**0.4142**	**0.5746**	**9.5000e-004**		**0.0201**	**0.0201**		**0.0194**	**0.0194**	**0.0000**	**81.5080**	**81.5080**	**0.0133**	**0.0000**	**81.8407**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-003	1.6600e-003	0.0226	6.0000e-005	7.2300e-003	4.0000e-005	7.2800e-003	1.9200e-003	4.0000e-005	1.9600e-003	0.0000	5.8290	5.8290	1.5000e-004	1.5000e-004	5.8775
Total	**2.1000e-003**	**1.6600e-003**	**0.0226**	**6.0000e-005**	**7.2300e-003**	**4.0000e-005**	**7.2800e-003**	**1.9200e-003**	**4.0000e-005**	**1.9600e-003**	**0.0000**	**5.8290**	**5.8290**	**1.5000e-004**	**1.5000e-004**	**5.8775**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Foundations/Concrete Pour - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0208	0.1815	0.2505	4.0000e-004		8.4400e-003	8.4400e-003		8.1500e-003	8.1500e-003	0.0000	34.6872	34.6872	6.1200e-003	0.0000	34.8402
Total	**0.0208**	**0.1815**	**0.2505**	**4.0000e-004**		**8.4400e-003**	**8.4400e-003**		**8.1500e-003**	**8.1500e-003**	**0.0000**	**34.6872**	**34.6872**	**6.1200e-003**	**0.0000**	**34.8402**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0700e-003	8.5000e-004	0.0115	3.0000e-005	3.6800e-003	2.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9675	2.9675	8.0000e-005	8.0000e-005	2.9922
Total	**1.0700e-003**	**8.5000e-004**	**0.0115**	**3.0000e-005**	**3.6800e-003**	**2.0000e-005**	**3.7000e-003**	**9.8000e-004**	**2.0000e-005**	**1.0000e-003**	**0.0000**	**2.9675**	**2.9675**	**8.0000e-005**	**8.0000e-005**	**2.9922**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Foundations/Concrete Pour - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0208	0.1815	0.2505	4.0000e-004		8.4400e-003	8.4400e-003		8.1500e-003	8.1500e-003	0.0000	34.6872	34.6872	6.1200e-003	0.0000	34.8402
Total	**0.0208**	**0.1815**	**0.2505**	**4.0000e-004**		**8.4400e-003**	**8.4400e-003**		**8.1500e-003**	**8.1500e-003**	**0.0000**	**34.6872**	**34.6872**	**6.1200e-003**	**0.0000**	**34.8402**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0700e-003	8.5000e-004	0.0115	3.0000e-005	3.6800e-003	2.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9675	2.9675	8.0000e-005	8.0000e-005	2.9922
Total	**1.0700e-003**	**8.5000e-004**	**0.0115**	**3.0000e-005**	**3.6800e-003**	**2.0000e-005**	**3.7000e-003**	**9.8000e-004**	**2.0000e-005**	**1.0000e-003**	**0.0000**	**2.9675**	**2.9675**	**8.0000e-005**	**8.0000e-005**	**2.9922**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2440	2.1697	2.7092	4.6700e-003		0.1002	0.1002		0.0969	0.0969	0.0000	401.0579	401.0579	0.0664	0.0000	402.7177
Total	**0.2440**	**2.1697**	**2.7092**	**4.6700e-003**		**0.1002**	**0.1002**		**0.0969**	**0.0969**	**0.0000**	**401.0579**	**401.0579**	**0.0664**	**0.0000**	**402.7177**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1500e-003	0.0766	0.0287	3.5000e-004	0.0120	3.7000e-004	0.0123	3.4600e-003	3.5000e-004	3.8100e-003	0.0000	34.5462	34.5462	1.1500e-003	4.9700e-003	36.0567
Worker	0.0154	0.0123	0.1662	4.6000e-004	0.0533	3.3000e-004	0.0536	0.0142	3.0000e-004	0.0145	0.0000	42.9577	42.9577	1.1300e-003	1.1000e-003	43.3150
Total	**0.0176**	**0.0888**	**0.1948**	**8.1000e-004**	**0.0653**	**7.0000e-004**	**0.0660**	**0.0176**	**6.5000e-004**	**0.0183**	**0.0000**	**77.5039**	**77.5039**	**2.2800e-003**	**6.0700e-003**	**79.3717**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2440	2.1697	2.7092	4.6700e-003		0.1002	0.1002		0.0969	0.0969	0.0000	401.0575	401.0575	0.0664	0.0000	402.7172
Total	**0.2440**	**2.1697**	**2.7092**	**4.6700e-003**		**0.1002**	**0.1002**		**0.0969**	**0.0969**	**0.0000**	**401.0575**	**401.0575**	**0.0664**	**0.0000**	**402.7172**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1500e-003	0.0766	0.0287	3.5000e-004	0.0120	3.7000e-004	0.0123	3.4600e-003	3.5000e-004	3.8100e-003	0.0000	34.5462	34.5462	1.1500e-003	4.9700e-003	36.0567
Worker	0.0154	0.0123	0.1662	4.6000e-004	0.0533	3.3000e-004	0.0536	0.0142	3.0000e-004	0.0145	0.0000	42.9577	42.9577	1.1300e-003	1.1000e-003	43.3150
Total	**0.0176**	**0.0888**	**0.1948**	**8.1000e-004**	**0.0653**	**7.0000e-004**	**0.0660**	**0.0176**	**6.5000e-004**	**0.0183**	**0.0000**	**77.5039**	**77.5039**	**2.2800e-003**	**6.0700e-003**	**79.3717**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0364	0.3224	0.4266	7.4000e-004		0.0140	0.0140		0.0135	0.0135	0.0000	63.3219	63.3219	0.0104	0.0000	63.5817
Total	**0.0364**	**0.3224**	**0.4266**	**7.4000e-004**		**0.0140**	**0.0140**		**0.0135**	**0.0135**	**0.0000**	**63.3219**	**63.3219**	**0.0104**	**0.0000**	**63.5817**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.3000e-004	0.0121	4.4300e-003	5.0000e-005	1.8900e-003	6.0000e-005	1.9500e-003	5.5000e-004	6.0000e-005	6.0000e-004	0.0000	5.3728	5.3728	1.8000e-004	7.7000e-004	5.6081
Worker	2.2800e-003	1.7300e-003	0.0244	7.0000e-005	8.4200e-003	5.0000e-005	8.4700e-003	2.2400e-003	5.0000e-005	2.2800e-003	0.0000	6.6434	6.6434	1.6000e-004	1.6000e-004	6.6958
Total	**2.6100e-003**	**0.0138**	**0.0289**	**1.2000e-004**	**0.0103**	**1.1000e-004**	**0.0104**	**2.7900e-003**	**1.1000e-004**	**2.8800e-003**	**0.0000**	**12.0163**	**12.0163**	**3.4000e-004**	**9.3000e-004**	**12.3038**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0364	0.3224	0.4266	7.4000e-004		0.0140	0.0140		0.0135	0.0135	0.0000	63.3218	63.3218	0.0104	0.0000	63.5816
Total	**0.0364**	**0.3224**	**0.4266**	**7.4000e-004**		**0.0140**	**0.0140**		**0.0135**	**0.0135**	**0.0000**	**63.3218**	**63.3218**	**0.0104**	**0.0000**	**63.5816**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.3000e-004	0.0121	4.4300e-003	5.0000e-005	1.8900e-003	6.0000e-005	1.9500e-003	5.5000e-004	6.0000e-005	6.0000e-004	0.0000	5.3728	5.3728	1.8000e-004	7.7000e-004	5.6081
Worker	2.2800e-003	1.7300e-003	0.0244	7.0000e-005	8.4200e-003	5.0000e-005	8.4700e-003	2.2400e-003	5.0000e-005	2.2800e-003	0.0000	6.6434	6.6434	1.6000e-004	1.6000e-004	6.6958
Total	**2.6100e-003**	**0.0138**	**0.0289**	**1.2000e-004**	**0.0103**	**1.1000e-004**	**0.0104**	**2.7900e-003**	**1.1000e-004**	**2.8800e-003**	**0.0000**	**12.0163**	**12.0163**	**3.4000e-004**	**9.3000e-004**	**12.3038**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3397					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.6600e-003	0.0660	0.0948	1.5000e-004		2.8000e-003	2.8000e-003		2.7200e-003	2.7200e-003	0.0000	12.9855	12.9855	2.5400e-003	0.0000	13.0489
Total	**0.3474**	**0.0660**	**0.0948**	**1.5000e-004**		**2.8000e-003**	**2.8000e-003**		**2.7200e-003**	**2.7200e-003**	**0.0000**	**12.9855**	**12.9855**	**2.5400e-003**	**0.0000**	**13.0489**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	7.0000e-004	9.5500e-003	3.0000e-005	3.0600e-003	2.0000e-005	3.0800e-003	8.1000e-004	2.0000e-005	8.3000e-004	0.0000	2.4685	2.4685	6.0000e-005	6.0000e-005	2.4890
Total	**8.9000e-004**	**7.0000e-004**	**9.5500e-003**	**3.0000e-005**	**3.0600e-003**	**2.0000e-005**	**3.0800e-003**	**8.1000e-004**	**2.0000e-005**	**8.3000e-004**	**0.0000**	**2.4685**	**2.4685**	**6.0000e-005**	**6.0000e-005**	**2.4890**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3397					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.6600e-003	0.0660	0.0948	1.5000e-004		2.8000e-003	2.8000e-003		2.7200e-003	2.7200e-003	0.0000	12.9854	12.9854	2.5400e-003	0.0000	13.0488
Total	**0.3474**	**0.0660**	**0.0948**	**1.5000e-004**		**2.8000e-003**	**2.8000e-003**		**2.7200e-003**	**2.7200e-003**	**0.0000**	**12.9854**	**12.9854**	**2.5400e-003**	**0.0000**	**13.0488**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	7.0000e-004	9.5500e-003	3.0000e-005	3.0600e-003	2.0000e-005	3.0800e-003	8.1000e-004	2.0000e-005	8.3000e-004	0.0000	2.4685	2.4685	6.0000e-005	6.0000e-005	2.4890
Total	**8.9000e-004**	**7.0000e-004**	**9.5500e-003**	**3.0000e-005**	**3.0600e-003**	**2.0000e-005**	**3.0800e-003**	**8.1000e-004**	**2.0000e-005**	**8.3000e-004**	**0.0000**	**2.4685**	**2.4685**	**6.0000e-005**	**6.0000e-005**	**2.4890**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1896					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.1000e-003	0.0353	0.0529	9.0000e-005		1.4000e-003	1.4000e-003		1.3600e-003	1.3600e-003	0.0000	7.2470	7.2470	1.4000e-003	0.0000	7.2821
Total	**0.1937**	**0.0353**	**0.0529**	**9.0000e-005**		**1.4000e-003**	**1.4000e-003**		**1.3600e-003**	**1.3600e-003**	**0.0000**	**7.2470**	**7.2470**	**1.4000e-003**	**0.0000**	**7.2821**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	3.5000e-004	4.9600e-003	1.0000e-005	1.7100e-003	1.0000e-005	1.7200e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.3495	1.3495	3.0000e-005	3.0000e-005	1.3601
Total	**4.6000e-004**	**3.5000e-004**	**4.9600e-003**	**1.0000e-005**	**1.7100e-003**	**1.0000e-005**	**1.7200e-003**	**4.5000e-004**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**1.3495**	**1.3495**	**3.0000e-005**	**3.0000e-005**	**1.3601**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1896					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.1000e-003	0.0353	0.0529	9.0000e-005		1.4000e-003	1.4000e-003		1.3600e-003	1.3600e-003	0.0000	7.2470	7.2470	1.4000e-003	0.0000	7.2821
Total	**0.1937**	**0.0353**	**0.0529**	**9.0000e-005**		**1.4000e-003**	**1.4000e-003**		**1.3600e-003**	**1.3600e-003**	**0.0000**	**7.2470**	**7.2470**	**1.4000e-003**	**0.0000**	**7.2821**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	3.5000e-004	4.9600e-003	1.0000e-005	1.7100e-003	1.0000e-005	1.7200e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.3495	1.3495	3.0000e-005	3.0000e-005	1.3601
Total	**4.6000e-004**	**3.5000e-004**	**4.9600e-003**	**1.0000e-005**	**1.7100e-003**	**1.0000e-005**	**1.7200e-003**	**4.5000e-004**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**1.3495**	**1.3495**	**3.0000e-005**	**3.0000e-005**	**1.3601**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Landscaping - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5800e-003	0.0261	0.0338	6.0000e-005		9.1000e-004	9.1000e-004		8.6000e-004	8.6000e-004	0.0000	4.8018	4.8018	1.3600e-003	0.0000	4.8358
Total	**2.5800e-003**	**0.0261**	**0.0338**	**6.0000e-005**		**9.1000e-004**	**9.1000e-004**		**8.6000e-004**	**8.6000e-004**	**0.0000**	**4.8018**	**4.8018**	**1.3600e-003**	**0.0000**	**4.8358**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	7.0000e-004	9.5500e-003	3.0000e-005	3.0600e-003	2.0000e-005	3.0800e-003	8.1000e-004	2.0000e-005	8.3000e-004	0.0000	2.4685	2.4685	6.0000e-005	6.0000e-005	2.4890
Total	**8.9000e-004**	**7.0000e-004**	**9.5500e-003**	**3.0000e-005**	**3.0600e-003**	**2.0000e-005**	**3.0800e-003**	**8.1000e-004**	**2.0000e-005**	**8.3000e-004**	**0.0000**	**2.4685**	**2.4685**	**6.0000e-005**	**6.0000e-005**	**2.4890**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Landscaping - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5800e-003	0.0261	0.0338	6.0000e-005		9.1000e-004	9.1000e-004		8.6000e-004	8.6000e-004	0.0000	4.8018	4.8018	1.3600e-003	0.0000	4.8358
Total	**2.5800e-003**	**0.0261**	**0.0338**	**6.0000e-005**		**9.1000e-004**	**9.1000e-004**		**8.6000e-004**	**8.6000e-004**	**0.0000**	**4.8018**	**4.8018**	**1.3600e-003**	**0.0000**	**4.8358**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	7.0000e-004	9.5500e-003	3.0000e-005	3.0600e-003	2.0000e-005	3.0800e-003	8.1000e-004	2.0000e-005	8.3000e-004	0.0000	2.4685	2.4685	6.0000e-005	6.0000e-005	2.4890
Total	**8.9000e-004**	**7.0000e-004**	**9.5500e-003**	**3.0000e-005**	**3.0600e-003**	**2.0000e-005**	**3.0800e-003**	**8.1000e-004**	**2.0000e-005**	**8.3000e-004**	**0.0000**	**2.4685**	**2.4685**	**6.0000e-005**	**6.0000e-005**	**2.4890**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Landscaping - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4100e-003	0.0141	0.0189	3.0000e-005		4.7000e-004	4.7000e-004		4.5000e-004	4.5000e-004	0.0000	2.6810	2.6810	7.6000e-004	0.0000	2.7000
Total	**1.4100e-003**	**0.0141**	**0.0189**	**3.0000e-005**		**4.7000e-004**	**4.7000e-004**		**4.5000e-004**	**4.5000e-004**	**0.0000**	**2.6810**	**2.6810**	**7.6000e-004**	**0.0000**	**2.7000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	3.5000e-004	4.9600e-003	1.0000e-005	1.7100e-003	1.0000e-005	1.7200e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.3495	1.3495	3.0000e-005	3.0000e-005	1.3601
Total	**4.6000e-004**	**3.5000e-004**	**4.9600e-003**	**1.0000e-005**	**1.7100e-003**	**1.0000e-005**	**1.7200e-003**	**4.5000e-004**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**1.3495**	**1.3495**	**3.0000e-005**	**3.0000e-005**	**1.3601**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Landscaping - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4100e-003	0.0141	0.0189	3.0000e-005		4.7000e-004	4.7000e-004		4.5000e-004	4.5000e-004	0.0000	2.6810	2.6810	7.6000e-004	0.0000	2.7000
Total	**1.4100e-003**	**0.0141**	**0.0189**	**3.0000e-005**		**4.7000e-004**	**4.7000e-004**		**4.5000e-004**	**4.5000e-004**	**0.0000**	**2.6810**	**2.6810**	**7.6000e-004**	**0.0000**	**2.7000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	3.5000e-004	4.9600e-003	1.0000e-005	1.7100e-003	1.0000e-005	1.7200e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.3495	1.3495	3.0000e-005	3.0000e-005	1.3601
Total	**4.6000e-004**	**3.5000e-004**	**4.9600e-003**	**1.0000e-005**	**1.7100e-003**	**1.0000e-005**	**1.7200e-003**	**4.5000e-004**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**1.3495**	**1.3495**	**3.0000e-005**	**3.0000e-005**	**1.3601**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0226	0.2046	0.2972	4.5000e-004		0.0100	0.0100		9.3400e-003	9.3400e-003	0.0000	39.5967	39.5967	0.0115	0.0000	39.8839
Paving	2.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0228**	**0.2046**	**0.2972**	**4.5000e-004**		**0.0100**	**0.0100**		**9.3400e-003**	**9.3400e-003**	**0.0000**	**39.5967**	**39.5967**	**0.0115**	**0.0000**	**39.8839**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1200e-003	8.5000e-004	0.0121	4.0000e-005	4.1600e-003	2.0000e-005	4.1800e-003	1.1000e-003	2.0000e-005	1.1300e-003	0.0000	3.2828	3.2828	8.0000e-005	8.0000e-005	3.3087
Total	**1.1200e-003**	**8.5000e-004**	**0.0121**	**4.0000e-005**	**4.1600e-003**	**2.0000e-005**	**4.1800e-003**	**1.1000e-003**	**2.0000e-005**	**1.1300e-003**	**0.0000**	**3.2828**	**3.2828**	**8.0000e-005**	**8.0000e-005**	**3.3087**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Paving - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0226	0.2046	0.2972	4.5000e-004		0.0100	0.0100		9.3400e-003	9.3400e-003	0.0000	39.5967	39.5967	0.0115	0.0000	39.8838
Paving	2.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0228**	**0.2046**	**0.2972**	**4.5000e-004**		**0.0100**	**0.0100**		**9.3400e-003**	**9.3400e-003**	**0.0000**	**39.5967**	**39.5967**	**0.0115**	**0.0000**	**39.8838**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1200e-003	8.5000e-004	0.0121	4.0000e-005	4.1600e-003	2.0000e-005	4.1800e-003	1.1000e-003	2.0000e-005	1.1300e-003	0.0000	3.2828	3.2828	8.0000e-005	8.0000e-005	3.3087
Total	**1.1200e-003**	**8.5000e-004**	**0.0121**	**4.0000e-005**	**4.1600e-003**	**2.0000e-005**	**4.1800e-003**	**1.1000e-003**	**2.0000e-005**	**1.1300e-003**	**0.0000**	**3.2828**	**3.2828**	**8.0000e-005**	**8.0000e-005**	**3.3087**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2000	0.2186	1.9778	4.1800e-003	0.4410	3.1100e-003	0.4442	0.1177	2.8900e-003	0.1206	0.0000	393.5968	393.5968	0.0279	0.0174	399.4829
Unmitigated	0.2000	0.2186	1.9778	4.1800e-003	0.4410	3.1100e-003	0.4442	0.1177	2.8900e-003	0.1206	0.0000	393.5968	393.5968	0.0279	0.0174	399.4829

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
General Office Building	23.57	5.35	1.69	57,478	57,478
High Turnover (Sit Down Restaurant)	173.88	189.72	221.09	249,244	249,244
Parking Lot	0.00	0.00	0.00		
Strip Mall	31.02	29.43	14.30	54,047	54,047
Unrefrigerated Warehouse-No Rail	189.73	189.73	189.73	813,127	813,127
Total	418.20	414.23	426.82	1,173,896	1,173,896

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
High Turnover (Sit Down	16.60	8.40	6.90	8.50	72.50	19.00	37	20	43
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Strip Mall	16.60	8.40	6.90	16.60	64.40	19.00	45	40	15
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
General Office Building	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
High Turnover (Sit Down Restaurant)	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
Parking Lot	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
Strip Mall	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
Unrefrigerated Warehouse-No Rail	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	50.4983	50.4983	7.9300e-003	9.6000e-004	50.9831
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	50.4983	50.4983	7.9300e-003	9.6000e-004	50.9831
NaturalGas Mitigated	2.5700e-003	0.0234	0.0196	1.4000e-004		1.7800e-003	1.7800e-003		1.7800e-003	1.7800e-003	0.0000	25.4507	25.4507	4.9000e-004	4.7000e-004	25.6019
NaturalGas Unmitigated	2.5700e-003	0.0234	0.0196	1.4000e-004		1.7800e-003	1.7800e-003		1.7800e-003	1.7800e-003	0.0000	25.4507	25.4507	4.9000e-004	4.7000e-004	25.6019

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	25001.8	1.3000e-004	1.2300e-003	1.0300e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.3342	1.3342	3.0000e-005	2.0000e-005	1.3421
High Turnover (Sit Down Restaurant)	357012	1.9300e-003	0.0175	0.0147	1.1000e-004		1.3300e-003	1.3300e-003		1.3300e-003	1.3300e-003	0.0000	19.0515	19.0515	3.7000e-004	3.5000e-004	19.1647
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	1141	1.0000e-005	6.0000e-005	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0609	0.0609	0.0000	0.0000	0.0613
Unrefrigerated Warehouse-No Rail	93773.5	5.1000e-004	4.6000e-003	3.8600e-003	3.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004	0.0000	5.0041	5.0041	1.0000e-004	9.0000e-005	5.0339
Total		**2.5800e-003**	**0.0234**	**0.0196**	**1.5000e-004**		**1.7700e-003**	**1.7700e-003**		**1.7700e-003**	**1.7700e-003**	**0.0000**	**25.4507**	**25.4507**	**5.0000e-004**	**4.6000e-004**	**25.6019**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	25001.8	1.3000e-004	1.2300e-003	1.0300e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.3342	1.3342	3.0000e-005	2.0000e-005	1.3421
High Turnover (Sit Down Restaurant)	357012	1.9300e-003	0.0175	0.0147	1.1000e-004		1.3300e-003	1.3300e-003		1.3300e-003	1.3300e-003	0.0000	19.0515	19.0515	3.7000e-004	3.5000e-004	19.1647
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	1141	1.0000e-005	6.0000e-005	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0609	0.0609	0.0000	0.0000	0.0613
Unrefrigerated Warehouse-No Rail	93773.5	5.1000e-004	4.6000e-003	3.8600e-003	3.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004	0.0000	5.0041	5.0041	1.0000e-004	9.0000e-005	5.0339
Total		**2.5800e-003**	**0.0234**	**0.0196**	**1.5000e-004**		**1.7700e-003**	**1.7700e-003**		**1.7700e-003**	**1.7700e-003**	**0.0000**	**25.4507**	**25.4507**	**5.0000e-004**	**4.6000e-004**	**25.6019**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
General Office Building	30312.5	2.8888	4.5000e-004	5.0000e-005	2.9165
High Turnover (Sit Down Restaurant)	67068.5	6.3916	1.0000e-003	1.2000e-004	6.4530
Parking Lot	5740	0.5470	9.0000e-005	1.0000e-005	0.5523
Strip Mall	9149	0.8719	1.4000e-004	2.0000e-005	0.8803
Unrefrigerated Warehouse-No Rail	417619	39.7990	6.2500e-003	7.6000e-004	40.1811
Total		**50.4983**	**7.9300e-003**	**9.6000e-004**	**50.9831**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
General Office Building	30312.5	2.8888	4.5000e-004	5.0000e-005	2.9165
High Turnover (Sit Down Restaurant)	67068.5	6.3916	1.0000e-003	1.2000e-004	6.4530
Parking Lot	5740	0.5470	9.0000e-005	1.0000e-005	0.5523
Strip Mall	9149	0.8719	1.4000e-004	2.0000e-005	0.8803
Unrefrigerated Warehouse-No Rail	417619	39.7990	6.2500e-003	7.6000e-004	40.1811
Total		**50.4983**	**7.9300e-003**	**9.6000e-004**	**50.9831**

6.0 Area Detail

6.1 Mitigation Measures Area

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4653	2.0000e-005	1.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.8500e-003	3.8500e-003	1.0000e-005	0.0000	4.1000e-003
Unmitigated	0.4653	2.0000e-005	1.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.8500e-003	3.8500e-003	1.0000e-005	0.0000	4.1000e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0529					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4122					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.8000e-004	2.0000e-005	1.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.8500e-003	3.8500e-003	1.0000e-005	0.0000	4.1000e-003
Total	**0.4653**	**2.0000e-005**	**1.9800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.8500e-003**	**3.8500e-003**	**1.0000e-005**	**0.0000**	**4.1000e-003**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0529					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4122					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.8000e-004	2.0000e-005	1.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.8500e-003	3.8500e-003	1.0000e-005	0.0000	4.1000e-003
Total	**0.4653**	**2.0000e-005**	**1.9800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.8500e-003**	**3.8500e-003**	**1.0000e-005**	**0.0000**	**4.1000e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	41.7868	0.8579	0.0208	69.4252
Unmitigated	41.7868	0.8579	0.0208	69.4252

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.631485	0.6686	1.1000e-004	1.0000e-005	0.6750
General Office Building	0.430116 / 0.263619	0.9493	0.0141	3.5000e-004	1.4061
High Turnover (Sit Down Restaurant)	0.470477 / 0.0300305	0.7649	0.0154	3.7000e-004	1.2619
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.0518508 / 0.0317795	0.1144	1.7000e-003	4.0000e-005	0.1695
Unrefrigerated Warehouse-No Rail	25.2155 / 0	39.2896	0.8266	0.0200	65.9126
Total		**41.7868**	**0.8579**	**0.0208**	**69.4252**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.631485	0.6686	1.1000e-004	1.0000e-005	0.6750
General Office Building	0.430116 / 0.263619	0.9493	0.0141	3.5000e-004	1.4061
High Turnover (Sit Down Restaurant)	0.470477 / 0.0300305	0.7649	0.0154	3.7000e-004	1.2619
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.0518508 / 0.0317795	0.1144	1.7000e-003	4.0000e-005	0.1695
Unrefrigerated Warehouse-No Rail	25.2155 / 0	39.2896	0.8266	0.0200	65.9126
Total		**41.7868**	**0.8579**	**0.0208**	**69.4252**

8.0 Waste Detail

8.1 Mitigation Measures Waste

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	25.1689	1.4874	0.0000	62.3548
Unmitigated	25.1689	1.4874	0.0000	62.3548

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.05	0.0102	6.0000e-004	0.0000	0.0252
General Office Building	2.25	0.4567	0.0270	0.0000	1.1315
High Turnover (Sit Down Restaurant)	18.45	3.7452	0.2213	0.0000	9.2785
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.74	0.1502	8.8800e-003	0.0000	0.3722
Unrefrigerated Warehouse-No Rail	102.5	20.8066	1.2296	0.0000	51.5474
Total		**25.1688**	**1.4874**	**0.0000**	**62.3548**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.05	0.0102	6.0000e-004	0.0000	0.0252
General Office Building	2.25	0.4567	0.0270	0.0000	1.1315
High Turnover (Sit Down Restaurant)	18.45	3.7452	0.2213	0.0000	9.2785
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.74	0.1502	8.8800e-003	0.0000	0.3722
Unrefrigerated Warehouse-No Rail	102.5	20.8066	1.2296	0.0000	51.5474
Total		**25.1688**	**1.4874**	**0.0000**	**62.3548**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	2.42	1000sqft	0.20	2,425.00	0
Unrefrigerated Warehouse-No Rail	109.04	1000sqft	0.50	109,039.00	0
Parking Lot	41.00	Space	0.20	16,400.00	0
City Park	0.53	Acre	1.50	22,999.68	0
High Turnover (Sit Down Restaurant)	1.55	1000sqft	0.20	1,550.00	0
Strip Mall	0.70	1000sqft	0.20	700.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	210.1	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Updated CO2e

Land Use - See Construction Assumptions

Construction Phase - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Trips and VMT -

Grading -

Architectural Coating - Landscaping has no VOCs

Vehicle Trips - no VMT for City Park

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	56,857.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	170,571.00	0.00
tblArchitecturalCoating	ConstArea_Parking	984.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	0.00
tblArchitecturalCoating	EF_Parking	100.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	50.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	50.00	0.00
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	3.00	23.00
tblConstructionPhase	NumDays	6.00	21.00
tblConstructionPhase	NumDays	220.00	176.00
tblConstructionPhase	NumDays	10.00	67.00
tblConstructionPhase	NumDays	10.00	67.00
tblConstructionPhase	NumDays	10.00	23.00
tblLandUse	LandUseSquareFeet	2,420.00	2,425.00
tblLandUse	LandUseSquareFeet	109,040.00	109,039.00
tblLandUse	LandUseSquareFeet	23,086.80	22,999.68

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblLandUse	LotAcreage	0.06	0.20
tblLandUse	LotAcreage	2.50	0.50
tblLandUse	LotAcreage	0.37	0.20
tblLandUse	LotAcreage	0.53	1.50
tblLandUse	LotAcreage	0.04	0.20
tblLandUse	LotAcreage	0.02	0.20
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblProjectCharacteristics	CO2IntensityFactor	390.98	210.1
tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	WD_TR	0.78	0.00

2.0 Emissions Summary

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.7314	3.3237	4.0813	7.8100e-003	0.1406	0.1533	0.2938	0.0297	0.1476	0.1773	0.0000	680.0894	680.0894	0.1027	6.6000e-003	684.6229
2024	0.2544	0.5375	0.7610	1.3700e-003	0.0179	0.0243	0.0422	4.7900e-003	0.0232	0.0280	0.0000	119.2817	119.2817	0.0209	1.0800e-003	120.1276
Maximum	**0.7314**	**3.3237**	**4.0813**	**7.8100e-003**	**0.1406**	**0.1533**	**0.2938**	**0.0297**	**0.1476**	**0.1773**	**0.0000**	**680.0894**	**680.0894**	**0.1027**	**6.6000e-003**	**684.6229**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.7314	3.3237	4.0813	7.8100e-003	0.1100	0.1533	0.2632	0.0264	0.1476	0.1740	0.0000	680.0887	680.0887	0.1027	6.6000e-003	684.6222
2024	0.2544	0.5375	0.7610	1.3700e-003	0.0179	0.0243	0.0422	4.7900e-003	0.0232	0.0280	0.0000	119.2816	119.2816	0.0209	1.0800e-003	120.1274
Maximum	**0.7314**	**3.3237**	**4.0813**	**7.8100e-003**	**0.1100**	**0.1533**	**0.2632**	**0.0264**	**0.1476**	**0.1740**	**0.0000**	**680.0887**	**680.0887**	**0.1027**	**6.6000e-003**	**684.6222**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**19.29**	**0.00**	**9.09**	**9.57**	**0.00**	**1.61**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2023**	**3-31-2023**	1.0291	1.0291
2	**4-1-2023**	**6-30-2023**	0.7290	0.7290
3	**7-1-2023**	**9-30-2023**	0.9214	0.9214
4	**10-1-2023**	**12-31-2023**	1.3751	1.3751
5	**1-1-2024**	**3-31-2024**	0.7568	0.7568
		Highest	1.3751	1.3751

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4653	2.0000e-005	1.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.8500e-003	3.8500e-003	1.0000e-005	0.0000	4.1000e-003
Energy	2.5700e-003	0.0234	0.0196	1.4000e-004		1.7800e-003	1.7800e-003		1.7800e-003	1.7800e-003	0.0000	75.9490	75.9490	8.4200e-003	1.4300e-003	76.5851
Mobile	0.2000	0.2186	1.9778	4.1800e-003	0.4410	3.1100e-003	0.4442	0.1177	2.8900e-003	0.1206	0.0000	393.5968	393.5968	0.0279	0.0174	399.4829
Waste						0.0000	0.0000		0.0000	0.0000	25.1689	0.0000	25.1689	1.4874	0.0000	62.3548
Water						0.0000	0.0000		0.0000	0.0000	8.3019	33.4849	41.7868	0.8579	0.0208	69.4252
Total	**0.6679**	**0.2420**	**1.9994**	**4.3200e-003**	**0.4410**	**4.9000e-003**	**0.4459**	**0.1177**	**4.6800e-003**	**0.1223**	**33.4707**	**503.0345**	**536.5053**	**2.3817**	**0.0396**	**607.8520**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4653	2.0000e-005	1.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.8500e-003	3.8500e-003	1.0000e-005	0.0000	4.1000e-003
Energy	2.5700e-003	0.0234	0.0196	1.4000e-004		1.7800e-003	1.7800e-003		1.7800e-003	1.7800e-003	0.0000	75.9490	75.9490	8.4200e-003	1.4300e-003	76.5851
Mobile	0.2000	0.2186	1.9778	4.1800e-003	0.4410	3.1100e-003	0.4442	0.1177	2.8900e-003	0.1206	0.0000	393.5968	393.5968	0.0279	0.0174	399.4829
Waste						0.0000	0.0000		0.0000	0.0000	25.1689	0.0000	25.1689	1.4874	0.0000	62.3548
Water						0.0000	0.0000		0.0000	0.0000	8.3019	33.4849	41.7868	0.8579	0.0208	69.4252
Total	**0.6679**	**0.2420**	**1.9994**	**4.3200e-003**	**0.4410**	**4.9000e-003**	**0.4459**	**0.1177**	**4.6800e-003**	**0.1223**	**33.4707**	**503.0345**	**536.5053**	**2.3817**	**0.0396**	**607.8520**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demo & Site Preparation	Site Preparation	1/1/2023	2/1/2023	5	23	
2	Grading/Excavation	Grading	2/1/2023	3/1/2023	5	21	
3	Drainage/Utilities/Trenching	Trenching	3/1/2023	5/1/2023	5	44	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Foundations/Concrete Pour	Trenching	5/1/2023	6/1/2023	5	24	
5	Building Construction	Building Construction	6/1/2023	2/1/2024	5	176	
6	Architectural Coating	Architectural Coating	11/1/2023	2/1/2024	5	67	
7	Landscaping	Architectural Coating	11/1/2023	2/1/2024	5	67	
8	Paving	Paving	1/1/2024	1/31/2024	5	23	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 94.5

Acres of Paving: 0.2

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 170,571; Non-Residential Outdoor: 56,857; Striped Parking Area: 984 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demo & Site Preparation	Air Compressors	2	8.00	78	0.48
Demo & Site Preparation	Dumpers/Tenders	2	8.00	16	0.38
Demo & Site Preparation	Excavators	1	8.00	158	0.38
Demo & Site Preparation	Generator Sets	1	8.00	84	0.74
Demo & Site Preparation	Skid Steer Loaders	1	8.00	65	0.37
Demo & Site Preparation	Sweepers/Scrubbers	1	8.00	64	0.46
Demo & Site Preparation	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading/Excavation	Concrete/Industrial Saws	1	8.00	81	0.73
Grading/Excavation	Crawler Tractors	2	8.00	212	0.43
Grading/Excavation	Dumpers/Tenders	2	8.00	16	0.38
Grading/Excavation	Excavators	1	8.00	158	0.38
Grading/Excavation	Graders	1	8.00	187	0.41
Grading/Excavation	Plate Compactors	1	8.00	8	0.43
Grading/Excavation	Rollers	1	8.00	80	0.38
Grading/Excavation	Scrapers	3	8.00	367	0.48

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Grading/Excavation	Sweepers/Scrubbers	1	8.00	64	0.46
Grading/Excavation	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Drainage/Utilities/Trenching	Air Compressors	1	8.00	78	0.48
Drainage/Utilities/Trenching	Dumpers/Tenders	2	8.00	16	0.38
Drainage/Utilities/Trenching	Excavators	1	8.00	158	0.38
Drainage/Utilities/Trenching	Generator Sets	2	8.00	84	0.74
Drainage/Utilities/Trenching	Plate Compactors	1	8.00	8	0.43
Drainage/Utilities/Trenching	Pumps	1	8.00	84	0.74
Drainage/Utilities/Trenching	Rough Terrain Forklifts	1	8.00	100	0.40
Drainage/Utilities/Trenching	Sweepers/Scrubbers	1	8.00	64	0.46
Drainage/Utilities/Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Foundations/Concrete Pour	Air Compressors	1	8.00	78	0.48
Foundations/Concrete Pour	Concrete/Industrial Saws	1	8.00	81	0.73
Foundations/Concrete Pour	Dumpers/Tenders	2	8.00	16	0.38
Foundations/Concrete Pour	Plate Compactors	1	8.00	8	0.43
Foundations/Concrete Pour	Pumps	1	8.00	84	0.74
Foundations/Concrete Pour	Rough Terrain Forklifts	1	8.00	100	0.40
Foundations/Concrete Pour	Skid Steer Loaders	1	8.00	65	0.37
Foundations/Concrete Pour	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Air Compressors	2	8.00	78	0.48
Building Construction	Cement and Mortar Mixers	2	8.00	9	0.56
Building Construction	Concrete/Industrial Saws	2	8.00	81	0.73
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Dumpers/Tenders	1	8.00	16	0.38
Building Construction	Forklifts	4	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Pumps	1	8.00	84	0.74
Building Construction	Rough Terrain Forklifts	1	8.00	100	0.40
Architectural Coating	Air Compressors	1	6.00	78	0.48

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Architectural Coating	Cement and Mortar Mixers	1	8.00	9	0.56
Architectural Coating	Rough Terrain Forklifts	1	8.00	100	0.40
Landscaping	Dumpers/Tenders	1	6.00	16	0.38
Landscaping	Skid Steer Loaders	1	8.00	65	0.37
Paving	Air Compressors	1	8.00	78	0.48
Paving	Dumpers/Tenders	2	8.00	16	0.38
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	3	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Sweepers/Scrubbers	1	8.00	64	0.46
Paving	Tractors/Loaders/Backhoes	3	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demo & Site Preparation	11	28.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading/Excavation	16	40.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Drainage/Utilities/Trenching	12	30.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Foundations/Concrete Pour	11	28.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	15	64.00	25.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	3	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping	2	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	13	33.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demo & Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0207	0.1756	0.2463	3.9000e-004		8.7900e-003	8.7900e-003		8.4100e-003	8.4100e-003	0.0000	33.7375	33.7375	6.7600e-003	0.0000	33.9065
Total	**0.0207**	**0.1756**	**0.2463**	**3.9000e-004**	**0.0000**	**8.7900e-003**	**8.7900e-003**	**0.0000**	**8.4100e-003**	**8.4100e-003**	**0.0000**	**33.7375**	**33.7375**	**6.7600e-003**	**0.0000**	**33.9065**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0200e-003	8.1000e-004	0.0110	3.0000e-005	3.5300e-003	2.0000e-005	3.5500e-003	9.4000e-004	2.0000e-005	9.6000e-004	0.0000	2.8438	2.8438	7.0000e-005	7.0000e-005	2.8675
Total	**1.0200e-003**	**8.1000e-004**	**0.0110**	**3.0000e-005**	**3.5300e-003**	**2.0000e-005**	**3.5500e-003**	**9.4000e-004**	**2.0000e-005**	**9.6000e-004**	**0.0000**	**2.8438**	**2.8438**	**7.0000e-005**	**7.0000e-005**	**2.8675**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demo & Site Preparation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0207	0.1756	0.2463	3.9000e-004		8.7900e-003	8.7900e-003		8.4100e-003	8.4100e-003	0.0000	33.7375	33.7375	6.7600e-003	0.0000	33.9064
Total	**0.0207**	**0.1756**	**0.2463**	**3.9000e-004**	**0.0000**	**8.7900e-003**	**8.7900e-003**	**0.0000**	**8.4100e-003**	**8.4100e-003**	**0.0000**	**33.7375**	**33.7375**	**6.7600e-003**	**0.0000**	**33.9064**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0200e-003	8.1000e-004	0.0110	3.0000e-005	3.5300e-003	2.0000e-005	3.5500e-003	9.4000e-004	2.0000e-005	9.6000e-004	0.0000	2.8438	2.8438	7.0000e-005	7.0000e-005	2.8675
Total	**1.0200e-003**	**8.1000e-004**	**0.0110**	**3.0000e-005**	**3.5300e-003**	**2.0000e-005**	**3.5500e-003**	**9.4000e-004**	**2.0000e-005**	**9.6000e-004**	**0.0000**	**2.8438**	**2.8438**	**7.0000e-005**	**7.0000e-005**	**2.8675**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading/Excavation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0501	0.0000	0.0501	5.4100e-003	0.0000	5.4100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0533	0.5503	0.4394	9.9000e-004		0.0228	0.0228		0.0211	0.0211	0.0000	86.7657	86.7657	0.0262	0.0000	87.4205
Total	**0.0533**	**0.5503**	**0.4394**	**9.9000e-004**	**0.0501**	**0.0228**	**0.0729**	**5.4100e-003**	**0.0211**	**0.0265**	**0.0000**	**86.7657**	**86.7657**	**0.0262**	**0.0000**	**87.4205**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3300e-003	1.0600e-003	0.0144	4.0000e-005	4.6000e-003	3.0000e-005	4.6300e-003	1.2200e-003	3.0000e-005	1.2500e-003	0.0000	3.7093	3.7093	1.0000e-004	1.0000e-004	3.7402
Total	**1.3300e-003**	**1.0600e-003**	**0.0144**	**4.0000e-005**	**4.6000e-003**	**3.0000e-005**	**4.6300e-003**	**1.2200e-003**	**3.0000e-005**	**1.2500e-003**	**0.0000**	**3.7093**	**3.7093**	**1.0000e-004**	**1.0000e-004**	**3.7402**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading/Excavation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0195	0.0000	0.0195	2.1100e-003	0.0000	2.1100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0533	0.5503	0.4394	9.9000e-004		0.0228	0.0228		0.0211	0.0211	0.0000	86.7656	86.7656	0.0262	0.0000	87.4204
Total	**0.0533**	**0.5503**	**0.4394**	**9.9000e-004**	**0.0195**	**0.0228**	**0.0423**	**2.1100e-003**	**0.0211**	**0.0232**	**0.0000**	**86.7656**	**86.7656**	**0.0262**	**0.0000**	**87.4204**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3300e-003	1.0600e-003	0.0144	4.0000e-005	4.6000e-003	3.0000e-005	4.6300e-003	1.2200e-003	3.0000e-005	1.2500e-003	0.0000	3.7093	3.7093	1.0000e-004	1.0000e-004	3.7402
Total	**1.3300e-003**	**1.0600e-003**	**0.0144**	**4.0000e-005**	**4.6000e-003**	**3.0000e-005**	**4.6300e-003**	**1.2200e-003**	**3.0000e-005**	**1.2500e-003**	**0.0000**	**3.7093**	**3.7093**	**1.0000e-004**	**1.0000e-004**	**3.7402**

3.4 Drainage/Utilities/Trenching - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0476	0.4142	0.5746	9.5000e-004		0.0201	0.0201		0.0194	0.0194	0.0000	81.5081	81.5081	0.0133	0.0000	81.8408
Total	**0.0476**	**0.4142**	**0.5746**	**9.5000e-004**		**0.0201**	**0.0201**		**0.0194**	**0.0194**	**0.0000**	**81.5081**	**81.5081**	**0.0133**	**0.0000**	**81.8408**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-003	1.6600e-003	0.0226	6.0000e-005	7.2300e-003	4.0000e-005	7.2800e-003	1.9200e-003	4.0000e-005	1.9600e-003	0.0000	5.8290	5.8290	1.5000e-004	1.5000e-004	5.8775
Total	**2.1000e-003**	**1.6600e-003**	**0.0226**	**6.0000e-005**	**7.2300e-003**	**4.0000e-005**	**7.2800e-003**	**1.9200e-003**	**4.0000e-005**	**1.9600e-003**	**0.0000**	**5.8290**	**5.8290**	**1.5000e-004**	**1.5000e-004**	**5.8775**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Drainage/Utilities/Trenching - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0476	0.4142	0.5746	9.5000e-004		0.0201	0.0201		0.0194	0.0194	0.0000	81.5080	81.5080	0.0133	0.0000	81.8407
Total	**0.0476**	**0.4142**	**0.5746**	**9.5000e-004**		**0.0201**	**0.0201**		**0.0194**	**0.0194**	**0.0000**	**81.5080**	**81.5080**	**0.0133**	**0.0000**	**81.8407**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-003	1.6600e-003	0.0226	6.0000e-005	7.2300e-003	4.0000e-005	7.2800e-003	1.9200e-003	4.0000e-005	1.9600e-003	0.0000	5.8290	5.8290	1.5000e-004	1.5000e-004	5.8775
Total	**2.1000e-003**	**1.6600e-003**	**0.0226**	**6.0000e-005**	**7.2300e-003**	**4.0000e-005**	**7.2800e-003**	**1.9200e-003**	**4.0000e-005**	**1.9600e-003**	**0.0000**	**5.8290**	**5.8290**	**1.5000e-004**	**1.5000e-004**	**5.8775**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Foundations/Concrete Pour - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0208	0.1815	0.2505	4.0000e-004		8.4400e-003	8.4400e-003		8.1500e-003	8.1500e-003	0.0000	34.6872	34.6872	6.1200e-003	0.0000	34.8402
Total	**0.0208**	**0.1815**	**0.2505**	**4.0000e-004**		**8.4400e-003**	**8.4400e-003**		**8.1500e-003**	**8.1500e-003**	**0.0000**	**34.6872**	**34.6872**	**6.1200e-003**	**0.0000**	**34.8402**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0700e-003	8.5000e-004	0.0115	3.0000e-005	3.6800e-003	2.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9675	2.9675	8.0000e-005	8.0000e-005	2.9922
Total	**1.0700e-003**	**8.5000e-004**	**0.0115**	**3.0000e-005**	**3.6800e-003**	**2.0000e-005**	**3.7000e-003**	**9.8000e-004**	**2.0000e-005**	**1.0000e-003**	**0.0000**	**2.9675**	**2.9675**	**8.0000e-005**	**8.0000e-005**	**2.9922**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Foundations/Concrete Pour - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0208	0.1815	0.2505	4.0000e-004		8.4400e-003	8.4400e-003		8.1500e-003	8.1500e-003	0.0000	34.6872	34.6872	6.1200e-003	0.0000	34.8402
Total	**0.0208**	**0.1815**	**0.2505**	**4.0000e-004**		**8.4400e-003**	**8.4400e-003**		**8.1500e-003**	**8.1500e-003**	**0.0000**	**34.6872**	**34.6872**	**6.1200e-003**	**0.0000**	**34.8402**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0700e-003	8.5000e-004	0.0115	3.0000e-005	3.6800e-003	2.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	2.9675	2.9675	8.0000e-005	8.0000e-005	2.9922
Total	**1.0700e-003**	**8.5000e-004**	**0.0115**	**3.0000e-005**	**3.6800e-003**	**2.0000e-005**	**3.7000e-003**	**9.8000e-004**	**2.0000e-005**	**1.0000e-003**	**0.0000**	**2.9675**	**2.9675**	**8.0000e-005**	**8.0000e-005**	**2.9922**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2143	1.8154	2.1687	3.8300e-003		0.0886	0.0886		0.0861	0.0861	0.0000	327.8131	327.8131	0.0436	0.0000	328.9033
Total	**0.2143**	**1.8154**	**2.1687**	**3.8300e-003**		**0.0886**	**0.0886**		**0.0861**	**0.0861**	**0.0000**	**327.8131**	**327.8131**	**0.0436**	**0.0000**	**328.9033**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1500e-003	0.0766	0.0287	3.5000e-004	0.0120	3.7000e-004	0.0123	3.4600e-003	3.5000e-004	3.8100e-003	0.0000	34.5462	34.5462	1.1500e-003	4.9700e-003	36.0567
Worker	0.0154	0.0123	0.1662	4.6000e-004	0.0533	3.3000e-004	0.0536	0.0142	3.0000e-004	0.0145	0.0000	42.9577	42.9577	1.1300e-003	1.1000e-003	43.3150
Total	**0.0176**	**0.0888**	**0.1948**	**8.1000e-004**	**0.0653**	**7.0000e-004**	**0.0660**	**0.0176**	**6.5000e-004**	**0.0183**	**0.0000**	**77.5039**	**77.5039**	**2.2800e-003**	**6.0700e-003**	**79.3717**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2143	1.8154	2.1687	3.8300e-003		0.0886	0.0886		0.0861	0.0861	0.0000	327.8127	327.8127	0.0436	0.0000	328.9029
Total	**0.2143**	**1.8154**	**2.1687**	**3.8300e-003**		**0.0886**	**0.0886**		**0.0861**	**0.0861**	**0.0000**	**327.8127**	**327.8127**	**0.0436**	**0.0000**	**328.9029**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1500e-003	0.0766	0.0287	3.5000e-004	0.0120	3.7000e-004	0.0123	3.4600e-003	3.5000e-004	3.8100e-003	0.0000	34.5462	34.5462	1.1500e-003	4.9700e-003	36.0567
Worker	0.0154	0.0123	0.1662	4.6000e-004	0.0533	3.3000e-004	0.0536	0.0142	3.0000e-004	0.0145	0.0000	42.9577	42.9577	1.1300e-003	1.1000e-003	43.3150
Total	**0.0176**	**0.0888**	**0.1948**	**8.1000e-004**	**0.0653**	**7.0000e-004**	**0.0660**	**0.0176**	**6.5000e-004**	**0.0183**	**0.0000**	**77.5039**	**77.5039**	**2.2800e-003**	**6.0700e-003**	**79.3717**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0318	0.2682	0.3412	6.0000e-004		0.0123	0.0123		0.0119	0.0119	0.0000	51.7591	51.7591	6.8000e-003	0.0000	51.9290
Total	**0.0318**	**0.2682**	**0.3412**	**6.0000e-004**		**0.0123**	**0.0123**		**0.0119**	**0.0119**	**0.0000**	**51.7591**	**51.7591**	**6.8000e-003**	**0.0000**	**51.9290**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.3000e-004	0.0121	4.4300e-003	5.0000e-005	1.8900e-003	6.0000e-005	1.9500e-003	5.5000e-004	6.0000e-005	6.0000e-004	0.0000	5.3728	5.3728	1.8000e-004	7.7000e-004	5.6081
Worker	2.2800e-003	1.7300e-003	0.0244	7.0000e-005	8.4200e-003	5.0000e-005	8.4700e-003	2.2400e-003	5.0000e-005	2.2800e-003	0.0000	6.6434	6.6434	1.6000e-004	1.6000e-004	6.6958
Total	**2.6100e-003**	**0.0138**	**0.0289**	**1.2000e-004**	**0.0103**	**1.1000e-004**	**0.0104**	**2.7900e-003**	**1.1000e-004**	**2.8800e-003**	**0.0000**	**12.0163**	**12.0163**	**3.4000e-004**	**9.3000e-004**	**12.3038**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0318	0.2682	0.3412	6.0000e-004		0.0123	0.0123		0.0119	0.0119	0.0000	51.7590	51.7590	6.8000e-003	0.0000	51.9290
Total	**0.0318**	**0.2682**	**0.3412**	**6.0000e-004**		**0.0123**	**0.0123**		**0.0119**	**0.0119**	**0.0000**	**51.7590**	**51.7590**	**6.8000e-003**	**0.0000**	**51.9290**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.3000e-004	0.0121	4.4300e-003	5.0000e-005	1.8900e-003	6.0000e-005	1.9500e-003	5.5000e-004	6.0000e-005	6.0000e-004	0.0000	5.3728	5.3728	1.8000e-004	7.7000e-004	5.6081
Worker	2.2800e-003	1.7300e-003	0.0244	7.0000e-005	8.4200e-003	5.0000e-005	8.4700e-003	2.2400e-003	5.0000e-005	2.2800e-003	0.0000	6.6434	6.6434	1.6000e-004	1.6000e-004	6.6958
Total	**2.6100e-003**	**0.0138**	**0.0289**	**1.2000e-004**	**0.0103**	**1.1000e-004**	**0.0104**	**2.7900e-003**	**1.1000e-004**	**2.8800e-003**	**0.0000**	**12.0163**	**12.0163**	**3.4000e-004**	**9.3000e-004**	**12.3038**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3397					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.6600e-003	0.0660	0.0948	1.5000e-004		2.8000e-003	2.8000e-003		2.7200e-003	2.7200e-003	0.0000	12.9855	12.9855	2.5400e-003	0.0000	13.0489
Total	**0.3474**	**0.0660**	**0.0948**	**1.5000e-004**		**2.8000e-003**	**2.8000e-003**		**2.7200e-003**	**2.7200e-003**	**0.0000**	**12.9855**	**12.9855**	**2.5400e-003**	**0.0000**	**13.0489**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	7.0000e-004	9.5500e-003	3.0000e-005	3.0600e-003	2.0000e-005	3.0800e-003	8.1000e-004	2.0000e-005	8.3000e-004	0.0000	2.4685	2.4685	6.0000e-005	6.0000e-005	2.4890
Total	**8.9000e-004**	**7.0000e-004**	**9.5500e-003**	**3.0000e-005**	**3.0600e-003**	**2.0000e-005**	**3.0800e-003**	**8.1000e-004**	**2.0000e-005**	**8.3000e-004**	**0.0000**	**2.4685**	**2.4685**	**6.0000e-005**	**6.0000e-005**	**2.4890**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3397					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.6600e-003	0.0660	0.0948	1.5000e-004		2.8000e-003	2.8000e-003		2.7200e-003	2.7200e-003	0.0000	12.9854	12.9854	2.5400e-003	0.0000	13.0488
Total	**0.3474**	**0.0660**	**0.0948**	**1.5000e-004**		**2.8000e-003**	**2.8000e-003**		**2.7200e-003**	**2.7200e-003**	**0.0000**	**12.9854**	**12.9854**	**2.5400e-003**	**0.0000**	**13.0488**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	7.0000e-004	9.5500e-003	3.0000e-005	3.0600e-003	2.0000e-005	3.0800e-003	8.1000e-004	2.0000e-005	8.3000e-004	0.0000	2.4685	2.4685	6.0000e-005	6.0000e-005	2.4890
Total	**8.9000e-004**	**7.0000e-004**	**9.5500e-003**	**3.0000e-005**	**3.0600e-003**	**2.0000e-005**	**3.0800e-003**	**8.1000e-004**	**2.0000e-005**	**8.3000e-004**	**0.0000**	**2.4685**	**2.4685**	**6.0000e-005**	**6.0000e-005**	**2.4890**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1896					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.1000e-003	0.0353	0.0529	9.0000e-005		1.4000e-003	1.4000e-003		1.3600e-003	1.3600e-003	0.0000	7.2470	7.2470	1.4000e-003	0.0000	7.2821
Total	**0.1937**	**0.0353**	**0.0529**	**9.0000e-005**		**1.4000e-003**	**1.4000e-003**		**1.3600e-003**	**1.3600e-003**	**0.0000**	**7.2470**	**7.2470**	**1.4000e-003**	**0.0000**	**7.2821**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	3.5000e-004	4.9600e-003	1.0000e-005	1.7100e-003	1.0000e-005	1.7200e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.3495	1.3495	3.0000e-005	3.0000e-005	1.3601
Total	**4.6000e-004**	**3.5000e-004**	**4.9600e-003**	**1.0000e-005**	**1.7100e-003**	**1.0000e-005**	**1.7200e-003**	**4.5000e-004**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**1.3495**	**1.3495**	**3.0000e-005**	**3.0000e-005**	**1.3601**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1896					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.1000e-003	0.0353	0.0529	9.0000e-005		1.4000e-003	1.4000e-003		1.3600e-003	1.3600e-003	0.0000	7.2470	7.2470	1.4000e-003	0.0000	7.2821
Total	**0.1937**	**0.0353**	**0.0529**	**9.0000e-005**		**1.4000e-003**	**1.4000e-003**		**1.3600e-003**	**1.3600e-003**	**0.0000**	**7.2470**	**7.2470**	**1.4000e-003**	**0.0000**	**7.2821**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	3.5000e-004	4.9600e-003	1.0000e-005	1.7100e-003	1.0000e-005	1.7200e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.3495	1.3495	3.0000e-005	3.0000e-005	1.3601
Total	**4.6000e-004**	**3.5000e-004**	**4.9600e-003**	**1.0000e-005**	**1.7100e-003**	**1.0000e-005**	**1.7200e-003**	**4.5000e-004**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**1.3495**	**1.3495**	**3.0000e-005**	**3.0000e-005**	**1.3601**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Landscaping - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5800e-003	0.0261	0.0338	6.0000e-005		9.1000e-004	9.1000e-004		8.6000e-004	8.6000e-004	0.0000	4.8018	4.8018	1.3600e-003	0.0000	4.8358
Total	**2.5800e-003**	**0.0261**	**0.0338**	**6.0000e-005**		**9.1000e-004**	**9.1000e-004**		**8.6000e-004**	**8.6000e-004**	**0.0000**	**4.8018**	**4.8018**	**1.3600e-003**	**0.0000**	**4.8358**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	7.0000e-004	9.5500e-003	3.0000e-005	3.0600e-003	2.0000e-005	3.0800e-003	8.1000e-004	2.0000e-005	8.3000e-004	0.0000	2.4685	2.4685	6.0000e-005	6.0000e-005	2.4890
Total	**8.9000e-004**	**7.0000e-004**	**9.5500e-003**	**3.0000e-005**	**3.0600e-003**	**2.0000e-005**	**3.0800e-003**	**8.1000e-004**	**2.0000e-005**	**8.3000e-004**	**0.0000**	**2.4685**	**2.4685**	**6.0000e-005**	**6.0000e-005**	**2.4890**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Landscaping - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5800e-003	0.0261	0.0338	6.0000e-005		9.1000e-004	9.1000e-004		8.6000e-004	8.6000e-004	0.0000	4.8018	4.8018	1.3600e-003	0.0000	4.8358
Total	**2.5800e-003**	**0.0261**	**0.0338**	**6.0000e-005**		**9.1000e-004**	**9.1000e-004**		**8.6000e-004**	**8.6000e-004**	**0.0000**	**4.8018**	**4.8018**	**1.3600e-003**	**0.0000**	**4.8358**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	7.0000e-004	9.5500e-003	3.0000e-005	3.0600e-003	2.0000e-005	3.0800e-003	8.1000e-004	2.0000e-005	8.3000e-004	0.0000	2.4685	2.4685	6.0000e-005	6.0000e-005	2.4890
Total	**8.9000e-004**	**7.0000e-004**	**9.5500e-003**	**3.0000e-005**	**3.0600e-003**	**2.0000e-005**	**3.0800e-003**	**8.1000e-004**	**2.0000e-005**	**8.3000e-004**	**0.0000**	**2.4685**	**2.4685**	**6.0000e-005**	**6.0000e-005**	**2.4890**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Landscaping - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4100e-003	0.0141	0.0189	3.0000e-005		4.7000e-004	4.7000e-004		4.5000e-004	4.5000e-004	0.0000	2.6810	2.6810	7.6000e-004	0.0000	2.7000
Total	**1.4100e-003**	**0.0141**	**0.0189**	**3.0000e-005**		**4.7000e-004**	**4.7000e-004**		**4.5000e-004**	**4.5000e-004**	**0.0000**	**2.6810**	**2.6810**	**7.6000e-004**	**0.0000**	**2.7000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	3.5000e-004	4.9600e-003	1.0000e-005	1.7100e-003	1.0000e-005	1.7200e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.3495	1.3495	3.0000e-005	3.0000e-005	1.3601
Total	**4.6000e-004**	**3.5000e-004**	**4.9600e-003**	**1.0000e-005**	**1.7100e-003**	**1.0000e-005**	**1.7200e-003**	**4.5000e-004**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**1.3495**	**1.3495**	**3.0000e-005**	**3.0000e-005**	**1.3601**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Landscaping - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4100e-003	0.0141	0.0189	3.0000e-005		4.7000e-004	4.7000e-004		4.5000e-004	4.5000e-004	0.0000	2.6810	2.6810	7.6000e-004	0.0000	2.7000
Total	**1.4100e-003**	**0.0141**	**0.0189**	**3.0000e-005**		**4.7000e-004**	**4.7000e-004**		**4.5000e-004**	**4.5000e-004**	**0.0000**	**2.6810**	**2.6810**	**7.6000e-004**	**0.0000**	**2.7000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	3.5000e-004	4.9600e-003	1.0000e-005	1.7100e-003	1.0000e-005	1.7200e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.3495	1.3495	3.0000e-005	3.0000e-005	1.3601
Total	**4.6000e-004**	**3.5000e-004**	**4.9600e-003**	**1.0000e-005**	**1.7100e-003**	**1.0000e-005**	**1.7200e-003**	**4.5000e-004**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**1.3495**	**1.3495**	**3.0000e-005**	**3.0000e-005**	**1.3601**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0226	0.2046	0.2972	4.5000e-004		0.0100	0.0100		9.3400e-003	9.3400e-003	0.0000	39.5967	39.5967	0.0115	0.0000	39.8839
Paving	2.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0228**	**0.2046**	**0.2972**	**4.5000e-004**		**0.0100**	**0.0100**		**9.3400e-003**	**9.3400e-003**	**0.0000**	**39.5967**	**39.5967**	**0.0115**	**0.0000**	**39.8839**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1200e-003	8.5000e-004	0.0121	4.0000e-005	4.1600e-003	2.0000e-005	4.1800e-003	1.1000e-003	2.0000e-005	1.1300e-003	0.0000	3.2828	3.2828	8.0000e-005	8.0000e-005	3.3087
Total	**1.1200e-003**	**8.5000e-004**	**0.0121**	**4.0000e-005**	**4.1600e-003**	**2.0000e-005**	**4.1800e-003**	**1.1000e-003**	**2.0000e-005**	**1.1300e-003**	**0.0000**	**3.2828**	**3.2828**	**8.0000e-005**	**8.0000e-005**	**3.3087**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Paving - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0226	0.2046	0.2972	4.5000e-004		0.0100	0.0100		9.3400e-003	9.3400e-003	0.0000	39.5967	39.5967	0.0115	0.0000	39.8838
Paving	2.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0228**	**0.2046**	**0.2972**	**4.5000e-004**		**0.0100**	**0.0100**		**9.3400e-003**	**9.3400e-003**	**0.0000**	**39.5967**	**39.5967**	**0.0115**	**0.0000**	**39.8838**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1200e-003	8.5000e-004	0.0121	4.0000e-005	4.1600e-003	2.0000e-005	4.1800e-003	1.1000e-003	2.0000e-005	1.1300e-003	0.0000	3.2828	3.2828	8.0000e-005	8.0000e-005	3.3087
Total	**1.1200e-003**	**8.5000e-004**	**0.0121**	**4.0000e-005**	**4.1600e-003**	**2.0000e-005**	**4.1800e-003**	**1.1000e-003**	**2.0000e-005**	**1.1300e-003**	**0.0000**	**3.2828**	**3.2828**	**8.0000e-005**	**8.0000e-005**	**3.3087**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2000	0.2186	1.9778	4.1800e-003	0.4410	3.1100e-003	0.4442	0.1177	2.8900e-003	0.1206	0.0000	393.5968	393.5968	0.0279	0.0174	399.4829
Unmitigated	0.2000	0.2186	1.9778	4.1800e-003	0.4410	3.1100e-003	0.4442	0.1177	2.8900e-003	0.1206	0.0000	393.5968	393.5968	0.0279	0.0174	399.4829

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
General Office Building	23.57	5.35	1.69	57,478	57,478
High Turnover (Sit Down Restaurant)	173.88	189.72	221.09	249,244	249,244
Parking Lot	0.00	0.00	0.00		
Strip Mall	31.02	29.43	14.30	54,047	54,047
Unrefrigerated Warehouse-No Rail	189.73	189.73	189.73	813,127	813,127
Total	418.20	414.23	426.82	1,173,896	1,173,896

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
High Turnover (Sit Down	16.60	8.40	6.90	8.50	72.50	19.00	37	20	43
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Strip Mall	16.60	8.40	6.90	16.60	64.40	19.00	45	40	15
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
General Office Building	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
High Turnover (Sit Down Restaurant)	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
Parking Lot	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
Strip Mall	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
Unrefrigerated Warehouse-No Rail	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	50.4983	50.4983	7.9300e-003	9.6000e-004	50.9831
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	50.4983	50.4983	7.9300e-003	9.6000e-004	50.9831
NaturalGas Mitigated	2.5700e-003	0.0234	0.0196	1.4000e-004		1.7800e-003	1.7800e-003		1.7800e-003	1.7800e-003	0.0000	25.4507	25.4507	4.9000e-004	4.7000e-004	25.6019
NaturalGas Unmitigated	2.5700e-003	0.0234	0.0196	1.4000e-004		1.7800e-003	1.7800e-003		1.7800e-003	1.7800e-003	0.0000	25.4507	25.4507	4.9000e-004	4.7000e-004	25.6019

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	25001.8	1.3000e-004	1.2300e-003	1.0300e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.3342	1.3342	3.0000e-005	2.0000e-005	1.3421
High Turnover (Sit Down Restaurant)	357012	1.9300e-003	0.0175	0.0147	1.1000e-004		1.3300e-003	1.3300e-003		1.3300e-003	1.3300e-003	0.0000	19.0515	19.0515	3.7000e-004	3.5000e-004	19.1647
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	1141	1.0000e-005	6.0000e-005	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0609	0.0609	0.0000	0.0000	0.0613
Unrefrigerated Warehouse-No Rail	93773.5	5.1000e-004	4.6000e-003	3.8600e-003	3.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004	0.0000	5.0041	5.0041	1.0000e-004	9.0000e-005	5.0339
Total		**2.5800e-003**	**0.0234**	**0.0196**	**1.5000e-004**		**1.7700e-003**	**1.7700e-003**		**1.7700e-003**	**1.7700e-003**	**0.0000**	**25.4507**	**25.4507**	**5.0000e-004**	**4.6000e-004**	**25.6019**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	25001.8	1.3000e-004	1.2300e-003	1.0300e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.3342	1.3342	3.0000e-005	2.0000e-005	1.3421
High Turnover (Sit Down Restaurant)	357012	1.9300e-003	0.0175	0.0147	1.1000e-004		1.3300e-003	1.3300e-003		1.3300e-003	1.3300e-003	0.0000	19.0515	19.0515	3.7000e-004	3.5000e-004	19.1647
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	1141	1.0000e-005	6.0000e-005	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0609	0.0609	0.0000	0.0000	0.0613
Unrefrigerated Warehouse-No Rail	93773.5	5.1000e-004	4.6000e-003	3.8600e-003	3.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004	0.0000	5.0041	5.0041	1.0000e-004	9.0000e-005	5.0339
Total		**2.5800e-003**	**0.0234**	**0.0196**	**1.5000e-004**		**1.7700e-003**	**1.7700e-003**		**1.7700e-003**	**1.7700e-003**	**0.0000**	**25.4507**	**25.4507**	**5.0000e-004**	**4.6000e-004**	**25.6019**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
General Office Building	30312.5	2.8888	4.5000e-004	5.0000e-005	2.9165
High Turnover (Sit Down Restaurant)	67068.5	6.3916	1.0000e-003	1.2000e-004	6.4530
Parking Lot	5740	0.5470	9.0000e-005	1.0000e-005	0.5523
Strip Mall	9149	0.8719	1.4000e-004	2.0000e-005	0.8803
Unrefrigerated Warehouse-No Rail	417619	39.7990	6.2500e-003	7.6000e-004	40.1811
Total		**50.4983**	**7.9300e-003**	**9.6000e-004**	**50.9831**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
General Office Building	30312.5	2.8888	4.5000e-004	5.0000e-005	2.9165
High Turnover (Sit Down Restaurant)	67068.5	6.3916	1.0000e-003	1.2000e-004	6.4530
Parking Lot	5740	0.5470	9.0000e-005	1.0000e-005	0.5523
Strip Mall	9149	0.8719	1.4000e-004	2.0000e-005	0.8803
Unrefrigerated Warehouse-No Rail	417619	39.7990	6.2500e-003	7.6000e-004	40.1811
Total		**50.4983**	**7.9300e-003**	**9.6000e-004**	**50.9831**

6.0 Area Detail

6.1 Mitigation Measures Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4653	2.0000e-005	1.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.8500e-003	3.8500e-003	1.0000e-005	0.0000	4.1000e-003
Unmitigated	0.4653	2.0000e-005	1.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.8500e-003	3.8500e-003	1.0000e-005	0.0000	4.1000e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0529					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4122					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.8000e-004	2.0000e-005	1.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.8500e-003	3.8500e-003	1.0000e-005	0.0000	4.1000e-003
Total	**0.4653**	**2.0000e-005**	**1.9800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.8500e-003**	**3.8500e-003**	**1.0000e-005**	**0.0000**	**4.1000e-003**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0529					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4122					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.8000e-004	2.0000e-005	1.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.8500e-003	3.8500e-003	1.0000e-005	0.0000	4.1000e-003
Total	**0.4653**	**2.0000e-005**	**1.9800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.8500e-003**	**3.8500e-003**	**1.0000e-005**	**0.0000**	**4.1000e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	41.7868	0.8579	0.0208	69.4252
Unmitigated	41.7868	0.8579	0.0208	69.4252

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.631485	0.6686	1.1000e-004	1.0000e-005	0.6750
General Office Building	0.430116 / 0.263619	0.9493	0.0141	3.5000e-004	1.4061
High Turnover (Sit Down Restaurant)	0.470477 / 0.0300305	0.7649	0.0154	3.7000e-004	1.2619
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.0518508 / 0.0317795	0.1144	1.7000e-003	4.0000e-005	0.1695
Unrefrigerated Warehouse-No Rail	25.2155 / 0	39.2896	0.8266	0.0200	65.9126
Total		**41.7868**	**0.8579**	**0.0208**	**69.4252**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.631485	0.6686	1.1000e-004	1.0000e-005	0.6750
General Office Building	0.430116 / 0.263619	0.9493	0.0141	3.5000e-004	1.4061
High Turnover (Sit Down Restaurant)	0.470477 / 0.0300305	0.7649	0.0154	3.7000e-004	1.2619
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.0518508 / 0.0317795	0.1144	1.7000e-003	4.0000e-005	0.1695
Unrefrigerated Warehouse-No Rail	25.2155 / 0	39.2896	0.8266	0.0200	65.9126
Total		**41.7868**	**0.8579**	**0.0208**	**69.4252**

8.0 Waste Detail

8.1 Mitigation Measures Waste

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	25.1689	1.4874	0.0000	62.3548
Unmitigated	25.1689	1.4874	0.0000	62.3548

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.05	0.0102	6.0000e-004	0.0000	0.0252
General Office Building	2.25	0.4567	0.0270	0.0000	1.1315
High Turnover (Sit Down Restaurant)	18.45	3.7452	0.2213	0.0000	9.2785
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.74	0.1502	8.8800e-003	0.0000	0.3722
Unrefrigerated Warehouse-No Rail	102.5	20.8066	1.2296	0.0000	51.5474
Total		**25.1688**	**1.4874**	**0.0000**	**62.3548**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.05	0.0102	6.0000e-004	0.0000	0.0252
General Office Building	2.25	0.4567	0.0270	0.0000	1.1315
High Turnover (Sit Down Restaurant)	18.45	3.7452	0.2213	0.0000	9.2785
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.74	0.1502	8.8800e-003	0.0000	0.3722
Unrefrigerated Warehouse-No Rail	102.5	20.8066	1.2296	0.0000	51.5474
Total		**25.1688**	**1.4874**	**0.0000**	**62.3548**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

21611 South Perry Street

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	2.42	1000sqft	0.20	2,425.00	0
Unrefrigerated Warehouse-No Rail	109.04	1000sqft	0.50	109,039.00	0
Parking Lot	41.00	Space	0.20	16,400.00	0
City Park	0.53	Acre	1.50	22,999.68	0
High Turnover (Sit Down Restaurant)	1.55	1000sqft	0.20	1,550.00	0
Strip Mall	0.70	1000sqft	0.20	700.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	210.1	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Updated CO2e

Land Use - See Construction Assumptions

Construction Phase - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Trips and VMT -

Grading -

Architectural Coating - Landscaping has no VOCs

Vehicle Trips - no VMT for City Park

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	56,857.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	170,571.00	0.00
tblArchitecturalCoating	ConstArea_Parking	984.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	0.00
tblArchitecturalCoating	EF_Parking	100.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	50.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	50.00	0.00
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	67.00
tblConstructionPhase	NumDays	10.00	67.00
tblConstructionPhase	NumDays	220.00	176.00
tblConstructionPhase	NumDays	6.00	21.00
tblConstructionPhase	NumDays	10.00	23.00
tblConstructionPhase	NumDays	3.00	23.00
tblLandUse	LandUseSquareFeet	2,420.00	2,425.00
tblLandUse	LandUseSquareFeet	109,040.00	109,039.00
tblLandUse	LandUseSquareFeet	23,086.80	22,999.68

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblLandUse	LotAcreage	0.06	0.20
tblLandUse	LotAcreage	2.50	0.50
tblLandUse	LotAcreage	0.37	0.20
tblLandUse	LotAcreage	0.53	1.50
tblLandUse	LotAcreage	0.04	0.20
tblLandUse	LotAcreage	0.02	0.20
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblProjectCharacteristics	CO2IntensityFactor	390.98	210.1
tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	WD_TR	0.78	0.00

2.0 Emissions Summary

21611 South Perry Street - Los Angeles-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	19.8047	71.3960	70.5000	0.1446	5.5547	3.0838	8.6385	0.7228	2.8934	3.6162	0.0000	13,901.6340	13,901.6340	3.4341	0.0932	13,992.3002
2024	21.6740	49.9701	71.8829	0.1271	1.5350	2.2047	3.7397	0.4107	2.0988	2.5095	0.0000	12,237.1705	12,237.1705	2.2995	0.0974	12,323.6770
Maximum	**21.6740**	**71.3960**	**71.8829**	**0.1446**	**5.5547**	**3.0838**	**8.6385**	**0.7228**	**2.8934**	**3.6162**	**0.0000**	**13,901.6340**	**13,901.6340**	**3.4341**	**0.0974**	**13,992.3002**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	19.8047	71.3960	70.5000	0.1446	2.6436	3.0838	5.7274	0.4085	2.8934	3.3018	0.0000	13,901.6340	13,901.6340	3.4341	0.0932	13,992.3002
2024	21.6740	49.9701	71.8829	0.1271	1.5350	2.2047	3.7397	0.4107	2.0988	2.5095	0.0000	12,237.1705	12,237.1705	2.2995	0.0974	12,323.6770
Maximum	**21.6740**	**71.3960**	**71.8829**	**0.1446**	**2.6436**	**3.0838**	**5.7274**	**0.4107**	**2.8934**	**3.3018**	**0.0000**	**13,901.6340**	**13,901.6340**	**3.4341**	**0.0974**	**13,992.3002**

21611 South Perry Street - Los Angeles-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	41.06	0.00	23.52	27.73	0.00	5.13	0.00	0.00	0.00	0.00	0.00	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.5500	1.4000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0340	0.0340	9.0000e-005		0.0362
Energy	0.0141	0.1281	0.1076	7.7000e-004		9.7400e-003	9.7400e-003		9.7400e-003	9.7400e-003		153.7237	153.7237	2.9500e-003	2.8200e-003	154.6372
Mobile	1.2434	1.1807	11.7504	0.0253	2.6304	0.0183	2.6487	0.7007	0.0170	0.7176		2,624.1440	2,624.1440	0.1769	0.1080	2,660.7478
Total	**3.8076**	**1.3089**	**11.8738**	**0.0261**	**2.6304**	**0.0281**	**2.6585**	**0.7007**	**0.0268**	**0.7274**		**2,777.9017**	**2,777.9017**	**0.1800**	**0.1108**	**2,815.4212**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.5500	1.4000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0340	0.0340	9.0000e-005		0.0362
Energy	0.0141	0.1281	0.1076	7.7000e-004		9.7400e-003	9.7400e-003		9.7400e-003	9.7400e-003		153.7237	153.7237	2.9500e-003	2.8200e-003	154.6372
Mobile	1.2434	1.1807	11.7504	0.0253	2.6304	0.0183	2.6487	0.7007	0.0170	0.7176		2,624.1440	2,624.1440	0.1769	0.1080	2,660.7478
Total	**3.8076**	**1.3089**	**11.8738**	**0.0261**	**2.6304**	**0.0281**	**2.6585**	**0.7007**	**0.0268**	**0.7274**		**2,777.9017**	**2,777.9017**	**0.1800**	**0.1108**	**2,815.4212**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demo & Site Preparation	Site Preparation	1/1/2023	2/1/2023	5	23	
2	Grading/Excavation	Grading	2/1/2023	3/1/2023	5	21	
3	Drainage/Utilities/Trenching	Trenching	3/1/2023	5/1/2023	5	44	
4	Foundations/Concrete Pour	Trenching	5/1/2023	6/1/2023	5	24	
5	Building Construction	Building Construction	6/1/2023	2/1/2024	5	176	
6	Architectural Coating	Architectural Coating	11/1/2023	2/1/2024	5	67	
7	Landscaping	Architectural Coating	11/1/2023	2/1/2024	5	67	
8	Paving	Paving	1/1/2024	1/31/2024	5	23	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 94.5

Acres of Paving: 0.2

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 170,571; Non-Residential Outdoor: 56,857; Striped Parking Area: 984 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demo & Site Preparation	Air Compressors	2	8.00	78	0.48
Demo & Site Preparation	Dumpers/Tenders	2	8.00	16	0.38
Demo & Site Preparation	Excavators	1	8.00	158	0.38

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Demo & Site Preparation	Generator Sets	1	8.00	84	0.74
Demo & Site Preparation	Skid Steer Loaders	1	8.00	65	0.37
Demo & Site Preparation	Sweepers/Scrubbers	1	8.00	64	0.46
Demo & Site Preparation	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading/Excavation	Concrete/Industrial Saws	1	8.00	81	0.73
Grading/Excavation	Crawler Tractors	2	8.00	212	0.43
Grading/Excavation	Dumpers/Tenders	2	8.00	16	0.38
Grading/Excavation	Excavators	1	8.00	158	0.38
Grading/Excavation	Graders	1	8.00	187	0.41
Grading/Excavation	Plate Compactors	1	8.00	8	0.43
Grading/Excavation	Rollers	1	8.00	80	0.38
Grading/Excavation	Scrapers	3	8.00	367	0.48
Grading/Excavation	Sweepers/Scrubbers	1	8.00	64	0.46
Grading/Excavation	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Drainage/Utilities/Trenching	Air Compressors	1	8.00	78	0.48
Drainage/Utilities/Trenching	Dumpers/Tenders	2	8.00	16	0.38
Drainage/Utilities/Trenching	Excavators	1	8.00	158	0.38
Drainage/Utilities/Trenching	Generator Sets	2	8.00	84	0.74
Drainage/Utilities/Trenching	Plate Compactors	1	8.00	8	0.43
Drainage/Utilities/Trenching	Pumps	1	8.00	84	0.74
Drainage/Utilities/Trenching	Rough Terrain Forklifts	1	8.00	100	0.40
Drainage/Utilities/Trenching	Sweepers/Scrubbers	1	8.00	64	0.46
Drainage/Utilities/Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Foundations/Concrete Pour	Air Compressors	1	8.00	78	0.48
Foundations/Concrete Pour	Concrete/Industrial Saws	1	8.00	81	0.73
Foundations/Concrete Pour	Dumpers/Tenders	2	8.00	16	0.38
Foundations/Concrete Pour	Plate Compactors	1	8.00	8	0.43
Foundations/Concrete Pour	Pumps	1	8.00	84	0.74
Foundations/Concrete Pour	Rough Terrain Forklifts	1	8.00	100	0.40

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Foundations/Concrete Pour	Skid Steer Loaders	1	8.00	65	0.37
Foundations/Concrete Pour	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Air Compressors	2	8.00	78	0.48
Building Construction	Cement and Mortar Mixers	2	8.00	9	0.56
Building Construction	Concrete/Industrial Saws	2	8.00	81	0.73
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Dumpers/Tenders	2	8.00	16	0.38
Building Construction	Forklifts	4	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Pumps	1	8.00	84	0.74
Building Construction	Rough Terrain Forklifts	4	8.00	100	0.40
Architectural Coating	Air Compressors	1	6.00	78	0.48
Architectural Coating	Cement and Mortar Mixers	1	8.00	9	0.56
Architectural Coating	Rough Terrain Forklifts	1	8.00	100	0.40
Landscaping	Dumpers/Tenders	1	6.00	16	0.38
Landscaping	Skid Steer Loaders	1	8.00	65	0.37
Paving	Air Compressors	1	8.00	78	0.48
Paving	Dumpers/Tenders	2	8.00	16	0.38
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	3	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Sweepers/Scrubbers	1	8.00	64	0.46
Paving	Tractors/Loaders/Backhoes	3	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demo & Site Preparation	11	28.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Grading/Excavation	16	40.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Drainage/Utilities/Trenching	12	30.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Foundations/Concrete Pour	11	28.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	19	64.00	25.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	3	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping	2	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	13	33.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demo & Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.7970	15.2696	21.4196	0.0340		0.7647	0.7647		0.7317	0.7317		3,233.8499	3,233.8499	0.6476		3,250.0406
Total	**1.7970**	**15.2696**	**21.4196**	**0.0340**	**0.0000**	**0.7647**	**0.7647**	**0.0000**	**0.7317**	**0.7317**		**3,233.8499**	**3,233.8499**	**0.6476**		**3,250.0406**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demo & Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0897	0.0625	1.0146	2.7700e-003	0.3130	1.8900e-003	0.3149	0.0830	1.7400e-003	0.0847		283.5316	283.5316	7.0600e-003	6.4600e-003	285.6338
Total	**0.0897**	**0.0625**	**1.0146**	**2.7700e-003**	**0.3130**	**1.8900e-003**	**0.3149**	**0.0830**	**1.7400e-003**	**0.0847**		**283.5316**	**283.5316**	**7.0600e-003**	**6.4600e-003**	**285.6338**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.7970	15.2696	21.4196	0.0340		0.7647	0.7647		0.7317	0.7317	0.0000	3,233.8499	3,233.8499	0.6476		3,250.0406
Total	**1.7970**	**15.2696**	**21.4196**	**0.0340**	**0.0000**	**0.7647**	**0.7647**	**0.0000**	**0.7317**	**0.7317**	**0.0000**	**3,233.8499**	**3,233.8499**	**0.6476**		**3,250.0406**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demo & Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0897	0.0625	1.0146	2.7700e-003	0.3130	1.8900e-003	0.3149	0.0830	1.7400e-003	0.0847		283.5316	283.5316	7.0600e-003	6.4600e-003	285.6338
Total	**0.0897**	**0.0625**	**1.0146**	**2.7700e-003**	**0.3130**	**1.8900e-003**	**0.3149**	**0.0830**	**1.7400e-003**	**0.0847**		**283.5316**	**283.5316**	**7.0600e-003**	**6.4600e-003**	**285.6338**

3.3 Grading/Excavation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.7723	0.0000	4.7723	0.5153	0.0000	0.5153			0.0000			0.0000
Off-Road	5.0746	52.4128	41.8462	0.0946		2.1676	2.1676		2.0080	2.0080		9,108.8387	9,108.8387	2.7496		9,177.5786
Total	**5.0746**	**52.4128**	**41.8462**	**0.0946**	**4.7723**	**2.1676**	**6.9398**	**0.5153**	**2.0080**	**2.5233**		**9,108.8387**	**9,108.8387**	**2.7496**		**9,177.5786**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading/Excavation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1281	0.0893	1.4495	3.9600e-003	0.4471	2.7000e-003	0.4498	0.1186	2.4800e-003	0.1211		405.0451	405.0451	0.0101	9.2300e-003	408.0483
Total	**0.1281**	**0.0893**	**1.4495**	**3.9600e-003**	**0.4471**	**2.7000e-003**	**0.4498**	**0.1186**	**2.4800e-003**	**0.1211**		**405.0451**	**405.0451**	**0.0101**	**9.2300e-003**	**408.0483**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.8612	0.0000	1.8612	0.2010	0.0000	0.2010			0.0000			0.0000
Off-Road	5.0746	52.4128	41.8462	0.0946		2.1676	2.1676		2.0080	2.0080	0.0000	9,108.8387	9,108.8387	2.7496		9,177.5786
Total	**5.0746**	**52.4128**	**41.8462**	**0.0946**	**1.8612**	**2.1676**	**4.0288**	**0.2010**	**2.0080**	**2.2090**	**0.0000**	**9,108.8387**	**9,108.8387**	**2.7496**		**9,177.5786**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading/Excavation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1281	0.0893	1.4495	3.9600e-003	0.4471	2.7000e-003	0.4498	0.1186	2.4800e-003	0.1211		405.0451	405.0451	0.0101	9.2300e-003	408.0483
Total	**0.1281**	**0.0893**	**1.4495**	**3.9600e-003**	**0.4471**	**2.7000e-003**	**0.4498**	**0.1186**	**2.4800e-003**	**0.1211**		**405.0451**	**405.0451**	**0.0101**	**9.2300e-003**	**408.0483**

3.4 Drainage/Utilities/Trenching - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1613	18.8269	26.1172	0.0431		0.9115	0.9115		0.8810	0.8810		4,083.9663	4,083.9663	0.6668		4,100.6369
Total	**2.1613**	**18.8269**	**26.1172**	**0.0431**		**0.9115**	**0.9115**		**0.8810**	**0.8810**		**4,083.9663**	**4,083.9663**	**0.6668**		**4,100.6369**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Drainage/Utilities/Trenching - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0961	0.0670	1.0871	2.9700e-003	0.3353	2.0200e-003	0.3374	0.0889	1.8600e-003	0.0908		303.7838	303.7838	7.5600e-003	6.9200e-003	306.0363
Total	**0.0961**	**0.0670**	**1.0871**	**2.9700e-003**	**0.3353**	**2.0200e-003**	**0.3374**	**0.0889**	**1.8600e-003**	**0.0908**		**303.7838**	**303.7838**	**7.5600e-003**	**6.9200e-003**	**306.0363**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1613	18.8269	26.1172	0.0431		0.9115	0.9115		0.8810	0.8810	0.0000	4,083.9663	4,083.9663	0.6668		4,100.6369
Total	**2.1613**	**18.8269**	**26.1172**	**0.0431**		**0.9115**	**0.9115**		**0.8810**	**0.8810**	**0.0000**	**4,083.9663**	**4,083.9663**	**0.6668**		**4,100.6369**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Drainage/Utilities/Trenching - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0961	0.0670	1.0871	2.9700e-003	0.3353	2.0200e-003	0.3374	0.0889	1.8600e-003	0.0908		303.7838	303.7838	7.5600e-003	6.9200e-003	306.0363
Total	**0.0961**	**0.0670**	**1.0871**	**2.9700e-003**	**0.3353**	**2.0200e-003**	**0.3374**	**0.0889**	**1.8600e-003**	**0.0908**		**303.7838**	**303.7838**	**7.5600e-003**	**6.9200e-003**	**306.0363**

3.5 Foundations/Concrete Pour - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7290	15.1259	20.8762	0.0337		0.7037	0.7037		0.6796	0.6796		3,186.3435	3,186.3435	0.5622		3,200.3992
Total	**1.7290**	**15.1259**	**20.8762**	**0.0337**		**0.7037**	**0.7037**		**0.6796**	**0.6796**		**3,186.3435**	**3,186.3435**	**0.5622**		**3,200.3992**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Foundations/Concrete Pour - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0897	0.0625	1.0146	2.7700e-003	0.3130	1.8900e-003	0.3149	0.0830	1.7400e-003	0.0847		283.5316	283.5316	7.0600e-003	6.4600e-003	285.6338
Total	**0.0897**	**0.0625**	**1.0146**	**2.7700e-003**	**0.3130**	**1.8900e-003**	**0.3149**	**0.0830**	**1.7400e-003**	**0.0847**		**283.5316**	**283.5316**	**7.0600e-003**	**6.4600e-003**	**285.6338**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7290	15.1259	20.8762	0.0337		0.7037	0.7037		0.6796	0.6796	0.0000	3,186.3435	3,186.3435	0.5622		3,200.3992
Total	**1.7290**	**15.1259**	**20.8762**	**0.0337**		**0.7037**	**0.7037**		**0.6796**	**0.6796**	**0.0000**	**3,186.3435**	**3,186.3435**	**0.5622**		**3,200.3992**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Foundations/Concrete Pour - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0897	0.0625	1.0146	2.7700e-003	0.3130	1.8900e-003	0.3149	0.0830	1.7400e-003	0.0847		283.5316	283.5316	7.0600e-003	6.4600e-003	285.6338
Total	**0.0897**	**0.0625**	**1.0146**	**2.7700e-003**	**0.3130**	**1.8900e-003**	**0.3149**	**0.0830**	**1.7400e-003**	**0.0847**		**283.5316**	**283.5316**	**7.0600e-003**	**6.4600e-003**	**285.6338**

3.6 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.2100	28.5489	35.6477	0.0614		1.3186	1.3186		1.2748	1.2748		5,816.9829	5,816.9829	0.9629		5,841.0559
Total	**3.2100**	**28.5489**	**35.6477**	**0.0614**		**1.3186**	**1.3186**		**1.2748**	**1.2748**		**5,816.9829**	**5,816.9829**	**0.9629**		**5,841.0559**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0288	0.9596	0.3718	4.6500e-003	0.1601	4.8200e-003	0.1650	0.0461	4.6100e-003	0.0507		500.7062	500.7062	0.0168	0.0720	522.5778
Worker	0.2049	0.1429	2.3192	6.3300e-003	0.7154	4.3200e-003	0.7197	0.1897	3.9700e-003	0.1937		648.0722	648.0722	0.0161	0.0148	652.8774
Total	**0.2337**	**1.1025**	**2.6909**	**0.0110**	**0.8755**	**9.1400e-003**	**0.8847**	**0.2358**	**8.5800e-003**	**0.2444**		**1,148.7784**	**1,148.7784**	**0.0329**	**0.0868**	**1,175.4551**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.2100	28.5489	35.6477	0.0614		1.3186	1.3186		1.2748	1.2748	0.0000	5,816.9829	5,816.9829	0.9629		5,841.0559
Total	**3.2100**	**28.5489**	**35.6477**	**0.0614**		**1.3186**	**1.3186**		**1.2748**	**1.2748**	**0.0000**	**5,816.9829**	**5,816.9829**	**0.9629**		**5,841.0559**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0288	0.9596	0.3718	4.6500e-003	0.1601	4.8200e-003	0.1650	0.0461	4.6100e-003	0.0507		500.7062	500.7062	0.0168	0.0720	522.5778
Worker	0.2049	0.1429	2.3192	6.3300e-003	0.7154	4.3200e-003	0.7197	0.1897	3.9700e-003	0.1937		648.0722	648.0722	0.0161	0.0148	652.8774
Total	**0.2337**	**1.1025**	**2.6909**	**0.0110**	**0.8755**	**9.1400e-003**	**0.8847**	**0.2358**	**8.5800e-003**	**0.2444**		**1,148.7784**	**1,148.7784**	**0.0329**	**0.0868**	**1,175.4551**

3.6 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.0341	26.8647	35.5479	0.0614		1.1636	1.1636		1.1245	1.1245		5,816.6999	5,816.6999	0.9548		5,840.5703
Total	**3.0341**	**26.8647**	**35.5479**	**0.0614**		**1.1636**	**1.1636**		**1.1245**	**1.1245**		**5,816.6999**	**5,816.6999**	**0.9548**		**5,840.5703**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0279	0.9615	0.3638	4.5800e-003	0.1601	4.8600e-003	0.1650	0.0461	4.6400e-003	0.0508		493.1865	493.1865	0.0168	0.0710	514.7600
Worker	0.1910	0.1276	2.1587	6.1500e-003	0.7154	4.1400e-003	0.7195	0.1897	3.8100e-003	0.1935		634.7129	634.7129	0.0146	0.0137	639.1714
Total	**0.2189**	**1.0891**	**2.5226**	**0.0107**	**0.8755**	**9.0000e-003**	**0.8845**	**0.2358**	**8.4500e-003**	**0.2443**		**1,127.8995**	**1,127.8995**	**0.0314**	**0.0847**	**1,153.9314**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.0341	26.8647	35.5479	0.0614		1.1636	1.1636		1.1245	1.1245	0.0000	5,816.6999	5,816.6999	0.9548		5,840.5703
Total	**3.0341**	**26.8647**	**35.5479**	**0.0614**		**1.1636**	**1.1636**		**1.1245**	**1.1245**	**0.0000**	**5,816.6999**	**5,816.6999**	**0.9548**		**5,840.5703**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0279	0.9615	0.3638	4.5800e-003	0.1601	4.8600e-003	0.1650	0.0461	4.6400e-003	0.0508		493.1865	493.1865	0.0168	0.0710	514.7600
Worker	0.1910	0.1276	2.1587	6.1500e-003	0.7154	4.1400e-003	0.7195	0.1897	3.8100e-003	0.1935		634.7129	634.7129	0.0146	0.0137	639.1714
Total	**0.2189**	**1.0891**	**2.5226**	**0.0107**	**0.8755**	**9.0000e-003**	**0.8845**	**0.2358**	**8.4500e-003**	**0.2443**		**1,127.8995**	**1,127.8995**	**0.0314**	**0.0847**	**1,153.9314**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.8013					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3562	3.0706	4.4068	7.1300e-003		0.1301	0.1301		0.1265	0.1265		665.7678	665.7678	0.1300		669.0189
Total	**16.1575**	**3.0706**	**4.4068**	**7.1300e-003**		**0.1301**	**0.1301**		**0.1265**	**0.1265**		**665.7678**	**665.7678**	**0.1300**		**669.0189**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0416	0.0290	0.4711	1.2900e-003	0.1453	8.8000e-004	0.1462	0.0385	8.1000e-004	0.0393		131.6397	131.6397	3.2800e-003	3.0000e-003	132.6157
Total	**0.0416**	**0.0290**	**0.4711**	**1.2900e-003**	**0.1453**	**8.8000e-004**	**0.1462**	**0.0385**	**8.1000e-004**	**0.0393**		**131.6397**	**131.6397**	**3.2800e-003**	**3.0000e-003**	**132.6157**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.8013					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3562	3.0706	4.4068	7.1300e-003		0.1301	0.1301		0.1265	0.1265	0.0000	665.7678	665.7678	0.1300		669.0189
Total	**16.1575**	**3.0706**	**4.4068**	**7.1300e-003**		**0.1301**	**0.1301**		**0.1265**	**0.1265**	**0.0000**	**665.7678**	**665.7678**	**0.1300**		**669.0189**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0416	0.0290	0.4711	1.2900e-003	0.1453	8.8000e-004	0.1462	0.0385	8.1000e-004	0.0393		131.6397	131.6397	3.2800e-003	3.0000e-003	132.6157
Total	**0.0416**	**0.0290**	**0.4711**	**1.2900e-003**	**0.1453**	**8.8000e-004**	**0.1462**	**0.0385**	**8.1000e-004**	**0.0393**		**131.6397**	**131.6397**	**3.2800e-003**	**3.0000e-003**	**132.6157**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.8013					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3419	2.9372	4.4075	7.1300e-003		0.1164	0.1164		0.1131	0.1131		665.7006	665.7006	0.1290		668.9263
Total	**16.1433**	**2.9372**	**4.4075**	**7.1300e-003**		**0.1164**	**0.1164**		**0.1131**	**0.1131**		**665.7006**	**665.7006**	**0.1290**		**668.9263**

3.7 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0388	0.0259	0.4385	1.2500e-003	0.1453	8.4000e-004	0.1462	0.0385	7.7000e-004	0.0393		128.9261	128.9261	2.9700e-003	2.7900e-003	129.8317
Total	**0.0388**	**0.0259**	**0.4385**	**1.2500e-003**	**0.1453**	**8.4000e-004**	**0.1462**	**0.0385**	**7.7000e-004**	**0.0393**		**128.9261**	**128.9261**	**2.9700e-003**	**2.7900e-003**	**129.8317**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.8013					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3419	2.9372	4.4075	7.1300e-003		0.1164	0.1164		0.1131	0.1131	0.0000	665.7006	665.7006	0.1290		668.9263
Total	**16.1433**	**2.9372**	**4.4075**	**7.1300e-003**		**0.1164**	**0.1164**		**0.1131**	**0.1131**	**0.0000**	**665.7006**	**665.7006**	**0.1290**		**668.9263**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0388	0.0259	0.4385	1.2500e-003	0.1453	8.4000e-004	0.1462	0.0385	7.7000e-004	0.0393		128.9261	128.9261	2.9700e-003	2.7900e-003	129.8317
Total	**0.0388**	**0.0259**	**0.4385**	**1.2500e-003**	**0.1453**	**8.4000e-004**	**0.1462**	**0.0385**	**7.7000e-004**	**0.0393**		**128.9261**	**128.9261**	**2.9700e-003**	**2.7900e-003**	**129.8317**

3.8 Landscaping - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1202	1.2131	1.5735	2.6300e-003		0.0423	0.0423		0.0399	0.0399		246.1915	246.1915	0.0698		247.9352
Total	**0.1202**	**1.2131**	**1.5735**	**2.6300e-003**		**0.0423**	**0.0423**		**0.0399**	**0.0399**		**246.1915**	**246.1915**	**0.0698**		**247.9352**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Landscaping - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0416	0.0290	0.4711	1.2900e-003	0.1453	8.8000e-004	0.1462	0.0385	8.1000e-004	0.0393		131.6397	131.6397	3.2800e-003	3.0000e-003	132.6157
Total	**0.0416**	**0.0290**	**0.4711**	**1.2900e-003**	**0.1453**	**8.8000e-004**	**0.1462**	**0.0385**	**8.1000e-004**	**0.0393**		**131.6397**	**131.6397**	**3.2800e-003**	**3.0000e-003**	**132.6157**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1202	1.2131	1.5735	2.6300e-003		0.0423	0.0423		0.0399	0.0399	0.0000	246.1915	246.1915	0.0698		247.9352
Total	**0.1202**	**1.2131**	**1.5735**	**2.6300e-003**		**0.0423**	**0.0423**		**0.0399**	**0.0399**	**0.0000**	**246.1915**	**246.1915**	**0.0698**		**247.9352**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Landscaping - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0416	0.0290	0.4711	1.2900e-003	0.1453	8.8000e-004	0.1462	0.0385	8.1000e-004	0.0393		131.6397	131.6397	3.2800e-003	3.0000e-003	132.6157
Total	**0.0416**	**0.0290**	**0.4711**	**1.2900e-003**	**0.1453**	**8.8000e-004**	**0.1462**	**0.0385**	**8.1000e-004**	**0.0393**		**131.6397**	**131.6397**	**3.2800e-003**	**3.0000e-003**	**132.6157**

3.8 Landscaping - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1174	1.1749	1.5727	2.6400e-003		0.0395	0.0395		0.0374	0.0374		246.2725	246.2725	0.0698		248.0168
Total	**0.1174**	**1.1749**	**1.5727**	**2.6400e-003**		**0.0395**	**0.0395**		**0.0374**	**0.0374**		**246.2725**	**246.2725**	**0.0698**		**248.0168**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Landscaping - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0388	0.0259	0.4385	1.2500e-003	0.1453	8.4000e-004	0.1462	0.0385	7.7000e-004	0.0393		128.9261	128.9261	2.9700e-003	2.7900e-003	129.8317
Total	**0.0388**	**0.0259**	**0.4385**	**1.2500e-003**	**0.1453**	**8.4000e-004**	**0.1462**	**0.0385**	**7.7000e-004**	**0.0393**		**128.9261**	**128.9261**	**2.9700e-003**	**2.7900e-003**	**129.8317**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1174	1.1749	1.5727	2.6400e-003		0.0395	0.0395		0.0374	0.0374	0.0000	246.2725	246.2725	0.0698		248.0168
Total	**0.1174**	**1.1749**	**1.5727**	**2.6400e-003**		**0.0395**	**0.0395**		**0.0374**	**0.0374**	**0.0000**	**246.2725**	**246.2725**	**0.0698**		**248.0168**

3.8 Landscaping - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0388	0.0259	0.4385	1.2500e-003	0.1453	8.4000e-004	0.1462	0.0385	7.7000e-004	0.0393		128.9261	128.9261	2.9700e-003	2.7900e-003	129.8317
Total	**0.0388**	**0.0259**	**0.4385**	**1.2500e-003**	**0.1453**	**8.4000e-004**	**0.1462**	**0.0385**	**7.7000e-004**	**0.0393**		**128.9261**	**128.9261**	**2.9700e-003**	**2.7900e-003**	**129.8317**

3.9 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9614	17.7866	25.8422	0.0395		0.8725	0.8725		0.8119	0.8119		3,795.4720	3,795.4720	1.1010		3,822.9960
Paving	0.0228					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9842**	**17.7866**	**25.8422**	**0.0395**		**0.8725**	**0.8725**		**0.8119**	**0.8119**		**3,795.4720**	**3,795.4720**	**1.1010**		**3,822.9960**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0985	0.0658	1.1131	3.1700e-003	0.3689	2.1300e-003	0.3710	0.0978	1.9700e-003	0.0998		327.2739	327.2739	7.5300e-003	7.0800e-003	329.5728
Total	**0.0985**	**0.0658**	**1.1131**	**3.1700e-003**	**0.3689**	**2.1300e-003**	**0.3710**	**0.0978**	**1.9700e-003**	**0.0998**		**327.2739**	**327.2739**	**7.5300e-003**	**7.0800e-003**	**329.5728**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9614	17.7866	25.8422	0.0395		0.8725	0.8725		0.8119	0.8119	0.0000	3,795.4720	3,795.4720	1.1010		3,822.9960
Paving	0.0228					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9842**	**17.7866**	**25.8422**	**0.0395**		**0.8725**	**0.8725**		**0.8119**	**0.8119**	**0.0000**	**3,795.4720**	**3,795.4720**	**1.1010**		**3,822.9960**

3.9 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0985	0.0658	1.1131	3.1700e-003	0.3689	2.1300e-003	0.3710	0.0978	1.9700e-003	0.0998		327.2739	327.2739	7.5300e-003	7.0800e-003	329.5728
Total	**0.0985**	**0.0658**	**1.1131**	**3.1700e-003**	**0.3689**	**2.1300e-003**	**0.3710**	**0.0978**	**1.9700e-003**	**0.0998**		**327.2739**	**327.2739**	**7.5300e-003**	**7.0800e-003**	**329.5728**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.2434	1.1807	11.7504	0.0253	2.6304	0.0183	2.6487	0.7007	0.0170	0.7176		2,624.1440	2,624.1440	0.1769	0.1080	2,660.7478
Unmitigated	1.2434	1.1807	11.7504	0.0253	2.6304	0.0183	2.6487	0.7007	0.0170	0.7176		2,624.1440	2,624.1440	0.1769	0.1080	2,660.7478

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
General Office Building	23.57	5.35	1.69	57,478	57,478
High Turnover (Sit Down Restaurant)	173.88	189.72	221.09	249,244	249,244
Parking Lot	0.00	0.00	0.00		
Strip Mall	31.02	29.43	14.30	54,047	54,047
Unrefrigerated Warehouse-No Rail	189.73	189.73	189.73	813,127	813,127
Total	418.20	414.23	426.82	1,173,896	1,173,896

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
High Turnover (Sit Down	16.60	8.40	6.90	8.50	72.50	19.00	37	20	43
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Strip Mall	16.60	8.40	6.90	16.60	64.40	19.00	45	40	15
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
General Office Building	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
High Turnover (Sit Down Restaurant)	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
Parking Lot	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
Strip Mall	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
Unrefrigerated Warehouse-No Rail	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0141	0.1281	0.1076	7.7000e-004		9.7400e-003	9.7400e-003		9.7400e-003	9.7400e-003		153.7237	153.7237	2.9500e-003	2.8200e-003	154.6372
NaturalGas Unmitigated	0.0141	0.1281	0.1076	7.7000e-004		9.7400e-003	9.7400e-003		9.7400e-003	9.7400e-003		153.7237	153.7237	2.9500e-003	2.8200e-003	154.6372

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	68.4979	7.4000e-004	6.7200e-003	5.6400e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		8.0586	8.0586	1.5000e-004	1.5000e-004	8.1065
High Turnover (Sit Down Restaurant)	978.114	0.0106	0.0959	0.0806	5.8000e-004		7.2900e-003	7.2900e-003		7.2900e-003	7.2900e-003		115.0722	115.0722	2.2100e-003	2.1100e-003	115.7560
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	3.12603	3.0000e-005	3.1000e-004	2.6000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.3678	0.3678	1.0000e-005	1.0000e-005	0.3700
Unrefrigerated Warehouse-No Rail	256.914	2.7700e-003	0.0252	0.0212	1.5000e-004		1.9100e-003	1.9100e-003		1.9100e-003	1.9100e-003		30.2252	30.2252	5.8000e-004	5.5000e-004	30.4048
Total		**0.0141**	**0.1281**	**0.1076**	**7.7000e-004**		**9.7300e-003**	**9.7300e-003**		**9.7300e-003**	**9.7300e-003**		**153.7237**	**153.7237**	**2.9500e-003**	**2.8200e-003**	**154.6372**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0.0684979	7.4000e-004	6.7200e-003	5.6400e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		8.0586	8.0586	1.5000e-004	1.5000e-004	8.1065
High Turnover (Sit Down Restaurant)	0.978114	0.0106	0.0959	0.0806	5.8000e-004		7.2900e-003	7.2900e-003		7.2900e-003	7.2900e-003		115.0722	115.0722	2.2100e-003	2.1100e-003	115.7560
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.00312603	3.0000e-005	3.1000e-004	2.6000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.3678	0.3678	1.0000e-005	1.0000e-005	0.3700
Unrefrigerated Warehouse-No Rail	0.256914	2.7700e-003	0.0252	0.0212	1.5000e-004		1.9100e-003	1.9100e-003		1.9100e-003	1.9100e-003		30.2252	30.2252	5.8000e-004	5.5000e-004	30.4048
Total		**0.0141**	**0.1281**	**0.1076**	**7.7000e-004**		**9.7300e-003**	**9.7300e-003**		**9.7300e-003**	**9.7300e-003**		**153.7237**	**153.7237**	**2.9500e-003**	**2.8200e-003**	**154.6372**

6.0 Area Detail

6.1 Mitigation Measures Area

21611 South Perry Street - Los Angeles-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.5500	1.4000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0340	0.0340	9.0000e-005		0.0362
Unmitigated	2.5500	1.4000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0340	0.0340	9.0000e-005		0.0362

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2901					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2585					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.4600e-003	1.4000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0340	0.0340	9.0000e-005		0.0362
Total	**2.5500**	**1.4000e-004**	**0.0158**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**		**0.0340**	**0.0340**	**9.0000e-005**		**0.0362**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2901					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2585					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.4600e-003	1.4000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0340	0.0340	9.0000e-005		0.0362
Total	**2.5500**	**1.4000e-004**	**0.0158**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**		**0.0340**	**0.0340**	**9.0000e-005**		**0.0362**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

21611 South Perry Street - Los Angeles-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

21611 South Perry Street

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	2.42	1000sqft	0.20	2,425.00	0
Unrefrigerated Warehouse-No Rail	109.04	1000sqft	0.50	109,039.00	0
Parking Lot	41.00	Space	0.20	16,400.00	0
City Park	0.53	Acre	1.50	22,999.68	0
High Turnover (Sit Down Restaurant)	1.55	1000sqft	0.20	1,550.00	0
Strip Mall	0.70	1000sqft	0.20	700.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	210.1	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Updated CO2e

Land Use - See Construction Assumptions

Construction Phase - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

21611 South Perry Street - Los Angeles-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Trips and VMT -

Grading -

Architectural Coating - Landscaping has no VOCs

Vehicle Trips - no VMT for City Park

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	56,857.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	170,571.00	0.00
tblArchitecturalCoating	ConstArea_Parking	984.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	0.00
tblArchitecturalCoating	EF_Parking	100.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	50.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	50.00	0.00
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	3.00	23.00
tblConstructionPhase	NumDays	6.00	21.00
tblConstructionPhase	NumDays	220.00	176.00
tblConstructionPhase	NumDays	10.00	67.00
tblConstructionPhase	NumDays	10.00	67.00
tblConstructionPhase	NumDays	10.00	23.00
tblLandUse	LandUseSquareFeet	2,420.00	2,425.00
tblLandUse	LandUseSquareFeet	109,040.00	109,039.00
tblLandUse	LandUseSquareFeet	23,086.80	22,999.68

21611 South Perry Street - Los Angeles-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblLandUse	LotAcreage	0.06	0.20
tblLandUse	LotAcreage	2.50	0.50
tblLandUse	LotAcreage	0.37	0.20
tblLandUse	LotAcreage	0.53	1.50
tblLandUse	LotAcreage	0.04	0.20
tblLandUse	LotAcreage	0.02	0.20
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblProjectCharacteristics	CO2IntensityFactor	390.98	210.1
tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	WD_TR	0.78	0.00

2.0 Emissions Summary

21611 South Perry Street - Los Angeles-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	19.4139	71.3960	70.5000	0.1446	5.5547	3.0838	8.6385	0.7228	2.8934	3.6162	0.0000	13,901.6340	13,901.6340	3.4341	0.0932	13,992.3002
2024	21.2933	45.4549	64.7649	0.1160	1.5350	2.0641	3.5991	0.4107	1.9681	2.3788	0.0000	11,175.0215	11,175.0215	1.9691	0.0974	11,253.2692
Maximum	**21.2933**	**71.3960**	**70.5000**	**0.1446**	**5.5547**	**3.0838**	**8.6385**	**0.7228**	**2.8934**	**3.6162**	**0.0000**	**13,901.6340**	**13,901.6340**	**3.4341**	**0.0974**	**13,992.3002**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	19.4139	71.3960	70.5000	0.1446	2.6436	3.0838	5.7274	0.4085	2.8934	3.3018	0.0000	13,901.6340	13,901.6340	3.4341	0.0932	13,992.3002
2024	21.2933	45.4549	64.7649	0.1160	1.5350	2.0641	3.5991	0.4107	1.9681	2.3788	0.0000	11,175.0215	11,175.0215	1.9691	0.0974	11,253.2692
Maximum	**21.2933**	**71.3960**	**70.5000**	**0.1446**	**2.6436**	**3.0838**	**5.7274**	**0.4107**	**2.8934**	**3.3018**	**0.0000**	**13,901.6340**	**13,901.6340**	**3.4341**	**0.0974**	**13,992.3002**

21611 South Perry Street - Los Angeles-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	41.06	0.00	23.79	27.73	0.00	5.24	0.00	0.00	0.00	0.00	0.00	0.00

21611 South Perry Street - Los Angeles-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.5500	1.4000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0340	0.0340	9.0000e-005		0.0362
Energy	0.0141	0.1281	0.1076	7.7000e-004		9.7400e-003	9.7400e-003		9.7400e-003	9.7400e-003		153.7237	153.7237	2.9500e-003	2.8200e-003	154.6372
Mobile	1.2434	1.1807	11.7504	0.0253	2.6304	0.0183	2.6487	0.7007	0.0170	0.7176		2,624.1440	2,624.1440	0.1769	0.1080	2,660.7478
Total	**3.8076**	**1.3089**	**11.8738**	**0.0261**	**2.6304**	**0.0281**	**2.6585**	**0.7007**	**0.0268**	**0.7274**		**2,777.9017**	**2,777.9017**	**0.1800**	**0.1108**	**2,815.4212**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.5500	1.4000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0340	0.0340	9.0000e-005		0.0362
Energy	0.0141	0.1281	0.1076	7.7000e-004		9.7400e-003	9.7400e-003		9.7400e-003	9.7400e-003		153.7237	153.7237	2.9500e-003	2.8200e-003	154.6372
Mobile	1.2434	1.1807	11.7504	0.0253	2.6304	0.0183	2.6487	0.7007	0.0170	0.7176		2,624.1440	2,624.1440	0.1769	0.1080	2,660.7478
Total	**3.8076**	**1.3089**	**11.8738**	**0.0261**	**2.6304**	**0.0281**	**2.6585**	**0.7007**	**0.0268**	**0.7274**		**2,777.9017**	**2,777.9017**	**0.1800**	**0.1108**	**2,815.4212**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demo & Site Preparation	Site Preparation	1/1/2023	2/1/2023	5	23	
2	Grading/Excavation	Grading	2/1/2023	3/1/2023	5	21	
3	Drainage/Utilities/Trenching	Trenching	3/1/2023	5/1/2023	5	44	
4	Foundations/Concrete Pour	Trenching	5/1/2023	6/1/2023	5	24	
5	Building Construction	Building Construction	6/1/2023	2/1/2024	5	176	
6	Architectural Coating	Architectural Coating	11/1/2023	2/1/2024	5	67	
7	Landscaping	Architectural Coating	11/1/2023	2/1/2024	5	67	
8	Paving	Paving	1/1/2024	1/31/2024	5	23	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 94.5

Acres of Paving: 0.2

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 170,571; Non-Residential Outdoor: 56,857; Striped Parking Area: 984 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demo & Site Preparation	Air Compressors	2	8.00	78	0.48
Demo & Site Preparation	Dumpers/Tenders	2	8.00	16	0.38
Demo & Site Preparation	Excavators	1	8.00	158	0.38

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Demo & Site Preparation	Generator Sets	1	8.00	84	0.74
Demo & Site Preparation	Skid Steer Loaders	1	8.00	65	0.37
Demo & Site Preparation	Sweepers/Scrubbers	1	8.00	64	0.46
Demo & Site Preparation	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading/Excavation	Concrete/Industrial Saws	1	8.00	81	0.73
Grading/Excavation	Crawler Tractors	2	8.00	212	0.43
Grading/Excavation	Dumpers/Tenders	2	8.00	16	0.38
Grading/Excavation	Excavators	1	8.00	158	0.38
Grading/Excavation	Graders	1	8.00	187	0.41
Grading/Excavation	Plate Compactors	1	8.00	8	0.43
Grading/Excavation	Rollers	1	8.00	80	0.38
Grading/Excavation	Scrapers	3	8.00	367	0.48
Grading/Excavation	Sweepers/Scrubbers	1	8.00	64	0.46
Grading/Excavation	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Drainage/Utilities/Trenching	Air Compressors	1	8.00	78	0.48
Drainage/Utilities/Trenching	Dumpers/Tenders	2	8.00	16	0.38
Drainage/Utilities/Trenching	Excavators	1	8.00	158	0.38
Drainage/Utilities/Trenching	Generator Sets	2	8.00	84	0.74
Drainage/Utilities/Trenching	Plate Compactors	1	8.00	8	0.43
Drainage/Utilities/Trenching	Pumps	1	8.00	84	0.74
Drainage/Utilities/Trenching	Rough Terrain Forklifts	1	8.00	100	0.40
Drainage/Utilities/Trenching	Sweepers/Scrubbers	1	8.00	64	0.46
Drainage/Utilities/Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Foundations/Concrete Pour	Air Compressors	1	8.00	78	0.48
Foundations/Concrete Pour	Concrete/Industrial Saws	1	8.00	81	0.73
Foundations/Concrete Pour	Dumpers/Tenders	2	8.00	16	0.38
Foundations/Concrete Pour	Plate Compactors	1	8.00	8	0.43
Foundations/Concrete Pour	Pumps	1	8.00	84	0.74
Foundations/Concrete Pour	Rough Terrain Forklifts	1	8.00	100	0.40

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Foundations/Concrete Pour	Skid Steer Loaders	1	8.00	65	0.37
Foundations/Concrete Pour	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Air Compressors	2	8.00	78	0.48
Building Construction	Cement and Mortar Mixers	2	8.00	9	0.56
Building Construction	Concrete/Industrial Saws	2	8.00	81	0.73
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Dumpers/Tenders	1	8.00	16	0.38
Building Construction	Forklifts	4	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Pumps	1	8.00	84	0.74
Building Construction	Rough Terrain Forklifts	1	8.00	100	0.40
Architectural Coating	Air Compressors	1	6.00	78	0.48
Architectural Coating	Cement and Mortar Mixers	1	8.00	9	0.56
Architectural Coating	Rough Terrain Forklifts	1	8.00	100	0.40
Landscaping	Dumpers/Tenders	1	6.00	16	0.38
Landscaping	Skid Steer Loaders	1	8.00	65	0.37
Paving	Air Compressors	1	8.00	78	0.48
Paving	Dumpers/Tenders	2	8.00	16	0.38
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	3	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Sweepers/Scrubbers	1	8.00	64	0.46
Paving	Tractors/Loaders/Backhoes	3	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demo & Site Preparation	11	28.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Grading/Excavation	16	40.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Drainage/Utilities/Trenching	12	30.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Foundations/Concrete Pour	11	28.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	15	64.00	25.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	3	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping	2	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	13	33.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demo & Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.7970	15.2696	21.4196	0.0340		0.7647	0.7647		0.7317	0.7317		3,233.8499	3,233.8499	0.6476		3,250.0406
Total	**1.7970**	**15.2696**	**21.4196**	**0.0340**	**0.0000**	**0.7647**	**0.7647**	**0.0000**	**0.7317**	**0.7317**		**3,233.8499**	**3,233.8499**	**0.6476**		**3,250.0406**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demo & Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0897	0.0625	1.0146	2.7700e-003	0.3130	1.8900e-003	0.3149	0.0830	1.7400e-003	0.0847		283.5316	283.5316	7.0600e-003	6.4600e-003	285.6338
Total	**0.0897**	**0.0625**	**1.0146**	**2.7700e-003**	**0.3130**	**1.8900e-003**	**0.3149**	**0.0830**	**1.7400e-003**	**0.0847**		**283.5316**	**283.5316**	**7.0600e-003**	**6.4600e-003**	**285.6338**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.7970	15.2696	21.4196	0.0340		0.7647	0.7647		0.7317	0.7317	0.0000	3,233.8499	3,233.8499	0.6476		3,250.0406
Total	**1.7970**	**15.2696**	**21.4196**	**0.0340**	**0.0000**	**0.7647**	**0.7647**	**0.0000**	**0.7317**	**0.7317**	**0.0000**	**3,233.8499**	**3,233.8499**	**0.6476**		**3,250.0406**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demo & Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0897	0.0625	1.0146	2.7700e-003	0.3130	1.8900e-003	0.3149	0.0830	1.7400e-003	0.0847		283.5316	283.5316	7.0600e-003	6.4600e-003	285.6338
Total	**0.0897**	**0.0625**	**1.0146**	**2.7700e-003**	**0.3130**	**1.8900e-003**	**0.3149**	**0.0830**	**1.7400e-003**	**0.0847**		**283.5316**	**283.5316**	**7.0600e-003**	**6.4600e-003**	**285.6338**

3.3 Grading/Excavation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.7723	0.0000	4.7723	0.5153	0.0000	0.5153			0.0000			0.0000
Off-Road	5.0746	52.4128	41.8462	0.0946		2.1676	2.1676		2.0080	2.0080		9,108.8387	9,108.8387	2.7496		9,177.5786
Total	**5.0746**	**52.4128**	**41.8462**	**0.0946**	**4.7723**	**2.1676**	**6.9398**	**0.5153**	**2.0080**	**2.5233**		**9,108.8387**	**9,108.8387**	**2.7496**		**9,177.5786**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading/Excavation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1281	0.0893	1.4495	3.9600e-003	0.4471	2.7000e-003	0.4498	0.1186	2.4800e-003	0.1211		405.0451	405.0451	0.0101	9.2300e-003	408.0483
Total	**0.1281**	**0.0893**	**1.4495**	**3.9600e-003**	**0.4471**	**2.7000e-003**	**0.4498**	**0.1186**	**2.4800e-003**	**0.1211**		**405.0451**	**405.0451**	**0.0101**	**9.2300e-003**	**408.0483**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.8612	0.0000	1.8612	0.2010	0.0000	0.2010			0.0000			0.0000
Off-Road	5.0746	52.4128	41.8462	0.0946		2.1676	2.1676		2.0080	2.0080	0.0000	9,108.8387	9,108.8387	2.7496		9,177.5786
Total	**5.0746**	**52.4128**	**41.8462**	**0.0946**	**1.8612**	**2.1676**	**4.0288**	**0.2010**	**2.0080**	**2.2090**	**0.0000**	**9,108.8387**	**9,108.8387**	**2.7496**		**9,177.5786**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading/Excavation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1281	0.0893	1.4495	3.9600e-003	0.4471	2.7000e-003	0.4498	0.1186	2.4800e-003	0.1211		405.0451	405.0451	0.0101	9.2300e-003	408.0483
Total	**0.1281**	**0.0893**	**1.4495**	**3.9600e-003**	**0.4471**	**2.7000e-003**	**0.4498**	**0.1186**	**2.4800e-003**	**0.1211**		**405.0451**	**405.0451**	**0.0101**	**9.2300e-003**	**408.0483**

3.4 Drainage/Utilities/Trenching - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1613	18.8269	26.1172	0.0431		0.9115	0.9115		0.8810	0.8810		4,083.9663	4,083.9663	0.6668		4,100.6369
Total	**2.1613**	**18.8269**	**26.1172**	**0.0431**		**0.9115**	**0.9115**		**0.8810**	**0.8810**		**4,083.9663**	**4,083.9663**	**0.6668**		**4,100.6369**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Drainage/Utilities/Trenching - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0961	0.0670	1.0871	2.9700e-003	0.3353	2.0200e-003	0.3374	0.0889	1.8600e-003	0.0908		303.7838	303.7838	7.5600e-003	6.9200e-003	306.0363
Total	**0.0961**	**0.0670**	**1.0871**	**2.9700e-003**	**0.3353**	**2.0200e-003**	**0.3374**	**0.0889**	**1.8600e-003**	**0.0908**		**303.7838**	**303.7838**	**7.5600e-003**	**6.9200e-003**	**306.0363**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1613	18.8269	26.1172	0.0431		0.9115	0.9115		0.8810	0.8810	0.0000	4,083.9663	4,083.9663	0.6668		4,100.6369
Total	**2.1613**	**18.8269**	**26.1172**	**0.0431**		**0.9115**	**0.9115**		**0.8810**	**0.8810**	**0.0000**	**4,083.9663**	**4,083.9663**	**0.6668**		**4,100.6369**

3.4 Drainage/Utilities/Trenching - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0961	0.0670	1.0871	2.9700e-003	0.3353	2.0200e-003	0.3374	0.0889	1.8600e-003	0.0908		303.7838	303.7838	7.5600e-003	6.9200e-003	306.0363
Total	**0.0961**	**0.0670**	**1.0871**	**2.9700e-003**	**0.3353**	**2.0200e-003**	**0.3374**	**0.0889**	**1.8600e-003**	**0.0908**		**303.7838**	**303.7838**	**7.5600e-003**	**6.9200e-003**	**306.0363**

3.5 Foundations/Concrete Pour - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7290	15.1259	20.8762	0.0337		0.7037	0.7037		0.6796	0.6796		3,186.3435	3,186.3435	0.5622		3,200.3992
Total	**1.7290**	**15.1259**	**20.8762**	**0.0337**		**0.7037**	**0.7037**		**0.6796**	**0.6796**		**3,186.3435**	**3,186.3435**	**0.5622**		**3,200.3992**

21611 South Perry Street - Los Angeles-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Foundations/Concrete Pour - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0897	0.0625	1.0146	2.7700e-003	0.3130	1.8900e-003	0.3149	0.0830	1.7400e-003	0.0847		283.5316	283.5316	7.0600e-003	6.4600e-003	285.6338
Total	**0.0897**	**0.0625**	**1.0146**	**2.7700e-003**	**0.3130**	**1.8900e-003**	**0.3149**	**0.0830**	**1.7400e-003**	**0.0847**		**283.5316**	**283.5316**	**7.0600e-003**	**6.4600e-003**	**285.6338**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7290	15.1259	20.8762	0.0337		0.7037	0.7037		0.6796	0.6796	0.0000	3,186.3435	3,186.3435	0.5622		3,200.3992
Total	**1.7290**	**15.1259**	**20.8762**	**0.0337**		**0.7037**	**0.7037**		**0.6796**	**0.6796**	**0.0000**	**3,186.3435**	**3,186.3435**	**0.5622**		**3,200.3992**

3.5 Foundations/Concrete Pour - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0897	0.0625	1.0146	2.7700e-003	0.3130	1.8900e-003	0.3149	0.0830	1.7400e-003	0.0847		283.5316	283.5316	7.0600e-003	6.4600e-003	285.6338
Total	**0.0897**	**0.0625**	**1.0146**	**2.7700e-003**	**0.3130**	**1.8900e-003**	**0.3149**	**0.0830**	**1.7400e-003**	**0.0847**		**283.5316**	**283.5316**	**7.0600e-003**	**6.4600e-003**	**285.6338**

3.6 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.8192	23.8862	28.5350	0.0503		1.1664	1.1664		1.1334	1.1334		4,754.6322	4,754.6322	0.6325		4,770.4448
Total	**2.8192**	**23.8862**	**28.5350**	**0.0503**		**1.1664**	**1.1664**		**1.1334**	**1.1334**		**4,754.6322**	**4,754.6322**	**0.6325**		**4,770.4448**

21611 South Perry Street - Los Angeles-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0288	0.9596	0.3718	4.6500e-003	0.1601	4.8200e-003	0.1650	0.0461	4.6100e-003	0.0507		500.7062	500.7062	0.0168	0.0720	522.5778
Worker	0.2049	0.1429	2.3192	6.3300e-003	0.7154	4.3200e-003	0.7197	0.1897	3.9700e-003	0.1937		648.0722	648.0722	0.0161	0.0148	652.8774
Total	**0.2337**	**1.1025**	**2.6909**	**0.0110**	**0.8755**	**9.1400e-003**	**0.8847**	**0.2358**	**8.5800e-003**	**0.2444**		**1,148.7784**	**1,148.7784**	**0.0329**	**0.0868**	**1,175.4551**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.8192	23.8862	28.5350	0.0503		1.1664	1.1664		1.1334	1.1334	0.0000	4,754.6322	4,754.6322	0.6325		4,770.4448
Total	**2.8192**	**23.8862**	**28.5350**	**0.0503**		**1.1664**	**1.1664**		**1.1334**	**1.1334**	**0.0000**	**4,754.6322**	**4,754.6322**	**0.6325**		**4,770.4448**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0288	0.9596	0.3718	4.6500e-003	0.1601	4.8200e-003	0.1650	0.0461	4.6100e-003	0.0507		500.7062	500.7062	0.0168	0.0720	522.5778
Worker	0.2049	0.1429	2.3192	6.3300e-003	0.7154	4.3200e-003	0.7197	0.1897	3.9700e-003	0.1937		648.0722	648.0722	0.0161	0.0148	652.8774
Total	**0.2337**	**1.1025**	**2.6909**	**0.0110**	**0.8755**	**9.1400e-003**	**0.8847**	**0.2358**	**8.5800e-003**	**0.2444**		**1,148.7784**	**1,148.7784**	**0.0329**	**0.0868**	**1,175.4551**

3.6 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6535	22.3495	28.4298	0.0503		1.0230	1.0230		0.9937	0.9937		4,754.5510	4,754.5510	0.6245		4,770.1625
Total	**2.6535**	**22.3495**	**28.4298**	**0.0503**		**1.0230**	**1.0230**		**0.9937**	**0.9937**		**4,754.5510**	**4,754.5510**	**0.6245**		**4,770.1625**

21611 South Perry Street - Los Angeles-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0279	0.9615	0.3638	4.5800e-003	0.1601	4.8600e-003	0.1650	0.0461	4.6400e-003	0.0508		493.1865	493.1865	0.0168	0.0710	514.7600
Worker	0.1910	0.1276	2.1587	6.1500e-003	0.7154	4.1400e-003	0.7195	0.1897	3.8100e-003	0.1935		634.7129	634.7129	0.0146	0.0137	639.1714
Total	**0.2189**	**1.0891**	**2.5226**	**0.0107**	**0.8755**	**9.0000e-003**	**0.8845**	**0.2358**	**8.4500e-003**	**0.2443**		**1,127.8995**	**1,127.8995**	**0.0314**	**0.0847**	**1,153.9314**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6535	22.3495	28.4298	0.0503		1.0230	1.0230		0.9937	0.9937	0.0000	4,754.5510	4,754.5510	0.6245		4,770.1625
Total	**2.6535**	**22.3495**	**28.4298**	**0.0503**		**1.0230**	**1.0230**		**0.9937**	**0.9937**	**0.0000**	**4,754.5510**	**4,754.5510**	**0.6245**		**4,770.1625**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0279	0.9615	0.3638	4.5800e-003	0.1601	4.8600e-003	0.1650	0.0461	4.6400e-003	0.0508		493.1865	493.1865	0.0168	0.0710	514.7600
Worker	0.1910	0.1276	2.1587	6.1500e-003	0.7154	4.1400e-003	0.7195	0.1897	3.8100e-003	0.1935		634.7129	634.7129	0.0146	0.0137	639.1714
Total	**0.2189**	**1.0891**	**2.5226**	**0.0107**	**0.8755**	**9.0000e-003**	**0.8845**	**0.2358**	**8.4500e-003**	**0.2443**		**1,127.8995**	**1,127.8995**	**0.0314**	**0.0847**	**1,153.9314**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.8013					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3562	3.0706	4.4068	7.1300e-003		0.1301	0.1301		0.1265	0.1265		665.7678	665.7678	0.1300		669.0189
Total	**16.1575**	**3.0706**	**4.4068**	**7.1300e-003**		**0.1301**	**0.1301**		**0.1265**	**0.1265**		**665.7678**	**665.7678**	**0.1300**		**669.0189**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0416	0.0290	0.4711	1.2900e-003	0.1453	8.8000e-004	0.1462	0.0385	8.1000e-004	0.0393		131.6397	131.6397	3.2800e-003	3.0000e-003	132.6157
Total	**0.0416**	**0.0290**	**0.4711**	**1.2900e-003**	**0.1453**	**8.8000e-004**	**0.1462**	**0.0385**	**8.1000e-004**	**0.0393**		**131.6397**	**131.6397**	**3.2800e-003**	**3.0000e-003**	**132.6157**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.8013					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3562	3.0706	4.4068	7.1300e-003		0.1301	0.1301		0.1265	0.1265	0.0000	665.7678	665.7678	0.1300		669.0189
Total	**16.1575**	**3.0706**	**4.4068**	**7.1300e-003**		**0.1301**	**0.1301**		**0.1265**	**0.1265**	**0.0000**	**665.7678**	**665.7678**	**0.1300**		**669.0189**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0416	0.0290	0.4711	1.2900e-003	0.1453	8.8000e-004	0.1462	0.0385	8.1000e-004	0.0393		131.6397	131.6397	3.2800e-003	3.0000e-003	132.6157
Total	**0.0416**	**0.0290**	**0.4711**	**1.2900e-003**	**0.1453**	**8.8000e-004**	**0.1462**	**0.0385**	**8.1000e-004**	**0.0393**		**131.6397**	**131.6397**	**3.2800e-003**	**3.0000e-003**	**132.6157**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.8013					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3419	2.9372	4.4075	7.1300e-003		0.1164	0.1164		0.1131	0.1131		665.7006	665.7006	0.1290		668.9263
Total	**16.1433**	**2.9372**	**4.4075**	**7.1300e-003**		**0.1164**	**0.1164**		**0.1131**	**0.1131**		**665.7006**	**665.7006**	**0.1290**		**668.9263**

3.7 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0388	0.0259	0.4385	1.2500e-003	0.1453	8.4000e-004	0.1462	0.0385	7.7000e-004	0.0393		128.9261	128.9261	2.9700e-003	2.7900e-003	129.8317
Total	**0.0388**	**0.0259**	**0.4385**	**1.2500e-003**	**0.1453**	**8.4000e-004**	**0.1462**	**0.0385**	**7.7000e-004**	**0.0393**		**128.9261**	**128.9261**	**2.9700e-003**	**2.7900e-003**	**129.8317**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.8013					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3419	2.9372	4.4075	7.1300e-003		0.1164	0.1164		0.1131	0.1131	0.0000	665.7006	665.7006	0.1290		668.9263
Total	**16.1433**	**2.9372**	**4.4075**	**7.1300e-003**		**0.1164**	**0.1164**		**0.1131**	**0.1131**	**0.0000**	**665.7006**	**665.7006**	**0.1290**		**668.9263**

3.7 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0388	0.0259	0.4385	1.2500e-003	0.1453	8.4000e-004	0.1462	0.0385	7.7000e-004	0.0393		128.9261	128.9261	2.9700e-003	2.7900e-003	129.8317
Total	**0.0388**	**0.0259**	**0.4385**	**1.2500e-003**	**0.1453**	**8.4000e-004**	**0.1462**	**0.0385**	**7.7000e-004**	**0.0393**		**128.9261**	**128.9261**	**2.9700e-003**	**2.7900e-003**	**129.8317**

3.8 Landscaping - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1202	1.2131	1.5735	2.6300e-003		0.0423	0.0423		0.0399	0.0399		246.1915	246.1915	0.0698		247.9352
Total	**0.1202**	**1.2131**	**1.5735**	**2.6300e-003**		**0.0423**	**0.0423**		**0.0399**	**0.0399**		**246.1915**	**246.1915**	**0.0698**		**247.9352**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Landscaping - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0416	0.0290	0.4711	1.2900e-003	0.1453	8.8000e-004	0.1462	0.0385	8.1000e-004	0.0393		131.6397	131.6397	3.2800e-003	3.0000e-003	132.6157
Total	**0.0416**	**0.0290**	**0.4711**	**1.2900e-003**	**0.1453**	**8.8000e-004**	**0.1462**	**0.0385**	**8.1000e-004**	**0.0393**		**131.6397**	**131.6397**	**3.2800e-003**	**3.0000e-003**	**132.6157**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1202	1.2131	1.5735	2.6300e-003		0.0423	0.0423		0.0399	0.0399	0.0000	246.1915	246.1915	0.0698		247.9352
Total	**0.1202**	**1.2131**	**1.5735**	**2.6300e-003**		**0.0423**	**0.0423**		**0.0399**	**0.0399**	**0.0000**	**246.1915**	**246.1915**	**0.0698**		**247.9352**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Landscaping - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0416	0.0290	0.4711	1.2900e-003	0.1453	8.8000e-004	0.1462	0.0385	8.1000e-004	0.0393		131.6397	131.6397	3.2800e-003	3.0000e-003	132.6157
Total	**0.0416**	**0.0290**	**0.4711**	**1.2900e-003**	**0.1453**	**8.8000e-004**	**0.1462**	**0.0385**	**8.1000e-004**	**0.0393**		**131.6397**	**131.6397**	**3.2800e-003**	**3.0000e-003**	**132.6157**

3.8 Landscaping - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1174	1.1749	1.5727	2.6400e-003		0.0395	0.0395		0.0374	0.0374		246.2725	246.2725	0.0698		248.0168
Total	**0.1174**	**1.1749**	**1.5727**	**2.6400e-003**		**0.0395**	**0.0395**		**0.0374**	**0.0374**		**246.2725**	**246.2725**	**0.0698**		**248.0168**

21611 South Perry Street - Los Angeles-South Coast County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Landscaping - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0388	0.0259	0.4385	1.2500e-003	0.1453	8.4000e-004	0.1462	0.0385	7.7000e-004	0.0393		128.9261	128.9261	2.9700e-003	2.7900e-003	129.8317
Total	**0.0388**	**0.0259**	**0.4385**	**1.2500e-003**	**0.1453**	**8.4000e-004**	**0.1462**	**0.0385**	**7.7000e-004**	**0.0393**		**128.9261**	**128.9261**	**2.9700e-003**	**2.7900e-003**	**129.8317**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1174	1.1749	1.5727	2.6400e-003		0.0395	0.0395		0.0374	0.0374	0.0000	246.2725	246.2725	0.0698		248.0168
Total	**0.1174**	**1.1749**	**1.5727**	**2.6400e-003**		**0.0395**	**0.0395**		**0.0374**	**0.0374**	**0.0000**	**246.2725**	**246.2725**	**0.0698**		**248.0168**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Landscaping - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0388	0.0259	0.4385	1.2500e-003	0.1453	8.4000e-004	0.1462	0.0385	7.7000e-004	0.0393		128.9261	128.9261	2.9700e-003	2.7900e-003	129.8317
Total	**0.0388**	**0.0259**	**0.4385**	**1.2500e-003**	**0.1453**	**8.4000e-004**	**0.1462**	**0.0385**	**7.7000e-004**	**0.0393**		**128.9261**	**128.9261**	**2.9700e-003**	**2.7900e-003**	**129.8317**

3.9 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9614	17.7866	25.8422	0.0395		0.8725	0.8725		0.8119	0.8119		3,795.4720	3,795.4720	1.1010		3,822.9960
Paving	0.0228					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9842**	**17.7866**	**25.8422**	**0.0395**		**0.8725**	**0.8725**		**0.8119**	**0.8119**		**3,795.4720**	**3,795.4720**	**1.1010**		**3,822.9960**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0985	0.0658	1.1131	3.1700e-003	0.3689	2.1300e-003	0.3710	0.0978	1.9700e-003	0.0998		327.2739	327.2739	7.5300e-003	7.0800e-003	329.5728
Total	**0.0985**	**0.0658**	**1.1131**	**3.1700e-003**	**0.3689**	**2.1300e-003**	**0.3710**	**0.0978**	**1.9700e-003**	**0.0998**		**327.2739**	**327.2739**	**7.5300e-003**	**7.0800e-003**	**329.5728**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9614	17.7866	25.8422	0.0395		0.8725	0.8725		0.8119	0.8119	0.0000	3,795.4720	3,795.4720	1.1010		3,822.9960
Paving	0.0228					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9842**	**17.7866**	**25.8422**	**0.0395**		**0.8725**	**0.8725**		**0.8119**	**0.8119**	**0.0000**	**3,795.4720**	**3,795.4720**	**1.1010**		**3,822.9960**

3.9 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0985	0.0658	1.1131	3.1700e-003	0.3689	2.1300e-003	0.3710	0.0978	1.9700e-003	0.0998		327.2739	327.2739	7.5300e-003	7.0800e-003	329.5728
Total	**0.0985**	**0.0658**	**1.1131**	**3.1700e-003**	**0.3689**	**2.1300e-003**	**0.3710**	**0.0978**	**1.9700e-003**	**0.0998**		**327.2739**	**327.2739**	**7.5300e-003**	**7.0800e-003**	**329.5728**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.2434	1.1807	11.7504	0.0253	2.6304	0.0183	2.6487	0.7007	0.0170	0.7176		2,624.1440	2,624.1440	0.1769	0.1080	2,660.7478
Unmitigated	1.2434	1.1807	11.7504	0.0253	2.6304	0.0183	2.6487	0.7007	0.0170	0.7176		2,624.1440	2,624.1440	0.1769	0.1080	2,660.7478

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
General Office Building	23.57	5.35	1.69	57,478	57,478
High Turnover (Sit Down Restaurant)	173.88	189.72	221.09	249,244	249,244
Parking Lot	0.00	0.00	0.00		
Strip Mall	31.02	29.43	14.30	54,047	54,047
Unrefrigerated Warehouse-No Rail	189.73	189.73	189.73	813,127	813,127
Total	418.20	414.23	426.82	1,173,896	1,173,896

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
High Turnover (Sit Down	16.60	8.40	6.90	8.50	72.50	19.00	37	20	43
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Strip Mall	16.60	8.40	6.90	16.60	64.40	19.00	45	40	15
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
General Office Building	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
High Turnover (Sit Down Restaurant)	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
Parking Lot	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
Strip Mall	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
Unrefrigerated Warehouse-No Rail	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0141	0.1281	0.1076	7.7000e-004		9.7400e-003	9.7400e-003		9.7400e-003	9.7400e-003		153.7237	153.7237	2.9500e-003	2.8200e-003	154.6372
NaturalGas Unmitigated	0.0141	0.1281	0.1076	7.7000e-004		9.7400e-003	9.7400e-003		9.7400e-003	9.7400e-003		153.7237	153.7237	2.9500e-003	2.8200e-003	154.6372

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	68.4979	7.4000e-004	6.7200e-003	5.6400e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		8.0586	8.0586	1.5000e-004	1.5000e-004	8.1065
High Turnover (Sit Down Restaurant)	978.114	0.0106	0.0959	0.0806	5.8000e-004		7.2900e-003	7.2900e-003		7.2900e-003	7.2900e-003		115.0722	115.0722	2.2100e-003	2.1100e-003	115.7560
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	3.12603	3.0000e-005	3.1000e-004	2.6000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.3678	0.3678	1.0000e-005	1.0000e-005	0.3700
Unrefrigerated Warehouse-No Rail	256.914	2.7700e-003	0.0252	0.0212	1.5000e-004		1.9100e-003	1.9100e-003		1.9100e-003	1.9100e-003		30.2252	30.2252	5.8000e-004	5.5000e-004	30.4048
Total		**0.0141**	**0.1281**	**0.1076**	**7.7000e-004**		**9.7300e-003**	**9.7300e-003**		**9.7300e-003**	**9.7300e-003**		**153.7237**	**153.7237**	**2.9500e-003**	**2.8200e-003**	**154.6372**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0.0684979	7.4000e-004	6.7200e-003	5.6400e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		8.0586	8.0586	1.5000e-004	1.5000e-004	8.1065
High Turnover (Sit Down Restaurant)	0.978114	0.0106	0.0959	0.0806	5.8000e-004		7.2900e-003	7.2900e-003		7.2900e-003	7.2900e-003		115.0722	115.0722	2.2100e-003	2.1100e-003	115.7560
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.00312603	3.0000e-005	3.1000e-004	2.6000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.3678	0.3678	1.0000e-005	1.0000e-005	0.3700
Unrefrigerated Warehouse-No Rail	0.256914	2.7700e-003	0.0252	0.0212	1.5000e-004		1.9100e-003	1.9100e-003		1.9100e-003	1.9100e-003		30.2252	30.2252	5.8000e-004	5.5000e-004	30.4048
Total		**0.0141**	**0.1281**	**0.1076**	**7.7000e-004**		**9.7300e-003**	**9.7300e-003**		**9.7300e-003**	**9.7300e-003**		**153.7237**	**153.7237**	**2.9500e-003**	**2.8200e-003**	**154.6372**

6.0 Area Detail

6.1 Mitigation Measures Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.5500	1.4000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0340	0.0340	9.0000e-005		0.0362
Unmitigated	2.5500	1.4000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0340	0.0340	9.0000e-005		0.0362

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2901					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2585					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.4600e-003	1.4000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0340	0.0340	9.0000e-005		0.0362
Total	**2.5500**	**1.4000e-004**	**0.0158**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**		**0.0340**	**0.0340**	**9.0000e-005**		**0.0362**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2901					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2585					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.4600e-003	1.4000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0340	0.0340	9.0000e-005		0.0362
Total	**2.5500**	**1.4000e-004**	**0.0158**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**		**0.0340**	**0.0340**	**9.0000e-005**		**0.0362**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

21611 South Perry Street

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	2.42	1000sqft	0.20	2,425.00	0
Unrefrigerated Warehouse-No Rail	109.04	1000sqft	0.50	109,039.00	0
Parking Lot	41.00	Space	0.20	16,400.00	0
City Park	0.53	Acre	1.50	22,999.68	0
High Turnover (Sit Down Restaurant)	1.55	1000sqft	0.20	1,550.00	0
Strip Mall	0.70	1000sqft	0.20	700.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	210.1	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Updated CO2e

Land Use - See Construction Assumptions

Construction Phase - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Trips and VMT -

Grading -

Architectural Coating - Landscaping has no VOCs

Vehicle Trips - no VMT for City Park

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	56,857.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	170,571.00	0.00
tblArchitecturalCoating	ConstArea_Parking	984.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	0.00
tblArchitecturalCoating	EF_Parking	100.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	50.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	50.00	0.00
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	67.00
tblConstructionPhase	NumDays	10.00	67.00
tblConstructionPhase	NumDays	220.00	176.00
tblConstructionPhase	NumDays	6.00	21.00
tblConstructionPhase	NumDays	10.00	23.00
tblConstructionPhase	NumDays	3.00	23.00
tblLandUse	LandUseSquareFeet	2,420.00	2,425.00
tblLandUse	LandUseSquareFeet	109,040.00	109,039.00
tblLandUse	LandUseSquareFeet	23,086.80	22,999.68

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblLandUse	LotAcreage	0.06	0.20
tblLandUse	LotAcreage	2.50	0.50
tblLandUse	LotAcreage	0.37	0.20
tblLandUse	LotAcreage	0.53	1.50
tblLandUse	LotAcreage	0.04	0.20
tblLandUse	LotAcreage	0.02	0.20
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblProjectCharacteristics	CO2IntensityFactor	390.98	210.1
tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	WD_TR	0.78	0.00

2.0 Emissions Summary

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	19.8251	71.4123	70.2950	0.1442	5.5547	3.0838	8.6385	0.7228	2.8934	3.6162	0.0000	13,864.2637	13,864.2637	3.4343	0.0949	13,955.2641
2024	21.7016	50.0409	71.5625	0.1265	1.5350	2.2048	3.7397	0.4107	2.0988	2.5096	0.0000	12,173.8149	12,173.8149	2.2998	0.0994	12,260.9187
Maximum	**21.7016**	**71.4123**	**71.5625**	**0.1442**	**5.5547**	**3.0838**	**8.6385**	**0.7228**	**2.8934**	**3.6162**	**0.0000**	**13,864.2637**	**13,864.2637**	**3.4343**	**0.0994**	**13,955.2641**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	19.8251	71.4123	70.2950	0.1442	2.6436	3.0838	5.7274	0.4085	2.8934	3.3018	0.0000	13,864.2637	13,864.2637	3.4343	0.0949	13,955.2641
2024	21.7016	50.0409	71.5625	0.1265	1.5350	2.2048	3.7397	0.4107	2.0988	2.5096	0.0000	12,173.8149	12,173.8149	2.2998	0.0994	12,260.9187
Maximum	**21.7016**	**71.4123**	**71.5625**	**0.1442**	**2.6436**	**3.0838**	**5.7274**	**0.4107**	**2.8934**	**3.3018**	**0.0000**	**13,864.2637**	**13,864.2637**	**3.4343**	**0.0994**	**13,955.2641**

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	41.06	0.00	23.52	27.73	0.00	5.13	0.00	0.00	0.00	0.00	0.00	0.00

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.5500	1.4000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0340	0.0340	9.0000e-005		0.0362
Energy	0.0141	0.1281	0.1076	7.7000e-004		9.7400e-003	9.7400e-003		9.7400e-003	9.7400e-003		153.7237	153.7237	2.9500e-003	2.8200e-003	154.6372
Mobile	1.2175	1.2751	11.5823	0.0242	2.6304	0.0183	2.6487	0.7007	0.0170	0.7177		2,513.4096	2,513.4096	0.1829	0.1128	2,551.6077
Total	**3.7817**	**1.4033**	**11.7057**	**0.0250**	**2.6304**	**0.0281**	**2.6585**	**0.7007**	**0.0268**	**0.7275**		**2,667.1673**	**2,667.1673**	**0.1860**	**0.1157**	**2,706.2811**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.5500	1.4000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0340	0.0340	9.0000e-005		0.0362
Energy	0.0141	0.1281	0.1076	7.7000e-004		9.7400e-003	9.7400e-003		9.7400e-003	9.7400e-003		153.7237	153.7237	2.9500e-003	2.8200e-003	154.6372
Mobile	1.2175	1.2751	11.5823	0.0242	2.6304	0.0183	2.6487	0.7007	0.0170	0.7177		2,513.4096	2,513.4096	0.1829	0.1128	2,551.6077
Total	**3.7817**	**1.4033**	**11.7057**	**0.0250**	**2.6304**	**0.0281**	**2.6585**	**0.7007**	**0.0268**	**0.7275**		**2,667.1673**	**2,667.1673**	**0.1860**	**0.1157**	**2,706.2811**

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demo & Site Preparation	Site Preparation	1/1/2023	2/1/2023	5	23	
2	Grading/Excavation	Grading	2/1/2023	3/1/2023	5	21	
3	Drainage/Utilities/Trenching	Trenching	3/1/2023	5/1/2023	5	44	
4	Foundations/Concrete Pour	Trenching	5/1/2023	6/1/2023	5	24	
5	Building Construction	Building Construction	6/1/2023	2/1/2024	5	176	
6	Architectural Coating	Architectural Coating	11/1/2023	2/1/2024	5	67	
7	Landscaping	Architectural Coating	11/1/2023	2/1/2024	5	67	
8	Paving	Paving	1/1/2024	1/31/2024	5	23	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 94.5

Acres of Paving: 0.2

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 170,571; Non-Residential Outdoor: 56,857; Striped Parking Area: 984 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demo & Site Preparation	Air Compressors	2	8.00	78	0.48
Demo & Site Preparation	Dumpers/Tenders	2	8.00	16	0.38
Demo & Site Preparation	Excavators	1	8.00	158	0.38

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Demo & Site Preparation	Generator Sets	1	8.00	84	0.74
Demo & Site Preparation	Skid Steer Loaders	1	8.00	65	0.37
Demo & Site Preparation	Sweepers/Scrubbers	1	8.00	64	0.46
Demo & Site Preparation	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading/Excavation	Concrete/Industrial Saws	1	8.00	81	0.73
Grading/Excavation	Crawler Tractors	2	8.00	212	0.43
Grading/Excavation	Dumpers/Tenders	2	8.00	16	0.38
Grading/Excavation	Excavators	1	8.00	158	0.38
Grading/Excavation	Graders	1	8.00	187	0.41
Grading/Excavation	Plate Compactors	1	8.00	8	0.43
Grading/Excavation	Rollers	1	8.00	80	0.38
Grading/Excavation	Scrapers	3	8.00	367	0.48
Grading/Excavation	Sweepers/Scrubbers	1	8.00	64	0.46
Grading/Excavation	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Drainage/Utilities/Trenching	Air Compressors	1	8.00	78	0.48
Drainage/Utilities/Trenching	Dumpers/Tenders	2	8.00	16	0.38
Drainage/Utilities/Trenching	Excavators	1	8.00	158	0.38
Drainage/Utilities/Trenching	Generator Sets	2	8.00	84	0.74
Drainage/Utilities/Trenching	Plate Compactors	1	8.00	8	0.43
Drainage/Utilities/Trenching	Pumps	1	8.00	84	0.74
Drainage/Utilities/Trenching	Rough Terrain Forklifts	1	8.00	100	0.40
Drainage/Utilities/Trenching	Sweepers/Scrubbers	1	8.00	64	0.46
Drainage/Utilities/Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Foundations/Concrete Pour	Air Compressors	1	8.00	78	0.48
Foundations/Concrete Pour	Concrete/Industrial Saws	1	8.00	81	0.73
Foundations/Concrete Pour	Dumpers/Tenders	2	8.00	16	0.38
Foundations/Concrete Pour	Plate Compactors	1	8.00	8	0.43
Foundations/Concrete Pour	Pumps	1	8.00	84	0.74
Foundations/Concrete Pour	Rough Terrain Forklifts	1	8.00	100	0.40

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Foundations/Concrete Pour	Skid Steer Loaders	1	8.00	65	0.37
Foundations/Concrete Pour	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Air Compressors	2	8.00	78	0.48
Building Construction	Cement and Mortar Mixers	2	8.00	9	0.56
Building Construction	Concrete/Industrial Saws	2	8.00	81	0.73
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Dumpers/Tenders	2	8.00	16	0.38
Building Construction	Forklifts	4	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Pumps	1	8.00	84	0.74
Building Construction	Rough Terrain Forklifts	4	8.00	100	0.40
Architectural Coating	Air Compressors	1	6.00	78	0.48
Architectural Coating	Cement and Mortar Mixers	1	8.00	9	0.56
Architectural Coating	Rough Terrain Forklifts	1	8.00	100	0.40
Landscaping	Dumpers/Tenders	1	6.00	16	0.38
Landscaping	Skid Steer Loaders	1	8.00	65	0.37
Paving	Air Compressors	1	8.00	78	0.48
Paving	Dumpers/Tenders	2	8.00	16	0.38
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	3	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Sweepers/Scrubbers	1	8.00	64	0.46
Paving	Tractors/Loaders/Backhoes	3	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demo & Site Preparation	11	28.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Grading/Excavation	16	40.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Drainage/Utilities/Trenching	12	30.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Foundations/Concrete Pour	11	28.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	19	64.00	25.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	3	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping	2	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	13	33.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demo & Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.7970	15.2696	21.4196	0.0340		0.7647	0.7647		0.7317	0.7317		3,233.8499	3,233.8499	0.6476		3,250.0406
Total	**1.7970**	**15.2696**	**21.4196**	**0.0340**	**0.0000**	**0.7647**	**0.7647**	**0.0000**	**0.7317**	**0.7317**		**3,233.8499**	**3,233.8499**	**0.6476**		**3,250.0406**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demo & Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0963	0.0691	0.9326	2.6200e-003	0.3130	1.8900e-003	0.3149	0.0830	1.7400e-003	0.0847		268.5835	268.5835	7.1600e-003	6.9000e-003	270.8194
Total	**0.0963**	**0.0691**	**0.9326**	**2.6200e-003**	**0.3130**	**1.8900e-003**	**0.3149**	**0.0830**	**1.7400e-003**	**0.0847**		**268.5835**	**268.5835**	**7.1600e-003**	**6.9000e-003**	**270.8194**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.7970	15.2696	21.4196	0.0340		0.7647	0.7647		0.7317	0.7317	0.0000	3,233.8499	3,233.8499	0.6476		3,250.0406
Total	**1.7970**	**15.2696**	**21.4196**	**0.0340**	**0.0000**	**0.7647**	**0.7647**	**0.0000**	**0.7317**	**0.7317**	**0.0000**	**3,233.8499**	**3,233.8499**	**0.6476**		**3,250.0406**

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demo & Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0963	0.0691	0.9326	2.6200e-003	0.3130	1.8900e-003	0.3149	0.0830	1.7400e-003	0.0847		268.5835	268.5835	7.1600e-003	6.9000e-003	270.8194
Total	**0.0963**	**0.0691**	**0.9326**	**2.6200e-003**	**0.3130**	**1.8900e-003**	**0.3149**	**0.0830**	**1.7400e-003**	**0.0847**		**268.5835**	**268.5835**	**7.1600e-003**	**6.9000e-003**	**270.8194**

3.3 Grading/Excavation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.7723	0.0000	4.7723	0.5153	0.0000	0.5153			0.0000			0.0000
Off-Road	5.0746	52.4128	41.8462	0.0946		2.1676	2.1676		2.0080	2.0080		9,108.8387	9,108.8387	2.7496		9,177.5786
Total	**5.0746**	**52.4128**	**41.8462**	**0.0946**	**4.7723**	**2.1676**	**6.9398**	**0.5153**	**2.0080**	**2.5233**		**9,108.8387**	**9,108.8387**	**2.7496**		**9,177.5786**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading/Excavation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1376	0.0986	1.3323	3.7500e-003	0.4471	2.7000e-003	0.4498	0.1186	2.4800e-003	0.1211		383.6907	383.6907	0.0102	9.8600e-003	386.8849
Total	**0.1376**	**0.0986**	**1.3323**	**3.7500e-003**	**0.4471**	**2.7000e-003**	**0.4498**	**0.1186**	**2.4800e-003**	**0.1211**		**383.6907**	**383.6907**	**0.0102**	**9.8600e-003**	**386.8849**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.8612	0.0000	1.8612	0.2010	0.0000	0.2010			0.0000			0.0000
Off-Road	5.0746	52.4128	41.8462	0.0946		2.1676	2.1676		2.0080	2.0080	0.0000	9,108.8387	9,108.8387	2.7496		9,177.5786
Total	**5.0746**	**52.4128**	**41.8462**	**0.0946**	**1.8612**	**2.1676**	**4.0288**	**0.2010**	**2.0080**	**2.2090**	**0.0000**	**9,108.8387**	**9,108.8387**	**2.7496**		**9,177.5786**

3.3 Grading/Excavation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1376	0.0986	1.3323	3.7500e-003	0.4471	2.7000e-003	0.4498	0.1186	2.4800e-003	0.1211		383.6907	383.6907	0.0102	9.8600e-003	386.8849
Total	**0.1376**	**0.0986**	**1.3323**	**3.7500e-003**	**0.4471**	**2.7000e-003**	**0.4498**	**0.1186**	**2.4800e-003**	**0.1211**		**383.6907**	**383.6907**	**0.0102**	**9.8600e-003**	**386.8849**

3.4 Drainage/Utilities/Trenching - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1613	18.8269	26.1172	0.0431		0.9115	0.9115		0.8810	0.8810		4,083.9663	4,083.9663	0.6668		4,100.6369
Total	**2.1613**	**18.8269**	**26.1172**	**0.0431**		**0.9115**	**0.9115**		**0.8810**	**0.8810**		**4,083.9663**	**4,083.9663**	**0.6668**		**4,100.6369**

3.4 Drainage/Utilities/Trenching - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1032	0.0740	0.9992	2.8100e-003	0.3353	2.0200e-003	0.3374	0.0889	1.8600e-003	0.0908		287.7680	287.7680	7.6700e-003	7.4000e-003	290.1636
Total	**0.1032**	**0.0740**	**0.9992**	**2.8100e-003**	**0.3353**	**2.0200e-003**	**0.3374**	**0.0889**	**1.8600e-003**	**0.0908**		**287.7680**	**287.7680**	**7.6700e-003**	**7.4000e-003**	**290.1636**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1613	18.8269	26.1172	0.0431		0.9115	0.9115		0.8810	0.8810	0.0000	4,083.9663	4,083.9663	0.6668		4,100.6369
Total	**2.1613**	**18.8269**	**26.1172**	**0.0431**		**0.9115**	**0.9115**		**0.8810**	**0.8810**	**0.0000**	**4,083.9663**	**4,083.9663**	**0.6668**		**4,100.6369**

3.4 Drainage/Utilities/Trenching - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1032	0.0740	0.9992	2.8100e-003	0.3353	2.0200e-003	0.3374	0.0889	1.8600e-003	0.0908		287.7680	287.7680	7.6700e-003	7.4000e-003	290.1636
Total	**0.1032**	**0.0740**	**0.9992**	**2.8100e-003**	**0.3353**	**2.0200e-003**	**0.3374**	**0.0889**	**1.8600e-003**	**0.0908**		**287.7680**	**287.7680**	**7.6700e-003**	**7.4000e-003**	**290.1636**

3.5 Foundations/Concrete Pour - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7290	15.1259	20.8762	0.0337		0.7037	0.7037		0.6796	0.6796		3,186.3435	3,186.3435	0.5622		3,200.3992
Total	**1.7290**	**15.1259**	**20.8762**	**0.0337**		**0.7037**	**0.7037**		**0.6796**	**0.6796**		**3,186.3435**	**3,186.3435**	**0.5622**		**3,200.3992**

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Foundations/Concrete Pour - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0963	0.0691	0.9326	2.6200e-003	0.3130	1.8900e-003	0.3149	0.0830	1.7400e-003	0.0847		268.5835	268.5835	7.1600e-003	6.9000e-003	270.8194
Total	**0.0963**	**0.0691**	**0.9326**	**2.6200e-003**	**0.3130**	**1.8900e-003**	**0.3149**	**0.0830**	**1.7400e-003**	**0.0847**		**268.5835**	**268.5835**	**7.1600e-003**	**6.9000e-003**	**270.8194**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7290	15.1259	20.8762	0.0337		0.7037	0.7037		0.6796	0.6796	0.0000	3,186.3435	3,186.3435	0.5622		3,200.3992
Total	**1.7290**	**15.1259**	**20.8762**	**0.0337**		**0.7037**	**0.7037**		**0.6796**	**0.6796**	**0.0000**	**3,186.3435**	**3,186.3435**	**0.5622**		**3,200.3992**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Foundations/Concrete Pour - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0963	0.0691	0.9326	2.6200e-003	0.3130	1.8900e-003	0.3149	0.0830	1.7400e-003	0.0847		268.5835	268.5835	7.1600e-003	6.9000e-003	270.8194
Total	**0.0963**	**0.0691**	**0.9326**	**2.6200e-003**	**0.3130**	**1.8900e-003**	**0.3149**	**0.0830**	**1.7400e-003**	**0.0847**		**268.5835**	**268.5835**	**7.1600e-003**	**6.9000e-003**	**270.8194**

3.6 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.2100	28.5489	35.6477	0.0614		1.3186	1.3186		1.2748	1.2748		5,816.9829	5,816.9829	0.9629		5,841.0559
Total	**3.2100**	**28.5489**	**35.6477**	**0.0614**		**1.3186**	**1.3186**		**1.2748**	**1.2748**		**5,816.9829**	**5,816.9829**	**0.9629**		**5,841.0559**

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0278	1.0047	0.3834	4.6600e-003	0.1601	4.8500e-003	0.1650	0.0461	4.6400e-003	0.0508		501.5508	501.5508	0.0167	0.0722	523.4778
Worker	0.2202	0.1578	2.1317	6.0000e-003	0.7154	4.3200e-003	0.7197	0.1897	3.9700e-003	0.1937		613.9051	613.9051	0.0164	0.0158	619.0158
Total	**0.2480**	**1.1625**	**2.5152**	**0.0107**	**0.8755**	**9.1700e-003**	**0.8847**	**0.2358**	**8.6100e-003**	**0.2444**		**1,115.4559**	**1,115.4559**	**0.0331**	**0.0880**	**1,142.4935**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.2100	28.5489	35.6477	0.0614		1.3186	1.3186		1.2748	1.2748	0.0000	5,816.9829	5,816.9829	0.9629		5,841.0559
Total	**3.2100**	**28.5489**	**35.6477**	**0.0614**		**1.3186**	**1.3186**		**1.2748**	**1.2748**	**0.0000**	**5,816.9829**	**5,816.9829**	**0.9629**		**5,841.0559**

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0278	1.0047	0.3834	4.6600e-003	0.1601	4.8500e-003	0.1650	0.0461	4.6400e-003	0.0508		501.5508	501.5508	0.0167	0.0722	523.4778
Worker	0.2202	0.1578	2.1317	6.0000e-003	0.7154	4.3200e-003	0.7197	0.1897	3.9700e-003	0.1937		613.9051	613.9051	0.0164	0.0158	619.0158
Total	**0.2480**	**1.1625**	**2.5152**	**0.0107**	**0.8755**	**9.1700e-003**	**0.8847**	**0.2358**	**8.6100e-003**	**0.2444**		**1,115.4559**	**1,115.4559**	**0.0331**	**0.0880**	**1,142.4935**

3.6 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.0341	26.8647	35.5479	0.0614		1.1636	1.1636		1.1245	1.1245		5,816.6999	5,816.6999	0.9548		5,840.5703
Total	**3.0341**	**26.8647**	**35.5479**	**0.0614**		**1.1636**	**1.1636**		**1.1245**	**1.1245**		**5,816.6999**	**5,816.6999**	**0.9548**		**5,840.5703**

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0269	1.0067	0.3754	4.5900e-003	0.1601	4.8800e-003	0.1650	0.0461	4.6700e-003	0.0508		494.0358	494.0358	0.0168	0.0712	515.6631
Worker	0.2059	0.1409	1.9860	5.8300e-003	0.7154	4.1400e-003	0.7195	0.1897	3.8100e-003	0.1935		601.3055	601.3055	0.0148	0.0147	606.0468
Total	**0.2328**	**1.1476**	**2.3614**	**0.0104**	**0.8755**	**9.0200e-003**	**0.8845**	**0.2358**	**8.4800e-003**	**0.2443**		**1,095.3414**	**1,095.3414**	**0.0316**	**0.0858**	**1,121.7099**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.0341	26.8647	35.5479	0.0614		1.1636	1.1636		1.1245	1.1245	0.0000	5,816.6999	5,816.6999	0.9548		5,840.5703
Total	**3.0341**	**26.8647**	**35.5479**	**0.0614**		**1.1636**	**1.1636**		**1.1245**	**1.1245**	**0.0000**	**5,816.6999**	**5,816.6999**	**0.9548**		**5,840.5703**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0269	1.0067	0.3754	4.5900e-003	0.1601	4.8800e-003	0.1650	0.0461	4.6700e-003	0.0508		494.0358	494.0358	0.0168	0.0712	515.6631
Worker	0.2059	0.1409	1.9860	5.8300e-003	0.7154	4.1400e-003	0.7195	0.1897	3.8100e-003	0.1935		601.3055	601.3055	0.0148	0.0147	606.0468
Total	**0.2328**	**1.1476**	**2.3614**	**0.0104**	**0.8755**	**9.0200e-003**	**0.8845**	**0.2358**	**8.4800e-003**	**0.2443**		**1,095.3414**	**1,095.3414**	**0.0316**	**0.0858**	**1,121.7099**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.8013					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3562	3.0706	4.4068	7.1300e-003		0.1301	0.1301		0.1265	0.1265		665.7678	665.7678	0.1300		669.0189
Total	**16.1575**	**3.0706**	**4.4068**	**7.1300e-003**		**0.1301**	**0.1301**		**0.1265**	**0.1265**		**665.7678**	**665.7678**	**0.1300**		**669.0189**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0447	0.0321	0.4330	1.2200e-003	0.1453	8.8000e-004	0.1462	0.0385	8.1000e-004	0.0393		124.6995	124.6995	3.3200e-003	3.2000e-003	125.7376
Total	**0.0447**	**0.0321**	**0.4330**	**1.2200e-003**	**0.1453**	**8.8000e-004**	**0.1462**	**0.0385**	**8.1000e-004**	**0.0393**		**124.6995**	**124.6995**	**3.3200e-003**	**3.2000e-003**	**125.7376**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.8013					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3562	3.0706	4.4068	7.1300e-003		0.1301	0.1301		0.1265	0.1265	0.0000	665.7678	665.7678	0.1300		669.0189
Total	**16.1575**	**3.0706**	**4.4068**	**7.1300e-003**		**0.1301**	**0.1301**		**0.1265**	**0.1265**	**0.0000**	**665.7678**	**665.7678**	**0.1300**		**669.0189**

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0447	0.0321	0.4330	1.2200e-003	0.1453	8.8000e-004	0.1462	0.0385	8.1000e-004	0.0393		124.6995	124.6995	3.3200e-003	3.2000e-003	125.7376
Total	**0.0447**	**0.0321**	**0.4330**	**1.2200e-003**	**0.1453**	**8.8000e-004**	**0.1462**	**0.0385**	**8.1000e-004**	**0.0393**		**124.6995**	**124.6995**	**3.3200e-003**	**3.2000e-003**	**125.7376**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.8013					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3419	2.9372	4.4075	7.1300e-003		0.1164	0.1164		0.1131	0.1131		665.7006	665.7006	0.1290		668.9263
Total	**16.1433**	**2.9372**	**4.4075**	**7.1300e-003**		**0.1164**	**0.1164**		**0.1131**	**0.1131**		**665.7006**	**665.7006**	**0.1290**		**668.9263**

3.7 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0418	0.0286	0.4034	1.1800e-003	0.1453	8.4000e-004	0.1462	0.0385	7.7000e-004	0.0393		122.1402	122.1402	3.0100e-003	2.9800e-003	123.1033
Total	**0.0418**	**0.0286**	**0.4034**	**1.1800e-003**	**0.1453**	**8.4000e-004**	**0.1462**	**0.0385**	**7.7000e-004**	**0.0393**		**122.1402**	**122.1402**	**3.0100e-003**	**2.9800e-003**	**123.1033**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.8013					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3419	2.9372	4.4075	7.1300e-003		0.1164	0.1164		0.1131	0.1131	0.0000	665.7006	665.7006	0.1290		668.9263
Total	**16.1433**	**2.9372**	**4.4075**	**7.1300e-003**		**0.1164**	**0.1164**		**0.1131**	**0.1131**	**0.0000**	**665.7006**	**665.7006**	**0.1290**		**668.9263**

3.7 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0418	0.0286	0.4034	1.1800e-003	0.1453	8.4000e-004	0.1462	0.0385	7.7000e-004	0.0393		122.1402	122.1402	3.0100e-003	2.9800e-003	123.1033
Total	**0.0418**	**0.0286**	**0.4034**	**1.1800e-003**	**0.1453**	**8.4000e-004**	**0.1462**	**0.0385**	**7.7000e-004**	**0.0393**		**122.1402**	**122.1402**	**3.0100e-003**	**2.9800e-003**	**123.1033**

3.8 Landscaping - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1202	1.2131	1.5735	2.6300e-003		0.0423	0.0423		0.0399	0.0399		246.1915	246.1915	0.0698		247.9352
Total	**0.1202**	**1.2131**	**1.5735**	**2.6300e-003**		**0.0423**	**0.0423**		**0.0399**	**0.0399**		**246.1915**	**246.1915**	**0.0698**		**247.9352**

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Landscaping - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0447	0.0321	0.4330	1.2200e-003	0.1453	8.8000e-004	0.1462	0.0385	8.1000e-004	0.0393		124.6995	124.6995	3.3200e-003	3.2000e-003	125.7376
Total	**0.0447**	**0.0321**	**0.4330**	**1.2200e-003**	**0.1453**	**8.8000e-004**	**0.1462**	**0.0385**	**8.1000e-004**	**0.0393**		**124.6995**	**124.6995**	**3.3200e-003**	**3.2000e-003**	**125.7376**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1202	1.2131	1.5735	2.6300e-003		0.0423	0.0423		0.0399	0.0399	0.0000	246.1915	246.1915	0.0698		247.9352
Total	**0.1202**	**1.2131**	**1.5735**	**2.6300e-003**		**0.0423**	**0.0423**		**0.0399**	**0.0399**	**0.0000**	**246.1915**	**246.1915**	**0.0698**		**247.9352**

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Landscaping - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0447	0.0321	0.4330	1.2200e-003	0.1453	8.8000e-004	0.1462	0.0385	8.1000e-004	0.0393		124.6995	124.6995	3.3200e-003	3.2000e-003	125.7376
Total	**0.0447**	**0.0321**	**0.4330**	**1.2200e-003**	**0.1453**	**8.8000e-004**	**0.1462**	**0.0385**	**8.1000e-004**	**0.0393**		**124.6995**	**124.6995**	**3.3200e-003**	**3.2000e-003**	**125.7376**

3.8 Landscaping - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1174	1.1749	1.5727	2.6400e-003		0.0395	0.0395		0.0374	0.0374		246.2725	246.2725	0.0698		248.0168
Total	**0.1174**	**1.1749**	**1.5727**	**2.6400e-003**		**0.0395**	**0.0395**		**0.0374**	**0.0374**		**246.2725**	**246.2725**	**0.0698**		**248.0168**

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Landscaping - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0418	0.0286	0.4034	1.1800e-003	0.1453	8.4000e-004	0.1462	0.0385	7.7000e-004	0.0393		122.1402	122.1402	3.0100e-003	2.9800e-003	123.1033
Total	**0.0418**	**0.0286**	**0.4034**	**1.1800e-003**	**0.1453**	**8.4000e-004**	**0.1462**	**0.0385**	**7.7000e-004**	**0.0393**		**122.1402**	**122.1402**	**3.0100e-003**	**2.9800e-003**	**123.1033**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1174	1.1749	1.5727	2.6400e-003		0.0395	0.0395		0.0374	0.0374	0.0000	246.2725	246.2725	0.0698		248.0168
Total	**0.1174**	**1.1749**	**1.5727**	**2.6400e-003**		**0.0395**	**0.0395**		**0.0374**	**0.0374**	**0.0000**	**246.2725**	**246.2725**	**0.0698**		**248.0168**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Landscaping - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0418	0.0286	0.4034	1.1800e-003	0.1453	8.4000e-004	0.1462	0.0385	7.7000e-004	0.0393		122.1402	122.1402	3.0100e-003	2.9800e-003	123.1033
Total	**0.0418**	**0.0286**	**0.4034**	**1.1800e-003**	**0.1453**	**8.4000e-004**	**0.1462**	**0.0385**	**7.7000e-004**	**0.0393**		**122.1402**	**122.1402**	**3.0100e-003**	**2.9800e-003**	**123.1033**

3.9 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9614	17.7866	25.8422	0.0395		0.8725	0.8725		0.8119	0.8119		3,795.4720	3,795.4720	1.1010		3,822.9960
Paving	0.0228					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9842**	**17.7866**	**25.8422**	**0.0395**		**0.8725**	**0.8725**		**0.8119**	**0.8119**		**3,795.4720**	**3,795.4720**	**1.1010**		**3,822.9960**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1062	0.0727	1.0240	3.0100e-003	0.3689	2.1300e-003	0.3710	0.0978	1.9700e-003	0.0998		310.0482	310.0482	7.6400e-003	7.5600e-003	312.4929
Total	**0.1062**	**0.0727**	**1.0240**	**3.0100e-003**	**0.3689**	**2.1300e-003**	**0.3710**	**0.0978**	**1.9700e-003**	**0.0998**		**310.0482**	**310.0482**	**7.6400e-003**	**7.5600e-003**	**312.4929**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9614	17.7866	25.8422	0.0395		0.8725	0.8725		0.8119	0.8119	0.0000	3,795.4720	3,795.4720	1.1010		3,822.9960
Paving	0.0228					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9842**	**17.7866**	**25.8422**	**0.0395**		**0.8725**	**0.8725**		**0.8119**	**0.8119**	**0.0000**	**3,795.4720**	**3,795.4720**	**1.1010**		**3,822.9960**

3.9 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1062	0.0727	1.0240	3.0100e-003	0.3689	2.1300e-003	0.3710	0.0978	1.9700e-003	0.0998		310.0482	310.0482	7.6400e-003	7.5600e-003	312.4929
Total	**0.1062**	**0.0727**	**1.0240**	**3.0100e-003**	**0.3689**	**2.1300e-003**	**0.3710**	**0.0978**	**1.9700e-003**	**0.0998**		**310.0482**	**310.0482**	**7.6400e-003**	**7.5600e-003**	**312.4929**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.2175	1.2751	11.5823	0.0242	2.6304	0.0183	2.6487	0.7007	0.0170	0.7177		2,513.4096	2,513.4096	0.1829	0.1128	2,551.6077
Unmitigated	1.2175	1.2751	11.5823	0.0242	2.6304	0.0183	2.6487	0.7007	0.0170	0.7177		2,513.4096	2,513.4096	0.1829	0.1128	2,551.6077

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
General Office Building	23.57	5.35	1.69	57,478	57,478
High Turnover (Sit Down Restaurant)	173.88	189.72	221.09	249,244	249,244
Parking Lot	0.00	0.00	0.00		
Strip Mall	31.02	29.43	14.30	54,047	54,047
Unrefrigerated Warehouse-No Rail	189.73	189.73	189.73	813,127	813,127
Total	418.20	414.23	426.82	1,173,896	1,173,896

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
High Turnover (Sit Down	16.60	8.40	6.90	8.50	72.50	19.00	37	20	43
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Strip Mall	16.60	8.40	6.90	16.60	64.40	19.00	45	40	15
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
General Office Building	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
High Turnover (Sit Down Restaurant)	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
Parking Lot	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
Strip Mall	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
Unrefrigerated Warehouse-No Rail	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0141	0.1281	0.1076	7.7000e-004		9.7400e-003	9.7400e-003		9.7400e-003	9.7400e-003		153.7237	153.7237	2.9500e-003	2.8200e-003	154.6372
NaturalGas Unmitigated	0.0141	0.1281	0.1076	7.7000e-004		9.7400e-003	9.7400e-003		9.7400e-003	9.7400e-003		153.7237	153.7237	2.9500e-003	2.8200e-003	154.6372

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	68.4979	7.4000e-004	6.7200e-003	5.6400e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		8.0586	8.0586	1.5000e-004	1.5000e-004	8.1065
High Turnover (Sit Down Restaurant)	978.114	0.0106	0.0959	0.0806	5.8000e-004		7.2900e-003	7.2900e-003		7.2900e-003	7.2900e-003		115.0722	115.0722	2.2100e-003	2.1100e-003	115.7560
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	3.12603	3.0000e-005	3.1000e-004	2.6000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.3678	0.3678	1.0000e-005	1.0000e-005	0.3700
Unrefrigerated Warehouse-No Rail	256.914	2.7700e-003	0.0252	0.0212	1.5000e-004		1.9100e-003	1.9100e-003		1.9100e-003	1.9100e-003		30.2252	30.2252	5.8000e-004	5.5000e-004	30.4048
Total		**0.0141**	**0.1281**	**0.1076**	**7.7000e-004**		**9.7300e-003**	**9.7300e-003**		**9.7300e-003**	**9.7300e-003**		**153.7237**	**153.7237**	**2.9500e-003**	**2.8200e-003**	**154.6372**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0.0684979	7.4000e-004	6.7200e-003	5.6400e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		8.0586	8.0586	1.5000e-004	1.5000e-004	8.1065
High Turnover (Sit Down Restaurant)	0.978114	0.0106	0.0959	0.0806	5.8000e-004		7.2900e-003	7.2900e-003		7.2900e-003	7.2900e-003		115.0722	115.0722	2.2100e-003	2.1100e-003	115.7560
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.00312603	3.0000e-005	3.1000e-004	2.6000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.3678	0.3678	1.0000e-005	1.0000e-005	0.3700
Unrefrigerated Warehouse-No Rail	0.256914	2.7700e-003	0.0252	0.0212	1.5000e-004		1.9100e-003	1.9100e-003		1.9100e-003	1.9100e-003		30.2252	30.2252	5.8000e-004	5.5000e-004	30.4048
Total		**0.0141**	**0.1281**	**0.1076**	**7.7000e-004**		**9.7300e-003**	**9.7300e-003**		**9.7300e-003**	**9.7300e-003**		**153.7237**	**153.7237**	**2.9500e-003**	**2.8200e-003**	**154.6372**

6.0 Area Detail

6.1 Mitigation Measures Area

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.5500	1.4000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0340	0.0340	9.0000e-005		0.0362
Unmitigated	2.5500	1.4000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0340	0.0340	9.0000e-005		0.0362

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2901					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2585					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.4600e-003	1.4000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0340	0.0340	9.0000e-005		0.0362
Total	**2.5500**	**1.4000e-004**	**0.0158**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**		**0.0340**	**0.0340**	**9.0000e-005**		**0.0362**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2901					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2585					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.4600e-003	1.4000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0340	0.0340	9.0000e-005		0.0362
Total	**2.5500**	**1.4000e-004**	**0.0158**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**		**0.0340**	**0.0340**	**9.0000e-005**		**0.0362**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

21611 South Perry Street

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	2.42	1000sqft	0.20	2,425.00	0
Unrefrigerated Warehouse-No Rail	109.04	1000sqft	0.50	109,039.00	0
Parking Lot	41.00	Space	0.20	16,400.00	0
City Park	0.53	Acre	1.50	22,999.68	0
High Turnover (Sit Down Restaurant)	1.55	1000sqft	0.20	1,550.00	0
Strip Mall	0.70	1000sqft	0.20	700.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	210.1	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Updated CO2e

Land Use - See Construction Assumptions

Construction Phase - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

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Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Off-road Equipment - See Construction Assumptions

Trips and VMT -

Grading -

Architectural Coating - Landscaping has no VOCs

Vehicle Trips - no VMT for City Park

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	56,857.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	170,571.00	0.00
tblArchitecturalCoating	ConstArea_Parking	984.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	0.00
tblArchitecturalCoating	EF_Parking	100.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	50.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	50.00	0.00
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	67.00
tblConstructionPhase	NumDays	10.00	67.00
tblConstructionPhase	NumDays	220.00	176.00
tblConstructionPhase	NumDays	6.00	21.00
tblConstructionPhase	NumDays	10.00	23.00
tblConstructionPhase	NumDays	3.00	23.00
tblLandUse	LandUseSquareFeet	2,420.00	2,425.00
tblLandUse	LandUseSquareFeet	109,040.00	109,039.00
tblLandUse	LandUseSquareFeet	23,086.80	22,999.68

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tblLandUse	LotAcreage	0.06	0.20
tblLandUse	LotAcreage	2.50	0.50
tblLandUse	LotAcreage	0.37	0.20
tblLandUse	LotAcreage	0.53	1.50
tblLandUse	LotAcreage	0.04	0.20
tblLandUse	LotAcreage	0.02	0.20
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblProjectCharacteristics	CO2IntensityFactor	390.98	210.1
tblVehicleTrips	ST_TR	1.96	0.00
tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	WD_TR	0.78	0.00

2.0 Emissions Summary

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	19.4344	71.4123	70.2950	0.1442	5.5547	3.0838	8.6385	0.7228	2.8934	3.6162	0.0000	13,864.2637	13,864.2637	3.4343	0.0949	13,955.2641
2024	21.3209	45.5256	64.4444	0.1154	1.5350	2.0641	3.5991	0.4107	1.9681	2.3788	0.0000	11,111.6659	11,111.6659	1.9695	0.0994	11,190.5110
Maximum	**21.3209**	**71.4123**	**70.2950**	**0.1442**	**5.5547**	**3.0838**	**8.6385**	**0.7228**	**2.8934**	**3.6162**	**0.0000**	**13,864.2637**	**13,864.2637**	**3.4343**	**0.0994**	**13,955.2641**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	19.4344	71.4123	70.2950	0.1442	2.6436	3.0838	5.7274	0.4085	2.8934	3.3018	0.0000	13,864.2637	13,864.2637	3.4343	0.0949	13,955.2641
2024	21.3209	45.5256	64.4444	0.1154	1.5350	2.0641	3.5991	0.4107	1.9681	2.3788	0.0000	11,111.6659	11,111.6659	1.9695	0.0994	11,190.5110
Maximum	**21.3209**	**71.4123**	**70.2950**	**0.1442**	**2.6436**	**3.0838**	**5.7274**	**0.4107**	**2.8934**	**3.3018**	**0.0000**	**13,864.2637**	**13,864.2637**	**3.4343**	**0.0994**	**13,955.2641**

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	41.06	0.00	23.79	27.73	0.00	5.24	0.00	0.00	0.00	0.00	0.00	0.00

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.5500	1.4000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0340	0.0340	9.0000e-005		0.0362
Energy	0.0141	0.1281	0.1076	7.7000e-004		9.7400e-003	9.7400e-003		9.7400e-003	9.7400e-003		153.7237	153.7237	2.9500e-003	2.8200e-003	154.6372
Mobile	1.2175	1.2751	11.5823	0.0242	2.6304	0.0183	2.6487	0.7007	0.0170	0.7177		2,513.4096	2,513.4096	0.1829	0.1128	2,551.6077
Total	**3.7817**	**1.4033**	**11.7057**	**0.0250**	**2.6304**	**0.0281**	**2.6585**	**0.7007**	**0.0268**	**0.7275**		**2,667.1673**	**2,667.1673**	**0.1860**	**0.1157**	**2,706.2811**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.5500	1.4000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0340	0.0340	9.0000e-005		0.0362
Energy	0.0141	0.1281	0.1076	7.7000e-004		9.7400e-003	9.7400e-003		9.7400e-003	9.7400e-003		153.7237	153.7237	2.9500e-003	2.8200e-003	154.6372
Mobile	1.2175	1.2751	11.5823	0.0242	2.6304	0.0183	2.6487	0.7007	0.0170	0.7177		2,513.4096	2,513.4096	0.1829	0.1128	2,551.6077
Total	**3.7817**	**1.4033**	**11.7057**	**0.0250**	**2.6304**	**0.0281**	**2.6585**	**0.7007**	**0.0268**	**0.7275**		**2,667.1673**	**2,667.1673**	**0.1860**	**0.1157**	**2,706.2811**

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demo & Site Preparation	Site Preparation	1/1/2023	2/1/2023	5	23	
2	Grading/Excavation	Grading	2/1/2023	3/1/2023	5	21	
3	Drainage/Utilities/Trenching	Trenching	3/1/2023	5/1/2023	5	44	
4	Foundations/Concrete Pour	Trenching	5/1/2023	6/1/2023	5	24	
5	Building Construction	Building Construction	6/1/2023	2/1/2024	5	176	
6	Architectural Coating	Architectural Coating	11/1/2023	2/1/2024	5	67	
7	Landscaping	Architectural Coating	11/1/2023	2/1/2024	5	67	
8	Paving	Paving	1/1/2024	1/31/2024	5	23	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 94.5

Acres of Paving: 0.2

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 170,571; Non-Residential Outdoor: 56,857; Striped Parking Area: 984 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demo & Site Preparation	Air Compressors	2	8.00	78	0.48
Demo & Site Preparation	Dumpers/Tenders	2	8.00	16	0.38
Demo & Site Preparation	Excavators	1	8.00	158	0.38

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Demo & Site Preparation	Generator Sets	1	8.00	84	0.74
Demo & Site Preparation	Skid Steer Loaders	1	8.00	65	0.37
Demo & Site Preparation	Sweepers/Scrubbers	1	8.00	64	0.46
Demo & Site Preparation	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading/Excavation	Concrete/Industrial Saws	1	8.00	81	0.73
Grading/Excavation	Crawler Tractors	2	8.00	212	0.43
Grading/Excavation	Dumpers/Tenders	2	8.00	16	0.38
Grading/Excavation	Excavators	1	8.00	158	0.38
Grading/Excavation	Graders	1	8.00	187	0.41
Grading/Excavation	Plate Compactors	1	8.00	8	0.43
Grading/Excavation	Rollers	1	8.00	80	0.38
Grading/Excavation	Scrapers	3	8.00	367	0.48
Grading/Excavation	Sweepers/Scrubbers	1	8.00	64	0.46
Grading/Excavation	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Drainage/Utilities/Trenching	Air Compressors	1	8.00	78	0.48
Drainage/Utilities/Trenching	Dumpers/Tenders	2	8.00	16	0.38
Drainage/Utilities/Trenching	Excavators	1	8.00	158	0.38
Drainage/Utilities/Trenching	Generator Sets	2	8.00	84	0.74
Drainage/Utilities/Trenching	Plate Compactors	1	8.00	8	0.43
Drainage/Utilities/Trenching	Pumps	1	8.00	84	0.74
Drainage/Utilities/Trenching	Rough Terrain Forklifts	1	8.00	100	0.40
Drainage/Utilities/Trenching	Sweepers/Scrubbers	1	8.00	64	0.46
Drainage/Utilities/Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Foundations/Concrete Pour	Air Compressors	1	8.00	78	0.48
Foundations/Concrete Pour	Concrete/Industrial Saws	1	8.00	81	0.73
Foundations/Concrete Pour	Dumpers/Tenders	2	8.00	16	0.38
Foundations/Concrete Pour	Plate Compactors	1	8.00	8	0.43
Foundations/Concrete Pour	Pumps	1	8.00	84	0.74
Foundations/Concrete Pour	Rough Terrain Forklifts	1	8.00	100	0.40

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Foundations/Concrete Pour	Skid Steer Loaders	1	8.00	65	0.37
Foundations/Concrete Pour	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Air Compressors	2	8.00	78	0.48
Building Construction	Cement and Mortar Mixers	2	8.00	9	0.56
Building Construction	Concrete/Industrial Saws	2	8.00	81	0.73
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Dumpers/Tenders	1	8.00	16	0.38
Building Construction	Forklifts	4	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Pumps	1	8.00	84	0.74
Building Construction	Rough Terrain Forklifts	1	8.00	100	0.40
Architectural Coating	Air Compressors	1	6.00	78	0.48
Architectural Coating	Cement and Mortar Mixers	1	8.00	9	0.56
Architectural Coating	Rough Terrain Forklifts	1	8.00	100	0.40
Landscaping	Dumpers/Tenders	1	6.00	16	0.38
Landscaping	Skid Steer Loaders	1	8.00	65	0.37
Paving	Air Compressors	1	8.00	78	0.48
Paving	Dumpers/Tenders	2	8.00	16	0.38
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	3	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Sweepers/Scrubbers	1	8.00	64	0.46
Paving	Tractors/Loaders/Backhoes	3	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demo & Site Preparation	11	28.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

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Grading/Excavation	16	40.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Drainage/Utilities/Trenching	12	30.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Foundations/Concrete Pour	11	28.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	15	64.00	25.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	3	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Landscaping	2	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	13	33.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demo & Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.7970	15.2696	21.4196	0.0340		0.7647	0.7647		0.7317	0.7317		3,233.8499	3,233.8499	0.6476		3,250.0406
Total	**1.7970**	**15.2696**	**21.4196**	**0.0340**	**0.0000**	**0.7647**	**0.7647**	**0.0000**	**0.7317**	**0.7317**		**3,233.8499**	**3,233.8499**	**0.6476**		**3,250.0406**

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3.2 Demo & Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0963	0.0691	0.9326	2.6200e-003	0.3130	1.8900e-003	0.3149	0.0830	1.7400e-003	0.0847		268.5835	268.5835	7.1600e-003	6.9000e-003	270.8194
Total	**0.0963**	**0.0691**	**0.9326**	**2.6200e-003**	**0.3130**	**1.8900e-003**	**0.3149**	**0.0830**	**1.7400e-003**	**0.0847**		**268.5835**	**268.5835**	**7.1600e-003**	**6.9000e-003**	**270.8194**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.7970	15.2696	21.4196	0.0340		0.7647	0.7647		0.7317	0.7317	0.0000	3,233.8499	3,233.8499	0.6476		3,250.0406
Total	**1.7970**	**15.2696**	**21.4196**	**0.0340**	**0.0000**	**0.7647**	**0.7647**	**0.0000**	**0.7317**	**0.7317**	**0.0000**	**3,233.8499**	**3,233.8499**	**0.6476**		**3,250.0406**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demo & Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0963	0.0691	0.9326	2.6200e-003	0.3130	1.8900e-003	0.3149	0.0830	1.7400e-003	0.0847		268.5835	268.5835	7.1600e-003	6.9000e-003	270.8194
Total	**0.0963**	**0.0691**	**0.9326**	**2.6200e-003**	**0.3130**	**1.8900e-003**	**0.3149**	**0.0830**	**1.7400e-003**	**0.0847**		**268.5835**	**268.5835**	**7.1600e-003**	**6.9000e-003**	**270.8194**

3.3 Grading/Excavation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.7723	0.0000	4.7723	0.5153	0.0000	0.5153			0.0000			0.0000
Off-Road	5.0746	52.4128	41.8462	0.0946		2.1676	2.1676		2.0080	2.0080		9,108.8387	9,108.8387	2.7496		9,177.5786
Total	**5.0746**	**52.4128**	**41.8462**	**0.0946**	**4.7723**	**2.1676**	**6.9398**	**0.5153**	**2.0080**	**2.5233**		**9,108.8387**	**9,108.8387**	**2.7496**		**9,177.5786**

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading/Excavation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1376	0.0986	1.3323	3.7500e-003	0.4471	2.7000e-003	0.4498	0.1186	2.4800e-003	0.1211		383.6907	383.6907	0.0102	9.8600e-003	386.8849
Total	**0.1376**	**0.0986**	**1.3323**	**3.7500e-003**	**0.4471**	**2.7000e-003**	**0.4498**	**0.1186**	**2.4800e-003**	**0.1211**		**383.6907**	**383.6907**	**0.0102**	**9.8600e-003**	**386.8849**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.8612	0.0000	1.8612	0.2010	0.0000	0.2010			0.0000			0.0000
Off-Road	5.0746	52.4128	41.8462	0.0946		2.1676	2.1676		2.0080	2.0080	0.0000	9,108.8387	9,108.8387	2.7496		9,177.5786
Total	**5.0746**	**52.4128**	**41.8462**	**0.0946**	**1.8612**	**2.1676**	**4.0288**	**0.2010**	**2.0080**	**2.2090**	**0.0000**	**9,108.8387**	**9,108.8387**	**2.7496**		**9,177.5786**

3.3 Grading/Excavation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1376	0.0986	1.3323	3.7500e-003	0.4471	2.7000e-003	0.4498	0.1186	2.4800e-003	0.1211		383.6907	383.6907	0.0102	9.8600e-003	386.8849
Total	**0.1376**	**0.0986**	**1.3323**	**3.7500e-003**	**0.4471**	**2.7000e-003**	**0.4498**	**0.1186**	**2.4800e-003**	**0.1211**		**383.6907**	**383.6907**	**0.0102**	**9.8600e-003**	**386.8849**

3.4 Drainage/Utilities/Trenching - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1613	18.8269	26.1172	0.0431		0.9115	0.9115		0.8810	0.8810		4,083.9663	4,083.9663	0.6668		4,100.6369
Total	**2.1613**	**18.8269**	**26.1172**	**0.0431**		**0.9115**	**0.9115**		**0.8810**	**0.8810**		**4,083.9663**	**4,083.9663**	**0.6668**		**4,100.6369**

3.4 Drainage/Utilities/Trenching - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1032	0.0740	0.9992	2.8100e-003	0.3353	2.0200e-003	0.3374	0.0889	1.8600e-003	0.0908		287.7680	287.7680	7.6700e-003	7.4000e-003	290.1636
Total	**0.1032**	**0.0740**	**0.9992**	**2.8100e-003**	**0.3353**	**2.0200e-003**	**0.3374**	**0.0889**	**1.8600e-003**	**0.0908**		**287.7680**	**287.7680**	**7.6700e-003**	**7.4000e-003**	**290.1636**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1613	18.8269	26.1172	0.0431		0.9115	0.9115		0.8810	0.8810	0.0000	4,083.9663	4,083.9663	0.6668		4,100.6369
Total	**2.1613**	**18.8269**	**26.1172**	**0.0431**		**0.9115**	**0.9115**		**0.8810**	**0.8810**	**0.0000**	**4,083.9663**	**4,083.9663**	**0.6668**		**4,100.6369**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Drainage/Utilities/Trenching - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1032	0.0740	0.9992	2.8100e-003	0.3353	2.0200e-003	0.3374	0.0889	1.8600e-003	0.0908		287.7680	287.7680	7.6700e-003	7.4000e-003	290.1636
Total	**0.1032**	**0.0740**	**0.9992**	**2.8100e-003**	**0.3353**	**2.0200e-003**	**0.3374**	**0.0889**	**1.8600e-003**	**0.0908**		**287.7680**	**287.7680**	**7.6700e-003**	**7.4000e-003**	**290.1636**

3.5 Foundations/Concrete Pour - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7290	15.1259	20.8762	0.0337		0.7037	0.7037		0.6796	0.6796		3,186.3435	3,186.3435	0.5622		3,200.3992
Total	**1.7290**	**15.1259**	**20.8762**	**0.0337**		**0.7037**	**0.7037**		**0.6796**	**0.6796**		**3,186.3435**	**3,186.3435**	**0.5622**		**3,200.3992**

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Foundations/Concrete Pour - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0963	0.0691	0.9326	2.6200e-003	0.3130	1.8900e-003	0.3149	0.0830	1.7400e-003	0.0847		268.5835	268.5835	7.1600e-003	6.9000e-003	270.8194
Total	**0.0963**	**0.0691**	**0.9326**	**2.6200e-003**	**0.3130**	**1.8900e-003**	**0.3149**	**0.0830**	**1.7400e-003**	**0.0847**		**268.5835**	**268.5835**	**7.1600e-003**	**6.9000e-003**	**270.8194**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7290	15.1259	20.8762	0.0337		0.7037	0.7037		0.6796	0.6796	0.0000	3,186.3435	3,186.3435	0.5622		3,200.3992
Total	**1.7290**	**15.1259**	**20.8762**	**0.0337**		**0.7037**	**0.7037**		**0.6796**	**0.6796**	**0.0000**	**3,186.3435**	**3,186.3435**	**0.5622**		**3,200.3992**

3.5 Foundations/Concrete Pour - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0963	0.0691	0.9326	2.6200e-003	0.3130	1.8900e-003	0.3149	0.0830	1.7400e-003	0.0847		268.5835	268.5835	7.1600e-003	6.9000e-003	270.8194
Total	**0.0963**	**0.0691**	**0.9326**	**2.6200e-003**	**0.3130**	**1.8900e-003**	**0.3149**	**0.0830**	**1.7400e-003**	**0.0847**		**268.5835**	**268.5835**	**7.1600e-003**	**6.9000e-003**	**270.8194**

3.6 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.8192	23.8862	28.5350	0.0503		1.1664	1.1664		1.1334	1.1334		4,754.6322	4,754.6322	0.6325		4,770.4448
Total	**2.8192**	**23.8862**	**28.5350**	**0.0503**		**1.1664**	**1.1664**		**1.1334**	**1.1334**		**4,754.6322**	**4,754.6322**	**0.6325**		**4,770.4448**

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0278	1.0047	0.3834	4.6600e-003	0.1601	4.8500e-003	0.1650	0.0461	4.6400e-003	0.0508		501.5508	501.5508	0.0167	0.0722	523.4778
Worker	0.2202	0.1578	2.1317	6.0000e-003	0.7154	4.3200e-003	0.7197	0.1897	3.9700e-003	0.1937		613.9051	613.9051	0.0164	0.0158	619.0158
Total	**0.2480**	**1.1625**	**2.5152**	**0.0107**	**0.8755**	**9.1700e-003**	**0.8847**	**0.2358**	**8.6100e-003**	**0.2444**		**1,115.4559**	**1,115.4559**	**0.0331**	**0.0880**	**1,142.4935**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.8192	23.8862	28.5350	0.0503		1.1664	1.1664		1.1334	1.1334	0.0000	4,754.6322	4,754.6322	0.6325		4,770.4448
Total	**2.8192**	**23.8862**	**28.5350**	**0.0503**		**1.1664**	**1.1664**		**1.1334**	**1.1334**	**0.0000**	**4,754.6322**	**4,754.6322**	**0.6325**		**4,770.4448**

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0278	1.0047	0.3834	4.6600e-003	0.1601	4.8500e-003	0.1650	0.0461	4.6400e-003	0.0508		501.5508	501.5508	0.0167	0.0722	523.4778
Worker	0.2202	0.1578	2.1317	6.0000e-003	0.7154	4.3200e-003	0.7197	0.1897	3.9700e-003	0.1937		613.9051	613.9051	0.0164	0.0158	619.0158
Total	**0.2480**	**1.1625**	**2.5152**	**0.0107**	**0.8755**	**9.1700e-003**	**0.8847**	**0.2358**	**8.6100e-003**	**0.2444**		**1,115.4559**	**1,115.4559**	**0.0331**	**0.0880**	**1,142.4935**

3.6 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6535	22.3495	28.4298	0.0503		1.0230	1.0230		0.9937	0.9937		4,754.5510	4,754.5510	0.6245		4,770.1625
Total	**2.6535**	**22.3495**	**28.4298**	**0.0503**		**1.0230**	**1.0230**		**0.9937**	**0.9937**		**4,754.5510**	**4,754.5510**	**0.6245**		**4,770.1625**

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0269	1.0067	0.3754	4.5900e-003	0.1601	4.8800e-003	0.1650	0.0461	4.6700e-003	0.0508		494.0358	494.0358	0.0168	0.0712	515.6631
Worker	0.2059	0.1409	1.9860	5.8300e-003	0.7154	4.1400e-003	0.7195	0.1897	3.8100e-003	0.1935		601.3055	601.3055	0.0148	0.0147	606.0468
Total	**0.2328**	**1.1476**	**2.3614**	**0.0104**	**0.8755**	**9.0200e-003**	**0.8845**	**0.2358**	**8.4800e-003**	**0.2443**		**1,095.3414**	**1,095.3414**	**0.0316**	**0.0858**	**1,121.7099**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6535	22.3495	28.4298	0.0503		1.0230	1.0230		0.9937	0.9937	0.0000	4,754.5510	4,754.5510	0.6245		4,770.1625
Total	**2.6535**	**22.3495**	**28.4298**	**0.0503**		**1.0230**	**1.0230**		**0.9937**	**0.9937**	**0.0000**	**4,754.5510**	**4,754.5510**	**0.6245**		**4,770.1625**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0269	1.0067	0.3754	4.5900e-003	0.1601	4.8800e-003	0.1650	0.0461	4.6700e-003	0.0508		494.0358	494.0358	0.0168	0.0712	515.6631
Worker	0.2059	0.1409	1.9860	5.8300e-003	0.7154	4.1400e-003	0.7195	0.1897	3.8100e-003	0.1935		601.3055	601.3055	0.0148	0.0147	606.0468
Total	**0.2328**	**1.1476**	**2.3614**	**0.0104**	**0.8755**	**9.0200e-003**	**0.8845**	**0.2358**	**8.4800e-003**	**0.2443**		**1,095.3414**	**1,095.3414**	**0.0316**	**0.0858**	**1,121.7099**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.8013					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3562	3.0706	4.4068	7.1300e-003		0.1301	0.1301		0.1265	0.1265		665.7678	665.7678	0.1300		669.0189
Total	**16.1575**	**3.0706**	**4.4068**	**7.1300e-003**		**0.1301**	**0.1301**		**0.1265**	**0.1265**		**665.7678**	**665.7678**	**0.1300**		**669.0189**

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0447	0.0321	0.4330	1.2200e-003	0.1453	8.8000e-004	0.1462	0.0385	8.1000e-004	0.0393		124.6995	124.6995	3.3200e-003	3.2000e-003	125.7376
Total	**0.0447**	**0.0321**	**0.4330**	**1.2200e-003**	**0.1453**	**8.8000e-004**	**0.1462**	**0.0385**	**8.1000e-004**	**0.0393**		**124.6995**	**124.6995**	**3.3200e-003**	**3.2000e-003**	**125.7376**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.8013					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3562	3.0706	4.4068	7.1300e-003		0.1301	0.1301		0.1265	0.1265	0.0000	665.7678	665.7678	0.1300		669.0189
Total	**16.1575**	**3.0706**	**4.4068**	**7.1300e-003**		**0.1301**	**0.1301**		**0.1265**	**0.1265**	**0.0000**	**665.7678**	**665.7678**	**0.1300**		**669.0189**

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0447	0.0321	0.4330	1.2200e-003	0.1453	8.8000e-004	0.1462	0.0385	8.1000e-004	0.0393		124.6995	124.6995	3.3200e-003	3.2000e-003	125.7376
Total	**0.0447**	**0.0321**	**0.4330**	**1.2200e-003**	**0.1453**	**8.8000e-004**	**0.1462**	**0.0385**	**8.1000e-004**	**0.0393**		**124.6995**	**124.6995**	**3.3200e-003**	**3.2000e-003**	**125.7376**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.8013					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3419	2.9372	4.4075	7.1300e-003		0.1164	0.1164		0.1131	0.1131		665.7006	665.7006	0.1290		668.9263
Total	**16.1433**	**2.9372**	**4.4075**	**7.1300e-003**		**0.1164**	**0.1164**		**0.1131**	**0.1131**		**665.7006**	**665.7006**	**0.1290**		**668.9263**

3.7 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0418	0.0286	0.4034	1.1800e-003	0.1453	8.4000e-004	0.1462	0.0385	7.7000e-004	0.0393		122.1402	122.1402	3.0100e-003	2.9800e-003	123.1033
Total	**0.0418**	**0.0286**	**0.4034**	**1.1800e-003**	**0.1453**	**8.4000e-004**	**0.1462**	**0.0385**	**7.7000e-004**	**0.0393**		**122.1402**	**122.1402**	**3.0100e-003**	**2.9800e-003**	**123.1033**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.8013					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3419	2.9372	4.4075	7.1300e-003		0.1164	0.1164		0.1131	0.1131	0.0000	665.7006	665.7006	0.1290		668.9263
Total	**16.1433**	**2.9372**	**4.4075**	**7.1300e-003**		**0.1164**	**0.1164**		**0.1131**	**0.1131**	**0.0000**	**665.7006**	**665.7006**	**0.1290**		**668.9263**

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0418	0.0286	0.4034	1.1800e-003	0.1453	8.4000e-004	0.1462	0.0385	7.7000e-004	0.0393		122.1402	122.1402	3.0100e-003	2.9800e-003	123.1033
Total	**0.0418**	**0.0286**	**0.4034**	**1.1800e-003**	**0.1453**	**8.4000e-004**	**0.1462**	**0.0385**	**7.7000e-004**	**0.0393**		**122.1402**	**122.1402**	**3.0100e-003**	**2.9800e-003**	**123.1033**

3.8 Landscaping - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1202	1.2131	1.5735	2.6300e-003		0.0423	0.0423		0.0399	0.0399		246.1915	246.1915	0.0698		247.9352
Total	**0.1202**	**1.2131**	**1.5735**	**2.6300e-003**		**0.0423**	**0.0423**		**0.0399**	**0.0399**		**246.1915**	**246.1915**	**0.0698**		**247.9352**

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Landscaping - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0447	0.0321	0.4330	1.2200e-003	0.1453	8.8000e-004	0.1462	0.0385	8.1000e-004	0.0393		124.6995	124.6995	3.3200e-003	3.2000e-003	125.7376
Total	**0.0447**	**0.0321**	**0.4330**	**1.2200e-003**	**0.1453**	**8.8000e-004**	**0.1462**	**0.0385**	**8.1000e-004**	**0.0393**		**124.6995**	**124.6995**	**3.3200e-003**	**3.2000e-003**	**125.7376**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1202	1.2131	1.5735	2.6300e-003		0.0423	0.0423		0.0399	0.0399	0.0000	246.1915	246.1915	0.0698		247.9352
Total	**0.1202**	**1.2131**	**1.5735**	**2.6300e-003**		**0.0423**	**0.0423**		**0.0399**	**0.0399**	**0.0000**	**246.1915**	**246.1915**	**0.0698**		**247.9352**

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Landscaping - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0447	0.0321	0.4330	1.2200e-003	0.1453	8.8000e-004	0.1462	0.0385	8.1000e-004	0.0393		124.6995	124.6995	3.3200e-003	3.2000e-003	125.7376
Total	**0.0447**	**0.0321**	**0.4330**	**1.2200e-003**	**0.1453**	**8.8000e-004**	**0.1462**	**0.0385**	**8.1000e-004**	**0.0393**		**124.6995**	**124.6995**	**3.3200e-003**	**3.2000e-003**	**125.7376**

3.8 Landscaping - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1174	1.1749	1.5727	2.6400e-003		0.0395	0.0395		0.0374	0.0374		246.2725	246.2725	0.0698		248.0168
Total	**0.1174**	**1.1749**	**1.5727**	**2.6400e-003**		**0.0395**	**0.0395**		**0.0374**	**0.0374**		**246.2725**	**246.2725**	**0.0698**		**248.0168**

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Landscaping - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0418	0.0286	0.4034	1.1800e-003	0.1453	8.4000e-004	0.1462	0.0385	7.7000e-004	0.0393		122.1402	122.1402	3.0100e-003	2.9800e-003	123.1033
Total	**0.0418**	**0.0286**	**0.4034**	**1.1800e-003**	**0.1453**	**8.4000e-004**	**0.1462**	**0.0385**	**7.7000e-004**	**0.0393**		**122.1402**	**122.1402**	**3.0100e-003**	**2.9800e-003**	**123.1033**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1174	1.1749	1.5727	2.6400e-003		0.0395	0.0395		0.0374	0.0374	0.0000	246.2725	246.2725	0.0698		248.0168
Total	**0.1174**	**1.1749**	**1.5727**	**2.6400e-003**		**0.0395**	**0.0395**		**0.0374**	**0.0374**	**0.0000**	**246.2725**	**246.2725**	**0.0698**		**248.0168**

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Landscaping - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0418	0.0286	0.4034	1.1800e-003	0.1453	8.4000e-004	0.1462	0.0385	7.7000e-004	0.0393		122.1402	122.1402	3.0100e-003	2.9800e-003	123.1033
Total	**0.0418**	**0.0286**	**0.4034**	**1.1800e-003**	**0.1453**	**8.4000e-004**	**0.1462**	**0.0385**	**7.7000e-004**	**0.0393**		**122.1402**	**122.1402**	**3.0100e-003**	**2.9800e-003**	**123.1033**

3.9 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9614	17.7866	25.8422	0.0395		0.8725	0.8725		0.8119	0.8119		3,795.4720	3,795.4720	1.1010		3,822.9960
Paving	0.0228					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9842**	**17.7866**	**25.8422**	**0.0395**		**0.8725**	**0.8725**		**0.8119**	**0.8119**		**3,795.4720**	**3,795.4720**	**1.1010**		**3,822.9960**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1062	0.0727	1.0240	3.0100e-003	0.3689	2.1300e-003	0.3710	0.0978	1.9700e-003	0.0998		310.0482	310.0482	7.6400e-003	7.5600e-003	312.4929
Total	**0.1062**	**0.0727**	**1.0240**	**3.0100e-003**	**0.3689**	**2.1300e-003**	**0.3710**	**0.0978**	**1.9700e-003**	**0.0998**		**310.0482**	**310.0482**	**7.6400e-003**	**7.5600e-003**	**312.4929**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9614	17.7866	25.8422	0.0395		0.8725	0.8725		0.8119	0.8119	0.0000	3,795.4720	3,795.4720	1.1010		3,822.9960
Paving	0.0228					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9842**	**17.7866**	**25.8422**	**0.0395**		**0.8725**	**0.8725**		**0.8119**	**0.8119**	**0.0000**	**3,795.4720**	**3,795.4720**	**1.1010**		**3,822.9960**

3.9 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1062	0.0727	1.0240	3.0100e-003	0.3689	2.1300e-003	0.3710	0.0978	1.9700e-003	0.0998		310.0482	310.0482	7.6400e-003	7.5600e-003	312.4929
Total	**0.1062**	**0.0727**	**1.0240**	**3.0100e-003**	**0.3689**	**2.1300e-003**	**0.3710**	**0.0978**	**1.9700e-003**	**0.0998**		**310.0482**	**310.0482**	**7.6400e-003**	**7.5600e-003**	**312.4929**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.2175	1.2751	11.5823	0.0242	2.6304	0.0183	2.6487	0.7007	0.0170	0.7177		2,513.4096	2,513.4096	0.1829	0.1128	2,551.6077
Unmitigated	1.2175	1.2751	11.5823	0.0242	2.6304	0.0183	2.6487	0.7007	0.0170	0.7177		2,513.4096	2,513.4096	0.1829	0.1128	2,551.6077

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
General Office Building	23.57	5.35	1.69	57,478	57,478
High Turnover (Sit Down Restaurant)	173.88	189.72	221.09	249,244	249,244
Parking Lot	0.00	0.00	0.00		
Strip Mall	31.02	29.43	14.30	54,047	54,047
Unrefrigerated Warehouse-No Rail	189.73	189.73	189.73	813,127	813,127
Total	418.20	414.23	426.82	1,173,896	1,173,896

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
High Turnover (Sit Down	16.60	8.40	6.90	8.50	72.50	19.00	37	20	43
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Strip Mall	16.60	8.40	6.90	16.60	64.40	19.00	45	40	15
Unrefrigerated Warehouse-No	16.60	8.40	6.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
General Office Building	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
High Turnover (Sit Down Restaurant)	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
Parking Lot	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
Strip Mall	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
Unrefrigerated Warehouse-No Rail	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0141	0.1281	0.1076	7.7000e-004		9.7400e-003	9.7400e-003		9.7400e-003	9.7400e-003		153.7237	153.7237	2.9500e-003	2.8200e-003	154.6372
NaturalGas Unmitigated	0.0141	0.1281	0.1076	7.7000e-004		9.7400e-003	9.7400e-003		9.7400e-003	9.7400e-003		153.7237	153.7237	2.9500e-003	2.8200e-003	154.6372

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	68.4979	7.4000e-004	6.7200e-003	5.6400e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		8.0586	8.0586	1.5000e-004	1.5000e-004	8.1065
High Turnover (Sit Down Restaurant)	978.114	0.0106	0.0959	0.0806	5.8000e-004		7.2900e-003	7.2900e-003		7.2900e-003	7.2900e-003		115.0722	115.0722	2.2100e-003	2.1100e-003	115.7560
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	3.12603	3.0000e-005	3.1000e-004	2.6000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.3678	0.3678	1.0000e-005	1.0000e-005	0.3700
Unrefrigerated Warehouse-No Rail	256.914	2.7700e-003	0.0252	0.0212	1.5000e-004		1.9100e-003	1.9100e-003		1.9100e-003	1.9100e-003		30.2252	30.2252	5.8000e-004	5.5000e-004	30.4048
Total		**0.0141**	**0.1281**	**0.1076**	**7.7000e-004**		**9.7300e-003**	**9.7300e-003**		**9.7300e-003**	**9.7300e-003**		**153.7237**	**153.7237**	**2.9500e-003**	**2.8200e-003**	**154.6372**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0.0684979	7.4000e-004	6.7200e-003	5.6400e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		8.0586	8.0586	1.5000e-004	1.5000e-004	8.1065
High Turnover (Sit Down Restaurant)	0.978114	0.0106	0.0959	0.0806	5.8000e-004		7.2900e-003	7.2900e-003		7.2900e-003	7.2900e-003		115.0722	115.0722	2.2100e-003	2.1100e-003	115.7560
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.00312603	3.0000e-005	3.1000e-004	2.6000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.3678	0.3678	1.0000e-005	1.0000e-005	0.3700
Unrefrigerated Warehouse-No Rail	0.256914	2.7700e-003	0.0252	0.0212	1.5000e-004		1.9100e-003	1.9100e-003		1.9100e-003	1.9100e-003		30.2252	30.2252	5.8000e-004	5.5000e-004	30.4048
Total		**0.0141**	**0.1281**	**0.1076**	**7.7000e-004**		**9.7300e-003**	**9.7300e-003**		**9.7300e-003**	**9.7300e-003**		**153.7237**	**153.7237**	**2.9500e-003**	**2.8200e-003**	**154.6372**

6.0 Area Detail

6.1 Mitigation Measures Area

21611 South Perry Street - Los Angeles-South Coast County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.5500	1.4000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0340	0.0340	9.0000e-005		0.0362
Unmitigated	2.5500	1.4000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0340	0.0340	9.0000e-005		0.0362

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2901					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2585					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.4600e-003	1.4000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0340	0.0340	9.0000e-005		0.0362
Total	**2.5500**	**1.4000e-004**	**0.0158**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**		**0.0340**	**0.0340**	**9.0000e-005**		**0.0362**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2901					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2585					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.4600e-003	1.4000e-004	0.0158	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0340	0.0340	9.0000e-005		0.0362
Total	**2.5500**	**1.4000e-004**	**0.0158**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**		**0.0340**	**0.0340**	**9.0000e-005**		**0.0362**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B
Biological Resources Memorandum

ESA

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December 7, 2021

Ms. Stefanie Edmondson
Senior Planner
City of Carson
Community Development-Planning Division
701 East Carson Street
Carson, CA 90745

Subject: Biological Literature and Database Review Results for the 21611 Perry Street Self Storage Project

Dear Ms. Edmondson:

This letter report documents the results of a California Natural Diversity Database (CNDDB) and California Native Plant Society's (CNPS) Online Inventory of Rare and Endangered Plants records search reviewed for 21611 Perry Street Self Storage Project, located in the City of Carson, Los Angeles County, California.

Project Site Location

The 21611 Perry Street Self Storage Project is located on a 2.80-acre lot at 21611 South Perry Street in the City of Carson (Project Site). The Project Site is within the Torrance U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle map. The project proposes the development of a self-storage facility with three buildings totaling approximately 113,714 square feet. Additionally, the proposed project would provide approximately 23,000 square feet of landscaping around the perimeter of the project site. The property was previously developed with an industrial building and paved parking surfaces through 2011.

Methods

A review of aerial maps and biological resource databases was undertaken to identify biological resources potentially occurring within the Project Site and broader vicinity of the immediately adjacent region. Recent and historical aerial imagery was reviewed, as well as the topographic electronic copies of the Torrance USGS 7.5-minute topographic quadrangle map. Aerial imagery (Google Earth 2021) was reviewed to confirm the current locations of developed and undeveloped land, and unique landforms within the Project Site vicnity. A list of special-status plant and wildlife species and their habitats previously recorded to occur near the Project Site was compiled primarily from the California Department of Fish and Wildlife (CDFW), California Natural Diversity Database (CNDDB) (2021) and California Native Plant Society (CNPS) (2021) Inventory of Rare and Endangered Plants. ESA conducted a query of the CNDDB and CNPS records for the following USGS 7.5-minute topographic quadrangle maps that surround the Project Site included: Inglewood, Long Beach, Redondo Beach, San Pedro, South Gate, Torrance, and Venice. Based on Google Earth imagery, the Project Site consists of sparse ruderal vegetation with plantings of carrotwood (*Cupaniopsis anacardioides*) as street trees along Perry Street.

Other data sources reviewed included the United States Department of Agriculture Natural Resources Conservation Service (NRCS) soils mapping (USDA 2021), U.S. Fish and Wildlife Service (USFWS) critical habitat maps (USFWS 2021a), the USFWS Information for Planning and Consultation (IPaC) (USFWS 2021b), and the National Wetlands Inventory (NWI) (USFWS 2021c).

Results

Special-Status Species and Sensitive Communities/Habitats

Special-status plants are defined as those plants that, because of their recognized rarity or vulnerability to various causes of habitat loss or population decline, are recognized by federal, state, or other agencies as under threat from human-associated developments. Some of these species receive specific protection that is defined by federal or state endangered species legislation. Others have been designated as special-status on the basis of adopted policies and expertise of state resource agencies or organizations with acknowledged expertise, or policies adopted by local governmental agencies such as counties, cities, and special districts to meet local conservation objectives. Special-status plants are defined as follows:

- Plants that are listed or proposed for listing as threatened or endangered, or are candidates for possible future listing as threatened or endangered, under the FESA or the CESA
- Plants that meet the definitions of rare or endangered under State CEQA Guidelines Section 15380
- Plants covered under an adopted Natural Community Conservation Plan (NCCP)/Habitat Conservation Plan (HCP)
- Plants considered by the CNPS to be rare, threatened, or endangered (Rank 1A, 1B, 2A and 2B plants) in California
- Plants listed as rare under the California Native Plant Protection Act (Fish and Game Code 1900 et seq.)

The potential for special-status plant species to occur within the Project Site is based on on-site vegetation and habitat quality, topography, elevation, soils, surrounding land uses, habitat preferences and geographic ranges. A review of the CNDDB (CDFW 2021) and the CNPS Inventory of Rare and Endangered Plants (CNPS 2021) revealed that many special-status plant species have been recorded within the USGS quadrangle search area.

A total of 15 special-status plant species were determined to have no to low potential to occur within the Project Site. No focused rare plant surveys were conducted at this time nor are they warranted. Additionally, no sensitive natural communities occur within the Project Site or adjacent vicinity. However, based on the criteria listed below, it has been determined that two of these special-status plant species have a low potential to occur because of the sites proximity to the Dominguez Channel to the west. These two species with low potential to occur are southern tarplant (*Centromadia parryi* ssp. *australis*) and Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*). All results and potential to occur determinations are listed in Attachment A.

The criteria for potential to occur include:

- **Present:** Species was observed or detected during the biological survey.
- **High Potential:** Species identified in the literature search and/or known to occur in the region and suitable habitat is present on the project site. These species are generally common and/or widespread in the project area and vicinity.

- **Moderate Potential:** Species identified in the literature search and/or known to occur in the region and suitable habitat is present within the project site. These species are generally less common and/or widespread than species considered to have "high" potential to occur.
- **Low Potential:** Species identified in the literature search or known to occur in the region, but the habitat on site is of low or marginal quality and/or the project site occurs outside the species known geographic or elevational range. Distance to nearest known occurrence and the age of last reported local occurrence are also considered.
- **Not Expected:** Species identified in the literature search or known to occur in the region, but suitable habitat on site is not present, nor is such habitat nearby. Distance to nearest known occurrence and the age of last reported local occurrence are also considered.

Two special-status plant species are determined to have a low potential to occur within the Project Site. The 13 species with no potential to occur within the project site are further detailed in **Attachment A**.

Special-Status Wildlife

Special-status wildlife consists of those animals that, because of their recognized rarity or vulnerability to various forms of habitat loss or population decline, are considered by federal, state, or other agencies to be under threat from human-associated developments. Some of these species receive specific protection that is defined by federal or state endangered species legislation and others have been designated as special-status on the basis of adopted local policies (i.e., city and county) or the educated opinion of respected resource interest groups (e.g., Western Bat Working Group). Special-status wildlife is defined as follows:

- Wildlife listed or proposed for listing as threatened or endangered, or are candidates for possible future listing as threatened or endangered, under the FESA or the CESA.
- Wildlife that meet the definitions of rare or endangered under California Environmental Quality Act (CEQA) Guidelines Section 15380.
- Wildlife covered under an adopted NCCP/HCP.
- Wildlife designated by CDFW as species of special concern, included on the Watch List or are considered Special Animals.
- Wildlife "fully protected" in California (California Fish and Game [CFG] Code Sections 3511, 4700, and 5050).
- Bird species protected by the Migratory Bird Treaty Act (MBTA).
- Bat species considered priority by the Western Bat Working Group (WBWG).

The potential for special-status wildlife species to occur within the Project Site is based on on-site vegetation and habitat quality, topography, elevation, soils, surrounding land uses, habitat preferences and geographic ranges. A review of the CNDDB (CDFW 2021) revealed that many special-status wildlife species have been recorded within the seven USGS quadrangle search area. This analysis included 18 special-status wildlife species. However, based on the criteria listed below, it has been determined that none of these wildlife species have the potential to occur because they lacked the necessary habitat requirements or do not have a range that overlaps within the Project Site. These are further detailed in **Attachment B** and have been omitted from further discussion.

- **Present:** The species was observed within the Project Site during the site assessment or has been documented within or immediately adjacent to the Project Site during recent surveys (with 2 years).
- **High Potential:** Species identified in the literature search and/or known to occur in the region and suitable habitat is present on the Project Site. These species are generally common and/or widespread in the Project Site area and vicinity.
- **Moderate Potential:** Species identified in the literature search and/or known to occur in the region and suitable habitat is present within the Project Site. These species are generally less common and/or widespread than species considered to have "high" potential to occur.
- **Low Potential:** Species identified in the literature search or known to occur in the region, but the habitat on site is of low or marginal quality and/or the Project Site occurs outside the species known geographic or elevational range. Distance to nearest known occurrence and the age of last reported local occurrence are also considered.
- **Not Expected:** Species identified in the literature search or known to occur in the region, but suitable habitat on site is not present, nor is such habitat nearby. Distance to nearest known occurrence and the age of last reported local occurrence are also considered.

A total of 18 special-status wildlife species were determined as not expected to occur within the Project Site. No focused surveys were conducted at this time and none are warranted. All results and potential to occur determinations are listed in Attachment B. All species identified through the database search are not expected to occur in the Project Site due to the history of the developed nature of the site and near complete lack of suitable habitat.

Conclusion

No site visits were conducted during this biological literature and database review. In summary, only two special-status plant species were determined to have a low potential to occur within the Project Site. No other special-status plant or wildlife species are not expected to occur within the Project Site. Additionally, no sensitive natural communities occur within the Project Site or adjacent vicinity. It should be stated the Project Site was previously completely developed and built up with a large building and associated infrastructure therefore has limited vegetation and wildlife species.

Should you have any questions regarding the findings in this letter report, please do not hesitate to contact Ryan Gilmore (rgilmore@esassoc.com) at 909-727-7634.

Ryan Gilmore
Principal Biologist/Urban Forester
ISA WE-9009BM

Attachments:
Attachment A: Special-Status Plant Species

Attachment B: Special-Status Wildlife Species

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Attachment A: Special-Status Plant Species

SPECIAL-STATUS PLANT SPECIES – NOT EXPECTED TO LOW POTENTIAL TO OCCUR WITHIN THE PROJECT SITE

Common Name *Scientific Name*	Flowering Period	Sensitivity Status	Preferred Habitat/Known Elevational Range	Presence/Potential to Occur within Project Site
Dicots				
aphanisma *Aphanisma blitoides*	February - June	--/--/1B.2	Coastal bluff scrub, coastal dunes, and coastal scrub sometimes in gravelly or sandy soils. Typically, on bluffs and slopes near the ocean. Elevation range: 5 – 1,000 feet (CNDDB 2021; CNPS 2021).	**Not expected.** No suitable habitat within the BSA. Single CNDDB record exists over seven miles west of BSA with an unspecified date (CNDDB 2021).
Coulter's saltbush *Atriplex coulteri*	March - October	--/--/1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, and valley and foothill grassland sometimes in alkaline or clay soils. Ocean bluffs, ridgetops, as well as alkaline low places. Elevation range: 10 – 1,510 feet (CNDDB 2021; CNPS 2021).	**Not expected.** No suitable habitat within the BSA. Both CNDDB records within five miles of BSA classified as extirpated (CNDDB 2021).
south coast saltscale *Atriplex pacifica*	March – October	--/--/1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, and playas in alkali soils. Elevation range: 0 –460 feet (CNDDB 2021; CNPS 2021).	**Not expected.** No suitable habitat within the BSA. Single CNDDB record from 1903 exists over seven miles west of BSA (CNDDB 2021).
Parish's brittlescale *Atriplex parishii*	June - October	--/--/1B.1	Alkali meadows, vernal pools, chenopod scrub, and playas. Typically located on alkali flats with finely textured soils. Elevation range: 13 – 6,160 feet (CNDDB 2021; CNPS 2021).	**Not expected.** No suitable habitat within the BSA. Single CNDDB record exists over seven miles west of BSA with an unspecified date (CNDDB 2021).
Davidson's saltscale *Atriplex serenana* var. *davidsonii*	April - October	--/--/1B.2	Coastal bluff scrub and coastal scrub. Located on alkaline soils. Elevation range: 0 – 650 feet (CNDDB 2021; CNPS 2021).	**Not expected.** No suitable habitat within the BSA. Single CNDDB record dated 1906 exists six miles south of BSA and classified as possibly extirpated (CNDDB 2021).
southern tarplant *Centromadia parryi* ssp. *australis*	May – November	--/S2/1B.1	Margins of marshes and swamps, and valley and foothill grassland. Often located on disturbed sites near the coast at marsh edges in alkaline soils. Sometimes along vernal pool margins. Elevation range: 0–1,385 feet. (CNDDB 2021; CNPS 2021).	**Low Potential.** This species has a low potential to occur due to presence of marginally suitable habitat and occurrences less than one mile upstream of BSA (CNDDB 2021). This species has a low potential to occur along the Dominguez Channel that is adjacent to the BSA, but only where damp grassland habitat might occur.
smooth tarplant *Centromadia pungens ssp. laevis*	April - September	--/--/1B.1	Chenopod scrub, meadows and seeps, playas, riparian woodland, and valley and foothill grassland in alkaline soils. Also in disturbed places. Elevation range: 0 – 2,100 feet (CNDDB 2021; CNPS 2021).	**Not expected.** No suitable habitat within the BSA. Single CNDDB record dated 1920 exists approximately six miles south of BSA and classified as possibly extirpated (CNDDB 2021).
salt marsh bird's-beak *Chloropyron maritimum ssp. maritimum*	May – October (November)	FE/SE/1B.2	Coastal dunes and marshes and swamps. Limited to higher zones of salt marsh habitat. Elevation range: 0 – 100 feet (CNDDB 2021; CNPS 2021).	**Not expected.** No suitable habitat within the BSA. Single CNDDB record dated 1980 exists approximately six miles south of BSA and classified as possibly extirpated (CNDDB 2021).
decumbent goldenbush *Isocoma menziesii var. decumbens*	April - November	--/--/1B.2	Chaparral and coastal scrub in sandy soils. Often on disturbed sites. Elevation range: 3 – 915 feet (CNDDB 2021; CNPS 2021).	**Not expected.** No suitable habitat within the BSA. Single CNDDB record dated 1897 exists five miles south of BSA and classified as extirpated (CNDDB 2021).

Common Name ***Scientific Name***	**Flowering Period**	**Sensitivity Status**	**Preferred Habitat/Known Elevational Range**	**Presence/Potential to Occur within Project Site**
Coulter's goldfields *Lasthenia glabrata ssp. coulteri*	February - June	--/--/1B.1	Marshes and swamps, playas, and vernal pools. Usually found on alkaline soils in playas, sinks, and grassland. Elevation range: 5 – 4,005 feet (CNDDB 2021; CNPS 2021).	**Low Potential.** This species has a low potential to occur due to marginally suitable habitat. Two occurrences within one mile northwest of BSA: one from 1917 classified as possibly extirpated and one from 1962 classified as extant (CNDDB 2021).
mud nama *Nama stenocarpa*	January - July	--/--/2B.2	Marshes and swamps. Also along lake shores, river banks, and intermittently wet areas. Elevation range: 15 – 1,640 feet (CNDDB 2021; CNPS 2021).	**Not expected.** No suitable habitat within the BSA. Single CNDDB record dated 1924 exists within five miles south of BSA (CNDDB 2021).
prostrate navarretia *Navarretia prostrata*	April - July	--/--/1B.1	Found in mesic conditions within coastal scrub, meadows and seeps, valley and foothill grassland (alkaline), and vernal pools. Elevation range: 10 – 2270 feet (CNDDB 2021; CNPS 2021).	**Not expected.** No suitable habitat within the BSA. Most recent CNDDB record dated 1882 classified as possibly extirpated and located over 2 miles south of BSA (CNDDB 2021).
Brand's star phacelia *Phacelia stellaris*	March – June	--/--/1B.1	Coastal dunes and coastal scrub in open areas. Elevation range: 5 – 1,310 feet (CNDDB 2021; CNPS 2021).	**Not expected.** No suitable habitat within the BSA. Most recent CNDDB record dated 1897 located over six miles west of BSA (CNDDB 2021).
estuary seablite *Suaeda esteroa*	(January - May) July - October	--/--/1B.2	Marshes and swamp and coastal salt marshes in clay, silt, and sand substrates. Elevation range: 0 – 15 feet (CNDDB 2021; CNPS 2021).	**Not expected.** No suitable habitat within the BSA. Most recent CNDDB record dated 1904 located over six miles south of BSA (CNDDB 2021).
San Bernardino aster *Symphyotrichum defoliatum*	July - November	--/--/1B.2	Meadows and seeps, marshes and swamps, coastal scrub, cismontane woodland, lower montane coniferous forest, and grassland. Located in mesic grassland near ditches, streams, and springs. Also found on disturbed sites. Elevation range: 5 – 6,630 feet (CNDDB 2021; CNPS 2021).	**Not Expected.** No suitable habitat within the BSA. Occurrences less than one mile upstream of BSA; however, occurrence is classified as extirpated (CNDDB 2021).

Common Name *Scientific Name*	Flowering Period	Sensitivity Status	Preferred Habitat/Known Elevational Range	Presence/Potential to Occur within Project Site
Key:				
Federal Listings				
FE = Listed as endangered under the FESA				
FT = Listed as threatened under the FESA				
State Listings				
SE = Listed as endangered under the CESA				
ST= Listed as threatened under the CESA				
SSC = Species of Special Concern (CDFW)				
CNDDB Element Rankings				
S1 = Less than 6 element occurrences (EOs) or 1,000 individuals or less than 2,000 acres (S1.1 very threatened, S1.2 threatened, S1.3 no current threats known)				
S2 = 6-20 EOs or 1,000-3,000 individuals or 2,000-10,000 acres (S2.1 very threatened, S2.2 threatened, S2.3 no current threats known)				
S3 = 21-100 EOs or 3,000-10,000 individuals or 10,000-50,000 acres (S3.1 very threatened, S3.2 threatened, S3.3 no current threats known)				
S4 = Apparently secure; this rank is clearly lower than S3 but factors exist to cause some concerns; i.e., there is some threat, or somewhat narrow habitat.				
CRPR Rankings				
1A: Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere				
1B: Plants Rare, Threatened, or Endangered in California and Elsewhere				
2A: Plants Presumed Extirpated in California, But Common Elsewhere				
2B: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere				
3: Plants About Which More Information is Needed - A Review List				
4: Plants of Limited Distribution - A Watch List				
NOTE:				
[a] Table footnote text.				
SOURCE: Calflora, CNDDB, and CNPSNOTE:				

Attachment B: Special-Status Wildlife Species

SPECIAL-STATUS WILDLIFE SPECIES – NOT EXPECTED TO OCCUR WITHIN THE PROJECT SITE

Common Name *Scientific Name*	Sensitivity Status	Preferred Habitat/Known Elevational Range	Presence/Potential to Occur within the Project Site
Invertebrates			
Crotch bumble bee *Bombus crotchii*	--/SSC/S1S2	Open grassland and scrub habitats that support potential nectar sources such as plants within the Fabaceae, Apocynaceae, Asteraceae, Lamiaceae, and Boraginaceae families.	**Not Expected.** Limited to no suitable habitat present within the BSA. CNDDB occurrences are over five miles away from BSA with the most recent 2017 record being located at White Point Nature Preserve over 8 miles southwest of the BSA (CNDDB 2021).
sandy beach tiger beetle *Cicindela hirticollis gravida*	--/--/S2	Inhabits areas adjacent to non-brackish water along the coast of California from San Francisco Bay to northern Mexico.	**Not Expected.** No suitable habitat present within the BSA. There are multiple CNDDB records dated from 1907-1979 all classified as extirpated (CNDDB 2021).
western beach tiger beetle *Cicindela latesignata latesignata*	--/--/S1	Coastal habitats, primarily beaches.	**Not Expected.** No suitable habitat present within the BSA. There are two CNDDB records dated from 1979 classified as extirpated (CNDDB 2021).
monarch - California overwintering population *Danaus plexippus* pop. 1	FC/--/S2S3	Wintering sites in California are associated with wind-protected groves of large trees (primarily eucalyptus or pine [*Pinus* spp.]) with nectar and water sources nearby that are generally near the coast.	**Not Expected.** No suitable habitat present within the BSA. The closest CNDDB occurrence is from 2014 and located approximately three miles south of the BSA (CNDDB 2021).
Palos Verdes blue butterfly *Glaucopsyche lygdamus palosverdesensis*	FE/--/S1	Restricted to coastal scrub on the seaward side of Palos Verdes Hills in Los Angeles County. Host species include *Acmispon glaber* and *Astragalus trichopodus* var. *lonchus*.	**Not Expected.** No suitable habitat present within the BSA. In 2001, the entire Torrance quad map was designated as a CNDDB occurrence (CNDDB 2021).
San Gabriel chestnut *Glyptostoma gabrielense*	--/--/S2	Terrestrial habitat in humid areas under rocks, logs, and cactus near a body of water (CNDDB 2021).	**Not Expected.** No suitable habitat present within the BSA. There are two CNDDB records from the 1900s classified as possibly extirpated. The closest occurrence is located just over one mile to the northeast of the BSA (CNDDB 2021).
western tidal-flat tiger beetle *Habroscelimorpha gabbii*	--/--/S1	Inhabits estuaries and mudflats along the coast of Southern California. Generally found on dark-colored mud in the lower zone; occasionally found on dry saline flats of estuaries (CNDDB 2021).	**Not Expected.** No suitable habitat present within the BSA. There are two dateless CNDDB records classified as extirpated and possibly extirpated (CNDDB 2021).
Riverside fairy shrimp *Streptocephalus woottoni*	FE/--/--	Endemic to western Riverside, Orange and San Diego Counties in areas of tectonic swales/earth slump basins in grassland and coastal sage scrub. Inhabit seasonally astatic pools filled by winter/spring rains greater than 12 inches in depth. Hatch in warm water later in the season. Typically observed January through March.	**Not Expected.** No suitable habitat present within the BSA. The closest CNDDB record from 2010 is located approximately five miles west of the BSA. Two additional CNDDB records over 10 miles northwest of the BSA are classified as extirpated (CNDDB 2021).
mimic tryonia (=California brackishwater snail) *Tryonia imitator*	--/--/S2	Inhabits coastal lagoons, estuaries and salt marshes, from Sonoma County south to San Diego County.	**Not Expected.** No suitable habitat present within the BSA. The closest CNDDB record from 2007 is located approximately six miles south of the BSA. Two additional CNDDB records are classified as extirpated and possibly extirpated (CNDDB 2021).

Common Name *Scientific Name*	Sensitivity Status	Preferred Habitat/Known Elevational Range	Presence/Potential to Occur within the Project Site
Amphibians			
western spadefoot *Spea hammondii*	--/SSC/S3	Mixed woodland, grasslands, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Prefers washes and other sandy areas with patches of brush and rocks. Rain pools or shallow temporary pools, which do not contain bullfrogs, fish, or crayfish are necessary for breeding. Perennial plants necessary for its major food-termites.	**Not Expected.** No suitable habitat present within the BSA. There are multiple CNDDB records dated from 1938-1966 all classified as possibly extirpated. The closest occurrence is undated, located approximately two miles southwest of the BSA, and is classified as extirpated (CNDDB 2021).
Reptiles			
Southern California legless lizard *Anniella stebbinsi*	--/SSC/S3	Found in broadleaved upland forest, chaparral, coastal dunes, and coastal scrub habitats, and generally found under sparse vegetation in sandy or loose loamy soils with a high moisture content.	**Not Expected.** No suitable habitat present within the BSA. There are multiple CNDDB records within five miles of the BSA. The closest occurrences are approximately 4 miles southwest of the BSA and are dated 1968 and 2009 (CNDDB 2021).
coast horned lizard *Phrynosoma blainvillii*	--/SSC/S3S4	Prefers sandy sage scrub habitats but also occurs in valley-foothill hardwood, conifer, pine-cypress, juniper and annual grassland habitats below 6,000 feet, open country, especially sandy areas, washes, flood plains, and windblown deposits. Requires open areas for sunning, bushes and loose soil for cover and abundant supply of harvester ants.	**Not Expected**. Limited suitable habitat located within the BSA. The most recent CNDDB record is from 1952 within five miles of BSA and is classified as possibly extirpated (CNDDB 2021).
Birds			
tricolored blackbird *Agelaius tricolor*	--/ST, SSC/S1S2	Known to occur in freshwater marsh, marsh, swap, and wetland. Highly colonial species, most numerous in Central Valley and vicinity. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	**Not Expected**. No suitable habitat located within the BSA. The most recent CNDDB records are from the 1980s and are within five miles of BSA (CNDDB 2021).
western yellow-billed cuckoo *Coccyzus americanus occidentalis*	FT, BCC/SE/S1	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry nettles, or wild grape.	**Not Expected.** No suitable habitat present within the BSA. There are four CNDDB records within five miles of the BSA all classified as extirpated (CNDDB 2021).
coastal California gnatcatcher *Polioptila californica californica*	FT/SSC/S2	Species is an obligate, permanent resident of coastal sage scrub habitats dominated by California sagebrush and flat-topped buckwheat, mainly on cismontane slopes below 1,500 feet in elevation. Low coastal sage scrub in arid washes, on mesas and slopes.	**Not Expected.** No suitable habitat located within the BSA. There are multiple CNDDB records over five miles southwest of the BSA along the coast (CNDDB 2021).
California least tern *Sternula antillarum browni*	FE/SE/S2	Known to occur in alkali playas and coastal dune and beach habitats. Nests along the coast from San Francisco Bay south to northern Baja California. Colonial breeder on bare or sparsely vegetated, flat substrates: sand beaches, alkali flats, landfills, or paved areas.	**Not Expected.** Limited suitable habitat located within the BSA. There is a single CNDDB record within five miles of the BSA from 1977 (CNDDB 2021).

Common Name *Scientific Name*	Sensitivity Status	Preferred Habitat/Known Elevational Range	Presence/Potential to Occur within the Project Site
Mammals			
pocketed free-tailed bat *Nyctinomops femorosaccus*	--/SSC/S3	Inhabits pinyon-juniper woodlands, riparian scrub, Sonoran desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree woodland, and palm oasis. Typically roosts in caves and rocky outcrops; prefers cliffs in order to obtain flight speed. Feeds on insects flying over bodies of water or arid desert habitats to capture prey.	**Not Expected.** No suitable habitat located within the BSA. The closest CNDDB record is within five miles southwest of the BSA and was recorded in 1985 (CNDDB 2021).
Pacific pocket mouse *Perognathus longimembris pacificus*	FE/SSC/S1	Found in the coastal scrub and maritime chaparral from the Mexican border north to El Segundo, Los Angeles County. Commonly associated with gravelly, or fine alluvial soils within coastal plains in the immediate vicinity of the Pacific Ocean. Also found on coastal strand, coastal dunes, and ruderal vegetation on river alluvium, within open, sparsely vegetated areas.	**Not Expected**. No suitable habitat located within the BSA. The most recent CNDDB record is from 1985 within five miles of BSA and is classified as extirpated (CNDDB 2021).

Key:

Federal Listings

FE = Listed as endangered under the FESA

FT = Listed as threatened under the FESA

BCC = Birds of Conservation Concern (USFWS)

State Listings

SE = Listed as endangered under the CESA

ST= Listed as threatened under the CESA

SSC = Species of Special Concern (CDFW)

WL = Watch List (CDFW)

CNDDB Element Rankings

S1 = Less than 6 element occurrences (EOs) or 1,000 individuals or less than 2,000 acres (S1.1 very threatened, S1.2 threatened, S1.3 no current threats known)

S2 = 6-20 EOs or 1,000-3,000 individuals or 2,000-10,000 acres (S2.1 very threatened, S2.2 threatened, S2.3 no current threats known)

S3 = 21-100 EOs or 3,000-10,000 individuals or 10,000-50,000 acres (S3.1 very threatened, S3.2 threatened, S3.3 no current threats known)

S4 = Apparently secure; this rank is clearly lower than S3 but factors exist to cause some concerns; i.e., there is some threat, or somewhat narrow habitat.

? = indicates some uncertainty.

NOTE:

a Table footnote text.

SOURCE: CNDDB

CONFIDENTIAL REPORT
Available at the City of Carson upon request.

Appendix C

Cultural Resources Assessment Report

ESA

Appendix D
Energy Calculations

ESA

21611 Perry Street
Construction Energy Analysis

Annual Fuel Summary

	Heavy-Duty Construction Equipment
83,758	Total Project Consumption
77,202	Annual Consumption
	Haul Trucks
3,538	Total Project Consumption
3,261	Annual Consumption
	Vendor Trucks
594	Total Project Consumption
547	Annual Consumption
	Workers
18,942	Total Project Consumption
17,459	Annual Consumption
4,131	Project Consumption of diesel for Haul Trucks and Vendors
3,808	Annual Consumption
87,890	Total Gallons Diesel
18,942	Total Gallons Gasoline

1.1 Estimated Project Construction Duration (years)

81,009 Annual Average Gallons Diesel
17,459 Annual Average Gallons Gasoline

Los Angeles County			Percent of Annual Project Compared to Los Angeles County
Source	**Fuel Type**	**Gallons**	
Workers	Gasoline	3,559,000,000	0.0005%
Off-Road/Vendor/Haul Trucks	Diesel	584,745,763	0.014%

Notes:
1 Gasoline and diesel amounts from CEC, 2019. Available: https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/california-retail-fuel-outlet-annual-reporting

Annual Electricity Summary

Water Conveyance for Dust Control	3,492 kWh/year
Total	**3,492 kWh/year**

84,654,000 Total SCE, 2019
0.00% Project percentage of SCE

21611 South Perry Street
Construction Energy Analysis

Off-Road Equipment

Equipment ≤ 100 hp		
pounds diesel fuel/hp-hr (lb/hp-hr):[1]	0.408	lb/hp-hr
diesel density (lb/gal):[1]	7.11	lb/gal
diesel gallons/hp-hr:	0.0574	gal/hp-hr
Total <100	1,184,892	hp-hr
Total diesel gallons:	68,004	gal
Equipment > 100 hp		
pounds diesel fuel/hp-hr (lb/hp-hr):[1]	0.367	lb/hp-hr
diesel density (lb/gal):[1]	7.11	lb/gal
diesel gallons/hp-hr:	0.0516	gal/hp-hr
Total >100	305,162	hp-hr
Total diesel gallons:	15,754	gal
Total diesel gallons (off-road equipment):	**83,758**	**gal**

1. OFFROAD2017 Emission Factor Documentation

Construction Phase	Equipment	Number	Hours/Day	HP	Load	Days	Total hp-hr
Demo & Site Preparation	Air Compressors	2	8	78	0.48	23	13,778
Demo & Site Preparation	Dumpers/Tenders	2	8	16	0.38	23	2,237
Demo & Site Preparation	Excavators	1	8	158	0.38	23	11,047
Demo & Site Preparation	Generator Sets	1	8	84	0.74	23	11,437
Demo & Site Preparation	Skid Steer Loaders	1	8	65	0.37	23	4,425
Demo & Site Preparation	Sweepers/Scrubbers	1	8	64	0.46	23	5,417
Demo & Site Preparation	Tractors/Loaders/Backhoes	3	7	97	0.37	23	17,335
Grading/Excavation	Concrete/Industrial Saws	1	8	81	0.73	21	9,934
Grading/Excavation	Crawler Tractors	2	8	212	0.43	21	30,630
Grading/Excavation	Dumpers/Tenders	2	8	16	0.38	21	2,043
Grading/Excavation	Excavators	1	8	158	0.38	21	10,087
Grading/Excavation	Graders	1	8	187	0.41	21	12,881
Grading/Excavation	Plate Compactors	1	8	8	0.43	21	578
Grading/Excavation	Rollers	1	8	80	0.38	21	5,107
Grading/Excavation	Scrapers	3	8	367	0.48	21	88,785
Grading/Excavation	Sweepers/Scrubbers	1	8	64	0.46	21	4,946
Grading/Excavation	Tractors/Loaders/Backhoes	3	7	97	0.37	21	15,827
Drainage/Utilities/Trenching	Air Compressors	1	8	78	0.48	44	13,179
Drainage/Utilities/Trenching	Dumpers/Tenders	2	8	16	0.38	44	4,280
Drainage/Utilities/Trenching	Excavators	1	8	158	0.38	44	21,134
Drainage/Utilities/Trenching	Generator Sets	2	8	84	0.74	44	43,761
Drainage/Utilities/Trenching	Plate Compactors	1	8	8	0.43	44	1,211
Drainage/Utilities/Trenching	Pumps	1	8	84	0.74	44	21,880
Drainage/Utilities/Trenching	Rough Terrain Forklifts	1	8	100	0.4	44	14,080
Drainage/Utilities/Trenching	Sweepers/Scrubbers	1	8	64	0.46	44	10,363
Drainage/Utilities/Trenching	Tractors/Loaders/Backhoes	2	8	97	0.37	44	25,267
Foundations/Concrete Pour	Air Compressors	1	8	78	0.48	24	7,188
Foundations/Concrete Pour	Concrete/Industrial Saws	1	8	81	0.73	24	11,353
Foundations/Concrete Pour	Dumpers/Tenders	2	8	16	0.38	24	2,335
Foundations/Concrete Pour	Plate Compactors	1	8	8	0.43	24	660
Foundations/Concrete Pour	Pumps	1	8	84	0.74	24	11,935
Foundations/Concrete Pour	Rough Terrain Forklifts	1	8	100	0.4	24	7,680
Foundations/Concrete Pour	Skid Steer Loaders	1	8	65	0.37	24	4,618
Foundations/Concrete Pour	Tractors/Loaders/Backhoes	3	8	97	0.37	24	20,673
Building Construction	Air Compressors	2	8	78	0.48	176	105,431
Building Construction	Cement and Mortar Mixers	2	8	9	0.56	176	14,193
Building Construction	Concrete/Industrial Saws	2	8	81	0.73	176	166,510
Building Construction	Cranes	1	8	231	0.29	176	94,322
Building Construction	Dumpers/Tenders	2	8	16	0.38	176	17,121
Building Construction	Forklifts	4	7	89	0.2	176	87,718
Building Construction	Generator Sets	1	8	84	0.74	176	87,521
Building Construction	Pumps	1	8	84	0.74	176	87,521
Building Construction	Rough Terrain Forklifts	4	8	100	0.4	176	225,280
Architectural Coating	Air Compressors	1	6	78	0.48	67	15,051
Architectural Coating	Cement and Mortar Mixers	1	8	9	0.56	67	2,701
Architectural Coating	Rough Terrain Forklifts	1	8	100	0.4	67	21,440
Landscaping	Dumpers/Tenders	1	6	16	0.38	67	2,444
Landscaping	Skid Steer Loaders	1	8	65	0.37	67	12,891

Paving	Air Compressors	1	8	78	0.48	23	6,889
Paving	Dumpers/Tenders	2	8	16	0.38	23	2,237
Paving	Pavers	1	8	130	0.42	23	10,046
Paving	Paving Equipment	3	8	132	0.36	23	26,231
Paving	Rollers	2	8	80	0.38	23	11,187
Paving	Sweepers/Scrubbers	1	8	64	0.46	23	5,417
Paving	Tractors/Loaders/Backhoes	3	8	97	0.37	23	19,811
						Total >100	305,162
						Total <100	1,184,892

21611 Perry Street
Operational Energy Demand

Electricity	kWh/yr	MWh/yr
Project		
City Park	0	-
General Office Building	30,313	30
High Turnover (Sit Down Restaurant)	67,069	67
Parking Lot	5,740	6
Strip Mall	9,149	9
Unrefrigerated Warehouse-No Rail	417,619	418
Project Total Building Energy	**529,889**	**530**
Project Total	**529,889**	**529.89**
Total (including water, see below)	**883,082**	**883**

Source: California Air Resources Board, CalEEMod, Version 2016.3.2.

Electricity	MWh/yr (Supplied)	MWh/yr (Sales)
Total SCE, 2020	84,654,000	85,399,000
Project Annual	883	
Net Project Annual	883	
Percent Net Project of SCE	0.0010%	0.001%

Source: Southern California Edison 2020 Annual Report. https://docs.cpuc.ca.gov/PublishedDocs/SupDo

Water	Mgal/yr	MWh/yr
Project		
City Park	0.63	8.22
General Office Building	0.69	9.03
High Turnover (Sit Down Restaurant)	0.50	6.52
Parking Lot	0.00	-
Strip Mall	0.08	1.09
Unrefrigerated Warehouse-No Rail	25.22	328.33
Project Total	**27.125**	**353.19**

Electricity Intensity Factors	kWh/Mgal
Electricity Factor - Supply	9,727
Electricity Factor - Treat	111
Electricity Factor - Distribute	1,272
Electricity Factor - Wastewater Treatment	1,911

Source: California Air Resources Board, CalEEMod, Version 2016.3.2.

Water Demand based on Project Water supply Assessment

Sewage Facilities Charge, Sewage Generation Factor for Residential and Commercial Categories, 2012.

Natural Gas	kBtu/yr	cubic foot (cf)
Project		
City Park	0	-
General Office Building	25,002	24,156
High Turnover (Sit Down Restaurant)	357,012	344,939
Parking Lot	0	-
Strip Mall	1,141	1,102
Unrefrigerated Warehouse-No Rail	93,774	90,602
Total	**476,928**	**460,800**

Source: California Air Resources Board, CalEEMod, Version 2016.3.2.

Conversion factor of 1,035 Btu per cubic foot based on United States Energy Information Administration data (see: USEIA, Natural Gas, Heat Content of Natural Gas Consumed, February 28, 2018, https://www.eia.gov/dnav/ng/ng_cons_heat_a_EPG0_VGTH_btucf_a.htm. Accessed March 2020.)

Natural Gas	million cubic foot (cf)
SoCalGas 2024	2,462
Project Annual	0.461
Net Project Annual	0.46
Percent Net Project of SoCalGas	0.0187%

Source: California Gas and Electric Utilities, 2020 California Gas Report, p. 145,2020.

21611 Perry Street
Project Energy Analysis
Fuel Usage from VMT

Annual VMT (Traffic Study)[4]: 1,173,896 miles/year

Fuel Type:[1]	Gasoline	Diesel	Electricity	Natural Gas	Plug-in Hybrid
Percent:	92.2%	3.3%	2.8%	0.2%	1.6%
Miles per Gallon Fuel:	24.2	8.5	-	4.1	56.3
Annual VMT by Fuel Type (miles):	1,081,869	38,394	32,534	2,025	19,073
Annual Fuel Usage (gallons):	44,633	4,509	-	71	339

	Los Angeles County Fuel Consumption [3]	
	Gasoline	Diesel
Los Angeles County:	3,559,000,000	584,745,763
Mobile	44,972	4,509
Project Total	44,972	4,509
Existing Total	-	-
Net Project Total	44,972	4,509
Percent Net Project of Los Angeles County:	0.001%	0.001%

Notes:

1. California Air Resources Board, EMFAC2021 (LA County; Annual; 2024', Aggregate Fleet).
2. Assumes electric vehicles would replace traditional gasoline-fueled vehicles.
3. California Energy Commission, California Retail Fuel Outlet Annual Reporting (CEC-A15) Results, 2019. Available at: https://ww2.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html. Accessed May 2021. Diesel is adjusted to account for retail (48%) and non-retail (52%) diesel sales.

Appendix E
Geotechnical Investigation

ESA

GEOTECHNICAL INVESTIGATION

PROPOSED COMMERCIAL DEVELOPMENT
21611 SOUTH PERRY STREET
CARSON, CALIFORNIA
APN: 7327-010-014

GEOCON
WEST, INC.
GEOTECHNICAL
ENVIRONMENTAL
MATERIALS

PREPARED FOR
FARING CAPITAL, LLC
WEST HOLLYWOOD, CALIFORNIA

PROJECT NO. W1301-06-01

APRIL 23, 2021

GEOCON
WEST, INC.
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS

Project No. W1301-06-01
April 23, 2021

Faring Capital, LLC
659 North Robertson Boulevard,
West Hollywood, California 90069

Attention: Mr. Darren Embry

Subject: GEOTECHNICAL INVESTIGATION
PROPOSED COMMERCIAL DEVELOPMENT
21611 SOUTH PERRY STREET
CARSON, CALIFORNIA
APN: 7327-010-014

Dear Mr. Embry:

In accordance with your authorization of our proposal dated December 11, 2020, we have prepared this geotechnical investigation report for the proposed commercial development located at 21611 South Perry Street in the City of Carson, California. The accompanying report presents the findings of our study, and our conclusions and recommendations pertaining to the geotechnical aspects of proposed design and construction. Based on the results of our investigation, it is our opinion that the site can be developed as proposed, provided the recommendations of this report are followed and implemented during design and construction.

If you have any questions regarding this report, or if we may be of further service, please contact the undersigned.

Very truly yours,

GEOCON WEST, INC.

REGISTERED PROFESSIONAL ENGINEER
JELISA THOMAS ADAMS
GE3092
GEOTECHNICAL
STATE OF CALIFORNIA

PROFESSIONAL GEOLOGIST
SUSAN FRANZEN KIRKGARD
No. 1754
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

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GEOTECHNICAL INVESTIGATION

1. PURPOSE AND SCOPE

This report presents the results of a geotechnical investigation for the proposed commercial development located at 21611 South Perry Street in the City of Carson, California (see Vicinity Map, Figure 1). The purpose of the investigation was to evaluate subsurface soil and geologic conditions underlying the site and, based on conditions encountered, to provide conclusions and recommendations pertaining to the geotechnical aspects of design and construction.

The scope of this investigation included a review of prior environmental reports for the site provided by the client, a site reconnaissance, field exploration, laboratory testing, engineering analysis, and the preparation of this report. The site was explored on February 9, 2021 by drilling five 8-inch diameter borings using a truck-mounted hollow-stem auger drilling machine and advancing five cone penetrometer tests (CPTs). The borings were excavated to depths between approximately 20½ and 51 feet beneath the existing ground surface. The CPTs were advanced to depths of approximately 60 feet below existing ground surface. The approximate locations of the exploratory borings and CPTs are depicted on the Site Plan (see Figure 2). A detailed discussion of the field investigation, including the boring and CPT logs, is presented in Appendix A.

Laboratory tests were performed on selected soil samples obtained during the investigation to determine pertinent physical and chemical soil properties. Appendix B presents a summary of the laboratory test results.

The recommendations presented herein are based on analysis of the data obtained during the investigation and our experience with similar soil and geologic conditions. References reviewed to prepare this report are provided in the *List of References* section.

If project details vary significantly from those described herein, Geocon should be contacted to determine the necessity for review and possible revision of this report.

2. SITE AND PROJECT DESCRIPTION

The subject site is an approximately 2.6-acre irregularly shaped parcel located at 21611 South Perry Street in the City of Carson, California. The site is currently vacant. The site is bounded by South Perry Street on the east, by the Dominguez Channel to the west, by one- to two-story single-family homes to the north, and by East Carson Street to the south. The site is relatively level, with no pronounced highs or lows. Surface water drainage at the site appears to be by sheet flow along the existing ground contours to the city streets.

Based on the information provided by the Client, it is our understanding that the proposed development will consist of three 2-story self-storage structures. Based on preliminary plans it is anticipated that the development will be approximately 25 feet in height and will be constructed at or near present grade (see Figure 2).

Based on the preliminary nature of the design at this time, wall and column loads were not available. It is anticipated that column loads for the proposed structures will be up to 300 kips, and wall loads will be up to 3 kips per linear foot.

Once the design phase and foundation loading configuration proceeds to a more finalized plan, the recommendations within this report should be reviewed and revised, if necessary. Any changes in the design, location or elevation of any structure, as outlined in this report, should be reviewed by this office. Geocon should be contacted to determine the necessity for review and possible revision of this report.

3. BACKGROUND

Prior environmental reports were prepared for the site and provided for our review, and include the following:

Phase 1 Environmental Site Assessment, 21611 S. Perry Street, Carson, CA. 90745-1613, Prepared by Weis Environmental, dated January 25, 2021.

2020 First Semi-Annual Groundwater Monitoring Report, January Through June 2020, Dominguez Channel Release, Carson, California, Prepared by AECOM, dated July 14, 2020.

Based on the prior reports, petroleum hydrocarbon impacted soil and groundwater were previously identified at the site that originated from on-site underground storage tanks (USTs) and migration of contaminants from off-site sources. AECOM (formerly URS) developed a workplan that developed cleanup goals and excavation limits to remove impacted soils that was approved by the LARWQCB. In 2014, approximately 4,800 cubic yards of impacted soils were excavated from four areas and removed from the site. The excavations were approximately 5 to 8 feet deep and were backfilled with clean import soils (Weis Environmental, 2021). The approximate locations and depths of these areas are indicated on the Site Plan (see Figure 2). The backfill was reportedly placed, compacted, and tested as a certified backfill material; however, a copy of the compaction report was not included as an exhibit. Therefore, for the purposes of this report, the backfill is considered to be uncertified fill.

Also, as part of the prior site remediation, groundwater monitoring wells were installed at the site and the immediately surrounding area. The monitoring wells present at the site are limited to the eastern, western, and southern property boundaries. Groundwater monitoring is ongoing in these wells in compliance with a semi-annual groundwater monitoring program required by the LARWQCB.

Based on documents included in the referenced environmental reports, the known soil and groundwater impacts are within acceptable levels for commercial use and further assessment or remediation is not required. However, a soil management plan (SMP) is anticipated required for further development of the site. Development of a soil management plan is beyond the scope of the Geotechnical Investigation.

4. GEOLOGIC SETTING

The site is located in the southern portion of the Los Angeles Basin, a coastal plain bounded by the Santa Monica Mountains on the north, the Elysian Hills and Repetto Hills on the northeast, the Puente Hills and the Whittier Fault on the east, the Palos Verdes Peninsula and Pacific Ocean on the west and south, and the Santa Ana Mountains and San Joaquin Hills on the southeast. The basin is underlain by a deep structural depression which has been filled by both marine and continental sedimentary deposits underlain by a basement complex of igneous and metamorphic composition. Regionally, the site is located within the northern portion of the Peninsular Ranges geomorphic province. This geomorphic province is characterized by northwest-trending physiographic and geologic features such as the nearby Newport-Inglewood Fault Zone located approximately 2.7 miles to the east-northeast.

5. SOIL AND GEOLOGIC CONDITIONS

Based on our field investigation and published geologic maps of the area, the site is underlain by artificial fill and Holocene age alluvium consisting sand, silt, and clay (California Geological Survey, 2010). Detailed stratigraphic profiles of the materials encountered at the site are provided on the boring logs in Appendix A.

5.1 Artificial Fill

Artificial fill was encountered in our explorations to depths ranging from 3 to 9 feet below existing ground surface. The deep fill, observed in boring B3, is associated with an area of a former UST removal. The artificial generally consists of light brown to brown or grayish brown sand and silty sand. The artificial fill is characterized as fine-grained with some medium-grained, moist, and loose to dense. The fill is likely the result of past grading, UST removal and environmental remediation, and past construction activities at the site. Deeper fill may exist between excavations and in other portions of the site that were not directly explored.

5.2 Alluvium

Holocene age alluvium was encountered beneath the fill to the maximum depth explored (51 feet below the ground surface). The alluvium generally consists of light brown to brown, olive brown, or gray to dark gray interbedded clay, sandy clay, silt, sandy silt, silty sand and clayey sand. The alluvial soils are characterized as primarily fine-grained, moist to wet, and loose to dense or soft to stiff.

6. GROUNDWATER

A review of the Seismic Hazard Zone Report for the Torrance Quadrangle (California Division of Mines and Geology [CDMG], 1998) indicates the historically highest groundwater level in the area is approximately 9 feet beneath the ground surface. Groundwater information presented in this document is generated from data collected in the early 1900's to the late 1990s. Based on current groundwater basin management practices, it is unlikely that groundwater levels will ever exceed the historic high levels.

Groundwater was encountered in borings B1 and B3 at depths of 12.5 feet and 17.6 feet beneath the existing ground surface, respectively. Additionally, readings from groundwater monitoring wells established on the site were taken on February 23, 2021. The locations of the accessible monitoring wells are indicated on the site plan (see Figure 2) and a summary of groundwater levels at the time of the investigation is provided in the table below.

Monitoring Well Readings

Well ID	MW-3	MW-4	MW-5	MW-7A	MW-8A	MW-9B
Depth to GW (Below Ground Surface)	12.0'	13.17'	12.25'	12.33'	12.67'	14.67'

Based on the depth to groundwater and the on-grade nature of the development, groundwater is not expected to have a detrimental effect on the project. Groundwater may be encountered during construction in deep drilled excavations, such as for ground improvement or elevator pistons. It is not uncommon for groundwater levels to vary seasonally or for groundwater seepage conditions to develop where none previously existed, especially in impermeable fine-grained soils which are heavily irrigated or after seasonal rainfall. In addition, recent requirements for stormwater infiltration could result in shallower seepage conditions in the immediate site vicinity. Proper surface drainage of irrigation and precipitation will be critical for future performance of the project. Recommendations for drainage are provided in the S*urface Drainage* section of this report (see Section 8.20).

7. GEOLOGIC HAZARDS

7.1 Surface Fault Rupture

The numerous faults in Southern California include Holocene-active, pre-Holocene, and inactive faults. The criteria for these major groups are based on criteria developed by the California Geological Survey (CGS, formerly known as CDMG) for the Alquist-Priolo Earthquake Fault Zone Program (CGS, 2018). By definition, a Holocene-active fault is one that has had surface displacement within Holocene time (about the last 11,700 years). A pre-Holocene fault has demonstrated surface displacement during Quaternary time (approximately the last 1.6 million years) but has had no known Holocene movement. Faults that have not moved in the last 1.6 million years are considered inactive.

The site is not within a state-designated Alquist-Priolo Earthquake Fault Zone for surface fault rupture hazards (CGS, 2021a; CGS, 2021b; CDMG 1986). No Holocene-active or pre-Holocene active faults with the potential for surface fault rupture are known to pass directly beneath the site. Therefore, the potential for surface rupture due to faulting occurring beneath the site during the design life of the proposed development is considered low. However, the site is located in the seismically active Southern California region, and could be subjected to moderate to strong ground shaking in the event of an earthquake on one of the many active Southern California faults. The faults in the vicinity of the site are shown in Figure 3, Regional Fault Map.

The closest surface trace of an active fault to the site is the Newport-Inglewood Fault Zone located approximately 2.7 miles to the east-northeast (USGS, 2006; CDMG, 1986). Other nearby active faults are the Palos Verdes Fault, the Cabrillo Fault, and the Whittier Fault located approximately 4.2 miles south-southwest, 8.2 miles south, and 16 miles northeast of the site, respectively. The active San Andreas Fault Zone is located approximately 48 miles northeast of the site.

Several buried thrust faults, commonly referred to as blind thrusts, underlie the Los Angeles Basin at depth. These faults are not exposed at the ground surface and are typically identified at depths greater than 3.0 kilometers. The October 1, 1987, M_w 5.9 Whittier Narrows earthquake and the January 17, 1994, M_w 6.7 Northridge earthquake were a result of movement on the Puente Hills Blind Thrust and the Northridge Thrust, respectively. These thrust faults and others in the Los Angeles area are not exposed at the surface and do not present a potential surface fault rupture hazard at the site; however, these deep thrust faults are considered active features capable of generating future earthquakes that could result in moderate to significant ground shaking at the site.

7.2 Seismicity

As with all of Southern California, the site has experienced historic earthquakes from various regional faults. The seismicity of the region surrounding the site was formulated based on research of an electronic database of earthquake data. The epicenters of recorded earthquakes with magnitudes equal to or greater than 5.0 in the site vicinity are depicted on Figure 4, Regional Seismicity Map. A partial list of moderate to major magnitude earthquakes that have occurred in the Southern California area within the last 100 years is included in the following table.

LIST OF HISTORIC EARTHQUAKES

Earthquake (Oldest to Youngest)	Date of Earthquake	Magnitude	Distance to Epicenter (Miles)	Direction to Epicenter
Near Redlands	July 23, 1923	6.3	59	E
Long Beach	March 10, 1933	6.4	22	SE
Tehachapi	July 21, 1952	7.5	91	NW
San Fernando	February 9, 1971	6.6	41	NNW
Whittier Narrows	October 1, 1987	5.9	19	NE
Sierra Madre	June 28, 1991	5.8	33	NE
Landers	June 28, 1992	7.3	107	ENE
Big Bear	June 28, 1992	6.4	85	ENE
Northridge	January 17, 1994	6.7	31	NW
Hector Mine	October 16, 1999	7.1	125	ENE
Ridgecrest	July 5, 2019	7.1	138	NNE

The site could be subjected to strong ground shaking in the event of an earthquake. However, this hazard is common in Southern California and the effects of ground shaking can be mitigated if the proposed structures are designed and constructed in conformance with current building codes and engineering practices.

7.3 Seismic Design Criteria

The following table summarizes the site-specific design criteria obtained from the 2019 California Building Code (CBC; Based on the 2018 International Building Code [IBC] and NEHRP-2015), Chapter 16 Structural Design, Section 1613, Earthquake Loads. The data was calculated using the online application *Seismic Design Maps*, provided by OSHPD. The short spectral response uses a period of 0.2 second. We evaluated the Site Class based on the discussion in Section 1613.2.2 of the 2019 CBC and Section 11.4.3 of NEHRP-2015. The values presented on the following page are for the risk-targeted maximum considered earthquake (MCE_R).

2019 CBC SEISMIC DESIGN PARAMETERS

Parameter	Value	2019 CBC Reference
Site Class	D	Section 1613.2.2
MCE_R Ground Motion Spectral Response Acceleration – Class B (short), S_S	1.711g	Figure 1613.2.1(1)
MCE_R Ground Motion Spectral Response Acceleration – Class B (1 sec), S_1	0.618g	Figure 1613.2.1(2)
Site Coefficient, F_A	1	Table 1613.2.3(1)
Site Coefficient, F_V	1.7*	Table 1613.2.3(2)
Site Class Modified MCE_R Spectral Response Acceleration (short), S_{MS}	1.711g	Section 1613.2.3 (Eqn 16-36)
Site Class Modified MCE_R Spectral Response Acceleration – (1 sec), S_{M1}	1.05g*	Section 1613.2.3 (Eqn 16-37)
5% Damped Design Spectral Response Acceleration (short), S_{DS}	1.141g	Section 1613.2.4 (Eqn 16-38)
5% Damped Design Spectral Response Acceleration (1 sec), S_{D1}	0.7g*	Section 1613.2.4 (Eqn 16-39)
Note: *Per Section 11.4.8 of ASCE/SEI 7-16, a ground motion hazard analysis shall be performed for projects for Site Class "E" sites with Ss greater than or equal to 1.0g and for Site Class "D" and "E" sites with S1 greater than 0.2g. Section 11.4.8 also provides exceptions which indicates that the ground motion hazard analysis may be waived provided the exceptions are followed. Using the code based values presented in the table above, in lieu of a performing a ground motion hazard analysis, requires the exceptions outlined in ASCE 7-16 Section 11.4.8 be followed.		

The table below presents the mapped maximum considered geometric mean (MCE_G) seismic design parameters for projects located in Seismic Design Categories of D through F in accordance with NEHRP-2015.

ASCE 7-16 PEAK GROUND ACCELERATION

Parameter	Value	ASCE 7-16 Reference
Mapped MCE_G Peak Ground Acceleration, PGA	0.748g	Figure 22-7
Site Coefficient, F_{PGA}	1.1	Table 11.8-1
Site Class Modified MCE_G Peak Ground Acceleration, PGA_M	0.823g	Section 11.8.3 (Eqn 11.8-1)

The Maximum Considered Earthquake Ground Motion (MCE) is the level of ground motion that has a 2 percent chance of exceedance in 50 years, with a statistical return period of 2,475 years. According to the 2019 California Building Code and ASCE 7-16, the MCE is to be utilized for the evaluation of liquefaction, lateral spreading, seismic settlements, and it is our understanding that the intent of the Building code is to maintain "Life Safety" during a MCE event. The Design Earthquake Ground Motion (DE) is the level of ground motion that has a 10 percent chance of exceedance in 50 years, with a statistical return period of 475 years.

Deaggregation of the MCE peak ground acceleration was performed using the USGS online Unified Hazard Tool, 2014 Conterminous U.S. Dynamic edition (v4.2.0). The result of the deaggregation analysis indicates that the predominant earthquake contributing to the MCE peak ground acceleration is characterized as a 6.87 magnitude event occurring at a hypocentral distance of 8.35 kilometers from the site.

Deaggregation was also performed for the Design Earthquake (DE) peak ground acceleration, and the result of the analysis indicates that the predominant earthquake contributing to the DE peak ground acceleration is characterized as a 6.68 magnitude occurring at a hypocentral distance of 13.48 kilometers from the site.

Conformance to the criteria in the above tables for seismic design does not constitute any kind of guarantee or assurance that significant structural damage or ground failure will not occur if a large earthquake occurs. The primary goal of seismic design is to protect life, not to avoid all damage, since such design may be economically prohibitive.

7.4 Liquefaction Potential

Liquefaction is a phenomenon in which loose, saturated, relatively cohesionless soil deposits lose shear strength during strong ground motions. Primary factors controlling liquefaction include intensity and duration of ground motion, gradation characteristics of the subsurface soils, in-situ stress conditions, and the depth to groundwater. Liquefaction is typified by a loss of shear strength in the liquefied layers due to rapid increases in pore water pressure generated by earthquake accelerations.

The current standard of practice, as outlined in the "Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Liquefaction in California" and "Special Publication 117A, Guidelines for Evaluating and Mitigating Seismic Hazards in California" requires liquefaction analysis to a depth of 50 feet below the lowest portion of the proposed structure. Liquefaction typically occurs in areas where the soils below the water table are composed of poorly consolidated, fine to medium-grained, primarily sandy soil. In addition to the requisite soil conditions, the ground acceleration and duration of the earthquake must also be of a sufficient level to induce liquefaction.

A review of the State of California Seismic Hazard Zone Map for the Torrance Quadrangle (CDMG, 1999) indicates that the site is located in an area designated as having a potential for liquefaction. Also, the City of Carson (2002) indicates the site is located within an area that has a potential for liquefaction.

The Standard Penetration Test (SPT) blow counts obtained from boring B3 were compared with the blow counts estimated from the CPT soundings. SPTs were performed in boring B3 at intervals of approximately 5 feet. In order to supplement the SPT blow count data, select California Modified Sampler blow count data were converted to equivalent SPT blow counts based on a correlation factor of 0.55 (Rogers, 2006). The field collected blow counts were corrected for hammer efficiency to N60 blow count values. The boring N60 values were compared with the N60 values generated by the program CpetIT (Version 3.2.1.7). The comparison of CPT-3 and boring B3 are shown as Figure 5. It is our opinion that the boring and CPT N60 values show a very reasonable correlation and that analysis of the liquefaction potential may be based on the CPT data.

Liquefaction analyses of the CPT soundings were performed using the program CLiq (Version 3.0.3.2). This program utilizes the 2001 NCEER method of analysis. This semi-empirical method is based on correlations with the data collected from the CPT soundings.

The liquefaction analysis was performed for a Design Earthquake level by using a historic groundwater level of 9 feet below the ground surface, a magnitude 6.68 earthquake, and a peak horizontal acceleration of 0.549g (⅔PGAM). The results of the enclosed liquefaction analyses included herein for CPTs 1 through 5 indicate that the alluvial soils below the design groundwater level could be susceptible to the liquefaction induced settlements summarized in the table below during Design Earthquake ground motion. A summary of the anticipated liquefaction induced settlements is provided as Figure 6; calculations and output from CLiq are provided as Appendix C.

Liquefaction Induced Settlements (Design Earthquake)

CPT Number	CPT-1	CPT-2	CPT-3	CPT-4	CPT-5
Liquefaction Settlement (in)	0.43	0.11	0.20	0.00	0.28

It is our understanding that the intent of the Building Code is to maintain "Life Safety" during Maximum Considered Earthquake level events. Therefore, additional analysis was performed to evaluate the potential for liquefaction during a MCE event. The structural engineer should evaluate the proposed structure for the anticipated MCE liquefaction induced settlements and verify that anticipated deformations would not cause the foundation system to lose the ability to support the gravity loads and/or cause collapse of the structure.

The liquefaction analysis performed for the Maximum Considered Earthquake level by using a historic groundwater level of 9 feet below the ground surface, a magnitude 6.87 earthquake, and a peak horizontal acceleration of 0.823g (PGAM). The results of the enclosed liquefaction analyses included herein for CPTs 1 through 5 indicate that the alluvial soils below the design groundwater level could be susceptible to the liquefaction induced settlements summarized in the table below during Maximum Considered Earthquake ground motion. A summary of the anticipated liquefaction induced settlements is provided as Figure 7.

Liquefaction Induced Settlements (Maximum Considered Earthquake)

CPT Number	CPT-1	CPT-2	CPT-3	CPT-4	CPT-4
Liquefaction Settlement (in)	0.80	0.19	0.33	0.00	0.41

7.5 Seismically Induced Settlement

Dynamic compaction of dry and loose sands may occur during a major earthquake. Typically, settlements occur in thick beds of such soils. The seismically induced settlement calculations were performed in accordance with the American Society of Civil Engineers, Technical Engineering and Design Guides as adapted from the US Army Corps of Engineers, No. 9.

The calculations provided herein in Figures 8 and 9 indicate that the soil above the historic high groundwater level of 9 feet would not be susceptible to significant settlement as a result of the Design Earthquake peak ground acceleration ($\frac{2}{3}PGA_M$).

7.6 Lateral Spreading

Due to the presence of the Dominguez Channel located to the west of the site, the potential for lateral spread was evaluated. Lateral spread occurs as a result of liquefaction induced lateral ground movement and typically occurs due to the presence of a slope comprised of and/or underlain by liquefiable soils.

Analysis of the potential for lateral spread was performed using the program CLiq (Version 1.7). The program utilizes the method proposed by Zhang et. al. (2004) to evaluate the potential for lateral spread and the resulting lateral displacements.

This method of analysis recommends evaluating the potential for lateral displacements to a distance of 50H from the slope, where H is the height of the slope. Beyond a horizontal distance of 50H lateral displacements due to the presence of a slope are not anticipated to occur. This method of analysis considers soils to a depth of twice the total slope height as potentially subject to lateral spread, up to a distance of 50H away from the toe of the slope.

The drainage channel is trapezoidal in shape and consists of two slopes approximately 12 feet in height inclined at a gradient of approximately 2:1 (estimated via satellite images). The proposed improvements have a minimum setback of 90 feet from the toe of the drainage channel. Therefore, lateral displacements using a horizontal setback of 90 feet was utilized.

Based on the results of the analyses it is anticipated that up to 10 inches of lateral displacements towards the drainage channel could occur during a Design Earthquake ground motion. The lateral displacements are anticipated to occur between depths of 10 and 15 feet below the ground surface. Calculations and output from CLiq are provided as Appendix C.

The grading and foundation design recommendations presented in this report are intended to minimize the effects of lateral spread on the proposed improvements.

7.7 Slope Stability

The topography at the site is relatively level and the topography in the immediate site vicinity slopes gently to the west-southwest. The County of Los Angeles Safety Element (Leighton, 1990) indicates the site is not located within an area identified as a "hillside area" or having a potential for slope instability. Additionally, the site is not within an area identified as having a potential for seismic slope instability (CDMG, 1999). There are no known landslides near the site, nor is the site in the path of any known or potential landslides. Therefore, the potential for slope stability hazards to adversely affect the proposed development is considered low.

7.8 Earthquake-Induced Flooding

Earthquake-induced flooding is inundation caused by failure of dams or other water-retaining structures due to earthquakes. Based on a review of the County of Los Angeles Safety Element (Leighton, 1990), the site is not located within a potential inundation area for an earthquake-induced dam failure. Therefore, the probability of earthquake-induced flooding is considered very low.

7.9 Tsunamis, Seiches, and Flooding

The site is not located within a coastal area. Therefore, tsunamis are not considered a significant hazard at the site.

Seiches are large waves generated in enclosed bodies of water in response to ground shaking. No major water-retaining structures are located immediately up gradient from the project site. Therefore, flooding resulting from a seismic-induced seiche is considered unlikely.

The site is within an area of minimal flooding (Zone X) as defined by the Federal Emergency Management Agency (FEMA, 2021; LACDPW, 2021).

7.10 Oil Fields & Methane Potential

Based on a review of the California Geologic Energy Management Division (CalGEM) Well Finder Website, the site is not located within an oil field and oil or gas wells are not documented in the immediate site vicinity (CalGEM, 2021). However, due to the voluntary nature of record reporting by the oil well drilling companies, wells may be improperly located or not shown on the location map and undocumented wells could be encountered during construction. Any wells encountered during construction will need to be properly abandoned in accordance with the current requirements of the CalGEM.

Since the site is not located within an oil field, the potential for methane or other volatile gases associated with oil and gas fields to be present at the site is considered low. However, as discussed in the Background section of this report (see Section 3), due to the site history there is a potential for low levels of volatile gases to be present, particularly during site grading. Should it be determined that a methane study or further environmental studies are required for the proposed development, it is recommended that a qualified methane or environmental consultant be retained to perform the study and provide mitigation measures as necessary.

7.11 Subsidence

Subsidence occurs when a large portion of land is displaced vertically, usually due to the withdrawal of groundwater, oil, or natural gas. Soils that are particularly subject to subsidence include those with high silt or clay content. The site is not located within an area of known ground subsidence. No large-scale extraction of groundwater, gas, oil, or geothermal energy is occurring or planned at the site or in the general site vicinity. There appears to be little or no potential for ground subsidence due to withdrawal of fluids or gases at the site.

8. CONCLUSIONS AND RECOMMENDATIONS

8.1 General

8.1.1 It is our opinion that neither soil nor geologic conditions were encountered during the investigation that would preclude construction of the proposed development provided the recommendations presented herein are followed and implemented during design and construction.

8.1.2 Up to 5 feet of existing artificial fill was encountered during the site investigation with localized areas of deeper fill of to 9 feet in depth. The existing fill encountered is believed to be the result of past grading and construction activities at the site. Deeper fill may exist in other areas of the site that were not directly explored. It is our opinion that the existing fill, in its present condition, is not suitable for direct support of proposed foundations or slabs. The existing fill and site soils are suitable for re-use as engineered fill provided the recommendations in the Grading section of this report are followed (see Section 8.4).

8.1.3 The enclosed liquefaction and seismically-induced settlement analyses indicate that the site soils could be susceptible to approximately ½ inch of total settlement as a result of the Design Earthquake peak ground acceleration ($\frac{2}{3}PGA_M$). Differential settlement at the foundation level is anticipated to be less than ¼ inch over a distance of 20 feet.

8.1.4 The results of the field data and laboratory testing indicate that the upper alluvial soils are relatively soft and compressible in their current condition (see Figure B5 thru B17) and could yield excessive static and differential settlements upon application of foundation loads.

8.1.5 The foundation design recommendations presented herein are intended to minimize the effects of settlement from liquefaction and consolidation on the proposed improvements. Based on our discussions with you, we understand that the preferred foundation system is a reinforced concrete mat foundation deriving support in newly placed engineered fill. Recommendations for a reinforced mat foundation system is provided in Sections 8.7 of this report.

8.1.6 For support of a mat foundation, it is recommended that the upper 6 feet of existing earth materials within the proposed building footprint areas be excavated and properly compacted for foundation and slab support. Deeper excavations should be conducted as necessary to remove deeper artificial fill or soft alluvial soil at the direction of the Geotechnical Engineer (a representative of Geocon). Proposed building foundations should be underlain by a minimum of 4 feet of newly placed engineered fill. The excavation should extend laterally a minimum distance of 3 feet beyond the building footprint area, including building appurtenances, or a distance equal to the depth of fill below the foundation, whichever is greater. The contractor should be aware that up to 9 feet of artificial fill was encountered in Boring B3. The limits of existing fill and/or soft alluvial soils removal will be verified by the Geocon representative during site grading activities. All excavations must be observed and approved in writing by the Geotechnical Engineer (a representative of Geocon).

8.1.7 It is anticipated that the recommended grading can be achieved with sloping measures. However, if excavations in close proximity to an adjacent property line and/or structure are required, special excavation measures in order to maintain lateral support of existing adjacent improvements will be required. Excavation recommendations are provided in the *Temporary Excavations* section of this report (Section 8.18).

8.1.8 Based on the relatively shallow groundwater table, the upper alluvial soils have the potential to be very moist and the grading contractor should be aware that the soils may be above optimum moisture content. If the soils are more than 3 percent above the optimum moisture content at the time of construction the soils will likely require some spreading and drying activities in order to achieve proper compaction. Bottom stabilization may also be necessary. Recommendations for bottom stabilization and earthwork are provided in the *Grading* section of this report (see Section 8.4).

8.1.9 Foundations for small outlying structures, such as block walls up to 6 feet in height, planter walls or trash enclosures, which will not be tied to the proposed structure, may be supported on conventional foundations deriving support on a minimum of 12 inches of newly placed engineered fill which extends laterally at least 12 inches beyond the foundation area. Where excavation and compaction cannot be performed or is undesirable, foundations may derive support directly in the competent undisturbed alluvial soils and should be deepened as necessary to maintain a minimum 12 inch embedment into the recommended bearing materials. If the soils exposed in the excavation bottom are soft or loose, compaction of the soils will be required prior to placing steel or concrete. Compaction of the foundation excavation bottom is typically accomplished with a compaction wheel or mechanical whacker and must be observed and approved in writing by a Geocon representative.

8.1.10 Where new paving is to be placed, it is recommended that all existing fill and soft alluvial soils be excavated and properly compacted for paving support. The client should be aware that excavation and compaction of all existing fill and soft alluvial soils in the area of new paving is not required; however, paving constructed over existing uncertified fill or unsuitable alluvial soil may experience increased settlement and/or cracking, and may therefore have a shorter design life and increased maintenance costs. As a minimum, the upper 12 inches of subgrade soil should be scarified and properly compacted for paving support. Paving recommendations are provided in *Preliminary Pavement Recommendations* section of this report (see Section 8.13).

8.1.11 Based on the shallow groundwater and impermeable nature of the fine grained soils which underly the site, infiltration of stormwater at this site is not considered feasible. Infiltration of stormwater at this site would be considered detrimental to the project. It is recommended that stormwater be retained, filtered, and discharged in accordance with the requirements of the local governing agency.

8.1.12 It should be noted that implementation of the recommendations presented herein is not intended to completely prevent damage to the structure during the occurrence of strong ground shaking as a result of nearby earthquakes. It is intended that the structure be designed in such a way that the amount of damage incurred as a result of strong ground shaking be minimized.

8.1.13 It is recommended that flexible utility connections be utilized for all rigid utilities to minimize or prevent damage to utilities from minor differential movements.

8.1.14 Once the design and foundation loading configuration for the proposed structure proceeds to a more finalized plan, the recommendations within this report should be reviewed and revised, if necessary. Based on the final foundation loading configurations, the potential for settlement should be reevaluated by this office.

8.1.15 Any changes in the design, location or elevation of improvements, as outlined in this report, should be reviewed by this office. Geocon should be contacted to determine the necessity for review and possible revision of this report.

8.2 Soil and Excavation Characteristics

8.2.1 The in-situ soils can be excavated with moderate effort using conventional excavation equipment. Some caving should be anticipated in unshored excavations, especially where granular soils are encountered.

8.2.2 It is the responsibility of the contractor to ensure that all excavations and trenches are properly shored and maintained in accordance with applicable OSHA rules and regulations to maintain safety and maintain the stability of existing adjacent improvements.

8.2.3 All onsite excavations must be conducted in such a manner that potential surcharges from existing structures, construction equipment, and vehicle loads are resisted. The surcharge area may be defined by a 1:1 projection down and away from the bottom of an existing foundation or vehicle load. Penetrations below this 1:1 projection will require special excavation measures such as sloping or shoring. Excavation recommendations are provided in the *Temporary Excavations* section of this report (see Section 8.18).

8.2.4 The upper 5 feet of existing site soils encountered during the investigation are considered to have a "medium" expansive potential (EI = 63) and are classified as "expansive" in accordance with the 2019 California Building Code (CBC) Section 1803.5.3. The recommendations presented herein assume that the building foundations and slabs will derive support in these materials.

8.3 Minimum Resistivity, pH, and Water-Soluble Sulfate

8.3.1 Potential of Hydrogen (pH) and resistivity testing, as well as chloride content testing, were performed on representative samples of on-site material to generally evaluate the corrosion potential to surface utilities. The tests were performed in accordance with California Test Method Nos. 643 and 422 and indicate that the soils are considered "moderately corrosive" to "severely corrosive" with respect to corrosion of buried ferrous metals on site. The results are presented in Appendix B (Figure B23) and should be considered for design of underground structures. Due to the corrosive potential of the soils, it is suggested that ABS pipes be considered in lieu of cast-iron for subdrains and retaining wall drains beneath the structure.

8.3.2 Laboratory tests were performed on representative samples of the site materials to measure the percentage of water-soluble sulfate content. Results from the laboratory water-soluble sulfate tests are presented in Appendix B (Figure B23) and indicate that the on-site materials possess a sulfate exposure class of "S0" to concrete structures as defined by 2019 CBC Section 1904 and ACI 318-14 Table 19.3.1.1.

8.3.3 Geocon West, Inc. does not practice in the field of corrosion engineering and mitigation. If corrosion sensitive improvements are planned, it is recommended that a corrosion engineer be retained to evaluate corrosion test results and incorporate the necessary precautions to avoid premature corrosion of buried metal pipes and concrete structures in direct contact with the soils.

8.4 Grading

8.4.1 Grading is anticipated to include preparation of building pads and paving subgrade, excavation of site soils for proposed foundations and utility trenches, as well as placement of backfill for utility trenches.

8.4.2 A preconstruction conference should be held at the site prior to the beginning of grading operations with the owner, contractor, civil engineer and soil engineer in attendance. Special soil handling requirements can be discussed at that time.

8.4.3 Earthwork should be observed, and compacted fill tested by representatives of Geocon West, Inc. The existing fill and alluvial soils encountered during exploration are suitable for reuse as engineered fill, provided any encountered oversize material (greater than 6 inches) and any encountered deleterious debris is removed.

8.4.4 Grading should commence with the removal of all existing vegetation and existing improvements from the area to be graded. Deleterious debris such as wood and root structures should be exported from the site and should not be mixed with the fill soils. Asphalt and concrete should not be mixed with the fill soils unless approved by the Geotechnical Engineer. All existing underground improvements planned for removal should be completely excavated and the resulting depressions properly backfilled in accordance with the procedures described herein. Once a clean excavation bottom has been established it must be observed and approved in writing by the Geotechnical Engineer (a representative of Geocon West, Inc.).

8.4.5 For support of a mat foundation, it is recommended that the upper 6 feet of existing earth materials within the proposed building footprint areas be excavated and properly compacted for foundation and slab support. Deeper excavations should be conducted as necessary to remove deeper artificial fill or soft alluvial soil at the direction of the Geotechnical Engineer (a representative of Geocon). Proposed building foundations should be underlain by a minimum of 4 feet of newly placed engineered fill. The excavation should extend laterally a minimum distance of 3 feet beyond the building footprint area, including building appurtenances, or a distance equal to the depth of fill below the foundation, whichever is greater. The contractor should be aware that up to 9 feet of artificial fill was encountered in Boring B3. The limits of existing fill and/or soft alluvial soils removal will be verified by the Geocon representative during site grading activities.

8.4.6 All excavations must be observed and approved in writing by the Geotechnical Engineer (a representative of Geocon). If determined to be excessively soft, stabilization of the bottom of the excavation may be required in order to provide a firm working surface upon which engineered fill can be placed and heavy equipment can operate.

8.4.7 Prior to placing fill or constructing proposed improvements, a stable excavation bottom must be established. In areas where the subgrade is saturated or soft, proper compaction will likely not be possible or achieved in a timely manner without introducing stabilization measures. If subgrade stabilization is required at the excavation bottom, rubber tire equipment should not be allowed in the excavation bottom until it is stabilized or extensive soil disturbance could result. It is suggested that excavation and grading be performed during the summer season to promote moisture control of the soils. In addition, the use of track equipment should be used to minimize disturbance to the soils at the excavation bottom.

8.4.8 Bottom stabilization, if necessary, may be achieved placing a thin lift of 3- to 6-inch-diameter crushed angular rock into the soft excavation bottom. The use of crushed concrete will also be acceptable. The crushed rock should be spread thinly across the excavation bottom and pressed into the soils by track rolling or wheel rolling with heavy equipment. It is very important that voids between the rock fragments are not created so the rock must be thoroughly pressed or blended into the soils. All subgrade soils must be properly compacted and proof-rolled in the presence of the Geotechnical Engineer (a representative of Geocon West, Inc.).

8.4.9 An alternative method of subgrade stabilization may be accomplished by placing a one-foot-thick layer of washed, angular 3/4-inch gravel atop a stabilization fabric (Mirafi 500X or equivalent) subsequent to subgrade approval. Stabilization fabric should also be placed over the top of the gravel. This procedure should be conducted in sections until the entire excavation bottom has been blanketed by fabric and gravel. Heavy equipment may operate on the gravel once it has been placed. The gravel should be compacted to a dense state using a vibratory drum roller. It is recommended that the contractor meet with the Geotechnical Engineer to discuss this procedure in more detail.

8.4.10 The upper soils encountered during site exploration were moist to wet and the grading contractor should be aware that the existing soils are currently above optimum moisture content. Conditions could change seasonally. If the soils are more than 3 percent above the optimum moisture content at the time of construction the soils will likely require spreading, processing, and drying activities in order to achieve proper compaction.

8.4.11 All fill and backfill soils should be placed in horizontal loose layers approximately 6 to 8 inches thick, moisture conditioned to near 2 percent above optimum moisture content, and properly compacted to a minimum of 90 percent of the maximum dry density per ASTM D 1557 (latest edition).

8.4.12 It is anticipated that stable excavations for the recommended grading can be achieved with sloping measures. However, if excavations in close proximity to an adjacent property line and/or structure are required, special excavation measures may be necessary in order to maintain lateral support of offsite improvements. Excavation recommendations are provided in the *Temporary Excavations* section of this report (see Section 8.18).

8.4.13 Although not anticipated for this project, all imported fill shall be observed, tested, and approved by Geocon West, Inc. prior to bringing soil to the site. Rocks larger than 6 inches in diameter shall not be used in the fill. If necessary, import soils used as structural fill should have an expansion index less than 50 and corrosivity properties that are equally or less detrimental to that of the existing onsite soils (see Figure B23).

8.4.14. Where new paving is to be placed, it is recommended that all existing fill and soft alluvium be excavated and properly compacted for paving support. As a minimum, the upper 12 inches of soil should be scarified, moisture conditioned to near two percent over optimum moisture content, and compacted to at least 92 percent relative compaction, as determined by ASTM Test Method D 1557 (latest edition). Paving recommendations are provided in *Preliminary Pavement Recommendations* section of this report (see Section 8.13).

8.4.15 Foundations for small outlying structures, such as block walls up to 6 feet in height, planter walls or trash enclosures, which will not be tied to the proposed structure, may be supported on conventional foundations deriving support on a minimum of 12 inches of newly placed engineered fill which extends laterally at least 12 inches beyond the foundation area. Where excavation and compaction cannot be performed or is undesirable, foundations may derive support directly in the competent undisturbed alluvial soils and should be deepened as necessary to maintain a minimum 12 inch embedment into the recommended bearing materials. If the soils exposed in the excavation bottom are soft or loose, compaction of the soils will be required prior to placing steel or concrete. Compaction of the foundation excavation bottom is typically accomplished with a compaction wheel or mechanical whacker and must be observed and approved by a Geocon representative.

8.4.16 It is recommended that flexible utility connections be utilized for all rigid utilities to minimize or prevent damage to utilities from minor differential movements. Utility trenches should be properly backfilled in accordance with the requirements of the Green Book (latest edition). The pipe should be bedded with clean sands (Sand Equivalent greater than 30) to a depth of at least 1 foot over the pipe, and the bedding material must be inspected and approved in writing by the Geotechnical Engineer (a representative of Geocon). The use of gravel is not acceptable unless used in conjunction with filter fabric to prevent the gravel from having direct contact with soil. The remainder of the trench backfill may be derived from onsite soil or approved import soil, compacted as necessary, until the required compaction is obtained. The use of minimum 2-sack slurry as backfill is also acceptable. Prior to placing any bedding materials or pipes, the trench excavation bottom must be observed and approved in writing by the Geotechnical Engineer (a representative of Geocon).

8.4.17 All trench and foundation excavation bottoms must be observed and approved in writing by the Geotechnical Engineer (a representative of Geocon), prior to placing bedding sands, fill, steel, gravel, or concrete.

8.5 Shrinkage

8.5.1 Shrinkage results when a volume of material removed at one density is compacted to a higher density. A shrinkage factor between 10 and 15 percent should be anticipated when excavating and compacting the upper 5 feet of existing earth materials on the site to an average relative compaction of 92 percent.

8.5.2 If import soils will be utilized in the building pad, the soils must be placed uniformly and at equal thickness at the direction of the Geotechnical Engineer (a representative of Geocon West, Inc.). Soils can be borrowed from non-building pad areas and later replaced with imported soils.

8.6 Mat Foundation Design

8.6.1 Subsequent to the recommended grading, a reinforced concrete mat foundation may be utilized for support of the proposed structures. The reinforced concrete mat foundation should derive support in the newly placed engineered fill and be underlain by at least 4 feet of newly placed engineered fill.

8.6.2 Foundation excavations should be observed and approved in writing by the Geotechnical Engineer (a representative of Geocon West, Inc.), prior to the placement of reinforcing steel and concrete to verify that the excavations and exposed soil conditions are consistent with those anticipated. If unanticipated soil conditions are encountered, foundation modifications may be required.

8.6.3 It is anticipated that the mat foundation constructed for the on-grade structure will impart an average pressure between 2,000 psf to 3,500 psf. The recommended maximum allowable bearing value is 3,500 psf. The allowable bearing pressure may be increased by up to one-third for transient loads due to wind or seismic forces.

8.6.4 A vertical modulus of subgrade reaction of 100 pci may be used in the design of mat foundations deriving support in competent alluvial soils. This value is a unit value for use with a 1-foot square footing. The modulus should be reduced in accordance with the following equation when used with larger foundations:

$$K_R = K\left[\frac{B+1}{2B}\right]^2$$

where: K_R = reduced subgrade modulus
K = unit subgrade modulus
B = foundation width (in feet)

8.6.5 The thickness of and reinforcement for the mat foundation should be designed by the project structural engineer.

8.6.6 For seismic design purposes, a coefficient of friction of 0.35 may be utilized between the concrete mat and newly placed engineered fill without a moisture barrier, and 0.15 for slabs underlain by a moisture barrier.

8.6.7 The enclosed liquefaction settlement analyses indicate that the site soils could be susceptible to less than ½ inch of total seismic settlement as a result of the Design Earthquake peak ground acceleration ($⅔PGA_M$). Differential settlement at the foundation level is anticipated to be less than ¼ inches over a distance of 20 feet. The foundation design recommendations presented herein are intended to minimize the effects of settlement on proposed improvements.

8.6.8 The maximum expected total settlement for a structure support on a mat foundation system designed with the maximum allowable bearing value of 3,500 psf and deriving support in the recommended bearing materials is estimated to be approximately 2 inches and occur below the heaviest loaded structural element. A majority of the settlement of the foundation system is expected to occur on initial application of loading; however, additional settlements are expected within the first twelve months. Differential settlement is not expected to exceed 1 inch over a distance of 20 feet.

8.6.9 Based on these considerations is it recommended that the proposed structure, designed with a maximum allowable bearing value of 3,500 psf, be designed for a combined static and seismically induced differential settlement of 1 ½ inch over a distance of 20 feet.

8.6.10 This office should be provided a copy of the final construction plans so that the excavation recommendations presented herein could be properly reviewed and revised if necessary.

8.6.11 Once the design and foundation loading configurations for the proposed structures proceeds to a more finalized plan, the estimated settlements presented in this report should be reviewed and revised, if necessary. If the final foundation loading configurations are greater than the assumed loading conditions, the potential for settlement should be reevaluated by this office.

8.7 Miscellaneous Foundations

8.7.1 Foundations for small outlying structures, such as block walls up to 6 feet in height, planter walls or trash enclosures, which will not be tied to the proposed structure, may be supported on conventional foundations deriving support on a minimum of 12 inches of newly placed engineered fill which extends laterally at least 12 inches beyond the foundation area. Where excavation and compaction cannot be performed or is undesirable, foundations may derive support directly in the competent undisturbed alluvial soils, and should be deepened as necessary to maintain a minimum 12 inch embedment into the recommended bearing materials.

8.7.2 If the soils exposed in the excavation bottom are soft, compaction of the soft soils will be required prior to placing steel or concrete. Compaction of the foundation excavation bottom is typically accomplished with a compaction wheel or mechanical whacker and must be observed and approved by a Geocon representative. Miscellaneous foundations may be designed for a bearing value of 1,500 psf, and should be a minimum of 12 inches in width, 24 ,inches in depth below the lowest adjacent grade and 12 inches into the recommended bearing material. The allowable bearing pressure may be increased by up to one-third for transient loads due to wind or seismic forces.

8.7.3 Foundation excavations should be observed and approved in writing by the Geotechnical Engineer (a representative of Geocon West, Inc.), prior to the placement of reinforcing steel and concrete to verify that the excavations and exposed soil conditions are consistent with those anticipated.

8.8 Lateral Design

8.8.1 Resistance to lateral loading may be provided by friction acting at the base of foundations, slabs and by passive earth pressure. An allowable coefficient of friction of 0.35 may be used with the dead load forces in the undisturbed alluvial soils and newly placed engineered fill.

8.8.2 Passive earth pressure for the sides of foundations and slabs poured against newly placed engineered fill or undisturbed alluvial soils may be computed as an equivalent fluid having a density of 230 pounds per cubic foot (pcf) with a maximum earth pressure of 2,300 psf. When combining passive and friction for lateral resistance, the passive component should be reduced by one-third. A one-third increase in the passive value may be used for wind or seismic loads.

8.9 Concrete Slabs-on-Grade

8.9.1 Exterior concrete slabs-on-grade subject to vehicle loading should be designed in accordance with the recommendations in the *Preliminary Pavement Recommendations* section of this report (Section 8.10).

8.9.2 Slabs-on-grade at the ground surface that may receive moisture-sensitive floor coverings or may be used to store moisture-sensitive materials should be underlain by a vapor retarder placed directly beneath the slab. The vapor retarder and acceptable permeance should be specified by the project architect or developer based on the type of floor covering that will be installed. The vapor retarder design should be consistent with the guidelines presented in Section 9.3 of the American Concrete Institute's (ACI) Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials (ACI 302.2R-06) and should be installed in general conformance with ASTM E 1643 (latest edition) and the manufacturer's recommendations. A minimum thickness of 15 mils extruded polyolefin plastic is recommended; vapor retarders which contain recycled content or woven materials are not recommended. The vapor retarder should have a permeance of less than 0.01 perms demonstrated by testing before and after mandatory conditioning. The vapor retarder should be installed in direct contact with the concrete slab with proper perimeter seal. If the Los Angeles Green Building Code requirements apply to this project, the vapor retarder should be underlain by 4 inches of clean aggregate. It is important that the vapor retarder be puncture resistant since it will be in direct contact with angular gravel. As an alternative to the clean aggregate suggested in the Los Angeles Green Building Code, it is our opinion that the concrete slab-on-grade may be underlain by a vapor retarder over 4 inches of clean sand (sand equivalent greater than 30), since the sand will serve a capillary break and will minimize the potential for punctures and damage to the vapor barrier.

8.9.3 For seismic design purposes, a coefficient of friction of 0.35 may be utilized between concrete slabs and subgrade soils without a moisture barrier, and 0.15 for slabs underlain by a moisture barrier.

8.9.4 Exterior slabs, not subject to traffic loads, should be at least 4 inches thick and reinforced with No. 3 steel reinforcing bars placed 18 inches on center in both horizontal directions, positioned near the slab midpoint. Prior to construction of slabs, the upper 12 inches of subgrade should be moistened to optimum moisture content and properly compacted to at least 92 percent relative compaction, as determined by ASTM Test Method D 1557 (latest edition). Crack control joints should be spaced at intervals not greater than 10 feet and should be constructed using saw-cuts or other methods as soon as practical following concrete placement. Crack control joints should extend a minimum depth of one-fourth the slab thickness. The project structural engineer should design construction joints as necessary.

8.9.5 Due to the expansive potential of the anticipated subgrade soils, the moisture content of the slab subgrade should be maintained and sprinkled as necessary to maintain a moist condition as would be expected in any concrete placement. Furthermore, consideration should be given to doweling slabs into adjacent curbs and foundations to minimize movements and offsets which could lead to a potential tripping hazard.

8.9.6 The recommendations of this report are intended to reduce the potential for cracking of slabs due to settlement. However, even with the incorporation of the recommendations presented herein, foundations, stucco walls, and slabs-on-grade may exhibit some cracking due to minor soil movement and/or concrete shrinkage. The occurrence of concrete shrinkage cracks is independent of the supporting soil characteristics. Their occurrence may be reduced and/or controlled by limiting the slump of the concrete, proper concrete placement and curing, and by the placement of crack control joints at periodic intervals, in particular, where re-entrant slab corners occur.

8.10 Preliminary Paving Design

8.10.1 Where new paving is to be placed, it is recommended that all existing fill and soft alluvium materials be excavated and properly compacted for paving support. The client should be aware that excavation and compaction of all existing artificial fill and soft alluvium in the area of new paving is not required; however, paving constructed over existing uncertified fill or unsuitable alluvium material may experience increased settlement and/or cracking, and may therefore have a shorter design life and increased maintenance costs. As a minimum, the upper 12 inches of paving subgrade should be scarified, moisture conditioned to at least 2 percent above optimum moisture content, and properly compacted to at least 92 percent relative compaction, as determined by ASTM Test Method D 1557 (latest edition).

8.10.2 The following pavement sections are based on an assumed R-Value of 20. Once site grading activities are complete an R-Value should be obtained by laboratory testing to confirm the properties of the soils serving as paving subgrade, prior to placing pavement.

8.10.3 The Traffic Indices listed below are estimates. Geocon does not practice in the field of traffic engineering. The actual Traffic Index for each area should be determined by the project civil engineer. If pavement sections for Traffic Indices other than those listed below are required, Geocon should be contacted to provide additional recommendations. Pavement thicknesses were determined following procedures outlined in the *California Highway Design Manual* (Caltrans). It is anticipated that the majority of traffic will consist of automobile and large truck traffic.

PRELIMINARY PAVEMENT DESIGN SECTIONS

Location	Estimated Traffic Index (TI)	Asphalt Concrete (inches)	Class 2 Aggregate Base (inches)
Automobile Parking and Driveways	4.0	3.0	4.0
Trash Truck & Fire Lanes	7.0	4.0	12.0

8.10.4 Asphalt concrete should conform to Section 203-6 of the "*Standard Specifications for Public Works Construction"* (Green Book). Class 2 aggregate base materials should conform to Section 26-1.02A of the "*Standard Specifications of the State of California, Department of Transportation"* (Caltrans). The use of Crushed Miscellaneous Base (CMB) in lieu of Class 2 aggregate base is acceptable. Crushed Miscellaneous Base should conform to Section 200-2.4 of the "*Standard Specifications for Public Works Construction"* (Green Book).

8.10.5 Unless specifically designed and evaluated by the project structural engineer, where exterior concrete paving will be utilized for support of vehicles, it is recommended that the concrete be a minimum of 6 inches of concrete reinforced with No. 3 steel reinforcing bars placed 18 inches on center in both horizontal directions. Concrete paving supporting vehicular traffic should be underlain by a minimum of 4 inches of aggregate base and a properly compacted subgrade. As a minimum, the upper 12 inches of paving subgrade should be scarified, moisture conditioned to 2 percent above optimum moisture content, and properly compacted to at least 92 percent relative compaction, as determined by ASTM Test Method D 1557 (latest edition). The base material should be compacted to 95 percent relative compaction as determined by ASTM Test Method D 1557 (latest edition).

8.10.6 The performance of pavements is highly dependent upon providing positive surface drainage away from the edge of pavements. Ponding of water on or adjacent to the pavement will likely result in saturation of the subgrade materials and subsequent cracking, subsidence and pavement distress. If planters are planned adjacent to paving, it is recommended that the perimeter curb be extended at least 12 inches below the bottom of the aggregate base to minimize the introduction of water beneath the paving.

8.11 Retaining Wall Design

8.11.1 The recommendations presented below are generally applicable to the design of rigid concrete or masonry retaining walls having a maximum height of 5 feet. In the event that walls significantly higher than 5 feet are planned, Geocon should be contacted for additional recommendations.

8.11.2 Retaining wall foundations should be designed in accordance with the recommendations provided in the *Foundation Design* section of this report (see Sections 8.6 through 8.9).

8.11.3 Retaining walls with a level backfill surface that are not restrained at the top should be designed utilizing a triangular distribution of pressure (active pressure). Restrained walls are those that are not allowed to rotate more than 0.001H (where H equals the height of the retaining portion of the wall in feet) at the top of the wall. Where walls are restrained from movement at the top, walls may be designed utilizing a triangular distribution of pressure (at-rest pressure). The table on the following page presents recommended pressures to be used in retaining wall design.

RETAINING WALL WITH LEVEL BACKFILL SURFACE

HEIGHT OF RETAINING WALL (Feet)	ACTIVE PRESSURE EQUIVALENT FLUID PRESSURE (Pounds Per Cubic Foot)	AT-REST PRESSURE EQUIVALENT FLUID PRESSURE (Pounds Per Cubic Foot)
Up to 5	30	74

8.11.4 The wall pressures provided above assume that the proposed retaining walls will support a wedge of engineered fill derived from onsite soils. If import soil will be used to backfill proposed retaining walls, revised earth pressures may be required to account for the geotechnical properties of the import soil used as engineered fill. This should be evaluated once the use of import soil is established. All imported fill shall be observed, tested, and approved by Geocon West, Inc. prior to bringing soil to the site.

8.11.5 The wall pressures provided above assume that the retaining wall will be properly drained preventing the buildup of hydrostatic pressure. If retaining wall drainage is not implemented, the equivalent fluid pressure to be used in design of undrained walls is 100 pcf. The value includes hydrostatic pressures plus buoyant lateral earth pressures.

8.11.6 Additional active pressure should be added for a surcharge condition due to sloping ground, vehicular traffic or adjacent structures and should be designed for each condition as the project progresses. Surcharges may be evaluated using Section 8.19 of this report. Once the design becomes more finalized, an addendum letter can be prepared revising recommendations and addressing specific surcharge conditions throughout the project, if necessary.

8.12 Retaining Wall Drainage

8.12.1 Where not designed for hydrostatic pressure, retaining walls should be provided with a drainage system. At the base of the drain system, a subdrain covered with a minimum of 12 inches of gravel should be installed, and a compacted fill blanket or other seal placed at the surface (see Figure 10). The clean bottom and subdrain pipe, behind a retaining wall, should be observed by the Geotechnical Engineer (a representative of Geocon), prior to placement of gravel or compacting backfill.

8.12.2 As an alternative, a plastic drainage composite such as Miradrain or equivalent may be installed in continuous, 4-foot-wide columns along the entire back face of the wall, at 8 feet on center. The top of these drainage composite columns should terminate approximately 18 inches below the ground surface, where either hardscape or a minimum of 18 inches of relatively cohesive material should be placed as a cap (see Figure 11). These vertical columns of drainage material would then be connected at the bottom of the wall to a collection panel or a 1-cubic-foot rock pocket drained by a 4-inch subdrain pipe.

8.12.3 Subdrainage pipes at the base of the retaining wall drainage system should outlet to an acceptable location via controlled drainage structures.

8.12.4 Moisture affecting below grade walls is one of the most common post-construction complaints. Poorly applied or omitted waterproofing can lead to efflorescence or standing water. Particular care should be taken in the design and installation of waterproofing to avoid moisture problems, or actual water seepage into the structure through any normal shrinkage cracks which may develop in the concrete walls, floor slab, foundations and/or construction joints. The design and inspection of the waterproofing is not the responsibility of the geotechnical engineer. A waterproofing consultant should be retained in order to recommend a product or method, which would provide protection to subterranean walls, floor slabs and foundations.

8.13 Elevator Pit Design

8.13.1 The elevator pit slab and retaining wall should be designed by the project structural engineer. Elevator pit walls may be designed in accordance with the recommendations in the *Retaining Wall Design* section of this report (see Section 8.14).

8.13.2 Additional active pressure should be added for a surcharge condition due to sloping ground, vehicular traffic or adjacent foundations and should be designed for each condition as the project progresses.

8.13.3 If retaining wall drainage is to be provided, the drainage system should be designed in accordance with the *Retaining Wall Drainage* section of this report (see Section 8.15).

8.13.4 It is suggested that the exterior walls and slab be waterproofed to prevent excessive moisture inside of the elevator pit. Waterproofing design and installation is not the responsibility of the geotechnical engineer.

8.14 Elevator Piston

8.14.1 If a plunger-type elevator piston is installed for this project, a deep drilled excavation will be required. It is important to verify that the drilled excavation is not situated immediately adjacent to a foundation, or the drilled excavation could compromise the existing foundation support, especially if the drilling is performed subsequent to the foundation construction.

8.14.2 Due to the preliminary nature of the project at this time, it is unknown if a plunger-type elevator piston will be included for this project. If in the future it is determined that a plunger-type elevator piston will be constructed, the location of the proposed elevator should be reviewed by the Geotechnical Engineer to evaluate the setback from foundations. Additional recommendations will be provided as necessary.

8.14.3 Some caving is anticipated in the granular soils below a depth of 20 feet. The contractor should be prepared to use casing and should have it readily available at the commencement of drilling activities. Continuous observation of the drilling and installation of the elevator piston by the Geotechnical Engineer (a representative of Geocon West, Inc.) is required.

8.14.4 The annular space between the piston casing and drilled excavation wall should be filled with a minimum of 1½-sack slurry pumped from the bottom up. As an alternative, pea gravel may be utilized. The use of soil to backfill the annular space is not acceptable.

8.15 Temporary Excavations

8.15.1 Excavations on the order of 6 feet in height are generally anticipated during grading activities, and isolated excavations up to 9 feet in height may also be required. The excavations are expected to expose artificial fill and alluvial soils, which may be subject to some caving where granular soils are exposed. Temporary vertical excavations up to 5 feet in height may be attempted where not surcharged by adjacent traffic or structures.

8.15.2 Vertical excavations greater than 5 feet or where surcharged by existing structures will require sloping or shoring measures in order to provide a stable excavation. Where sufficient space is available, temporary unsurcharged embankments could be sloped back at a uniform 1:1 slope gradient or flatter up to a maximum of 9 feet in height. A uniform slope does not have a vertical portion. Where space is limited, shoring measures will be required. *Shoring* recommendations can be provided under separate cover if necessary.

8.15.3 If excavations in close proximity to an adjacent property line and/or structure are required, special excavation measures such as slot-cutting or shoring may be necessary in order to maintain lateral support of offsite improvements. Recommendations for slot-cutting and shoring can be provided under separate cover.

8.15.4 Where sloped embankments are utilized, the top of the slope should be barricaded to prevent vehicles and storage loads at the top of the slope within a horizontal distance equal to the height of the slope. If the temporary construction embankments are to be maintained during the rainy season, berms are suggested along the tops of the slopes where necessary to prevent runoff water from entering the excavation and eroding the slope faces. Geocon personnel should inspect the soils exposed in the cut slopes during excavation so that modifications of the slopes can be made if variations in the soil conditions occur. All excavations should be stabilized within 30 days of initial excavation.

8.16 Surcharge from Adjacent Structures and Improvements

8.16.1 Additional pressure should be added for a surcharge condition due to sloping ground, vehicular traffic or adjacent structures and should be designed for each condition as the project progresses.

8.16.2 It is recommended that line-load surcharges from adjacent wall footings, use horizontal pressures generated from NAV-FAC DM 7.2. The governing equations are:

$$For\ {}^{x}/_{H} \leq 0.4$$

$$\sigma_H(z) = \frac{0.20 \times \left(\frac{z}{H}\right)}{\left[0.16 + \left(\frac{z}{H}\right)^2\right]^2} \times \frac{Q_L}{H}$$

and

$$For\ {}^{x}/_{H} > 0.4$$

$$\sigma_H(z) = \frac{1.28 \times \left(\frac{x}{H}\right)^2 \times \left(\frac{z}{H}\right)}{\left[\left(\frac{x}{H}\right)^2 + \left(\frac{z}{H}\right)^2\right]^2} \times \frac{Q_L}{H}$$

where x is the distance from the face of the excavation or wall to the vertical line-load, H is the distance from the bottom of the footing to the bottom of excavation or wall, z is the depth at which the horizontal pressure is desired, Q_L is the vertical line-load and $\sigma_{H(z)}$ is the horizontal pressure at depth z.

8.16.3 It is recommended that vertical point-loads, from construction equipment outriggers or adjacent building columns use horizontal pressures generated from NAV-FAC DM 7.2. The governing equations are:

$$For\ {}^{x}/_{H} \leq 0.4$$

$$\sigma_H(z) = \frac{0.28 \times \left(\frac{z}{H}\right)^2}{\left[0.16 + \left(\frac{z}{H}\right)^2\right]^3} \times \frac{Q_P}{H^2}$$

and

$$For\ {}^{x}/_{H} > 0.4$$

$$\sigma_H(z) = \frac{1.77 \times \left(\frac{x}{H}\right)^2 \times \left(\frac{z}{H}\right)^2}{\left[\left(\frac{x}{H}\right)^2 + \left(\frac{z}{H}\right)^2\right]^3} \times \frac{Q_P}{H^2}$$

then

$$\sigma'_H(z) = \sigma_H(z) cos^2(1.1\theta)$$

where x is the distance from the face of the excavation/wall to the vertical point-load, H is distance from the outrigger/bottom of column footing to the bottom of excavation, z is the depth at which the horizontal pressure is desired, Qp is the vertical point-load, $\sigma_H(z)$ is the horizontal pressure at depth z, θ is the angle between a line perpendicular to the excavation/wall and a line from the point-load to location on the excavation/wall where the surcharge is being evaluated, and $\sigma_H(z)$ is the horizontal pressure at depth z.

8.17 Surface Drainage

8.17.1 Proper surface drainage is critical to the future performance of the project. Uncontrolled infiltration of irrigation excess and storm runoff into the soils can adversely affect the performance of the planned improvements. Saturation of a soil can cause it to lose internal shear strength and increase its compressibility, resulting in a change in the original designed engineering properties. Proper drainage should be maintained at all times.

8.17.2 All site drainage should be collected and controlled in non-erosive drainage devices. Drainage should not be allowed to pond anywhere on the site, and especially not against any foundation or retaining wall. The site should be graded and maintained such that surface drainage is directed away from structures in accordance with 2019 CBC 1804.4 or other applicable standards. In addition, drainage should not be allowed to flow uncontrolled over any descending slope. Discharge from downspouts, roof drains and scuppers are not recommended onto unprotected soils within 5 feet of the building perimeter. Planters which are located adjacent to foundations should be sealed to prevent moisture intrusion into the soils providing foundation support. Landscape irrigation is not recommended within 5 feet of the building perimeter footings except when enclosed in protected planters.

8.17.3 Positive site drainage should be provided away from structures, pavement, and the tops of slopes to swales or other controlled drainage structures. The building pad and pavement areas should be fine graded such that water is not allowed to pond.

8.17.4 Landscaping planters immediately adjacent to paved areas are not recommended due to the potential for surface or irrigation water to infiltrate the pavement's subgrade and base course. Either a subdrain, which collects excess irrigation water and transmits it to drainage structures, or impervious above-grade planter boxes should be used. In addition, where landscaping is planned adjacent to the pavement, it is recommended that consideration be given to providing a cutoff wall along the edge of the pavement that extends at least 12 inches below the base material.

8.18 Plan Review

8.18.1 Grading, foundation, and shoring plans should be reviewed by the Geotechnical Engineer (a representative of Geocon West, Inc.), prior to finalization to verify that the plans have been prepared in substantial conformance with the recommendations of this report and to provide additional analyses or recommendations.

LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. The recommendations of this report pertain only to the site investigated and are based upon the assumption that the soil conditions do not deviate from those disclosed in the investigation. If any variations or undesirable conditions are encountered during construction, or if the proposed construction will differ from that anticipated herein, Geocon West, Inc. should be notified so that supplemental recommendations can be given. The evaluation or identification of the potential presence of hazardous or corrosive materials was not part of the scope of services provided by Geocon West, Inc.

2. This report is issued with the understanding that it is the responsibility of the owner, or of his representative, to ensure that the information and recommendations contained herein are brought to the attention of the architect and engineer for the project and incorporated into the plans, and the necessary steps are taken to see that the contractor and subcontractors carry out such recommendations in the field.

3. The findings of this report are valid as of the date of this report. However, changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or the works of man on this or adjacent properties. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated wholly or partially by changes outside our control. Therefore, this report is subject to review and should not be relied upon after a period of three years.

4. The firm that performed the geotechnical investigation for the project should be retained to provide testing and observation services during construction to provide continuity of geotechnical interpretation and to check that the recommendations presented for geotechnical aspects of site development are incorporated during site grading, construction of improvements, and excavation of foundations. If another geotechnical firm is selected to perform the testing and observation services during construction operations, that firm should prepare a letter indicating their intent to assume the responsibilities of project geotechnical engineer of record. A copy of the letter should be provided to the regulatory agency for their records. In addition, that firm should provide revised recommendations concerning the geotechnical aspects of the proposed development, or a written acknowledgement of their concurrence with the recommendations presented in our report. They should also perform additional analyses deemed necessary to assume the role of Geotechnical Engineer of Record.

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U.S. Geological Survey and California Geological Survey, 2006, *Quaternary Fault and Fold Database for the United States,* accessed March 4, 2021 from USGS web site: http//earthquake.usgs.gov/hazards/qfaults/.

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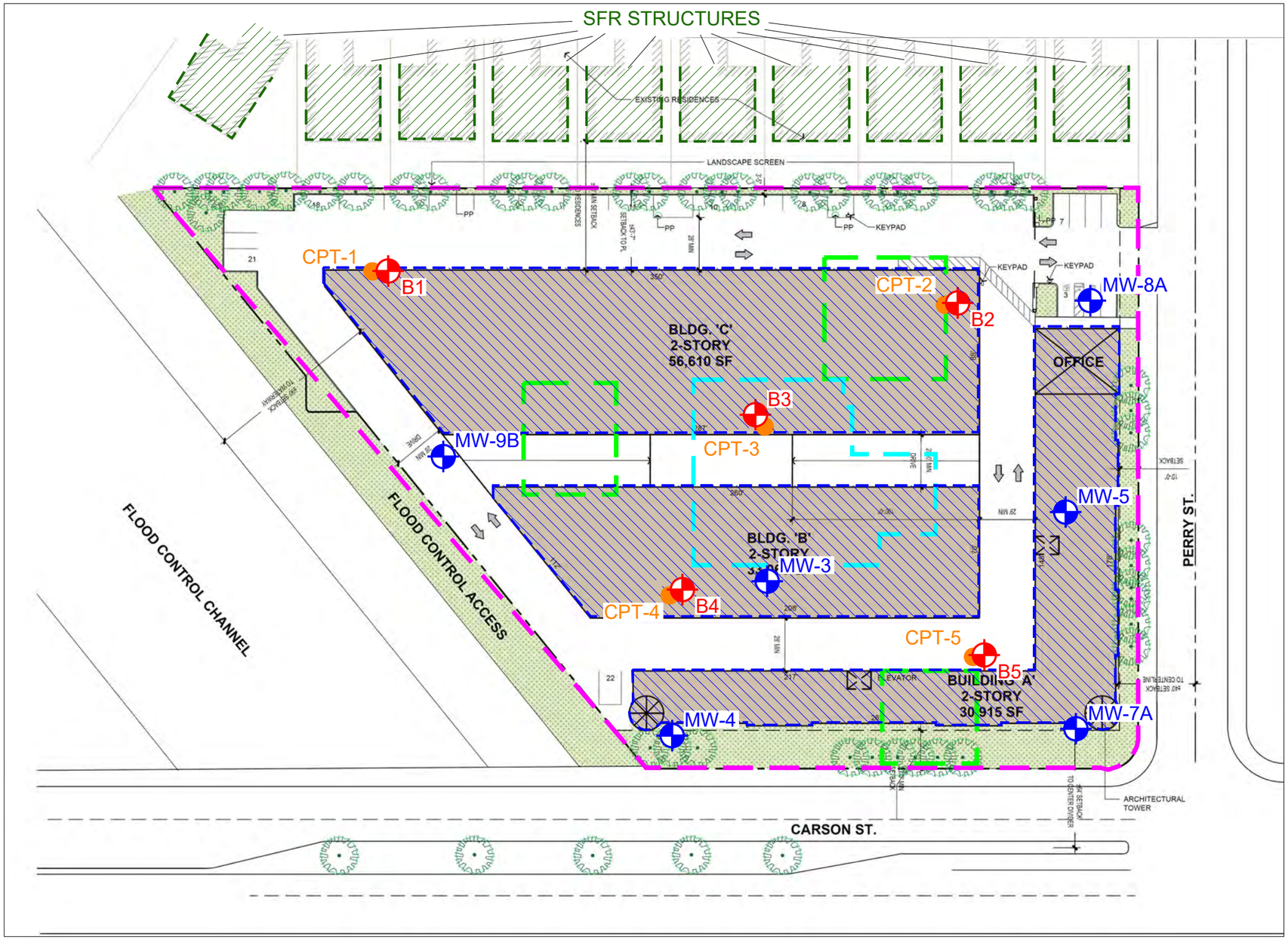
Ziony, J. I., and Jones, L. M., 1989, *Map Showing Late Quaternary Faults and 1978–1984 Seismicity of the Los Angeles Region, California*, U.S. Geological Survey Miscellaneous Field Studies Map MF-1964.



LEGEND

- B5 — Approximate Location of Boring
- CPT-5 — Approximate Location of CPT
- MW-9B — Approximate Location of Monitoring Well
- Property Limits
- Existing Off-Site Structures
- Proposed New Medical Office Building
- Extent of URS Removal and Recompaction (5 FT BGS)
- Extent of URS Removal and Recompaction (8 FT BGS)

North

0 60' 120'

GEOCON WEST, INC.

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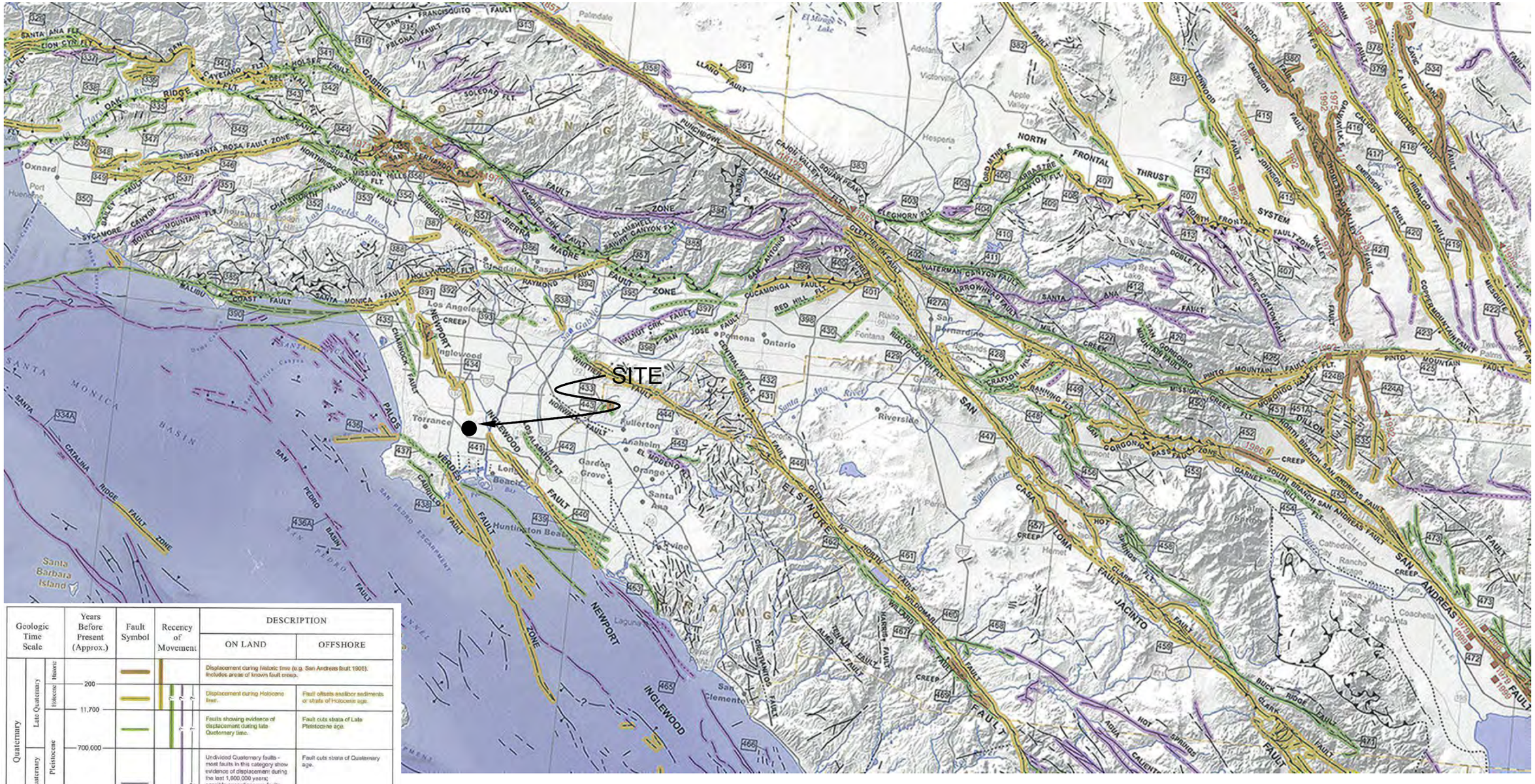
DRAFTED BY: JMH	CHECKED BY: JTA

SITE PLAN

21611 S PERRY STREET
CARSON, CALIFORNIA

APRIL 2021	PROJECT NO. W1301-06-01	FIG. 2

Reference: Jennings, C.W. and Bryant, W. A., 2010, Fault Activity Map of California, California Geological Survey Geologic Data Map No. 6.



Geologic Time Scale			Years Before Present (Approx.)	Fault Symbol	Recency of Movement	DESCRIPTION: ON LAND	DESCRIPTION: OFFSHORE
Quaternary	Late Quaternary	Historic				Displacement during historic time (e.g. San Andreas fault 1906). Includes areas of known fault creep.	
		Holocene	200			Displacement during Holocene time.	Fault offsets seafloor sediments or strata of Holocene age.
			11,700			Faults showing evidence of displacement during late Quaternary time.	Fault cuts strata of Late Pleistocene age.
	Early Quaternary	Pleistocene	700,000			Undivided Quaternary faults - most faults in this category show evidence of displacement during the last 1,600,000 years; possible exceptions are faults which displace rocks of undifferentiated Plio-Pleistocene age.	Fault cuts strata of Quaternary age.
Pre-Quaternary			1,600,000*			Faults without recognized Quaternary displacement or showing evidence of no displacement during Quaternary time. Not necessarily inactive.	Fault cuts strata of Pliocene or older age.
			4.5 billion (Age of Earth)				

* Quaternary now recognized as extending to 2.6 Ma (Walker and Geissman, 2009). Quaternary faults in this map were established using the previous 1.6 Ma criterion.

N

0 12 24 Miles

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REGIONAL FAULT MAP

21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021	PROJECT NO. W1301-06-01	FIG. 3

SANTA BARBARA
VENTURA
LOS ANGELES
ORANGE
RIVERSIDE
IMPERIAL
SAN DIEGO
SITE
120°
33°
119°

EPICENTER MAP LEGEND

Period	1800 - 1868	1869 - 1931	1932 - 1999
≥ 7.0			
6.5 - 6.9			
6.0 - 6.4			
5.5 - 5.9			
5.0 - 5.4			

Magnitude (M)

Historical Faulting
Holocene Faulting
Highways (Major)
Highways (Minor)
Lakes

65 Last two digits of M ≥ 6.5 earthquake year

Reference: Toppozada, T., Branum, D., Petersen, M., Hallstrom, C., Cramer, C., and Reichle, M., 2000, Epicenters and Areas Damaged by M≥5 California Earthquakes, 1800 - 1999, California Geological Survey, Map Sheet 49.

0 20 40 Miles

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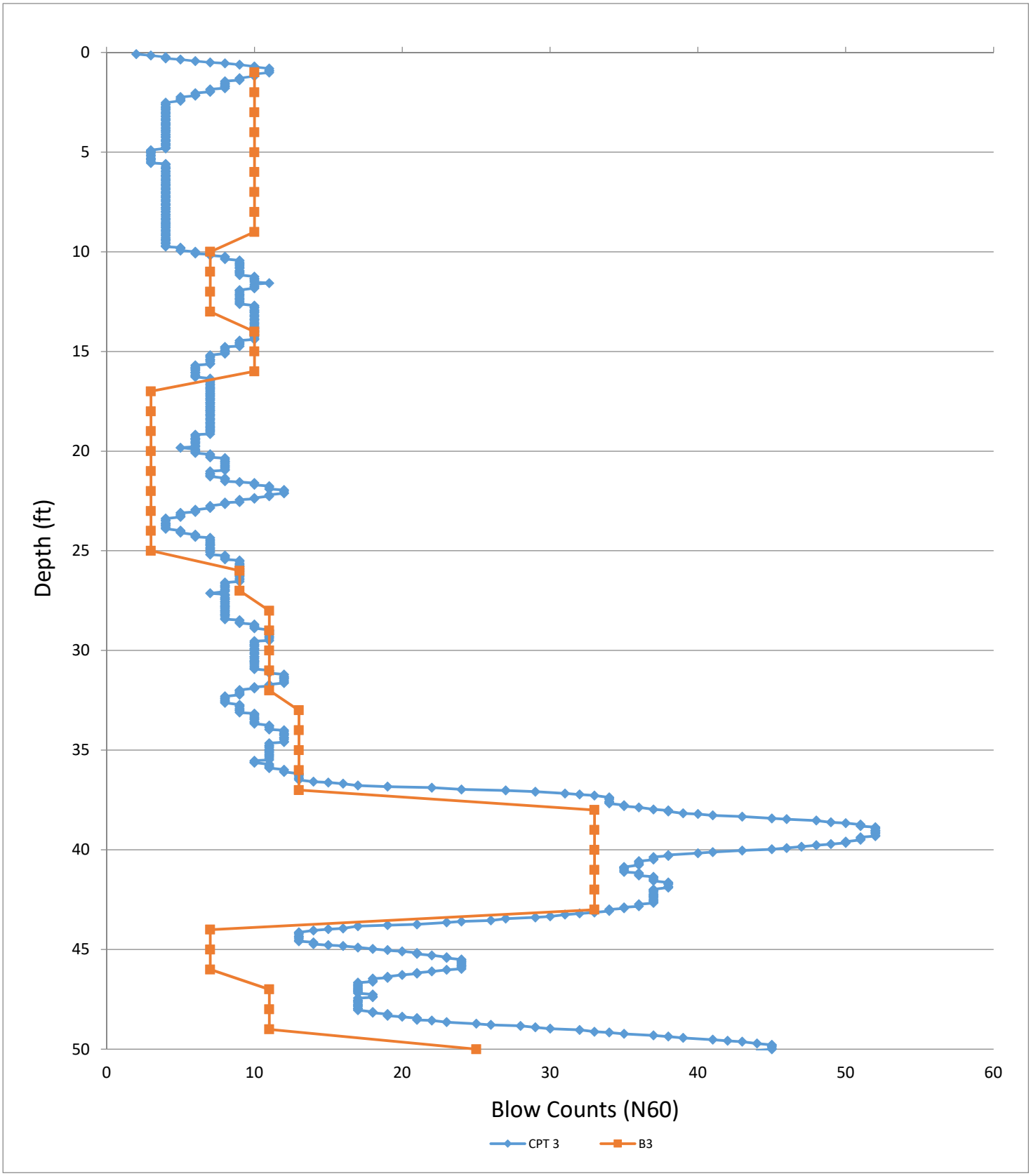
REGIONAL SEISMICITY MAP

21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021 | PROJECT NO. W1301-06-01 | FIG.4



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JMH		

CORRELATION OF BORING & CPT N60

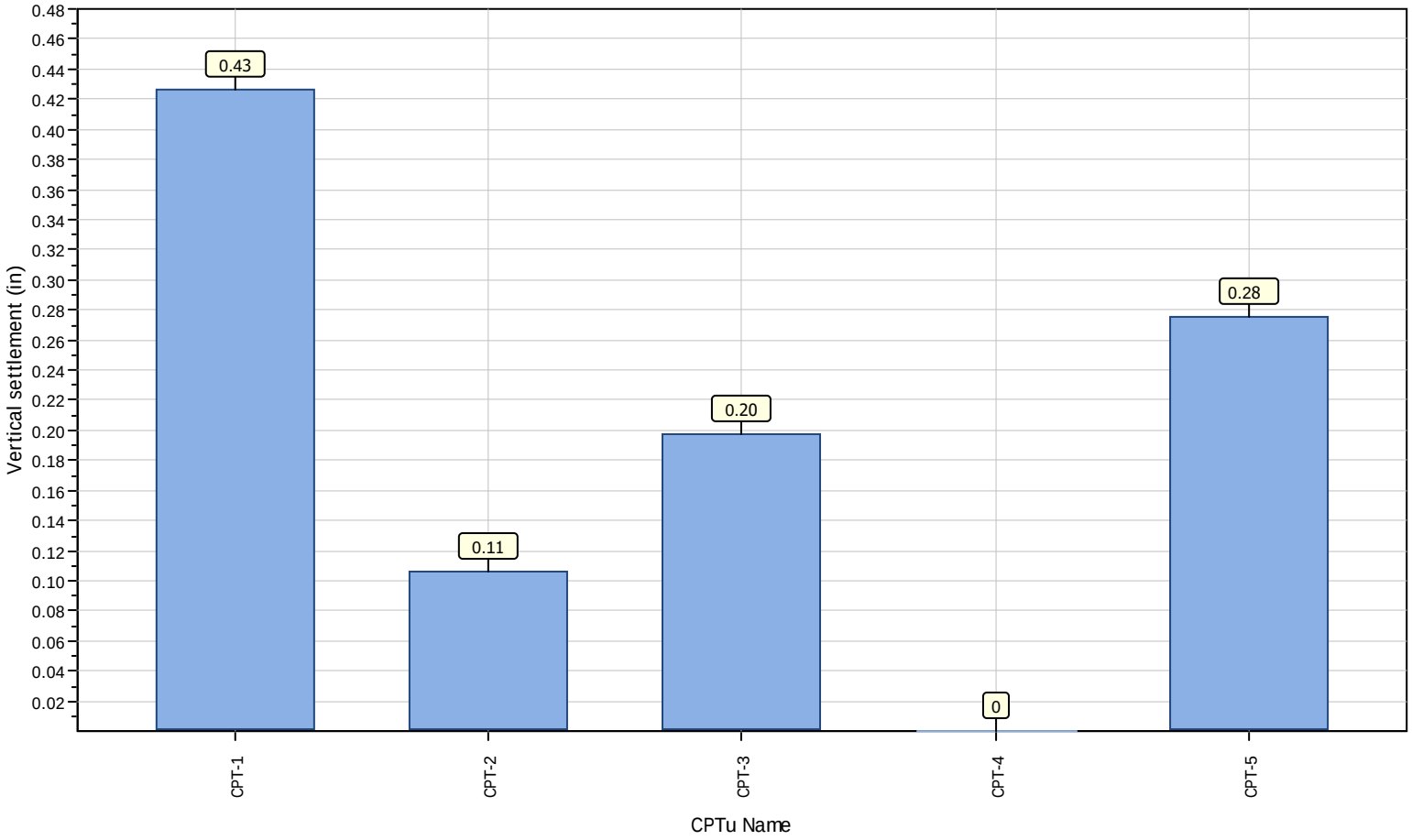
21611 SOUTH PERRY STREET
CARSON, CA

APRIL 2021	PROJECT NO. W1301-06-01	FIG.5

Project title : W1301-06-01

Location : Perry Street

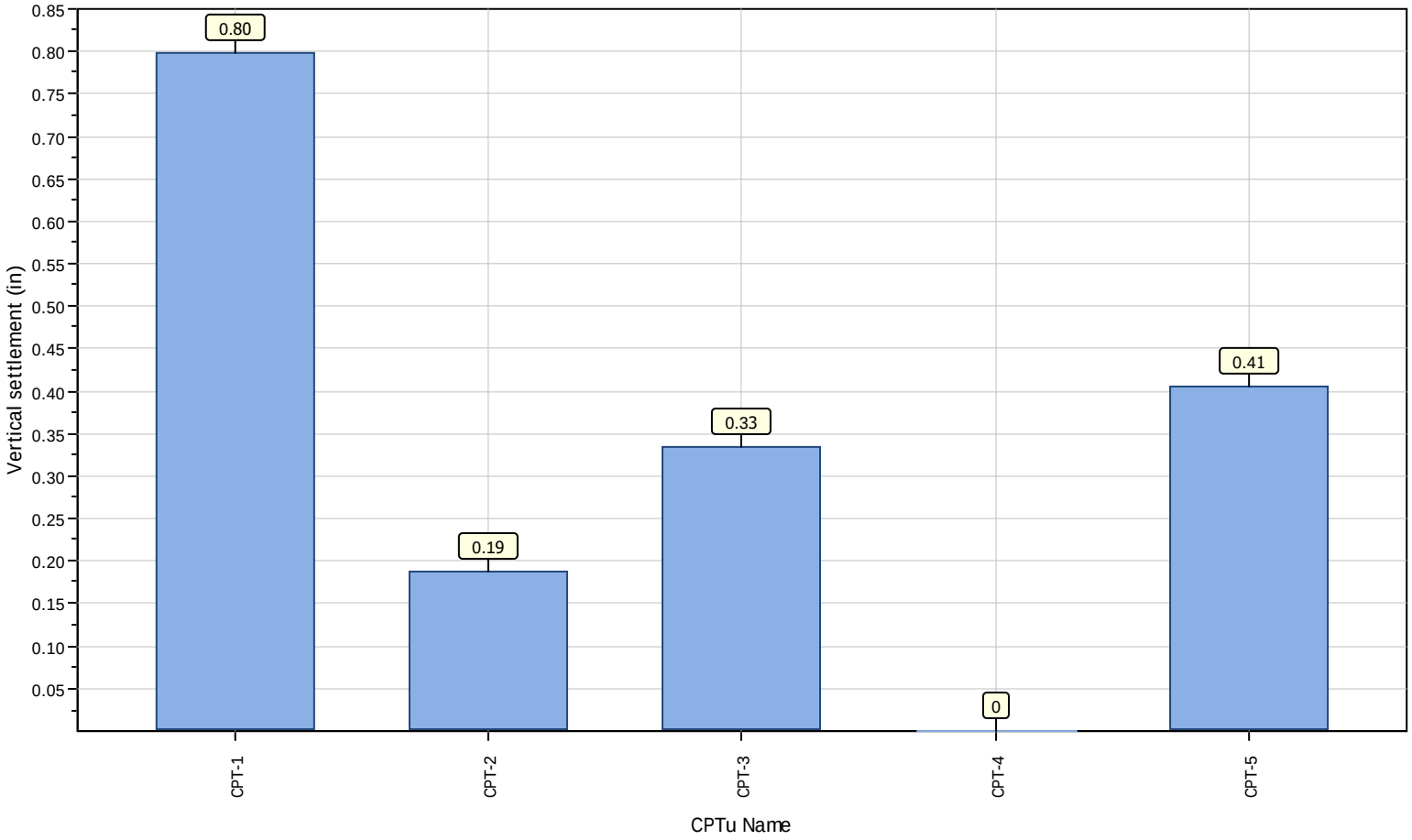
Overall vertical settlements report



Project title : W1301-06-01

Location : Perry Street

Overall vertical settlements report



GEOCON

Client : Perry Street
File No. : W1301-06-01
Boring : 3

TECHNICAL ENGINEERING AND DESIGN GUIDES AS ADAPTED FROM THE US ARMY CORPS OF ENGINEERS, NO. 9
EVALUATION OF EARTHQUAKE-INDUCED SETTLEMENTS IN DRY SANDY SOILS
DESIGN EARTHQUAKE

DE EARTHQUAKE INFORMATION:

Earthquake Magnitude:	6.68
Peak Horiz. Acceleration (g):	0.549

Fig 4.1 Fig 4.2 Fig 4.4

Depth of Base of Strata (ft)	Thickness of Layer (ft)	Depth of Mid-point of Layer (ft)	Soil Unit Weight (pcf)	Overburden Pressure at Mid-point (tsf)	Mean Effective Pressure at Mid-point (tsf)	Average Cyclic Shear Stress [Tav]	Field SPT [N]	Correction Factor [Cer]	Relative Density [Dr] (%)	Correction Factor [Cn]	Corrected [N1]60	rd Factor	Maximum Shear Mod. [Gmax] (tsf)	[yeff]*[Geff] [Gmax]	yeff Shear Strain	[yeff]*100%	Volumetric Strain M7.5 [E15] (%)	Number of Strain Cycles [Nc]	Corrected Vol. Strains [Ec]	Estimated Settlement [S] (inches)
1.0	1.0	0.5	120.0	0.03	0.02	0.011	10	1.25	76.6	1.7	19.1	1.0	169.475	6.25E-05	1.00E-04	0.010	1.06E-02	8.4928	8.17E-03	0.00
2.0	1.0	1.5	120.0	0.09	0.06	0.032	10	1.25	74.4	1.7	19.1	1.0	293.540	1.06E-04	2.30E-04	0.023	2.43E-02	8.4928	1.88E-02	0.00
3.0	1.0	2.5	120.0	0.15	0.10	0.053	10	1.25	72.5	1.7	19.1	1.0	378.958	1.34E-04	1.70E-04	0.017	1.79E-02	8.4928	1.39E-02	0.00
4.0	1.0	3.5	120.0	0.21	0.14	0.075	10	1.25	70.7	1.7	19.1	1.0	448.389	1.56E-04	1.70E-04	0.017	1.79E-02	8.4928	1.39E-02	0.00
5.0	1.0	4.5	120.0	0.27	0.18	0.096	10	1.25	69.0	1.7	19.1	1.0	508.425	1.74E-04	1.70E-04	0.017	1.79E-02	8.4928	1.39E-02	0.00
6.0	1.0	5.5	120.0	0.33	0.22	0.117	10	1.25	67.4	1.7	19.1	1.0	562.085	1.88E-04	1.50E-04	0.015	1.58E-02	8.4928	1.23E-02	0.00
7.0	1.0	6.5	120.0	0.39	0.26	0.139	10	1.25	65.9	1.6	18.4	1.0	603.301	2.03E-04	4.50E-04	0.045	4.97E-02	8.4928	3.85E-02	0.01
8.0	1.0	7.5	120.0	0.45	0.30	0.160	10	1.25	64.5	1.5	17.1	1.0	632.776	2.20E-04	4.50E-04	0.045	5.42E-02	8.4928	4.19E-02	0.01
9.0	1.0	8.5	120.0	0.51	0.34	0.181	10	1.25	63.3	1.4	16.1	1.0	659.735	2.34E-04	4.50E-04	0.045	5.84E-02	8.4928	4.52E-02	0.01
10.0	1.0	9.5	120.0	0.57	0.38	0.202	7	1.25	52.2	1.4	10.7	1.0	607.907	2.79E-04	4.50E-04	0.045	9.58E-02	8.4928	7.41E-02	0.00
11.0	1.0	10.5	120.0	0.63	0.42	0.222	7	1.25	52.2	1.3	10.1	1.0	628.529	2.93E-04	4.50E-04	0.045	1.02E-01	8.4928	7.87E-02	0.00
12.0	1.0	11.5	120.0	0.69	0.46	0.243	7	1.25	52.2	1.2	9.8	0.9	650.354	3.05E-04	1.00E-03	0.100	2.35E-01	8.4928	1.82E-01	0.00
13.0	1.0	12.5	120.0	0.75	0.50	0.263	7	1.25	52.2	1.2	9.6	0.9	673.332	3.14E-04	7.10E-04	0.071	1.71E-01	8.4928	1.33E-01	0.00
14.0	1.0	13.5	120.0	0.81	0.54	0.284	10	1.25	59.6	1.2	14.4	0.9	802.030	2.80E-04	3.70E-04	0.037	5.47E-02	8.4928	4.23E-02	0.00
15.0	1.0	14.5	120.0	0.87	0.58	0.304	10	1.25	59.6	1.2	14.2	0.9	825.875	2.87E-04	3.70E-04	0.037	5.59E-02	8.4928	4.33E-02	0.00
16.0	1.0	15.5	120.0	0.93	0.62	0.324	10	1.25	59.6	1.1	13.9	0.9	848.608	2.93E-04	3.70E-04	0.037	5.72E-02	8.4928	4.43E-02	0.00
17.0	1.0	16.5	120.0	0.99	0.66	0.344	3	1.25	31.4	1.1	4.5	0.9	603.195	4.31E-04	1.20E-03	0.120	7.10E-01	8.4928	5.49E-01	0.00
18.0	1.0	17.5	120.0	1.05	0.70	0.364	3	1.25	31.4	1.1	4.5	0.9	617.634	4.39E-04	1.20E-03	0.120	7.24E-01	8.4928	5.61E-01	0.00
19.0	1.0	18.5	120.0	1.11	0.74	0.383	3	1.25	31.4	1.1	4.4	0.9	631.508	4.47E-04	1.20E-03	0.120	7.39E-01	8.4928	5.72E-01	0.00
20.0	1.0	19.5	120.0	1.17	0.78	0.402	3	1.25	31.4	1.1	4.3	0.9	644.865	4.53E-04	1.20E-03	0.120	7.54E-01	8.4928	5.83E-01	0.00
21.0	1.0	20.5	120.0	1.23	0.82	0.421	3	1.25	31.4	1.1	4.3	0.9	657.749	4.60E-04	1.20E-03	0.120	7.68E-01	8.4928	5.94E-01	0.00
22.0	1.0	21.5	120.0	1.29	0.86	0.440	3	1.25	31.4	1.0	4.2	0.9	670.198	4.65E-04	1.20E-03	0.120	7.82E-01	8.4928	6.05E-01	0.00
23.0	1.0	22.5	120.0	1.35	0.90	0.458	3	1.25	31.4	1.0	4.1	0.9	682.246	4.70E-04	1.20E-03	0.120	7.96E-01	8.4928	6.16E-01	0.00
24.0	1.0	23.5	120.0	1.41	0.94	0.477	3	1.25	31.4	1.0	4.1	0.9	693.922	4.75E-04	1.20E-03	0.120	8.10E-01	8.4928	6.27E-01	0.00
25.0	1.0	24.5	120.0	1.47	0.98	0.495	3	1.25	31.4	1.0	4.0	0.9	705.252	4.80E-04	1.20E-03	0.120	8.23E-01	8.4928	6.37E-01	0.00
26.0	1.0	25.5	120.0	1.53	1.03	0.513	9	1.25	52.3	1.0	12.7	0.9	1055.741	3.28E-04	5.20E-04	0.052	8.97E-02	8.4928	6.95E-02	0.00
27.0	1.0	26.5	120.0	1.59	1.07	0.530	9	1.25	52.3	1.0	12.5	0.9	1071.522	3.31E-04	5.20E-04	0.052	9.12E-02	8.4928	7.06E-02	0.00
28.0	1.0	27.5	120.0	1.65	1.11	0.547	11	1.25	55.9	1.0	15.8	0.9	1179.921	3.07E-04	5.20E-04	0.052	6.89E-02	8.4928	5.33E-02	0.00
29.0	1.0	28.5	120.0	1.71	1.15	0.564	11	1.25	55.9	0.9	15.6	0.9	1196.177	3.09E-04	5.20E-04	0.052	6.99E-02	8.4928	5.41E-02	0.00
30.0	1.0	29.5	120.0	1.77	1.19	0.581	11	1.25	55.9	0.9	15.4	0.9	1212.035	3.11E-04	5.20E-04	0.052	7.10E-02	8.4928	5.49E-02	0.00
31.0	1.0	30.5	120.0	1.83	1.23	0.597	11	1.25	55.9	0.9	15.3	0.9	1227.516	3.12E-04	5.20E-04	0.052	7.20E-02	8.4928	5.57E-02	0.00
32.0	1.0	31.5	120.0	1.89	1.27	0.613	11	1.25	55.9	0.9	15.1	0.9	1242.641	3.14E-04	5.20E-04	0.052	7.30E-02	8.4928	5.65E-02	0.00
33.0	1.0	32.5	120.0	1.95	1.31	0.629	13	1.25	58.8	0.9	17.6	0.9	1329.436	2.98E-04	3.00E-04	0.030	3.49E-02	8.4928	2.70E-02	0.00
34.0	1.0	33.5	120.0	2.01	1.35	0.645	13	1.25	58.8	0.9	17.4	0.8	1344.735	2.99E-04	3.00E-04	0.030	3.54E-02	8.4928	2.74E-02	0.00
35.0	1.0	34.5	120.0	2.07	1.39	0.660	13	1.25	58.8	0.9	17.2	0.8	1359.713	3.00E-04	5.20E-04	0.052	6.22E-02	8.4928	4.81E-02	0.00
36.0	1.0	35.5	120.0	2.13	1.43	0.675	13	1.25	58.8	0.9	17.0	0.8	1374.387	3.01E-04	5.20E-04	0.052	6.30E-02	8.4928	4.88E-02	0.00
37.0	1.0	36.5	120.0	2.19	1.47	0.690	13	1.25	58.8	0.9	16.9	0.8	1388.771	3.02E-04	5.20E-04	0.052	6.38E-02	8.4928	4.94E-02	0.00
38.0	1.0	37.5	120.0	2.25	1.51	0.704	33	1.25	90.8	0.9	42.4	0.8	1913.714	2.22E-04	3.00E-04	0.030	1.22E-02	8.4928	9.43E-03	0.00
39.0	1.0	38.5	120.0	2.31	1.55	0.718	33	1.25	90.8	0.8	42.0	0.8	1932.598	2.22E-04	3.00E-04	0.030	1.23E-02	8.4928	9.54E-03	0.00
40.0	1.0	39.5	120.0	2.37	1.59	0.732	33	1.25	90.8	0.8	41.6	0.8	1951.139	2.23E-04	3.00E-04	0.030	1.25E-02	8.4928	9.65E-03	0.00
41.0	1.0	40.5	120.0	2.43	1.63	0.745	33	1.25	90.8	0.8	41.2	0.8	1969.350	2.23E-04	3.00E-04	0.030	1.26E-02	8.4928	9.77E-03	0.00
42.0	1.0	41.5	120.0	2.49	1.67	0.758	33	1.25	90.8	0.8	40.8	0.8	1987.246	2.23E-04	3.00E-04	0.030	1.28E-02	8.4928	9.88E-03	0.00
43.0	1.0	42.5	120.0	2.55	1.71	0.771	33	1.25	90.8	0.8	40.4	0.8	2004.839	2.23E-04	3.00E-04	0.030	1.29E-02	8.4928	9.99E-03	0.00
44.0	1.0	43.5	120.0	2.61	1.75	0.783	7	1.25	40.6	0.8	15.5	0.8	1473.568	3.07E-04	5.20E-04	0.052	7.06E-02	8.4928	5.47E-02	0.00
45.0	1.0	44.5	120.0	2.67	1.79	0.795	7	1.25	40.6	0.8	15.4	0.8	1487.981	3.07E-04	5.20E-04	0.052	7.11E-02	8.4928	5.50E-02	0.00
46.0	1.0	45.5	120.0	2.73	1.83	0.807	7	1.25	40.6	0.8	15.3	0.8	1502.208	3.06E-04	5.20E-04	0.052	7.15E-02	8.4928	5.53E-02	0.00
47.0	1.0	46.5	120.0	2.79	1.87	0.819	11	1.25	50.1	0.8	13.0	0.8	1436.934	3.23E-04	5.20E-04	0.052	8.72E-02	8.4928	6.75E-02	0.00
48.0	1.0	47.5	120.0	2.85	1.91	0.830	11	1.25	50.1	0.8	12.9	0.8	1448.200	3.23E-04	5.20E-04	0.052	8.81E-02	8.4928	6.82E-02	0.00
49.0	1.0	48.5	120.0	2.91	1.95	0.841	11	1.25	50.1	0.8	12.8	0.8	1459.300	3.23E-04	5.20E-04	0.052	8.90E-02	8.4928	6.89E-02	0.00
50.0	1.0	49.5	120.0	2.97	1.99	0.851	25	1.25	74.5	0.8	34.0	0.8	2042.085	2.32E-04	3.00E-04	0.030	1.59E-02	8.4928	1.23E-02	0.00

TOTAL SETTLEMENT = **0.05**

Figure 9

GEOCON

Client : Perry Street
File No. : W1301-06-01
Boring : 3

TECHNICAL ENGINEERING AND DESIGN GUIDES AS ADAPTED FROM THE US ARMY CORPS OF ENGINEERS, NO. 9
EVALUATION OF EARTHQUAKE-INDUCED SETTLEMENTS IN DRY SANDY SOILS
MAXIMUM CONSIDERED EARTHQUAKE

MCE EARTHQUAKE INFORMATION:

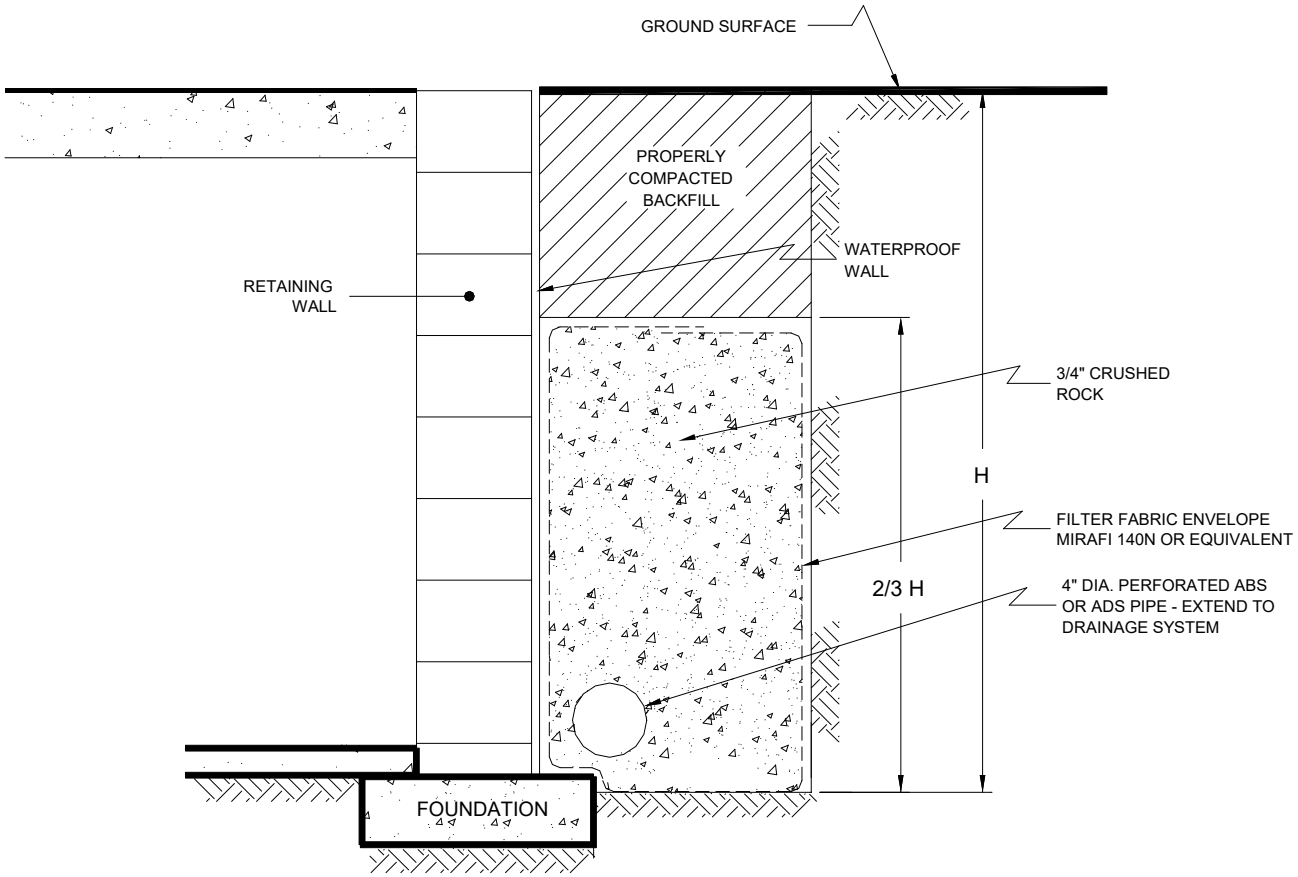
Earthquake Magnitude:	6.87
Peak Horiz. Acceleration (g):	0.823

Fig 4.1 Fig 4.2 Fig 4.4

Depth of Base of Strata (ft)	Thickness of Layer (ft)	Depth of Mid-point of Layer (ft)	Soil Unit Weight (pcf)	Overburden Pressure at Mid-point (tsf)	Mean Effective Pressure at Mid-point (tsf)	Average Cyclic Shear Stress [Tav]	Field SPT [N]	Correction Factor [Cer]	Relative Density [Dr] (%)	Correction Factor [Cn]	Corrected [N1]60	rd Factor	Maximum Shear Mod. [Gmax] (tsf)	[yeff]*[Geff] [Gmax]	yeff Shear Strain	[yeff]*100%	Volumetric Strain M7.5 [E15] (%)	Number of Strain Cycles [Nc]	Corrected Vol. Strains [Ec]	Estimated Settlement [S] (inches)
1.0	1.0	0.5	120.0	0.03	0.02	0.016	10	1.25	76.6	1.7	19.1	1.0	169.475	9.38E-05	1.90E-04	0.019	2.00E-02	9.8538	1.66E-02	0.00
2.0	1.0	1.5	120.0	0.09	0.06	0.048	10	1.25	74.4	1.7	19.1	1.0	293.540	1.59E-04	2.30E-04	0.023	2.43E-02	9.8538	2.01E-02	0.00
3.0	1.0	2.5	120.0	0.15	0.10	0.080	10	1.25	72.5	1.7	19.1	1.0	378.958	2.02E-04	8.10E-04	0.081	8.55E-02	9.8538	7.07E-02	0.02
4.0	1.0	3.5	120.0	0.21	0.14	0.112	10	1.25	70.7	1.7	19.1	1.0	448.389	2.34E-04	8.10E-04	0.081	8.55E-02	9.8538	7.07E-02	0.02
5.0	1.0	4.5	120.0	0.27	0.18	0.144	10	1.25	69.0	1.7	19.1	1.0	508.425	2.60E-04	8.10E-04	0.081	8.55E-02	9.8538	7.07E-02	0.02
6.0	1.0	5.5	120.0	0.33	0.22	0.176	10	1.25	67.4	1.7	19.1	1.0	562.085	2.82E-04	4.50E-04	0.045	4.75E-02	9.8538	3.93E-02	0.01
7.0	1.0	6.5	120.0	0.39	0.26	0.208	10	1.25	65.9	1.6	18.4	1.0	603.301	3.05E-04	1.00E-03	0.100	1.10E-01	9.8538	9.14E-02	0.02
8.0	1.0	7.5	120.0	0.45	0.30	0.239	10	1.25	64.5	1.5	17.1	1.0	632.776	3.29E-04	1.00E-03	0.100	1.20E-01	9.8538	9.96E-02	0.02
9.0	1.0	8.5	120.0	0.51	0.34	0.271	10	1.25	63.3	1.4	16.1	1.0	659.735	3.51E-04	1.00E-03	0.100	1.30E-01	9.8538	1.07E-01	0.03
10.0	1.0	9.5	120.0	0.57	0.38	0.302	7	1.25	52.2	1.4	10.7	1.0	607.907	4.18E-04	2.70E-03	0.270	5.75E-01	9.8538	4.76E-01	0.00
11.0	1.0	10.5	120.0	0.63	0.42	0.333	7	1.25	52.2	1.3	10.1	1.0	628.529	4.39E-04	2.70E-03	0.270	6.10E-01	9.8538	5.05E-01	0.00
12.0	1.0	11.5	120.0	0.69	0.46	0.364	7	1.25	52.2	1.2	9.8	0.9	650.354	4.57E-04	2.70E-03	0.270	6.36E-01	9.8538	5.26E-01	0.00
13.0	1.0	12.5	120.0	0.75	0.50	0.395	7	1.25	52.2	1.2	9.6	0.9	673.332	4.71E-04	1.20E-03	0.120	2.90E-01	9.8538	2.40E-01	0.00
14.0	1.0	13.5	120.0	0.81	0.54	0.426	10	1.25	59.6	1.2	14.4	0.9	802.030	4.19E-04	1.20E-03	0.120	1.77E-01	9.8538	1.47E-01	0.00
15.0	1.0	14.5	120.0	0.87	0.58	0.456	10	1.25	59.6	1.2	14.2	0.9	825.875	4.30E-04	1.20E-03	0.120	1.81E-01	9.8538	1.50E-01	0.00
16.0	1.0	15.5	120.0	0.93	0.62	0.486	10	1.25	59.6	1.1	13.9	0.9	848.608	4.39E-04	1.20E-03	0.120	1.86E-01	9.8538	1.54E-01	0.00
17.0	1.0	16.5	120.0	0.99	0.66	0.516	3	1.25	31.4	1.1	4.5	0.9	603.195	6.47E-04	4.10E-03	0.410	2.42E+00	9.8538	2.01E+00	0.00
18.0	1.0	17.5	120.0	1.05	0.70	0.545	3	1.25	31.4	1.1	4.5	0.9	617.634	6.59E-04	4.10E-03	0.410	2.47E+00	9.8538	2.05E+00	0.00
19.0	1.0	18.5	120.0	1.11	0.74	0.574	3	1.25	31.4	1.1	4.4	0.9	631.508	6.70E-04	4.10E-03	0.410	2.53E+00	9.8538	2.09E+00	0.00
20.0	1.0	19.5	120.0	1.17	0.78	0.603	3	1.25	31.4	1.1	4.3	0.9	644.865	6.80E-04	4.10E-03	0.410	2.57E+00	9.8538	2.13E+00	0.00
21.0	1.0	20.5	120.0	1.23	0.82	0.631	3	1.25	31.4	1.1	4.3	0.9	657.749	6.89E-04	4.10E-03	0.410	2.62E+00	9.8538	2.17E+00	0.00
22.0	1.0	21.5	120.0	1.29	0.86	0.660	3	1.25	31.4	1.0	4.2	0.9	670.198	6.98E-04	4.10E-03	0.410	2.67E+00	9.8538	2.21E+00	0.00
23.0	1.0	22.5	120.0	1.35	0.90	0.687	3	1.25	31.4	1.0	4.1	0.9	682.246	7.05E-04	1.00E-02	1.000	6.63E+00	9.8538	5.49E+00	0.00
24.0	1.0	23.5	120.0	1.41	0.94	0.715	3	1.25	31.4	1.0	4.1	0.9	693.922	7.13E-04	1.00E-02	1.000	6.75E+00	9.8538	5.59E+00	0.00
25.0	1.0	24.5	120.0	1.47	0.98	0.742	3	1.25	31.4	1.0	4.0	0.9	705.252	7.19E-04	1.00E-02	1.000	6.86E+00	9.8538	5.68E+00	0.00
26.0	1.0	25.5	120.0	1.53	1.03	0.769	9	1.25	52.3	1.0	12.7	0.9	1055.741	4.92E-04	8.10E-04	0.081	1.40E-01	9.8538	1.16E-01	0.00
27.0	1.0	26.5	120.0	1.59	1.07	0.795	9	1.25	52.3	1.0	12.5	0.9	1071.522	4.96E-04	8.10E-04	0.081	1.42E-01	9.8538	1.18E-01	0.00
28.0	1.0	27.5	120.0	1.65	1.11	0.821	11	1.25	55.9	1.0	15.8	0.9	1179.921	4.60E-04	8.10E-04	0.081	1.07E-01	9.8538	8.88E-02	0.00
29.0	1.0	28.5	120.0	1.71	1.15	0.846	11	1.25	55.9	0.9	15.6	0.9	1196.177	4.63E-04	8.10E-04	0.081	1.09E-01	9.8538	9.02E-02	0.00
30.0	1.0	29.5	120.0	1.77	1.19	0.871	11	1.25	55.9	0.9	15.4	0.9	1212.035	4.66E-04	8.10E-04	0.081	1.11E-01	9.8538	9.15E-02	0.00
31.0	1.0	30.5	120.0	1.83	1.23	0.896	11	1.25	55.9	0.9	15.3	0.9	1227.516	4.68E-04	8.10E-04	0.081	1.12E-01	9.8538	9.28E-02	0.00
32.0	1.0	31.5	120.0	1.89	1.27	0.920	11	1.25	55.9	0.9	15.1	0.9	1242.641	4.71E-04	8.10E-04	0.081	1.14E-01	9.8538	9.41E-02	0.00
33.0	1.0	32.5	120.0	1.95	1.31	0.943	13	1.25	58.8	0.9	17.6	0.9	1329.436	4.47E-04	8.10E-04	0.081	9.43E-02	9.8538	7.81E-02	0.00
34.0	1.0	33.5	120.0	2.01	1.35	0.967	13	1.25	58.8	0.9	17.4	0.8	1344.735	4.49E-04	8.10E-04	0.081	9.56E-02	9.8538	7.91E-02	0.00
35.0	1.0	34.5	120.0	2.07	1.39	0.990	13	1.25	58.8	0.9	17.2	0.8	1359.713	4.50E-04	8.10E-04	0.081	9.68E-02	9.8538	8.02E-02	0.00
36.0	1.0	35.5	120.0	2.13	1.43	1.012	13	1.25	58.8	0.9	17.0	0.8	1374.387	4.52E-04	8.10E-04	0.081	9.81E-02	9.8538	8.12E-02	0.00
37.0	1.0	36.5	120.0	2.19	1.47	1.034	13	1.25	58.8	0.9	16.9	0.8	1388.771	4.53E-04	8.10E-04	0.081	9.93E-02	9.8538	8.22E-02	0.00
38.0	1.0	37.5	120.0	2.25	1.51	1.055	33	1.25	90.8	0.9	42.4	0.8	1913.714	3.33E-04	5.20E-04	0.052	2.11E-02	9.8538	1.75E-02	0.00
39.0	1.0	38.5	120.0	2.31	1.55	1.076	33	1.25	90.8	0.8	42.0	0.8	1932.598	3.33E-04	5.20E-04	0.052	2.14E-02	9.8538	1.77E-02	0.00
40.0	1.0	39.5	120.0	2.37	1.59	1.097	33	1.25	90.8	0.8	41.6	0.8	1951.139	3.34E-04	5.20E-04	0.052	2.16E-02	9.8538	1.79E-02	0.00
41.0	1.0	40.5	120.0	2.43	1.63	1.117	33	1.25	90.8	0.8	41.2	0.8	1969.350	3.34E-04	5.20E-04	0.052	2.19E-02	9.8538	1.81E-02	0.00
42.0	1.0	41.5	120.0	2.49	1.67	1.136	33	1.25	90.8	0.8	40.8	0.8	1987.246	3.35E-04	5.20E-04	0.052	2.21E-02	9.8538	1.83E-02	0.00
43.0	1.0	42.5	120.0	2.55	1.71	1.155	33	1.25	90.8	0.8	40.4	0.8	2004.839	3.35E-04	5.20E-04	0.052	2.24E-02	9.8538	1.85E-02	0.00
44.0	1.0	43.5	120.0	2.61	1.75	1.174	7	1.25	40.6	0.8	15.5	0.8	1473.568	4.60E-04	8.10E-04	0.081	1.10E-01	9.8538	9.11E-02	0.00
45.0	1.0	44.5	120.0	2.67	1.79	1.192	7	1.25	40.6	0.8	15.4	0.8	1487.981	4.60E-04	8.10E-04	0.081	1.11E-01	9.8538	9.16E-02	0.00
46.0	1.0	45.5	120.0	2.73	1.83	1.210	7	1.25	40.6	0.8	15.3	0.8	1502.208	4.59E-04	8.10E-04	0.081	1.11E-01	9.8538	9.22E-02	0.00
47.0	1.0	46.5	120.0	2.79	1.87	1.227	11	1.25	50.1	0.8	13.0	0.8	1436.934	4.84E-04	8.10E-04	0.081	1.36E-01	9.8538	1.12E-01	0.00
48.0	1.0	47.5	120.0	2.85	1.91	1.244	11	1.25	50.1	0.8	12.9	0.8	1448.200	4.84E-04	8.10E-04	0.081	1.37E-01	9.8538	1.14E-01	0.00
49.0	1.0	48.5	120.0	2.91	1.95	1.260	11	1.25	50.1	0.8	12.8	0.8	1459.300	4.84E-04	8.10E-04	0.081	1.39E-01	9.8538	1.15E-01	0.00
50.0	1.0	49.5	120.0	2.97	1.99	1.276	25	1.25	74.5	0.8	34.0	0.8	2042.085	3.48E-04	5.20E-04	0.052	2.75E-02	9.8538	2.28E-02	0.00

TOTAL SETTLEMENT = **0.14**

Figure 10



NO SCALE

GEOCON WEST, INC.

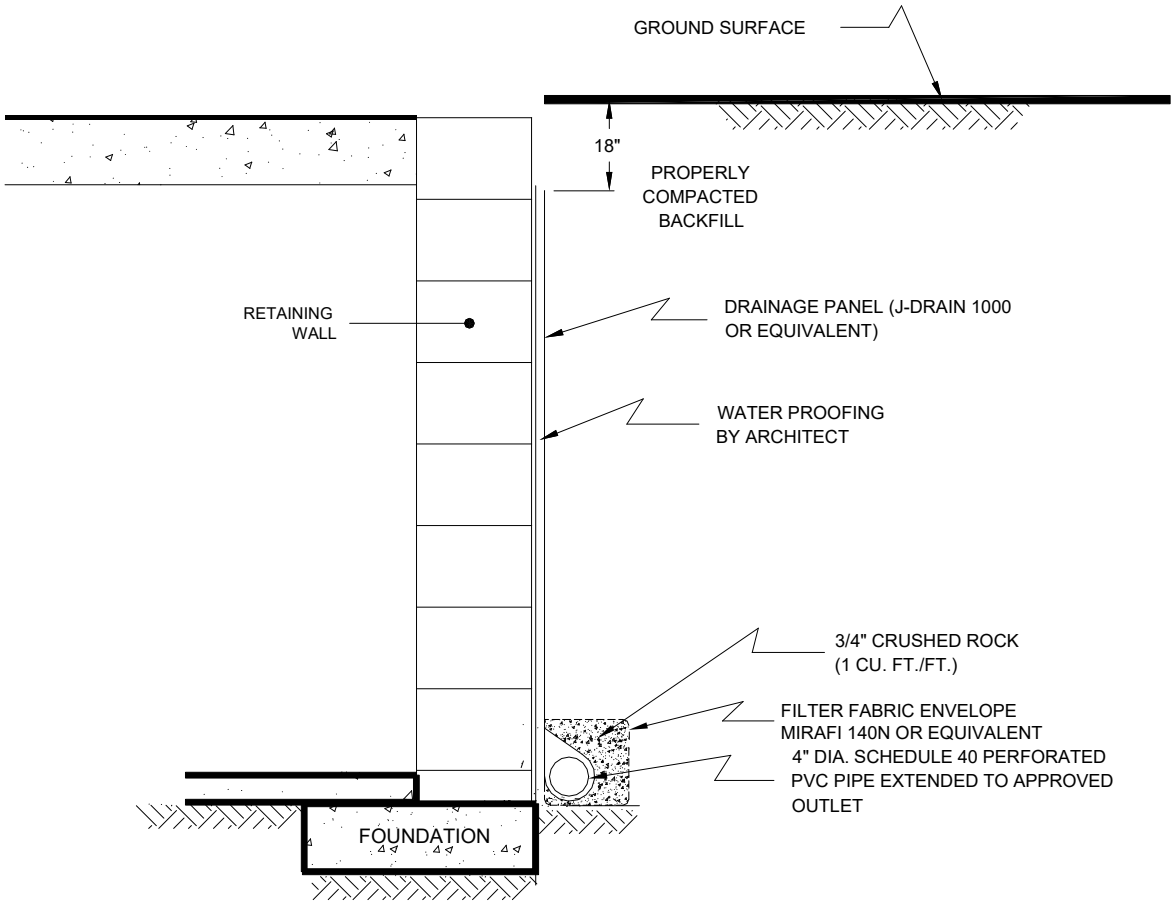
ENVIRONMENTAL GEOTECHNICAL MATERIALS
3303 N. SAN FERNANDO BLVD. - SUITE 100 - BURBANK, CA 91504
PHONE (818) 841-8388 - FAX (818) 841-1704

DRAFTED BY: JMH	CHECKED BY: JTA

RETAINING WALL DRAIN DETAIL

21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021	NO. W1301-06-01	FIG. 10



NO SCALE

GEOCON WEST, INC.

ENVIRONMENTAL GEOTECHNICAL MATERIALS
3303 N. SAN FERNANDO BLVD. - SUITE 100 - BURBANK, CA 91504
PHONE (818) 841-8388 - FAX (818) 841-1704

DRAFTED BY: JMH	CHECKED BY: JTA

RETAINING WALL DRAIN DETAIL

21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021	NO. W1301-06-01	FIG. 11

APPENDIX A

APPENDIX A

FIELD INVESTIGATION

The site was explored on February 9, 2021 by drilling five 8-inch diameter borings using a truck-mounted hollow-stem auger drilling machine and advancing five cone penetrometer tests (CPTs). The borings were excavated to depths between approximately 20½ and 51 feet beneath the existing ground surface. The CPTs were advanced to depths of approximately 60 feet below existing ground surface. Representative and relatively undisturbed samples were obtained by driving a 4 inch, O. D., California Modified Sampler into the "undisturbed" soil mass with blows from a 140 pound hammer falling 30 inches. Bulk samples were also obtained. Standard Penetration Tests were performed in boring B3.

The soil conditions encountered in the borings were visually examined, classified and logged in general accordance with the Unified Soil Classification System (USCS). Logs of the borings are presented on Figures A1 through A5. The CPT data is presented as Figures A6 through A10. The logs depict the soil and geologic conditions encountered and the depth at which samples were obtained. The logs also include our interpretation of the conditions between sampling intervals. Therefore, the logs contain both observed and interpreted data. We determined the lines designating the interface between soil materials on the logs using visual observations, penetration rates, excavation characteristics and other factors. The transition between materials may be abrupt or gradual. Where applicable, the boring logs were revised based on subsequent laboratory testing. The approximate locations of the borings and CPTs are depicted on the Site Plan (see Figure 2)

PROJECT NO. W1301-06-01

BORING 1

ELEV. (MSL.) -- DATE COMPLETED **2/9/2021**

EQUIPMENT **HOLLOW STEM AUGER** BY: **JMH**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT*)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	BULK 0-5'				**ARTIFICIAL FILL** Silty Sand, poorly graded, dense, moist, light brown, fine-grained, some medium-grained, some gravel.			
2								
4								
6	B1@5'			CH	**ALLUVIUM** Clay, firm, moist, dark gray, high plasticity.	19	105.0	24.0
8	B1@7.5'				- some sand	13	106.1	19.7
10	B1@10'				- olive brown mottles	21	103.7	22.0
12			▼					
14					Clayey Sand, poorly graded, loose, saturated, brown, fine-grained.			
16	B1@15'			SC		10	111.6	19.8
18					Silty Sand, poorly graded, medium dense, saturated, brown, fine-grained.			
20	B1@20'			SM		22	114.5	19.2

Total depth of boring: 20.5 feet
Fill to 4.5 feet.
Groundwater encountered at 12.5 feet.
Backfilled with grout.

*Penetration resistance for 140-pound hammer falling 30 inches by auto-hammer.
NOTE: The stratification lines presented herein represent the approximate boundary between earth types; the transitions may be gradual.

W1301-06-01 BORING LOGS.GPJ

Figure A1,
Log of Boring 1, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

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PROJECT NO. W1301-06-01

BORING 2

ELEV. (MSL.) -- DATE COMPLETED **2/9/2021**

EQUIPMENT **HOLLOW STEM AUGER** BY: **JMH**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT*)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	BULK 0-5'				**ARTIFICIAL FILL** Silty Sand, poorly graded, loose, moist, brown, fine-grained.			
2								
4	B2@3'			ML	**ALLUVIUM** Sandy Silt, firm, moist, dark gray.	14	73.4	29.6
6	B2@6'				Clay, soft, wet, gray, high plasticity.	10	29.3	32.0
8								
10	B2@9'			CH	- firm, dark gray	15	73.9	49.8
12	B2@12'					15	87.2	35.9
14								
16	B2@15'				- soft	8	75.1	45.2
18								
20	B2@20'				- firm	17	101.7	27.4

Total depth of boring: 20.5 feet
Fill to 3 feet.
No groundwater encountered.
Backfilled with grout.

*Penetration resistance for 140-pound hammer falling 30 inches by auto-hammer.
NOTE: The stratification lines presented herein represent the approximate boundary between earth types; the transitions may be gradual.

W1301-06-01 BORING LOGS.GPJ

Figure A2,
Log of Boring 2, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

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PROJECT NO. W1301-06-01

BORING 3

ELEV. (MSL.) -- DATE COMPLETED **2/9/2021**

EQUIPMENT **HOLLOW STEM AUGER** BY: **JMH**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT*)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	BULK 0-5'				**ARTIFICIAL FILL** Sand, poorly graded, dense, moist, light brown, fine-grained, some medium-grained.			
2	B3@1.5'					50 (6")	107.1	4.0
4								
6	B3@5'					50 (6")		
8	B3@7'				- grayish brown, some fine gravel	50 (3")	103.4	8.7
10	B3@10'			MH	**ALLUVIUM** Silt, soft, moist, dark gray, high plasticity, some sand.	7		
12	B3@12.5'			CH	Clay, firm, moist, dark gray, high plasticity.	21	91.7	31.6
14								
16	B3@15'					10		
18	B3@17.5'		▼		Clay, firm, moist, dark gray.	14	103.7	26.1
20	B3@20'			CL	- soft, wet	3		
22	B3@22.5'				- firm, light brown	11	105.7	27.3
24								
26	B3@25'			CH	Clay, firm, moist, olive brown, some sand, trace gravel, high plasticity.	9		
28	B3@27.5'				- mottled calcium deposits, increase in sand	21	89.9	32.6

W1301-06-01 BORING LOGS.GPJ

Figure A3,
Log of Boring 3, Page 1 of 2

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◥ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

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PROJECT NO. W1301-06-01

BORING 3

ELEV. (MSL.) -- DATE COMPLETED **2/9/2021**

EQUIPMENT **HOLLOW STEM AUGER** BY: **JMH**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT*)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
30	B3@30'				- decrease in sand	11		
32	B3@32.5'			CH	- stiff	22	98.4	27.3
34	B3@35'				- firm, increase in sand	13		
36								
38	B3@37.5'				Silty Sand, poorly graded, dense, wet, olive brown, fine-grained.	67	117.6	16.4
40	B3@40'			SM		33		
42	B3@42.5'				- medium dense, trace shells	36	101.9	25.0
44				CL	Sandy Clay, soft, wet, olive brown.			
46	B3@45'					7		
48	B3@47.5'			SC	Clayey Sand, poorly graded, medium dense, saturated, olive brown with oxidation mottles, fine-grained.	20	100.0	25.4
50	B3@50'			SM	Silty Sand, poorly graded, medium dense, saturated, olive brown.	25		
					Total depth of boring: 51 feet Fill to 9 feet. Groundwater encountered at 17.6 feet. Backfilled with grout. *Penetration resistance for 140-pound hammer falling 30 inches by auto-hammer. NOTE: The stratification lines presented herein represent the approximate boundary between earth types; the transitions may be gradual.			

W1301-06-01 BORING LOGS.GPJ

Figure A3,
Log of Boring 3, Page 2 of 2

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◥ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

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PROJECT NO. W1301-06-01

BORING 4

ELEV. (MSL.) -- DATE COMPLETED **2/9/2021**

EQUIPMENT **HOLLOW STEM AUGER** BY: **JMH**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT*)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	BULK 0-5'				**ARTIFICIAL FILL** Silty Sand, poorly graded, dense, moist, brown, fine-grained, some medium-grained, some gravel.			
2								
4	B4@3'					50 (6")		
6	B4@5'			ML	**ALLUVIUM** Sandy Silt, soft, moist, dark gray.	10	78.1	31.1
8	B4@7.5'				Clay, soft, wet, dark gray, high plasticity.	10	80.7	38.9
10	B4@10'					8	77.8	42.4
12				CH				
14								
16	B4@15'					10	85.0	38.5
18								
20	B4@20'					4	80.0	42.3

Total depth of boring: 20.5 feet
Fill to 5 feet.
No groundwater encountered.
Backfilled with grout.

*Penetration resistance for 140-pound hammer falling 30 inches by auto-hammer.
NOTE: The stratification lines presented herein represent the approximate boundary between earth types; the transitions may be gradual.

W1301-06-01 BORING LOGS.GPJ

Figure A4,
Log of Boring 4, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

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PROJECT NO. W1301-06-01

BORING 5

ELEV. (MSL.) -- DATE COMPLETED **2/9/2021**

EQUIPMENT **HOLLOW STEM AUGER** BY: **JMH**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT*)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**ARTIFICIAL FILL** Silty Sand, poorly graded, loose, moist, brown, fine-grained, some medium-grained.			
2								
4								
6	B5@5'				**ALLUVIUM** Clay, soft, moist, dark gray, high plasticity.	11	79.5	42.3
8	B5@7.5'				- wet	10	82.2	38.4
10	B5@10'			CH		7	74.1	37.5
12								
14								
16	B5@15'				- saturated	11	97.9	47.5
18								
20	B5@20'				- firm, no recovery	17		

Total depth of boring: 20.5 feet
Fill to 5 feet.
No groundwater encountered.
Backfilled with grout.

*Penetration resistance for 140-pound hammer falling 30 inches by auto-hammer.
NOTE: The stratification lines presented herein represent the approx

W1301-06-01 BORING LOGS.GPJ

Figure A5,
Log of Boring 5, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

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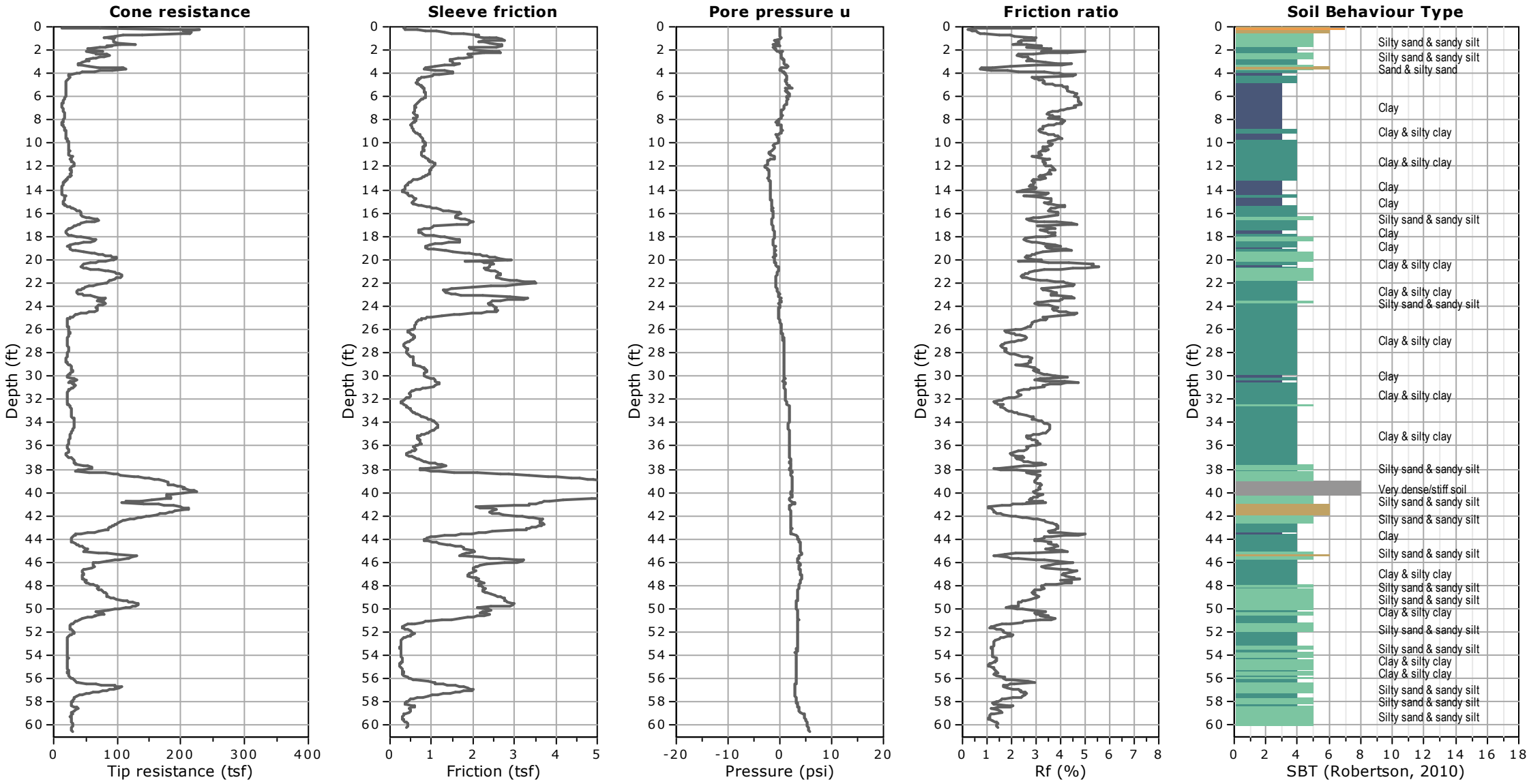
Kehoe Testing and Engineering
714-901-7270
steve@kehoetesting.com
www.kehoetesting.com

Project: Geocon West / Faring Perry Street
Location: Carson, CA

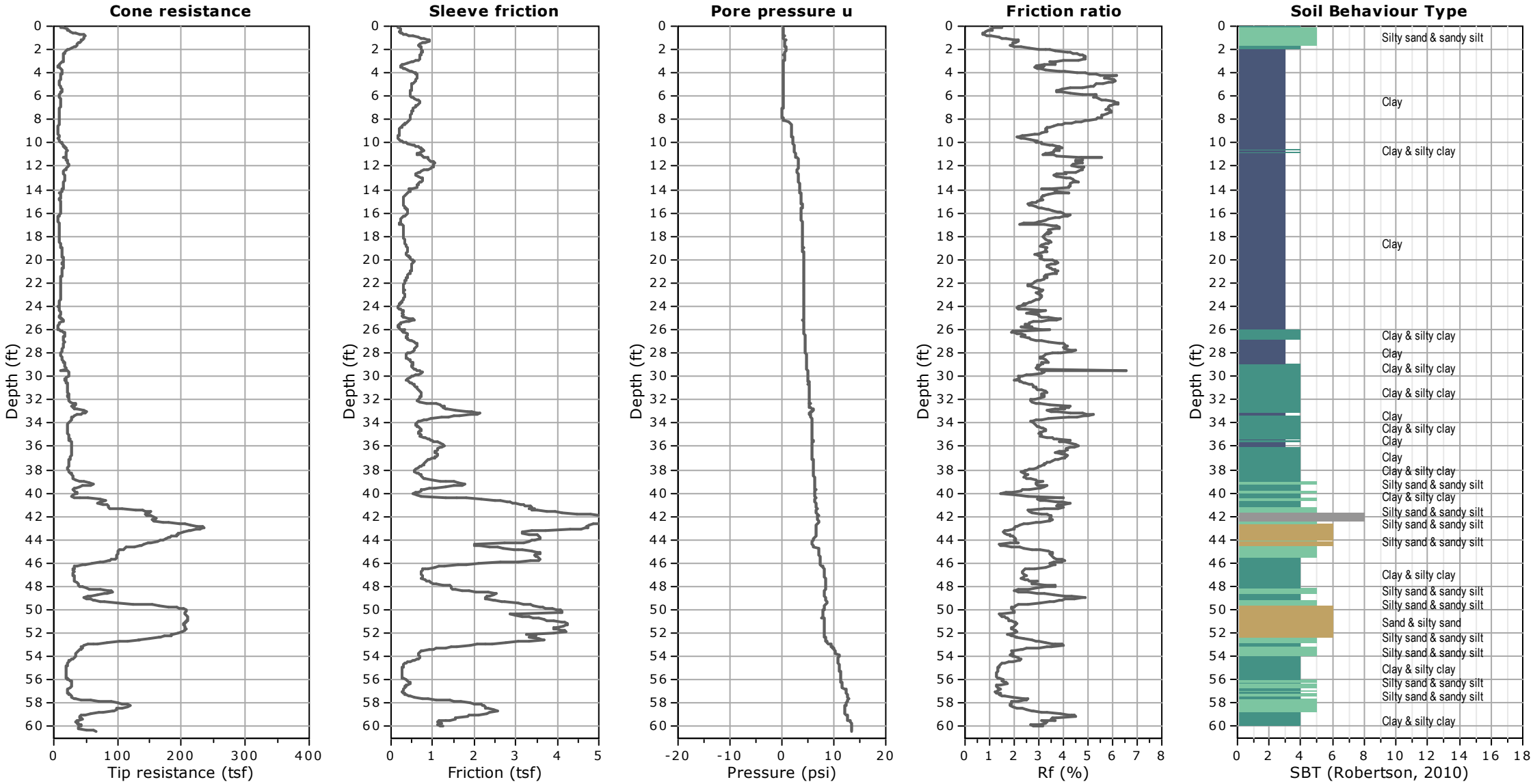
CPT-1
Total depth: 60.51 ft, Date: 2/9/2021



Kehoe Testing and Engineering
714-901-7270
steve@kehoetesting.com
www.kehoetesting.com

Project: **Geocon West / Faring Perry Street**
Location: **Carson, CA**

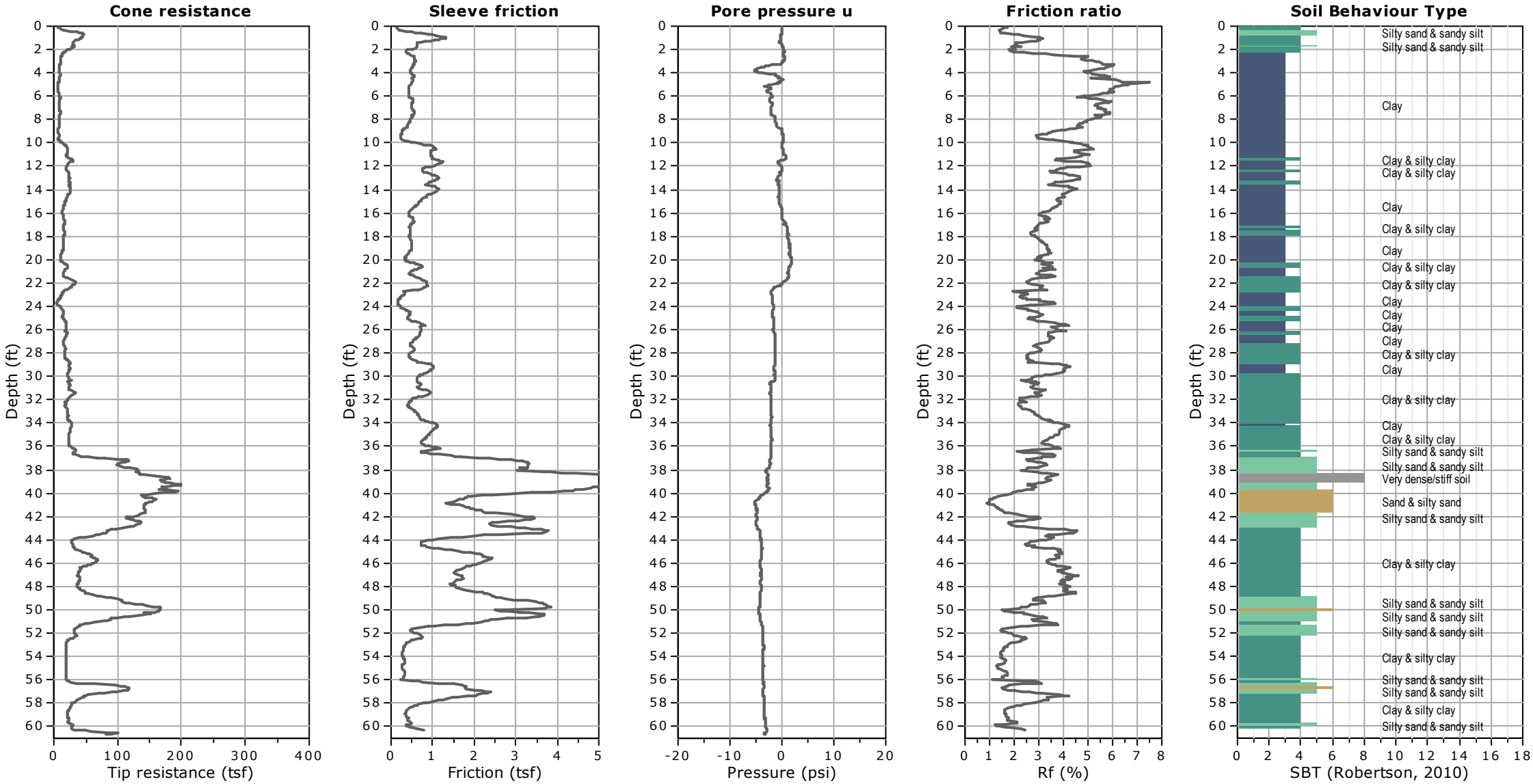
CPT-2
Total depth: 60.38 ft, Date: 2/9/2021



Kehoe Testing and Engineering
714-901-7270
steve@kehoetesting.com
www.kehoetesting.com

Project: **Geocon West / Faring Perry Street**
Location: **Carson, CA**

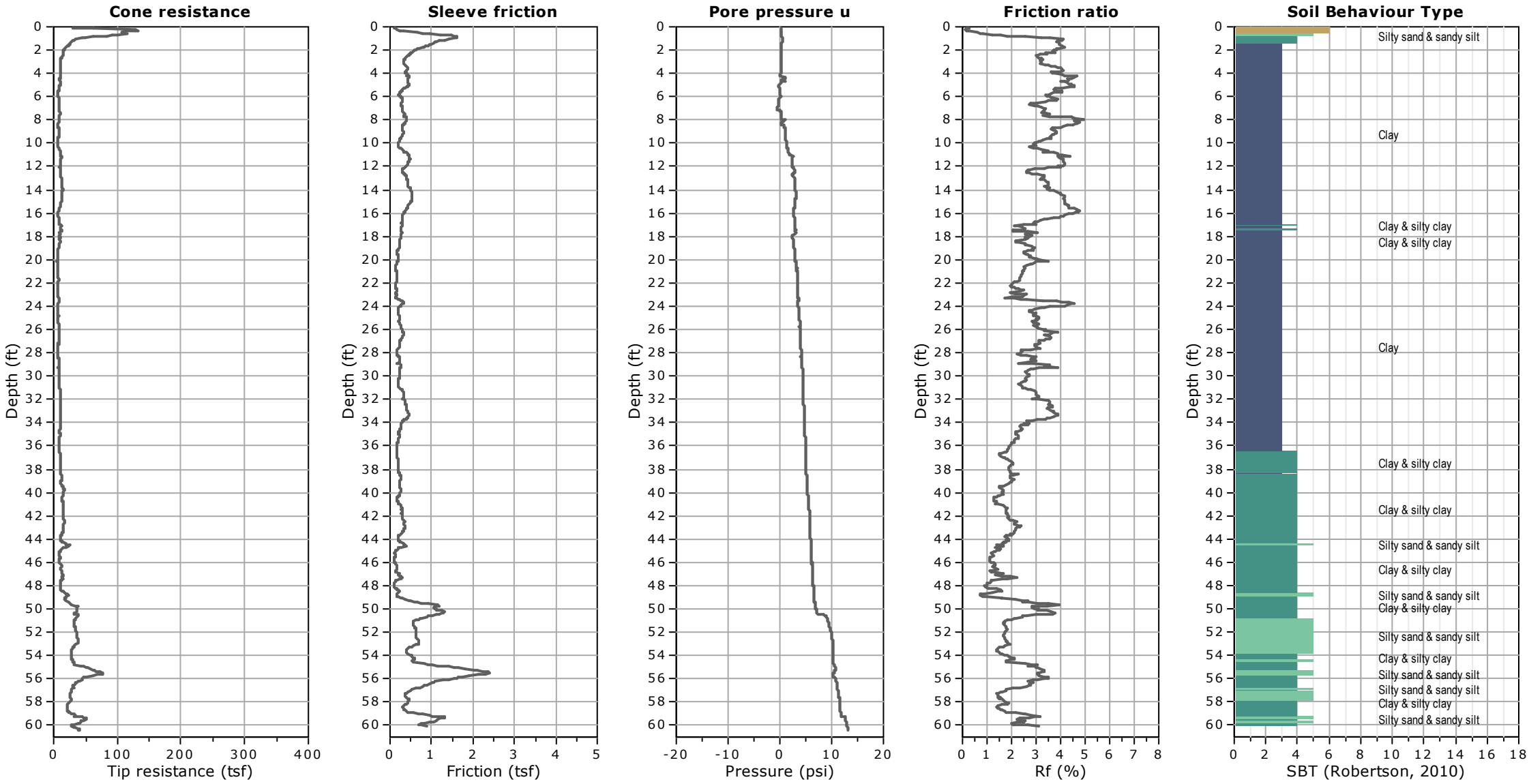
CPT-3
Total depth: 60.63 ft, Date: 2/9/2021



Kehoe Testing and Engineering
714-901-7270
steve@kehoetesting.com
www.kehoetesting.com

Project: **Geocon West / Faring Perry Street**
Location: **Carson, CA**

CPT-4
Total depth: 60.47 ft, Date: 2/9/2021



Kehoe Testing and Engineering
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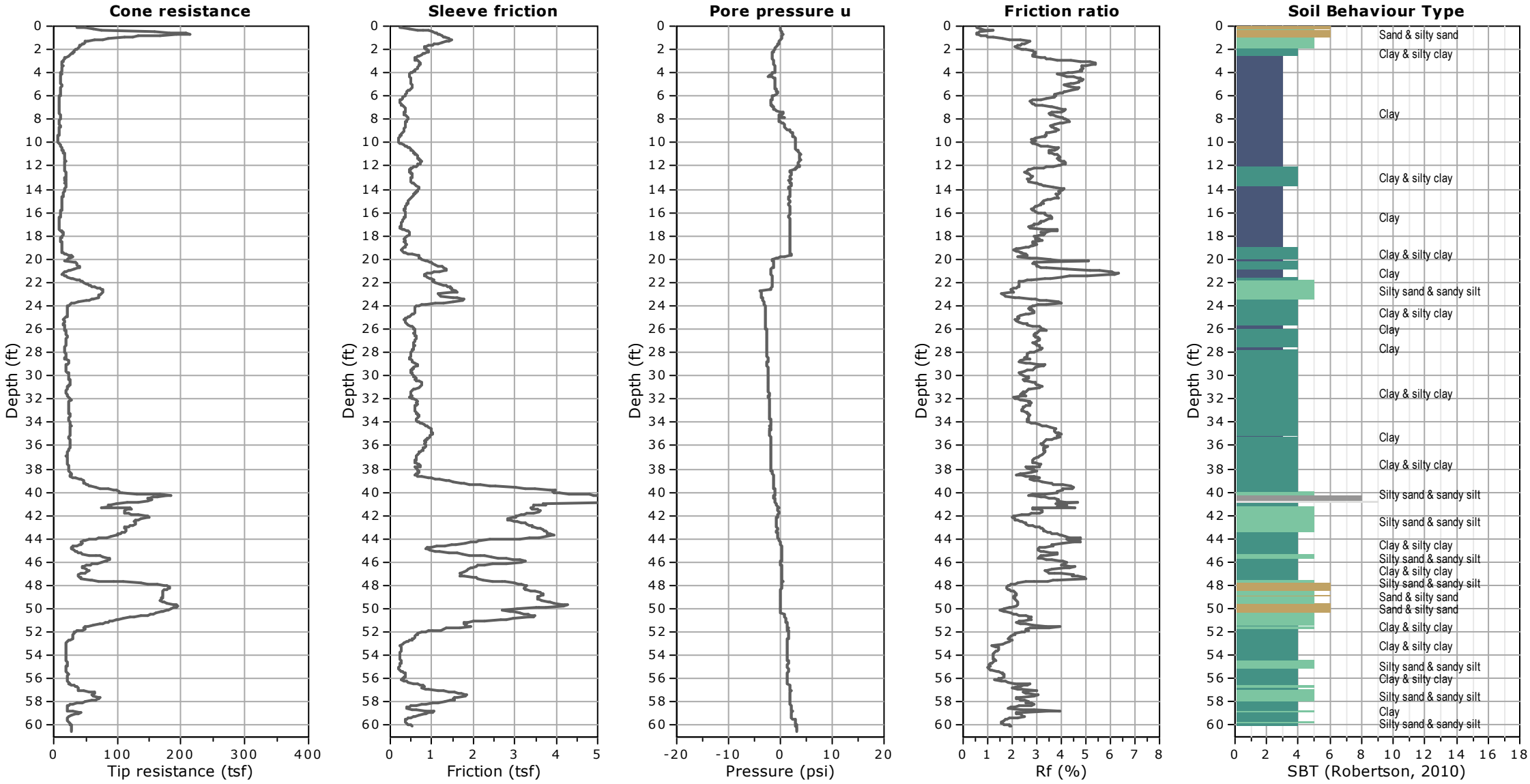
steve@kehoetesting.com
www.kehoetesting.com

Project: **Geocon West / Faring Perry Street**
Location: **Carson, CA**

CPT-5
Total depth: 60.51 ft, Date: 2/9/2021

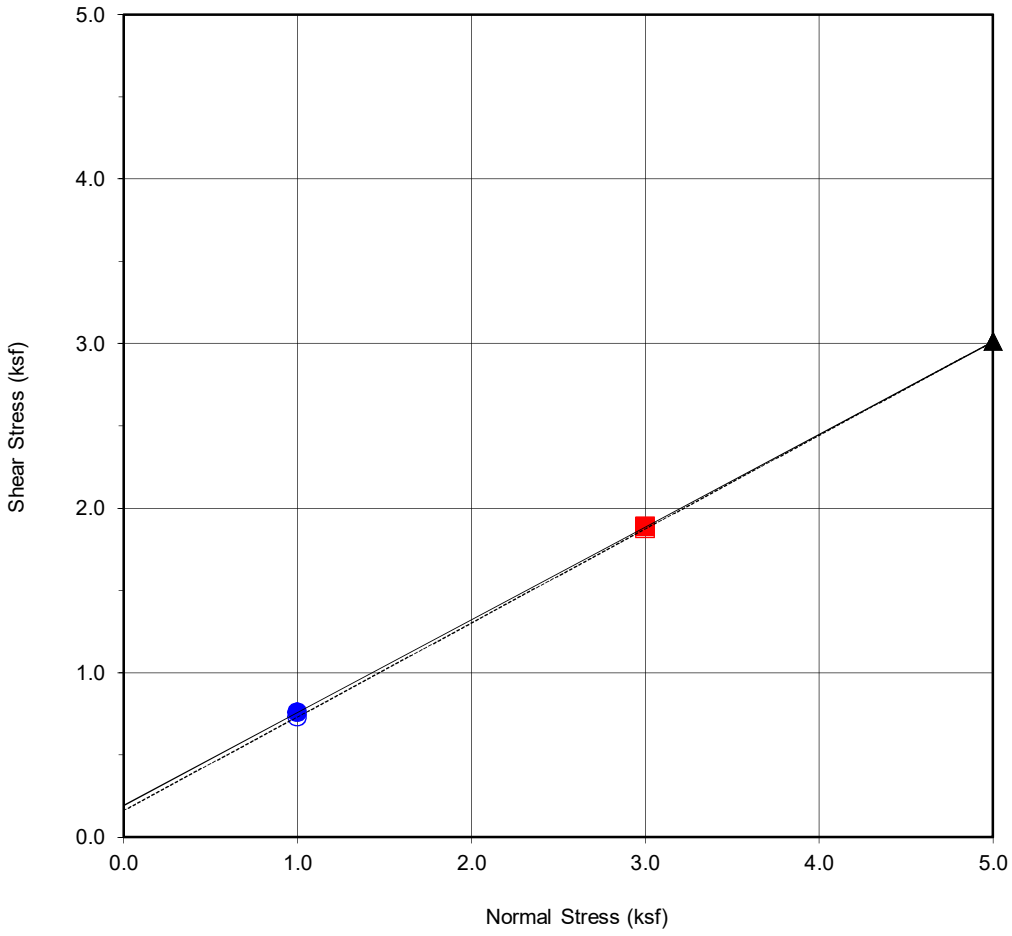


APPENDIX B

APPENDIX B

LABORATORY TESTING

Laboratory tests were performed in accordance with generally accepted test methods of the "American Society for Testing and Materials (ASTM)", or other suggested procedures. Selected samples were tested for direct shear strength, consolidation, plasticity indices, grain size, moisture density relationship, expansion characteristics, corrosivity and in-place dry density and moisture content. The results of the laboratory tests are summarized in Figures B1 through B23. The in-place dry density and moisture content of the samples tested are presented on the boring logs, Appendix A.



Boring No.	**B1 + B2**
Sample No.	**B1B2@0-5'**
Depth (ft)	**0-5'**
Sample Type:	Ring

Soil Identification:		
Brown Silty Sand (SM)		
Strength Parameters		
	C (psf)	ϕ (^{o})
Peak	192	29.4
Ultimate	162	29.7

Normal Strest (kip/ft2)	1	3	5
Peak Shear Stress (kip/ft²)	● 0.76	■ 1.88	▲ 3.01
Shear Stress @ End of Test (ksf)	○ 0.73	□ 1.87	△ 3.01
Deformation Rate (in./min.)	0.05	0.05	0.05
Initial Sample Height (in.)	1.0	1.0	1.0
Ring Inside Diameter (in.)	2.375	2.375	2.375
Initial Moisture Content (%)	13.6	14.5	14.1
Initial Dry Density (pcf)	101.0	101.0	101.0
Initial Degree of Saturation (%)	54.7	58.3	56.7
Soil Height Before Shearing (in.)	1.2	1.2	1.2
Final Moisture Content (%)	24.4	22.1	23.4

GEOCON

DIRECT SHEAR TEST RESULTS

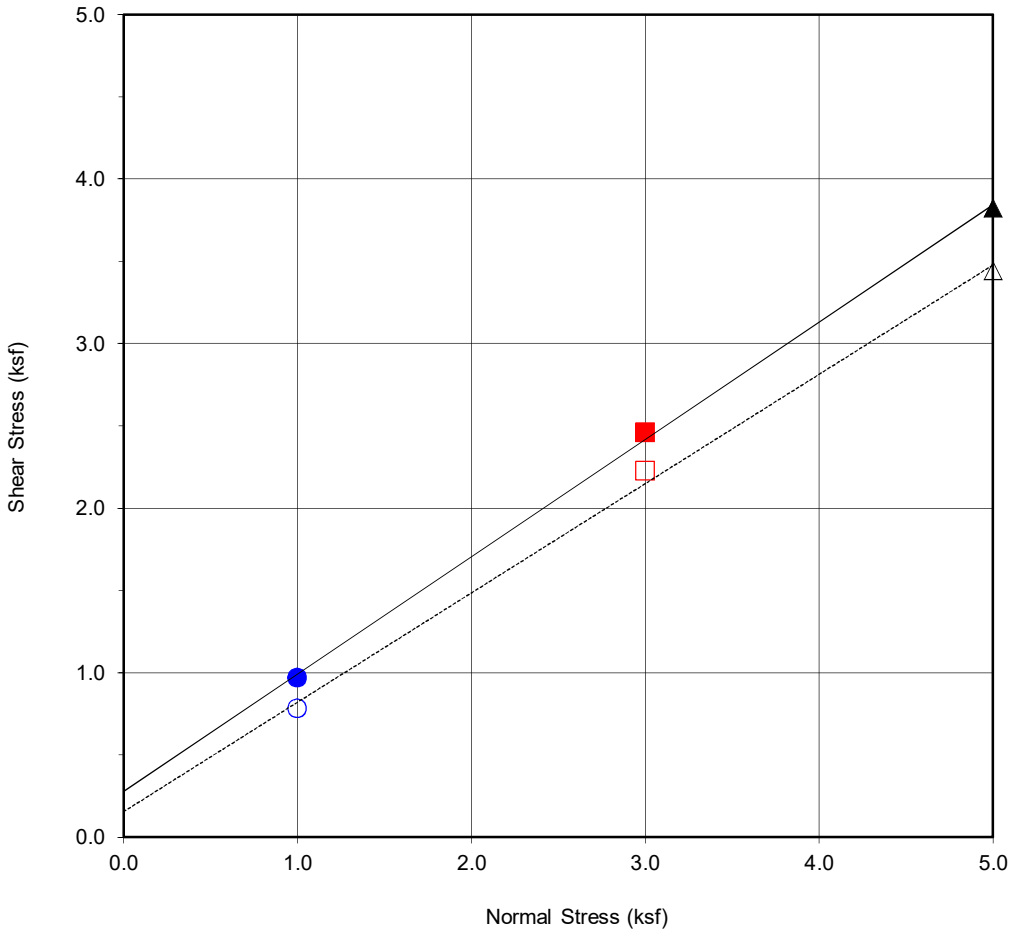
Consolidated Drained ASTM D-3080

Checked by: JMH

Project No.: W1301-06-01

21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021 Figure B1



Boring No.	**B3 + B4**
Sample No.	**B3B4@0-5'**
Depth (ft)	**0-5'**
Sample Type:	Ring

Soil Identification:		
Light Brown Silty Sand (SM)		
Strength Parameters		
	C (psf)	ϕ (^{o})
Peak	276	35.5
Ultimate	155	33.6

Normal Strest (kip/ft2)	1	3	5
Peak Shear Stress (kip/ft²)	● 0.97	■ 2.46	▲ 3.82
Shear Stress @ End of Test (ksf)	○ 0.78	□ 2.22	△ 3.44
Deformation Rate (in./min.)	0.05	0.05	0.05
Initial Sample Height (in.)	1.0	1.0	1.0
Ring Inside Diameter (in.)	2.375	2.375	2.375
Initial Moisture Content (%)	8.2	8.0	7.6
Initial Dry Density (pcf)	114.0	114.0	114.0
Initial Degree of Saturation (%)	46.3	44.9	42.7
Soil Height Before Shearing (in.)	1.2	1.2	1.2
Final Moisture Content (%)	14.2	14.9	14.1

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DIRECT SHEAR TEST RESULTS

Consolidated Drained ASTM D-3080

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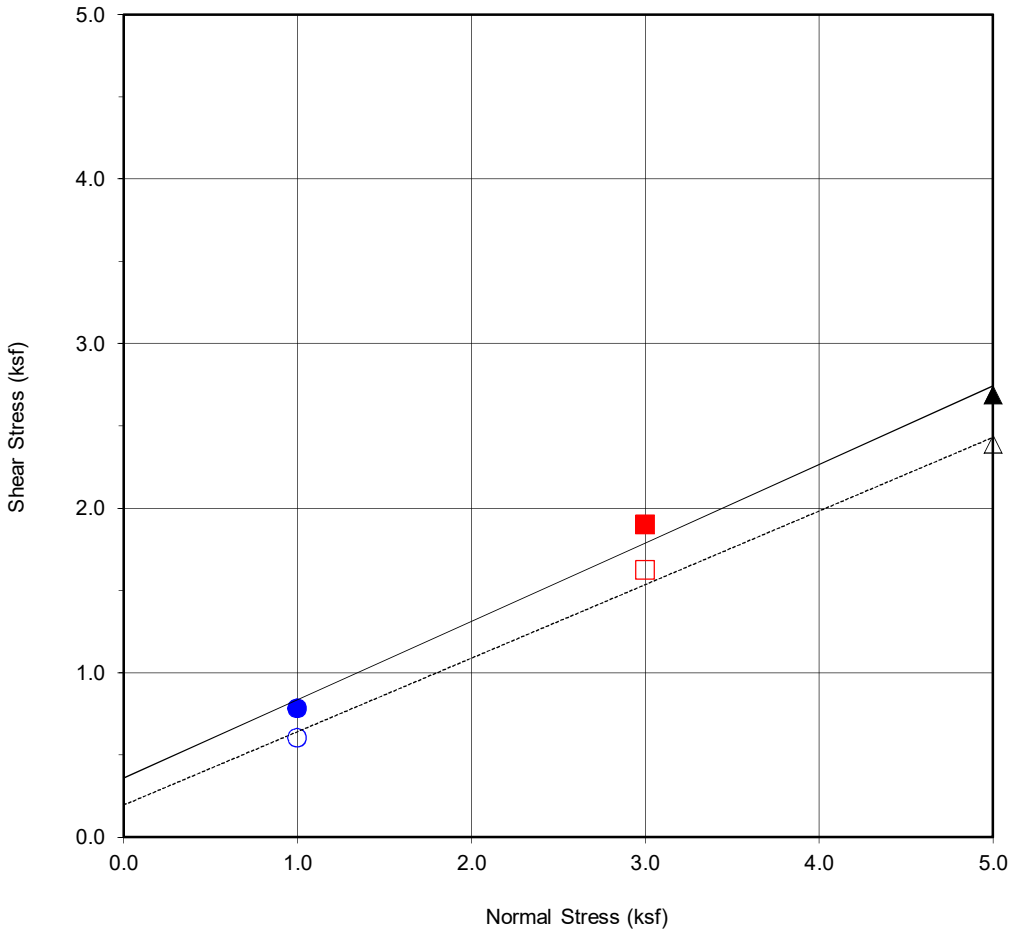
21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021 Figure B2



Boring No.	B2
Sample No.	B2@3'
Depth (ft)	3
Sample Type:	Ring

Soil Identification:		
Dark Gray Sandy Silt (ML)		
Strength Parameters		
	C (psf)	ϕ (^{o})
Peak	357	25.5
Ultimate	195	24.1

Normal Strest (kip/ft2)	1	3	5
Peak Shear Stress (kip/ft²)	● 0.78	■ 1.90	▲ 2.69
Shear Stress @ End of Test (ksf)	○ 0.60	□ 1.62	△ 2.39
Deformation Rate (in./min.)	0.05	0.05	0.05
Initial Sample Height (in.)	1.0	1.0	1.0
Ring Inside Diameter (in.)	2.375	2.375	2.375
Initial Moisture Content (%)	34.1	36.8	37.9
Initial Dry Density (pcf)	80.3	83.9	82.9
Initial Degree of Saturation (%)	83.8	98.3	98.9
Soil Height Before Shearing (in.)	1.2	1.2	1.2
Final Moisture Content (%)	40.3	37.8	36.6

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DIRECT SHEAR TEST RESULTS

Consolidated Drained ASTM D-3080

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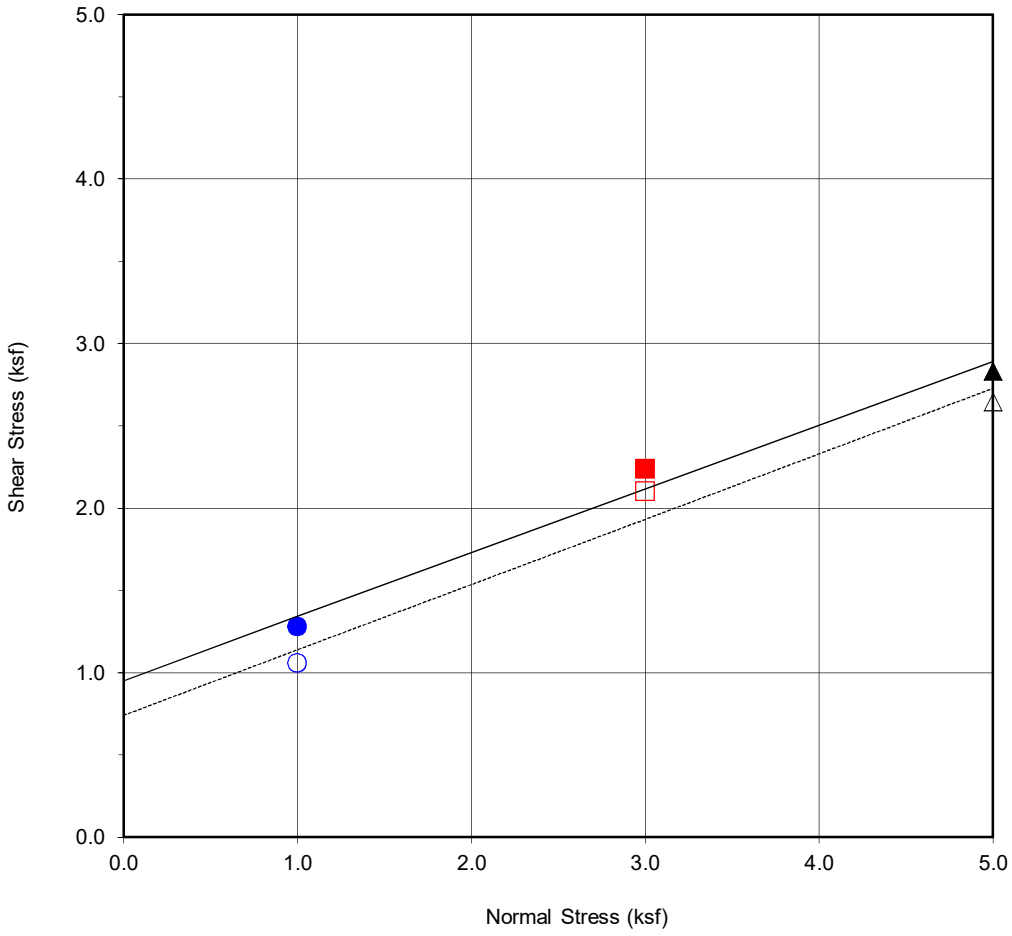
21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021 Figure B3



Boring No.	**B1**
Sample No.	**B1@5'**
Depth (ft)	**5**
Sample Type:	Ring

Soil Identification:		
Dark Gray Clay (CH)		
Strength Parameters		
	C (psf)	ϕ (^{o})
Peak	951	21.2
Ultimate	740	21.7

Normal Strest (kip/ft2)	1	3	5
Peak Shear Stress (kip/ft²)	● 1.28	■ 2.24	▲ 2.83
Shear Stress @ End of Test (ksf)	○ 1.06	□ 2.10	△ 2.65
Deformation Rate (in./min.)	0.05	0.05	0.05
Initial Sample Height (in.)	1.0	1.0	1.0
Ring Inside Diameter (in.)	2.375	2.375	2.375
Initial Moisture Content (%)	22.9	22.4	22.6
Initial Dry Density (pcf)	103.1	102.5	102.3
Initial Degree of Saturation (%)	97.2	93.9	94.3
Soil Height Before Shearing (in.)	1.2	1.2	1.2
Final Moisture Content (%)	26.0	24.1	23.0

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DIRECT SHEAR TEST RESULTS

Consolidated Drained ASTM D-3080

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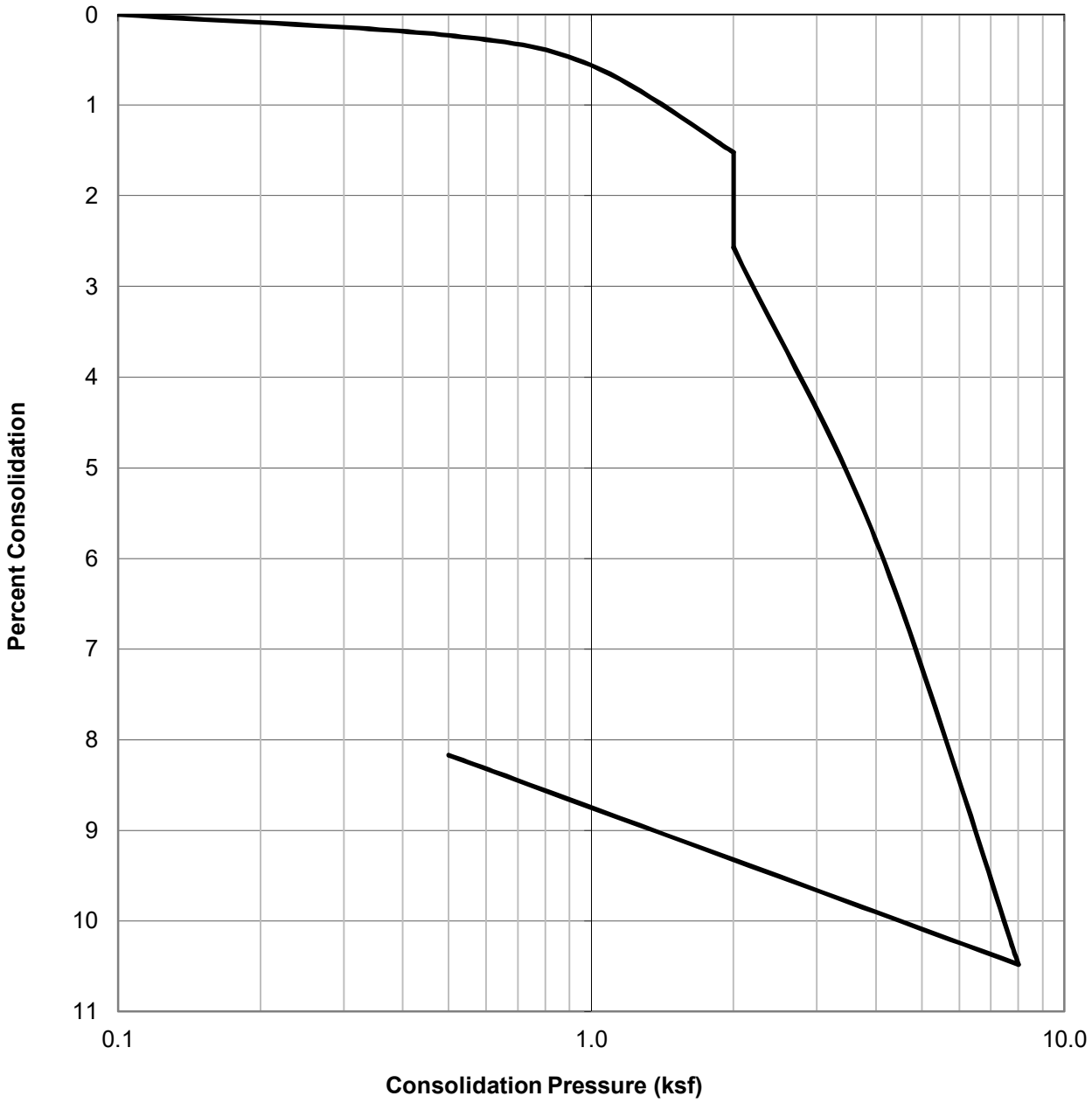
APRIL 2021 Figure B4

WATER ADDED AT 2.0 KSF



SAMPLE ID.	SOIL TYPE	DRY DENSITY (PCF)	INITIAL MOISTURE (%)	FINAL MOISTURE (%)
B2@3	Dark Gray Sandy Silt (ML)	76.2	32.7	37.3

GEOCON

CONSOLIDATION TEST RESULTS

ASTM D-2435

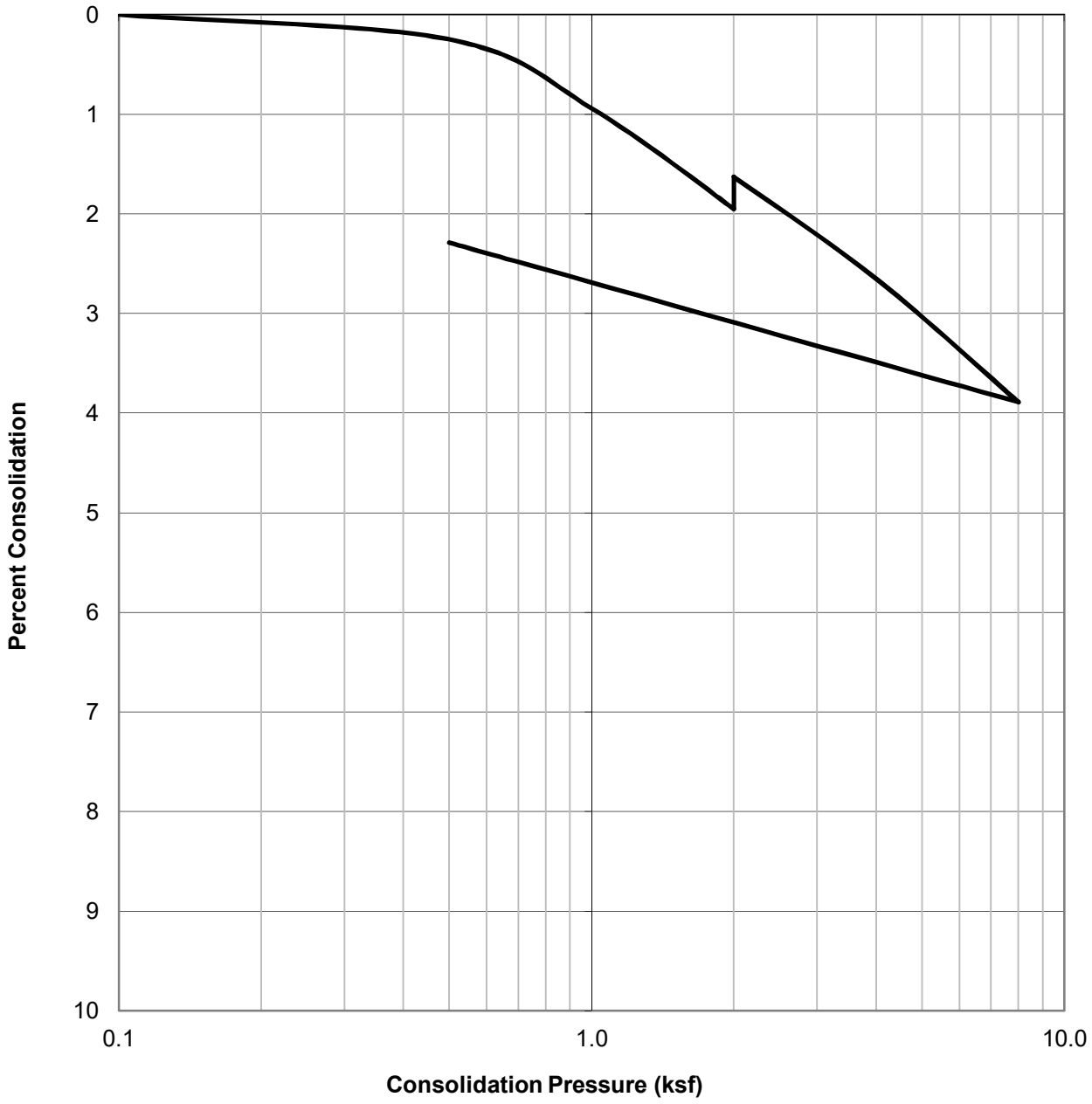
Checked by: JMH

Project No.: W1301-06-01

21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021 Figure B5

WATER ADDED AT 2.0 KSF



SAMPLE ID.	SOIL TYPE	DRY DENSITY (PCF)	INITIAL MOISTURE (%)	FINAL MOISTURE (%)
B1@5	Dark Gray Clay (CH)	101.8	24.0	24.3

GEOCON

CONSOLIDATION TEST RESULTS

ASTM D-2435

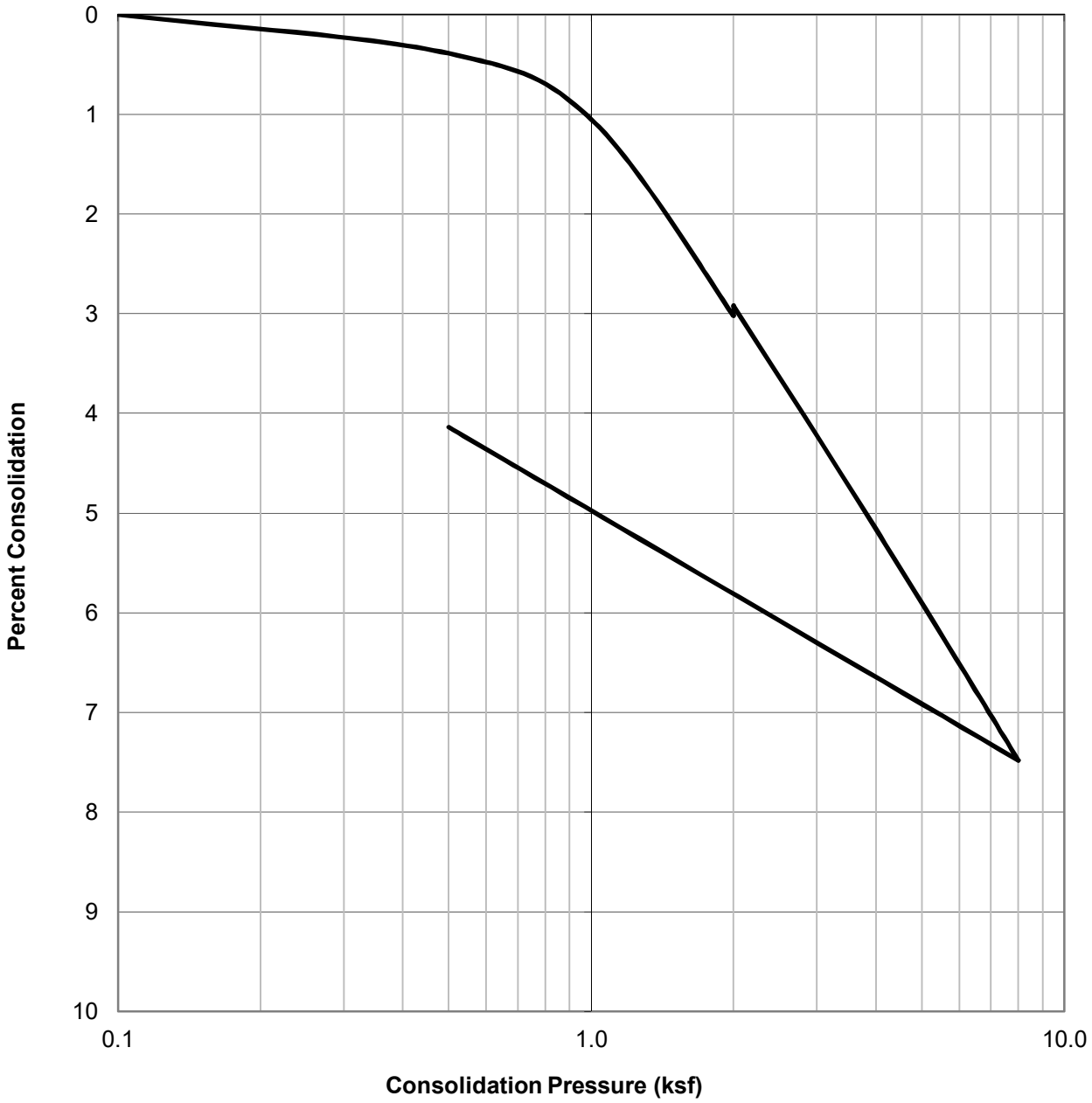
Checked by: JMH

Project No.: W1301-06-01

21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021 Figure B6

WATER ADDED AT 2.0 KSF



SAMPLE ID.	SOIL TYPE	DRY DENSITY (PCF)	INITIAL MOISTURE (%)	FINAL MOISTURE (%)
B5@5	Dark Gray Clay (CH)	81.9	38.4	39.2

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CONSOLIDATION TEST RESULTS

ASTM D-2435

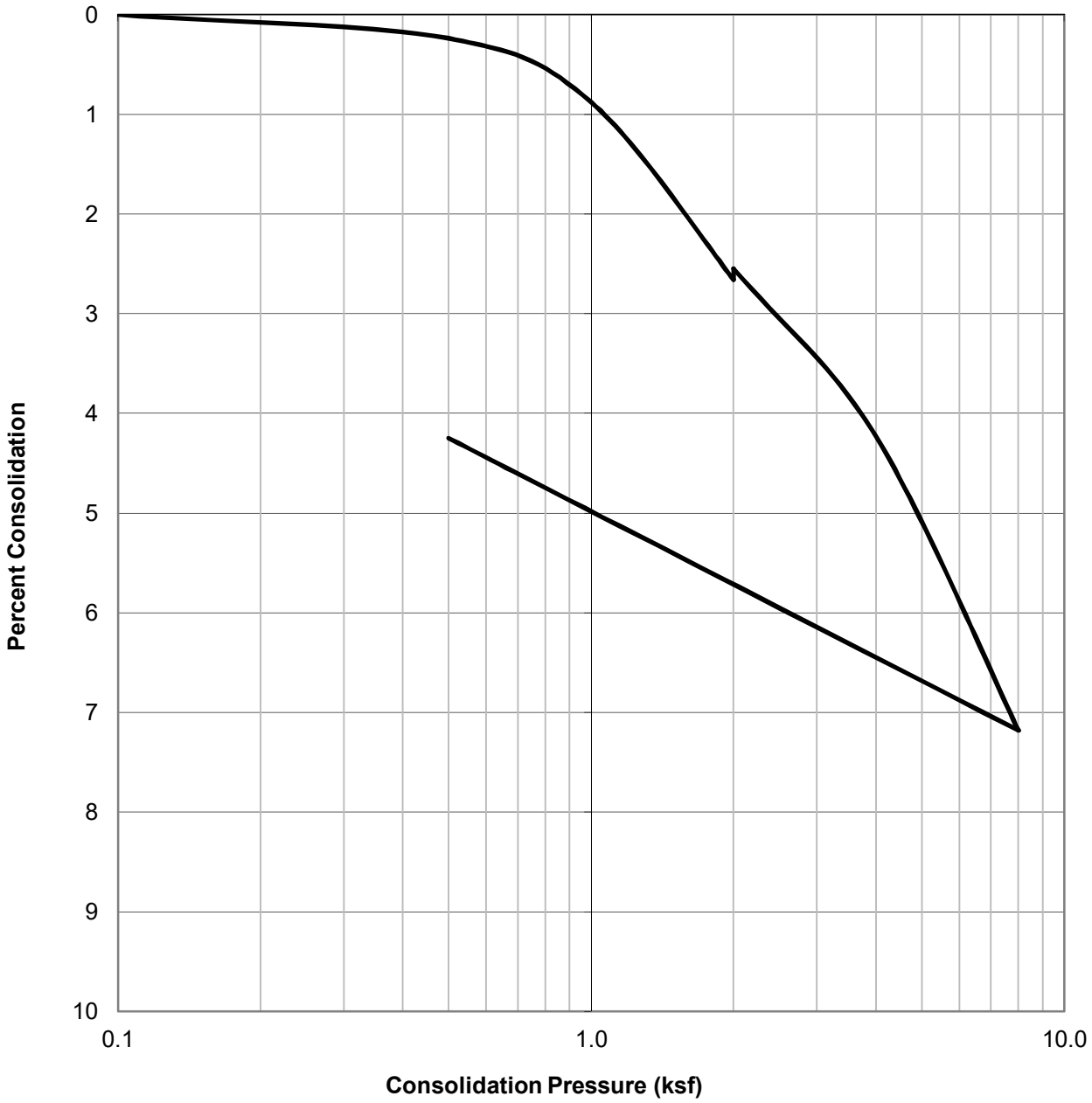
Checked by: JMH

Project No.: W1301-06-01

21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021 Figure B7

WATER ADDED AT 2.0 KSF



SAMPLE ID.	SOIL TYPE	DRY DENSITY (PCF)	INITIAL MOISTURE (%)	FINAL MOISTURE (%)
B4@7.5	Dark Gray Clay (CH)	80.9	38.9	38.0

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CONSOLIDATION TEST RESULTS

ASTM D-2435

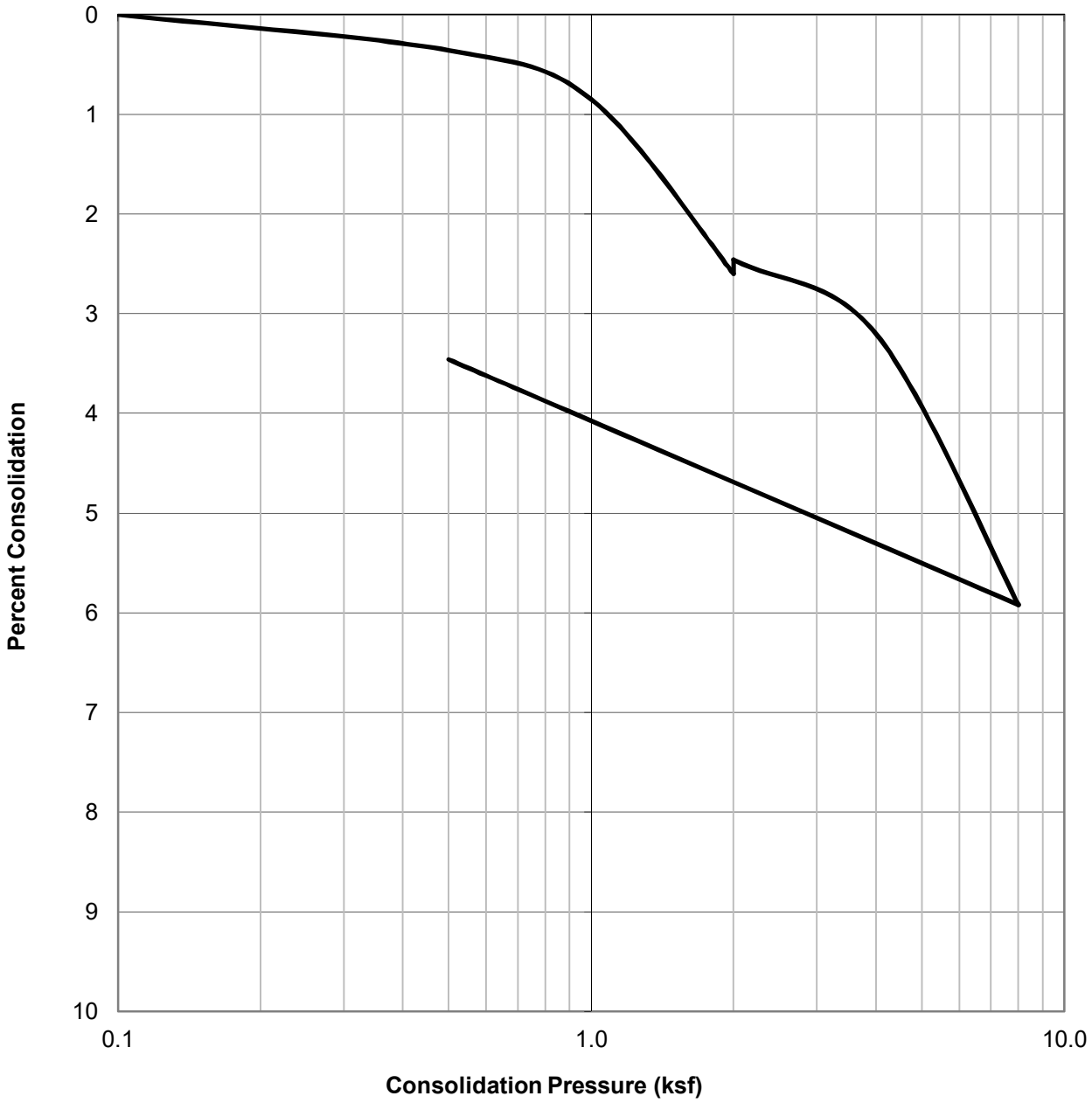
Checked by: JMH

Project No.: W1301-06-01

21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021 Figure B8

WATER ADDED AT 2.0 KSF



SAMPLE ID.	SOIL TYPE	DRY DENSITY (PCF)	INITIAL MOISTURE (%)	FINAL MOISTURE (%)
B2@9	Dark Gray Clay (CH)	70.9	49.8	48.8

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CONSOLIDATION TEST RESULTS

ASTM D-2435

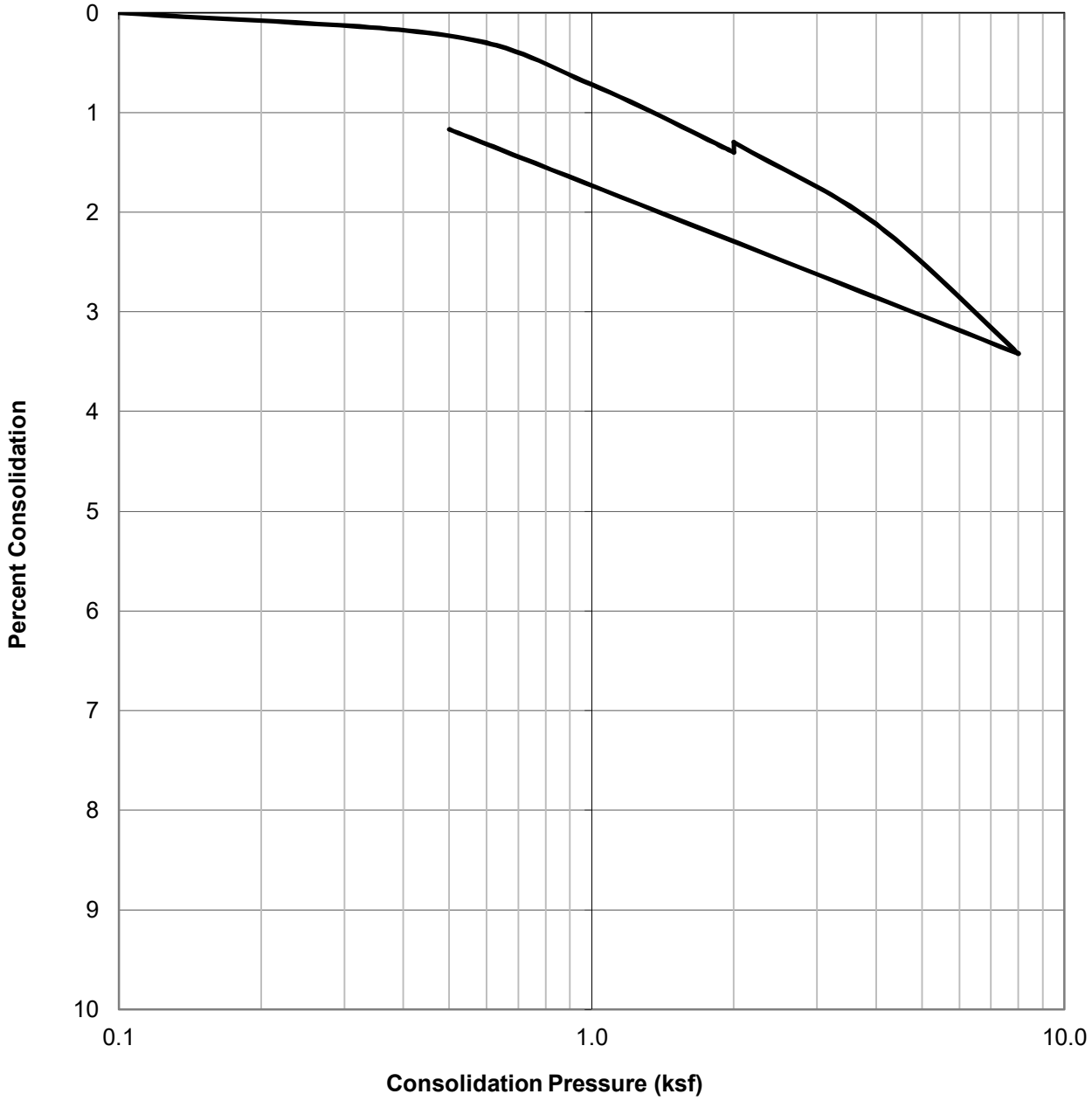
Checked by: JMH

Project No.: W1301-06-01

21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021 Figure B9

WATER ADDED AT 2.0 KSF



SAMPLE ID.	SOIL TYPE	DRY DENSITY (PCF)	INITIAL MOISTURE (%)	FINAL MOISTURE (%)
B1@10	Olive Brown Clay (CH)	105.4	22.0	22.8

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CONSOLIDATION TEST RESULTS

ASTM D-2435

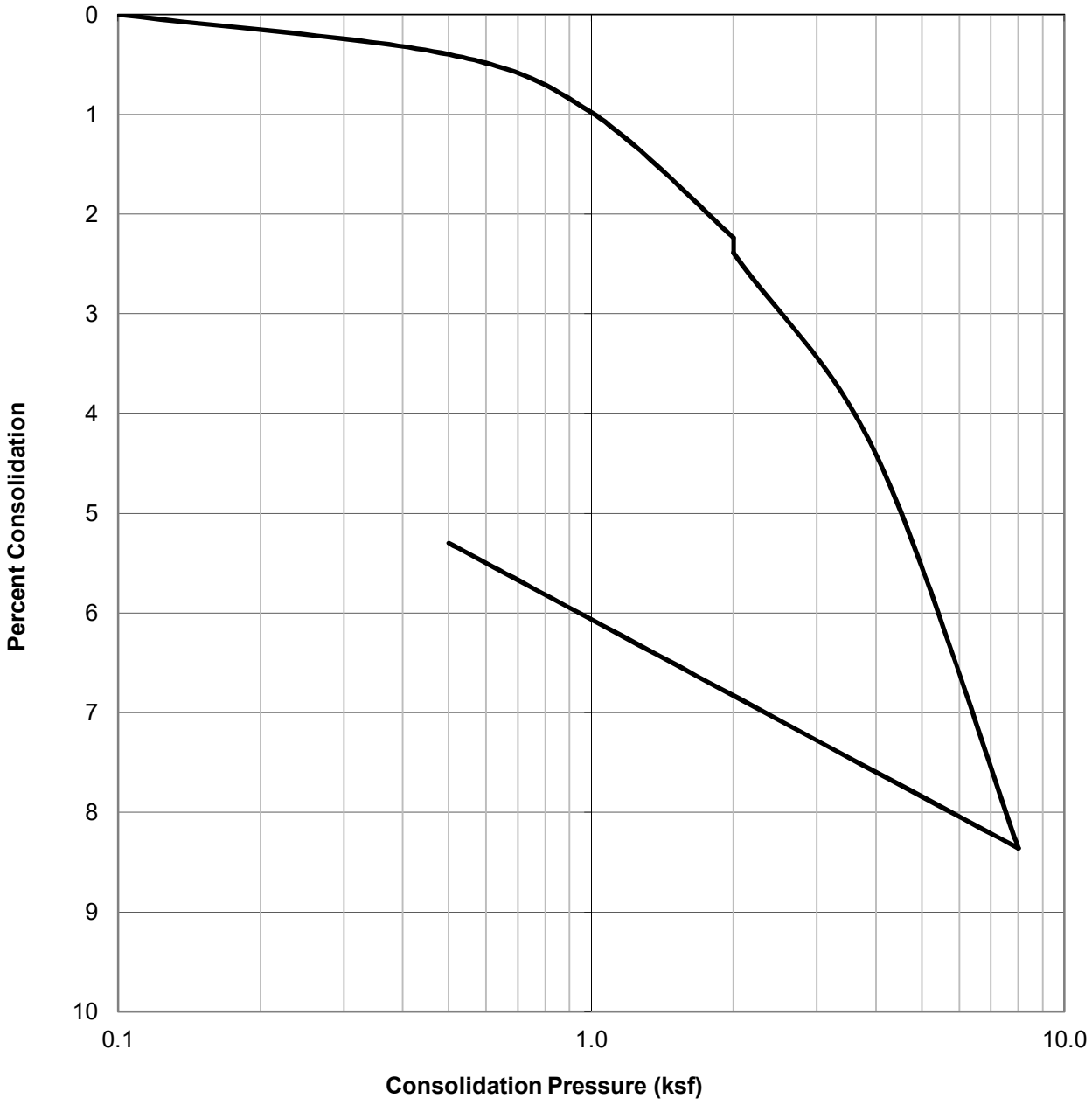
Checked by: JMH

Project No.: W1301-06-01

21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021 Figure B10

WATER ADDED AT 2.0 KSF



SAMPLE ID.	SOIL TYPE	DRY DENSITY (PCF)	INITIAL MOISTURE (%)	FINAL MOISTURE (%)
B5@10	Dark Gray Clay (CH)	71.6	47.5	46.1

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CONSOLIDATION TEST RESULTS

ASTM D-2435

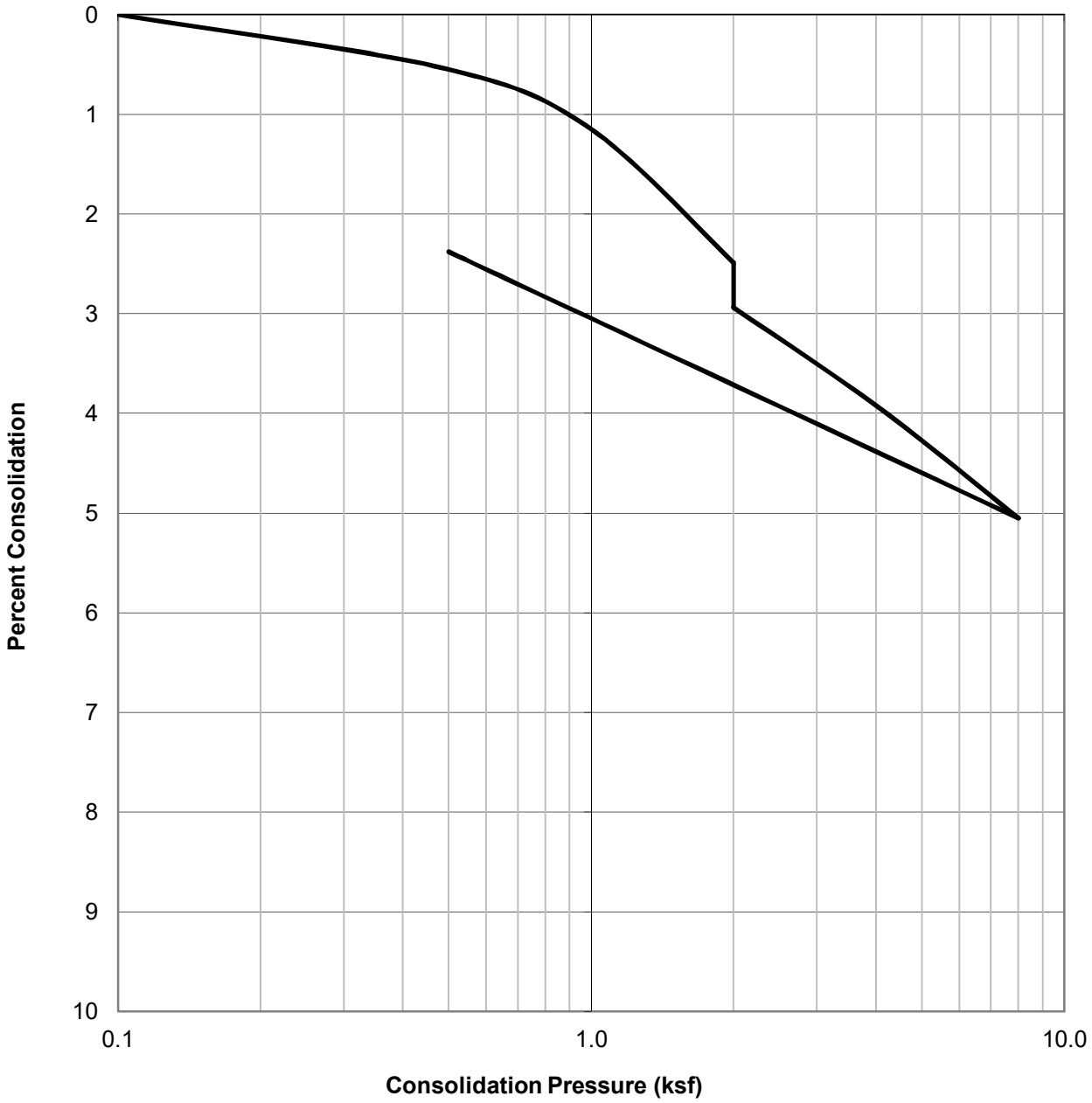
Checked by: JMH

Project No.: W1301-06-01

21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021 Figure B11

WATER ADDED AT 2.0 KSF



SAMPLE ID.	SOIL TYPE	DRY DENSITY (PCF)	INITIAL MOISTURE (%)	FINAL MOISTURE (%)
B3@12.5	Dark Gray Clay (CL)	90.9	31.6	31.3

GEOCON

CONSOLIDATION TEST RESULTS

ASTM D-2435

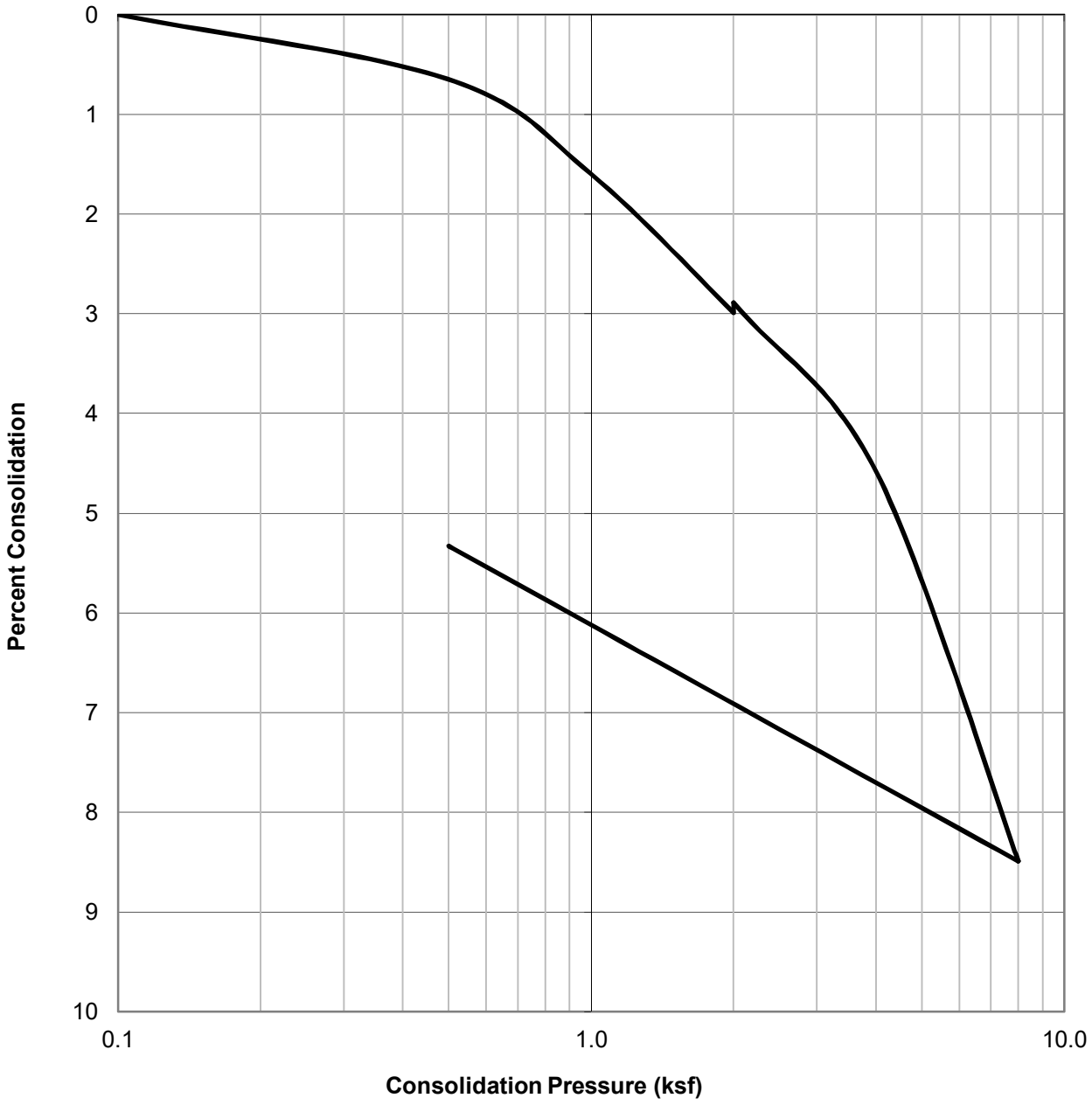
Checked by: JMH

Project No.: W1301-06-01

21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021 Figure B12

WATER ADDED AT 2.0 KSF



SAMPLE ID.	SOIL TYPE	DRY DENSITY (PCF)	INITIAL MOISTURE (%)	FINAL MOISTURE (%)
B2@15	Gray Clay (CH)	75.8	45.2	41.7

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CONSOLIDATION TEST RESULTS

ASTM D-2435

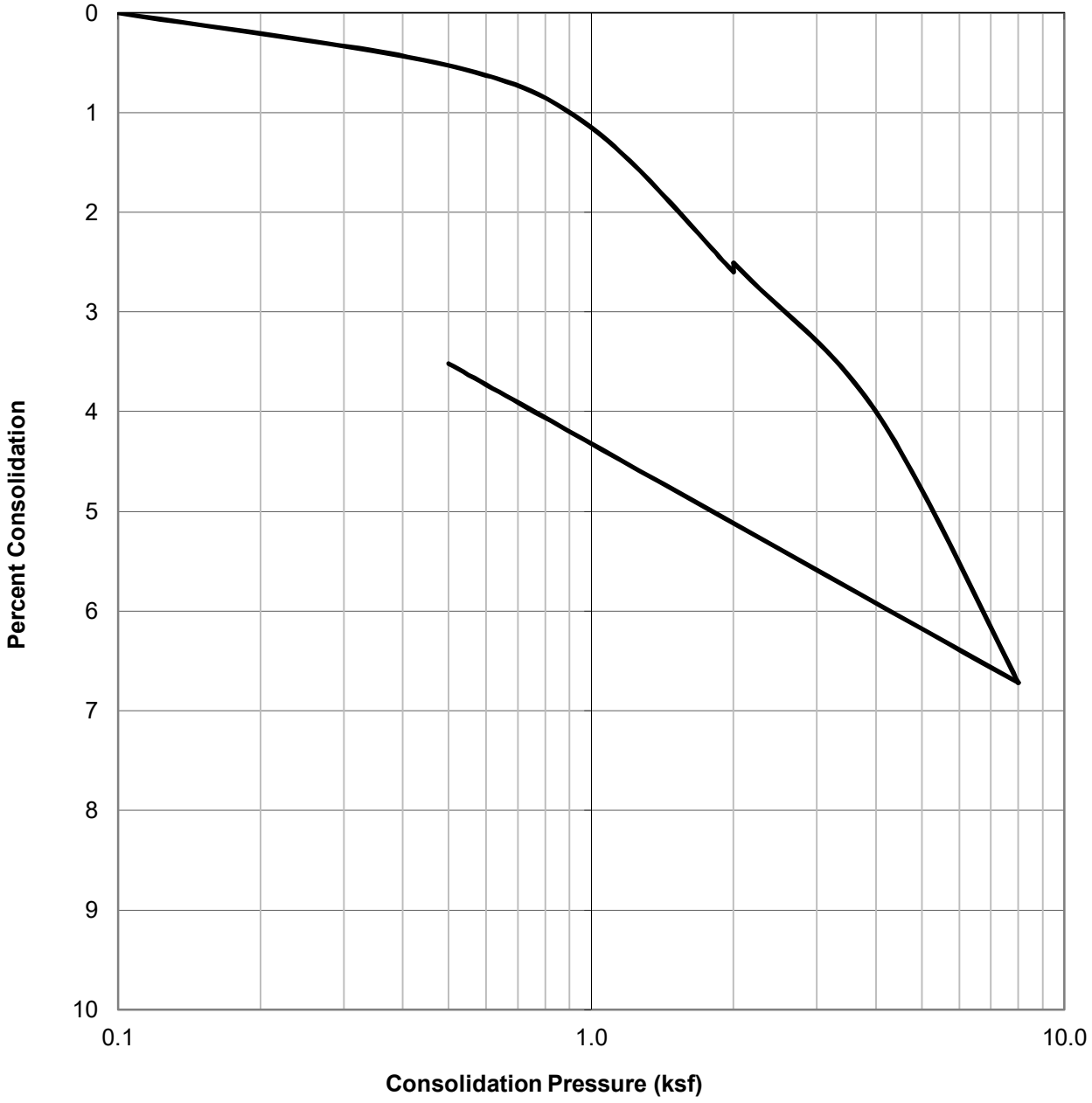
Checked by: JMH

Project No.: W1301-06-01

21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021 Figure B13

WATER ADDED AT 2.0 KSF



SAMPLE ID.	SOIL TYPE	DRY DENSITY (PCF)	INITIAL MOISTURE (%)	FINAL MOISTURE (%)
B4@15	Dark Gray Clay (CH)	83.1	38.5	37.0

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CONSOLIDATION TEST RESULTS

ASTM D-2435

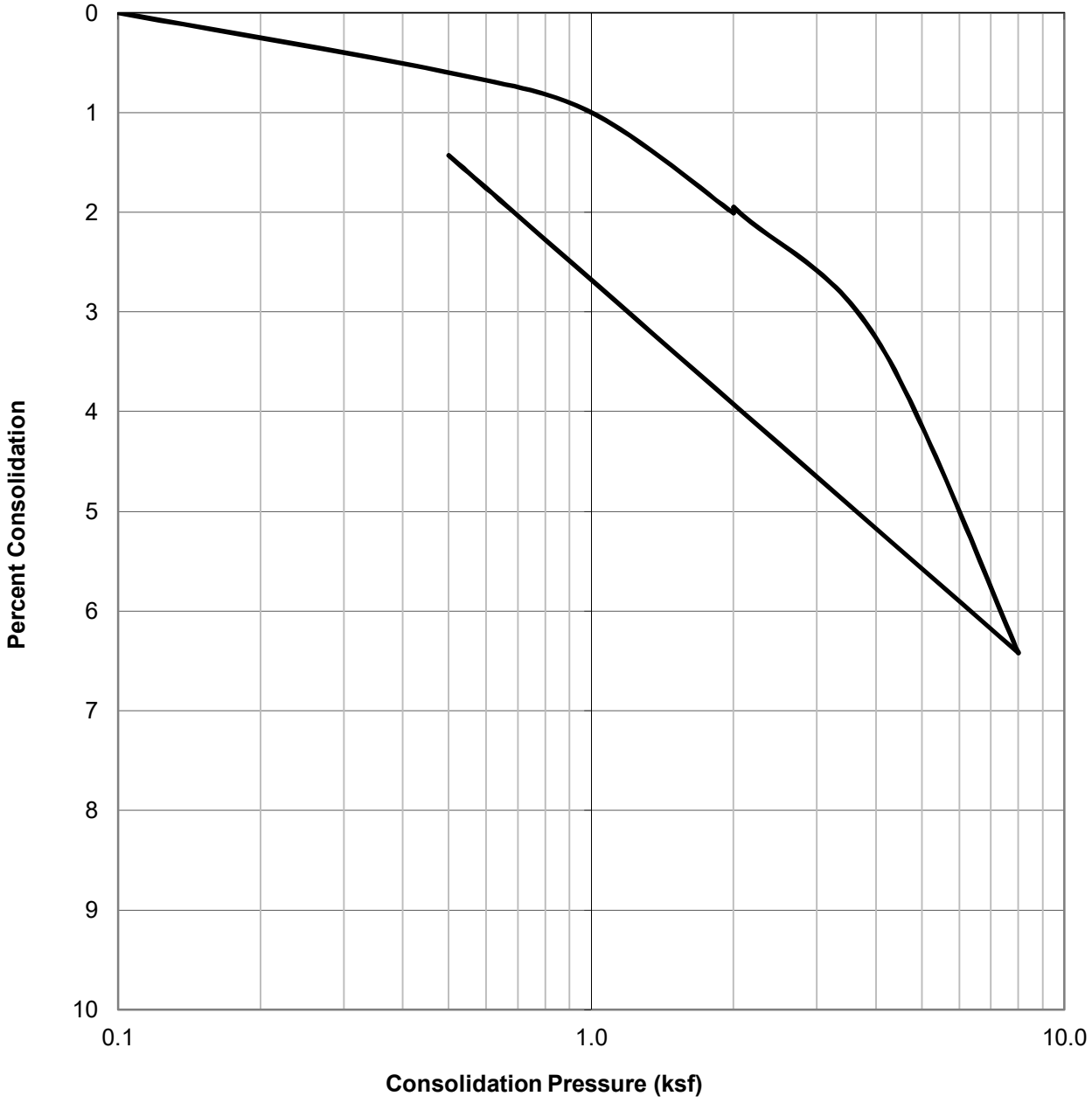
Checked by: JMH

Project No.: W1301-06-01

21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021 Figure B14

WATER ADDED AT 2.0 KSF



SAMPLE ID.	SOIL TYPE	DRY DENSITY (PCF)	INITIAL MOISTURE (%)	FINAL MOISTURE (%)
B5@15	Dark Gray Clay (CH)	96.3	29.6	29.7

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CONSOLIDATION TEST RESULTS

ASTM D-2435

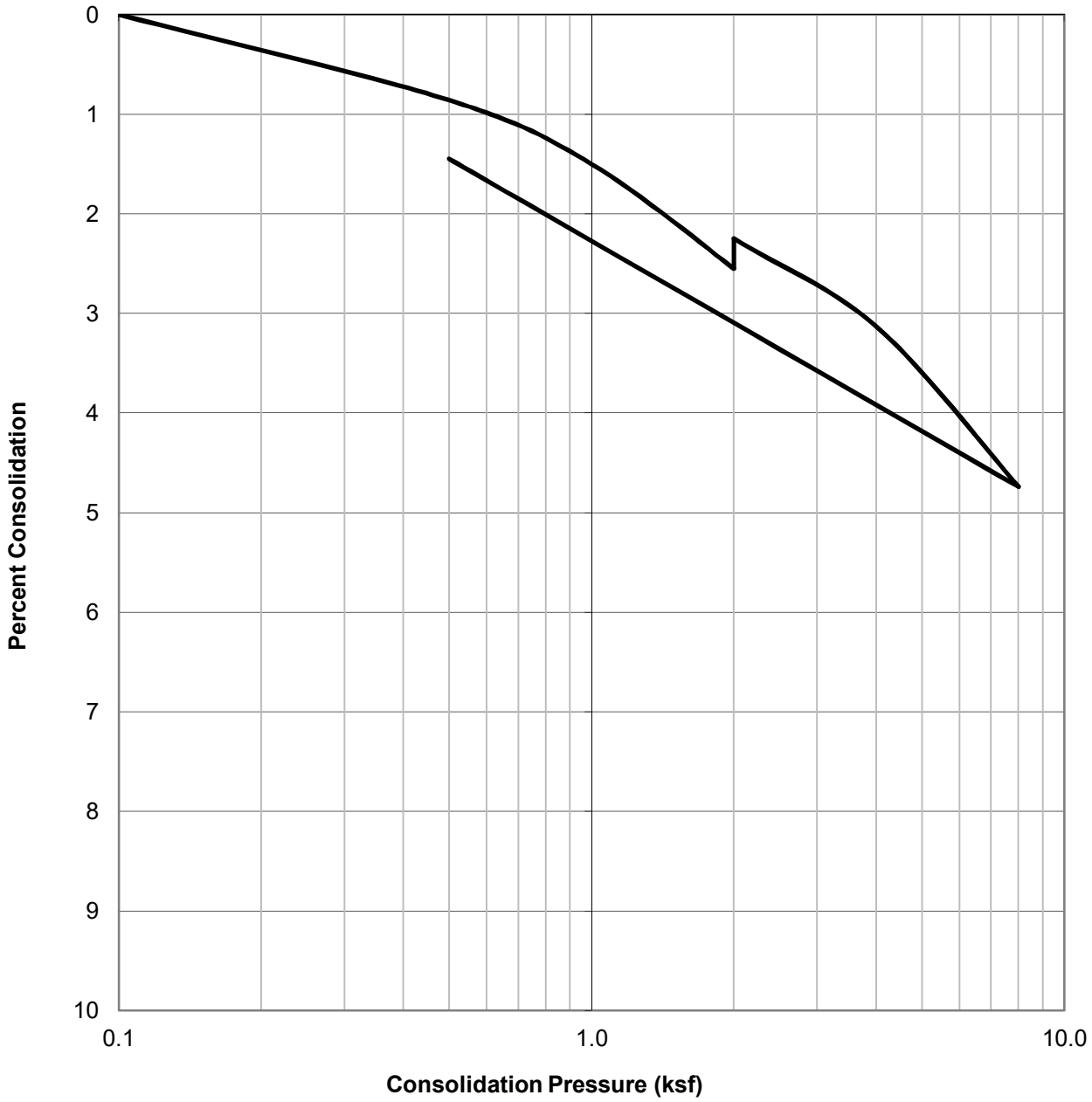
Checked by: JMH

Project No.: W1301-06-01

21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021 Figure B15

WATER ADDED AT 2.0 KSF



SAMPLE ID.	SOIL TYPE	DRY DENSITY (PCF)	INITIAL MOISTURE (%)	FINAL MOISTURE (%)
B3@17.5	Dark Gray Clay (CL)	100.2	26.1	25.9

GEOCON

CONSOLIDATION TEST RESULTS

ASTM D-2435

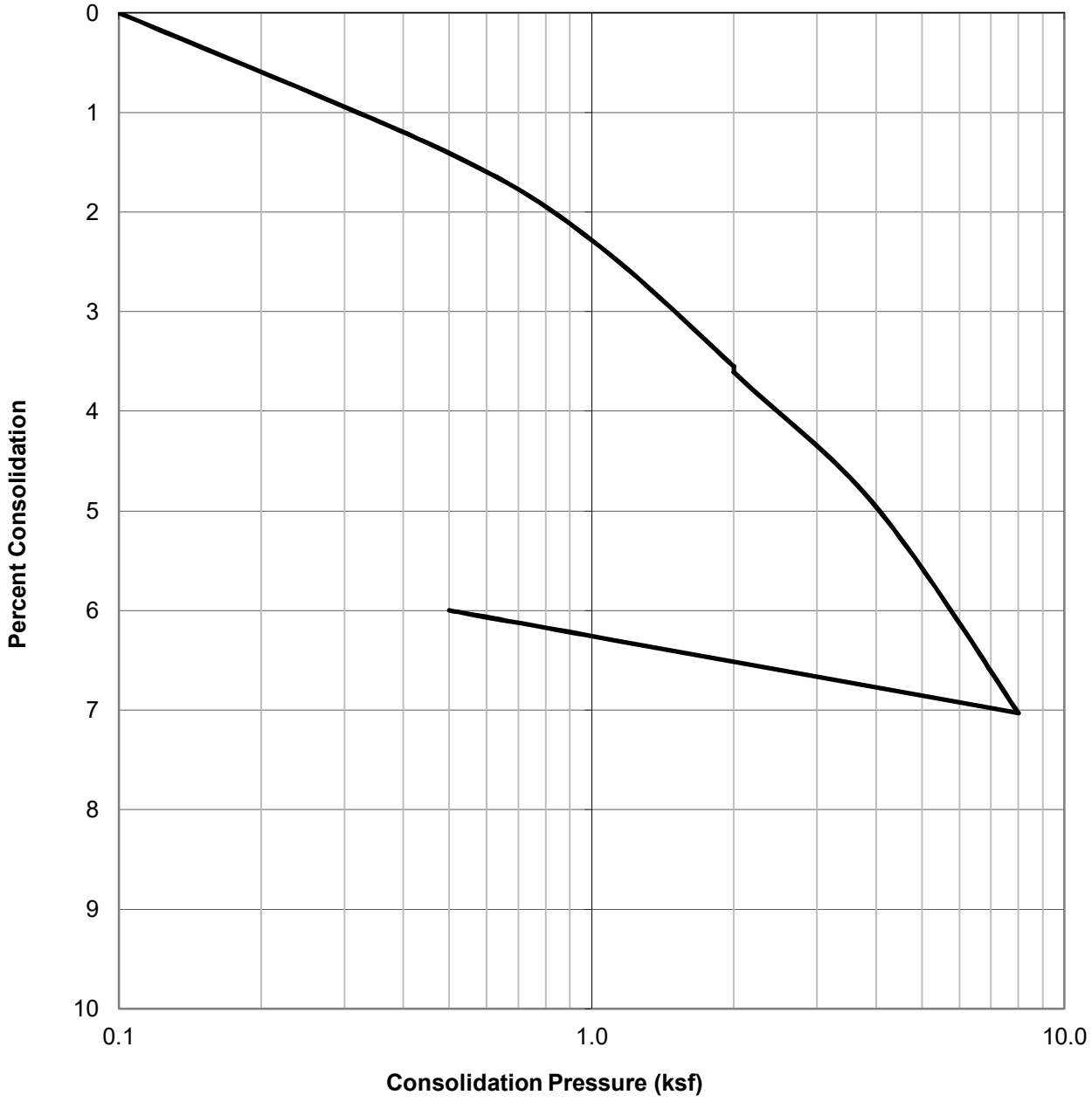
Checked by: JMH

Project No.: W1301-06-01

21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021 Figure B16

WATER ADDED AT 2.0 KSF



SAMPLE ID.	SOIL TYPE	DRY DENSITY (PCF)	INITIAL MOISTURE (%)	FINAL MOISTURE (%)
B3@22.5	Light Brown Clay (CL)	98.3	27.2	23.0

GEOCON

CONSOLIDATION TEST RESULTS

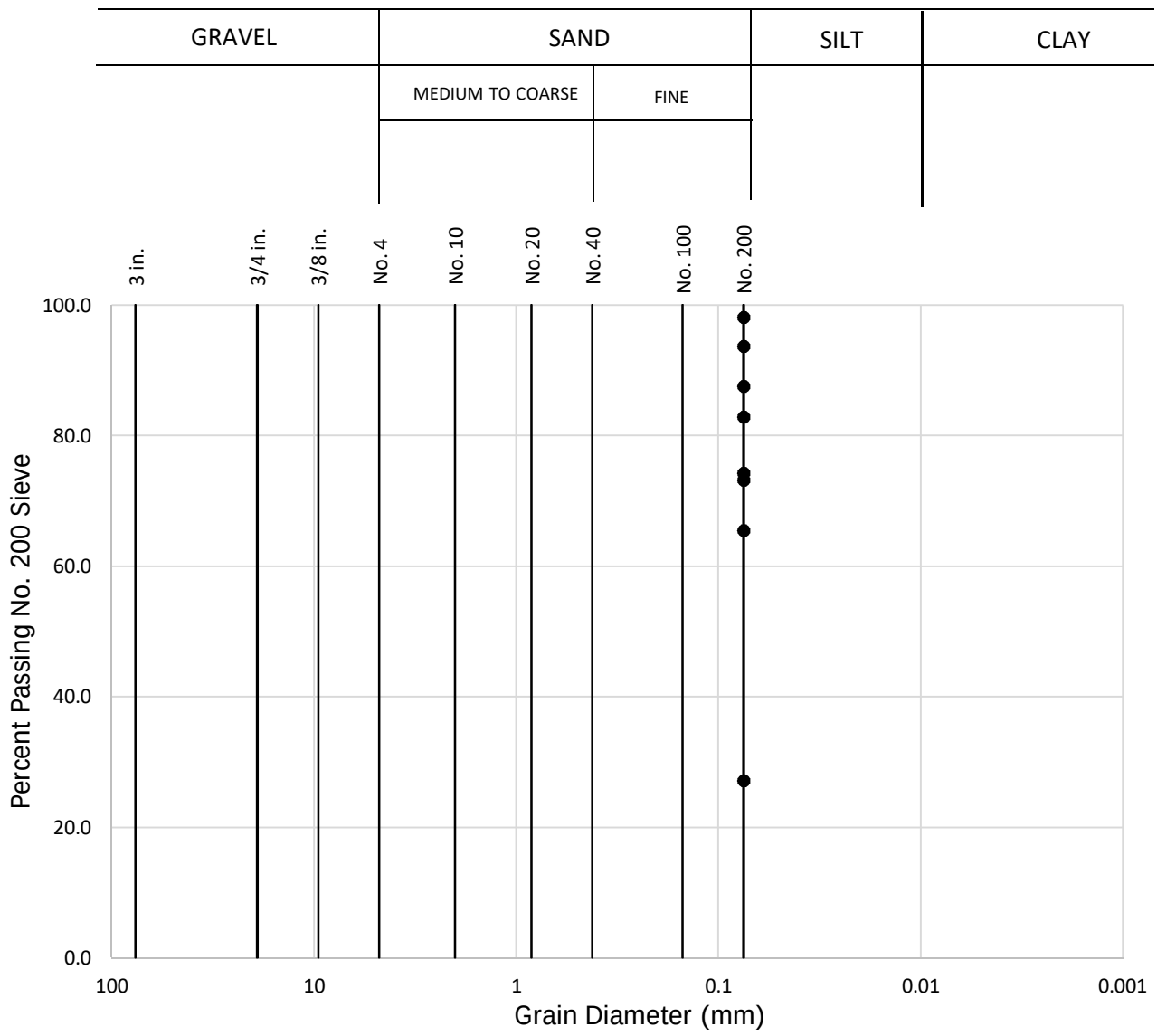
ASTM D-2435

Checked by: JMH

Project No.: W1301-06-01

21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021 Figure B17



Sample No.	Percent Passing No. 200 Sieve
B3 @ 10'	82.8
B3 @ 15'	87.6
B3 @ 20'	73.2
B3 @ 25'	98.1
B3 @ 30'	93.7
B3 @ 35'	74.2
B3 @ 40'	65.4
B3 @ 50'	27.1

GEOCON

GRAIN SIZE ANALYSIS

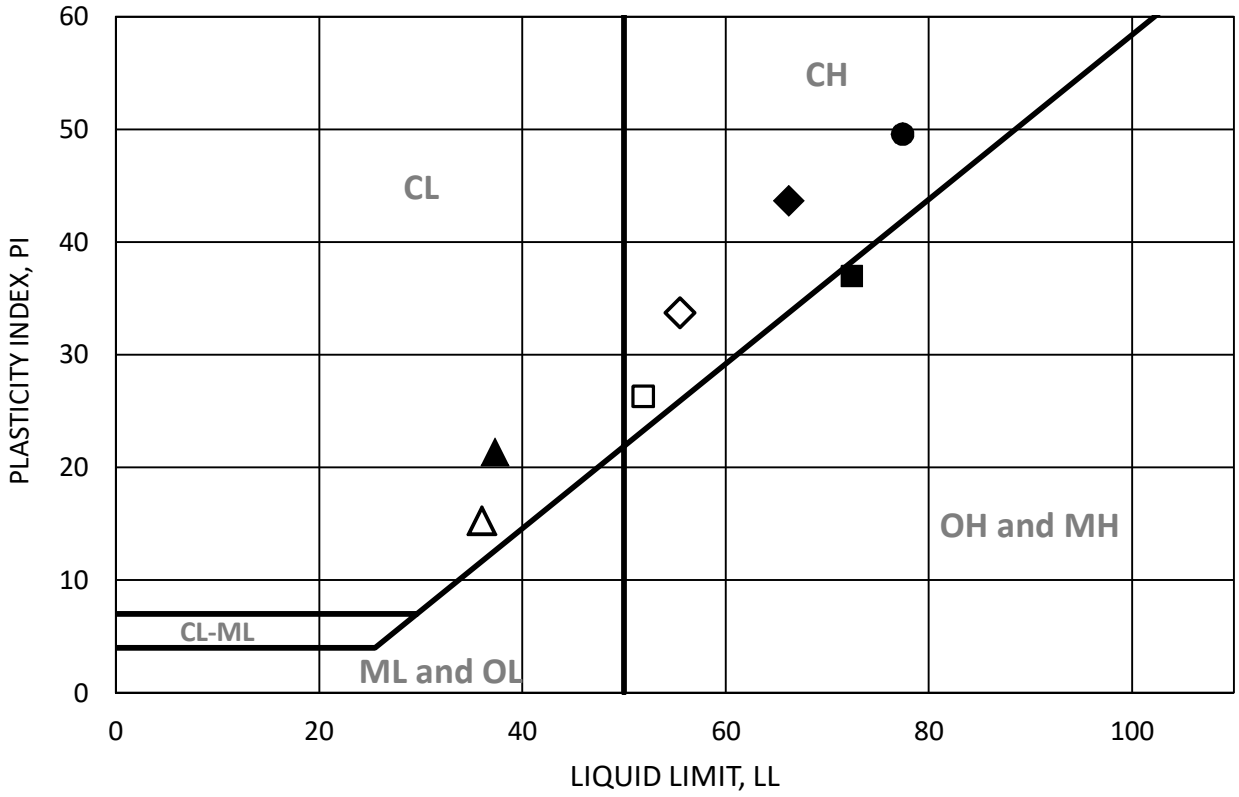
ASTM D-1140

Checked by: JMH

Project No.: W1301-06-01

21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021 Figure B18



SYMBOL	BORING	DEPTH (ft)	LL	PL	PI	MOISTURE CONTENT AT SATURATION	SOIL BEHAVIOR
■	B3	10'	72.5	36	37		MH
◆	B3	15'	66	23	44		CH
▲	B3	20'	37	16	21		CL
●	B3	25'	78	28	50		CH
□	B3	30'	52	26	26		CH
◇	B3	35'	56	22	34		CH
△	B3	45'	36	21	15		CL
○	B3	50'	N/P	N/P	N/P		SM

N/P = Non-Plastic

GEOCON

ATTERBERG LIMITS

ASTM D-4318

Checked by: JMH

Project No.: W1301-06-01

21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021 Figure B19

B1B2@0-5'

MOLDED SPECIMEN		BEFORE TEST	AFTER TEST
Specimen Diameter	(in.)	4.0	4.0
Specimen Height	(in.)	1.0	1.1
Wt. Comp. Soil + Mold	(gm)	740.3	787.1
Wt. of Mold	(gm)	367.6	367.6
Specific Gravity	(Assumed)	2.7	2.7
Wet Wt. of Soil + Cont.	(gm)	484.4	787.1
Dry Wt. of Soil + Cont.	(gm)	451.5	331.9
Wt. of Container	(gm)	184.4	367.6
Moisture Content	(%)	12.3	26.4
Wet Density	(pcf)	112.4	126.4
Dry Density	(pcf)	100.1	100.0
Void Ratio		0.7	0.8
Total Porosity		0.4	0.4
Pore Volume	(cc)	84.1	97.0
Degree of Saturation	(%) [S_{meas}]	49.0	90.3

Date	Time	Pressure (psi)	Elapsed Time (min)	Dial Readings (in.)
3/8/2021	10:00	1.0	0	0.3035
3/8/2021	10:10	1.0	10	0.302
Add Distilled Water to the Specimen				
3/9/2021	10:00	1.0	1430	0.3645
3/9/2021	11:00	1.0	1490	0.3645

Expansion Index (EI meas) =	62.5
Expansion Index (Report) =	**63**

Expansion Index, EI_{50}	CBC CLASSIFICATION *	UBC CLASSIFICATION **
0-20	Non-Expansive	Very Low
21-50	Expansive	Low
51-90	Expansive	Medium
91-130	Expansive	High
>130	Expansive	Very High

* Reference: 2019 California Building Code, Section 1803.5.3

** Reference: 1997 Uniform Building Code, Table 18-I-B.

GEOCON

EXPANSION INDEX TEST RESULTS

ASTM D-4829

Checked by: JMH

Project No.: W1301-06-01

21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021 Figure B20

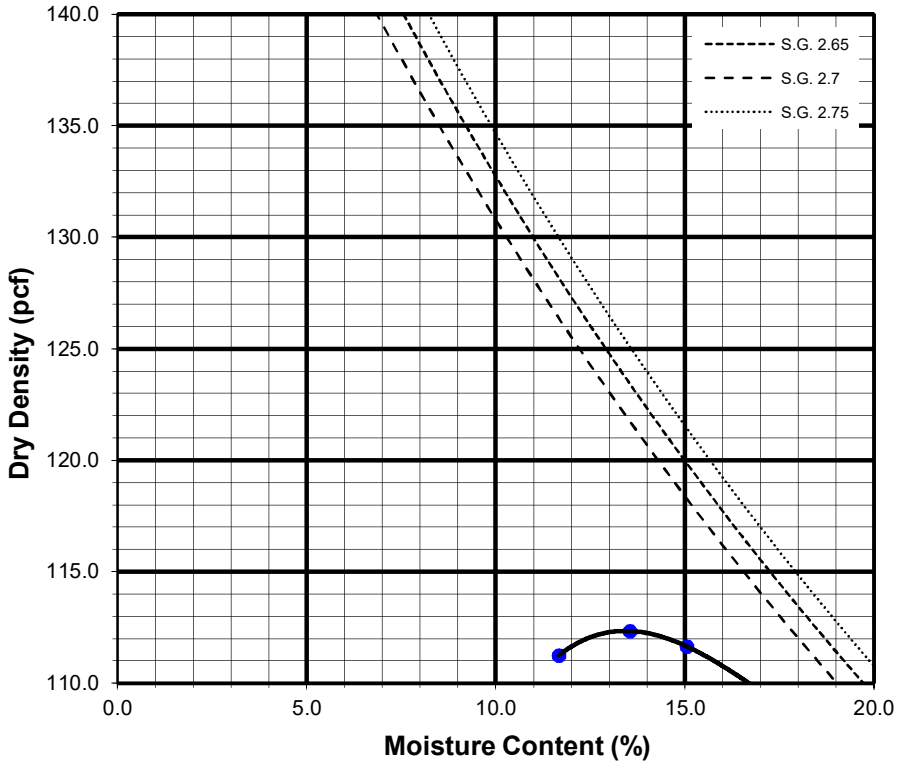
Sample No:

B1B2@0-5'	Brown Silty Sand (SM)

TEST NO.		1	2	3	4	5	6
Wt. Compacted Soil + Mold	(g)	6008	6058	6072	6069		
Weight of Mold	(g)	4132	4132	4132	4132		
Net Weight of Soil	(g)	1876	1927	1940	1937		
Wet Weight of Soil + Cont.	(g)	630.8	626.4	653.1	674.5		
Dry Weight of Soil + Cont.	(g)	580.0	569.3	585.6	594.2		
Weight of Container	(g)	144.4	147.6	137.1	125.4		
Moisture Content	(%)	11.7	13.5	15.1	17.1		
Wet Density	(pcf)	124.2	127.6	128.5	128.2		
Dry Density	(pcf)	111.2	112.3	111.7	109.5		

Maximum Dry Density (pcf)	**112.5**

Optimum Moisture Content (%)	**14.0**



Preparation Method: A

GEOCON

COMPACTION CHARACTERISTICS USING MODIFIED EFFORT TEST RESULTS

ASTM D-1557

Checked by: JMH

Project No.: W1301-06-01

21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021 Figure B21

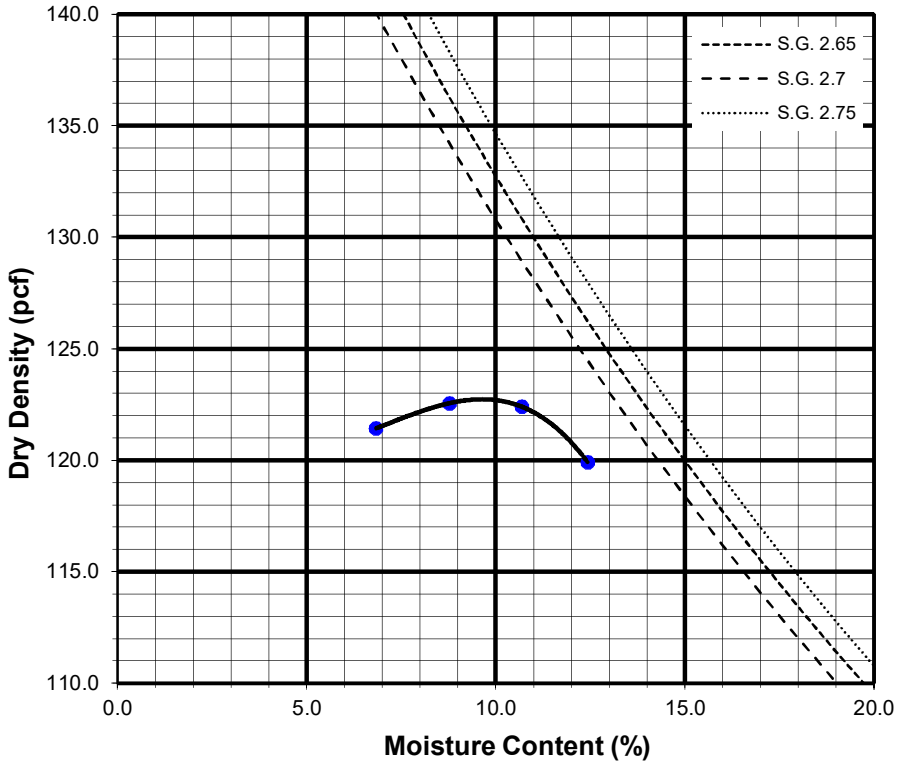
Sample No:

B3B4@0-5'	Light Brown Silty Sand (SM)

TEST NO.		1	2	3	4	5	6
Wt. Compacted Soil + Mold	(g)	6085	6139	6172	6162		
Weight of Mold	(g)	4132	4132	4132	4132		
Net Weight of Soil	(g)	1954	2008	2040	2030		
Wet Weight of Soil + Cont.	(g)	659.1	662.9	668.4	663.2		
Dry Weight of Soil + Cont.	(g)	626.4	619.6	618.1	606.0		
Weight of Container	(g)	148.0	126.1	147.5	145.6		
Moisture Content	(%)	6.8	8.8	10.7	12.4		
Wet Density	(pcf)	129.7	133.3	135.5	134.8		
Dry Density	(pcf)	121.4	122.6	122.4	119.9		

Maximum Dry Density (pcf)	**123.0**
Bulk Specific Gravity (dry)	**2.36**
Corrected Maximum Dry Density (pcf)	**127.0**

Optimum Moisture Content (%)	**10.0**
Oversized Fraction (%)	**18.0**
Corrected Moisture Content (%)	**8.0**



Preparation Method: A

GEOCON

COMPACTION CHARACTERISTICS USING MODIFIED EFFORT TEST RESULTS

ASTM D-1557

Checked by: JMH

Project No.: W1301-06-01

21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021 Figure B22

SUMMARY OF LABORATORY POTENTIAL
OF HYDROGEN (pH) AND RESISTIVITY TEST RESULTS
CALIFORNIA TEST NO. 643

Sample No.	pH	Resistivity (ohm centimeters)
B1 + B2 @ 0-5'	8.1	910 (Severely Corrosive)
B3 + B4 @ 0-5'	10.5	3900 (Moderately Corrosive)

SUMMARY OF LABORATORY CHLORIDE CONTENT TEST RESULTS
EPA NO. 325.3

Sample No.	Chloride Ion Content (%)
B1 + B2@0-5'	0.006
B3 + B4@0-5'	0.003

SUMMARY OF LABORATORY WATER SOLUBLE SULFATE TEST RESULTS
CALIFORNIA TEST NO. 417

Sample No.	Water Soluble Sulfate (% SO_4)	Sulfate Exposure*
B1 + B2@0-5'	0.070	S0
B3 + B4@0-5'	0.013	S0

GEOCON

CORROSIVITY TEST RESULTS

Checked by: JMH

Project No.: W1301-06-01

21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021 Figure B23

APPENDIX C

APPENDIX C

CPT LIQUEFACTION ANALYSIS

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Lateral displacements data report	549
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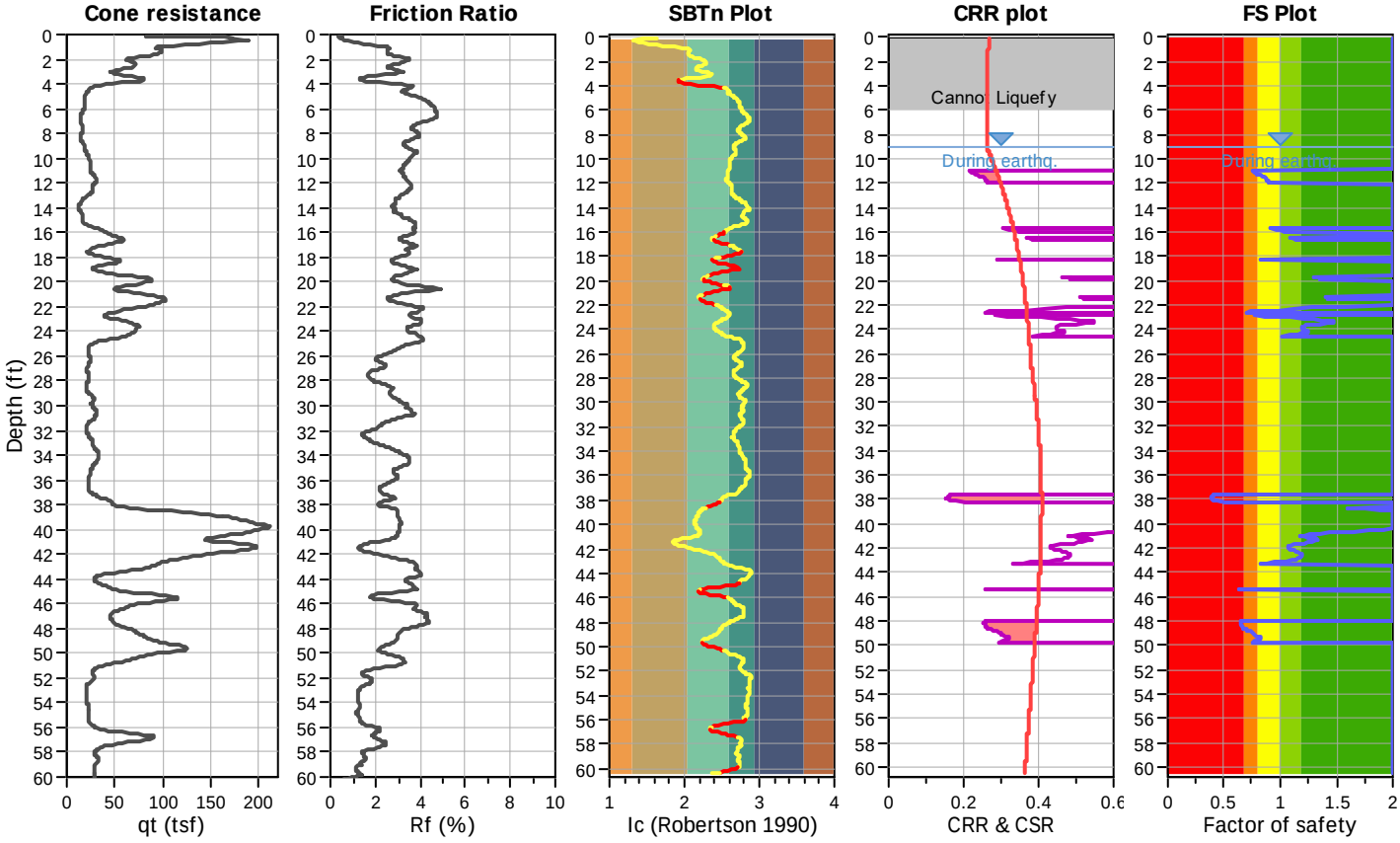
LIQUEFACTION ANALYSIS REPORT

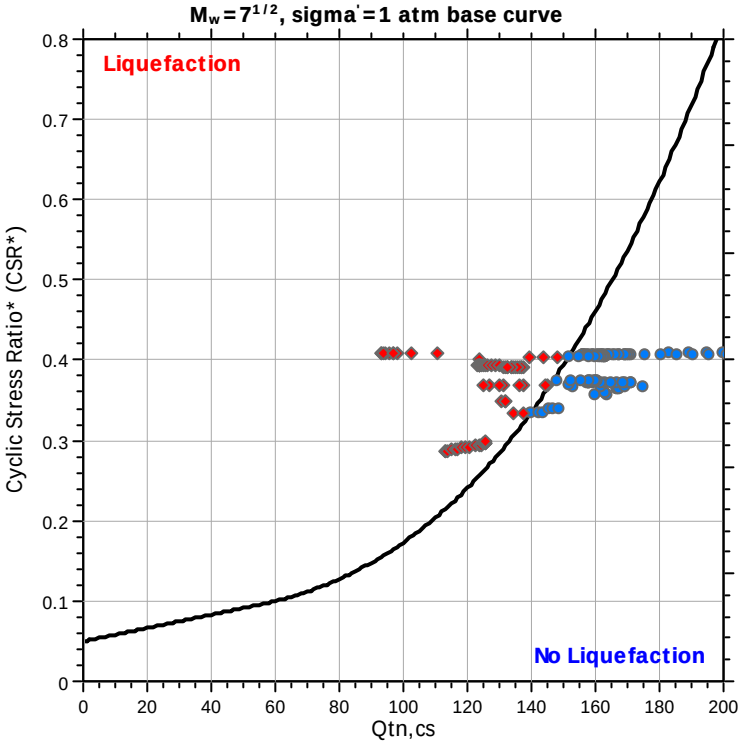
Project title : W1301-06-01 **Location : Perry Street**

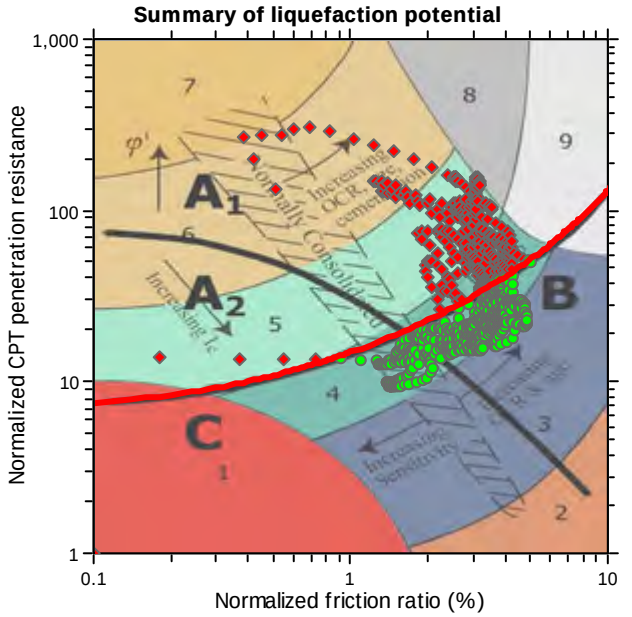
CPT file : CPT-1

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	12.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	9.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	.	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	6.68	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

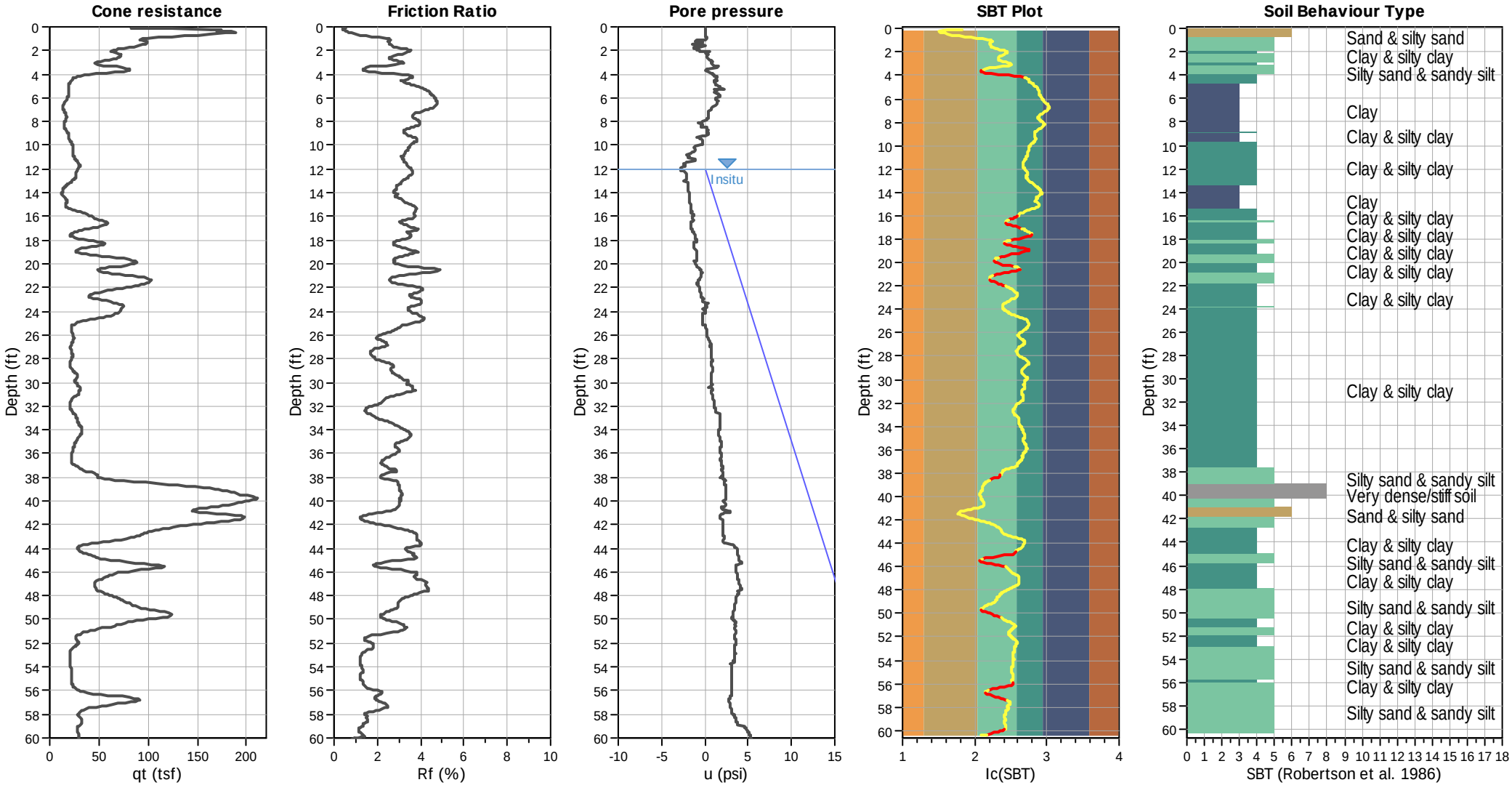






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



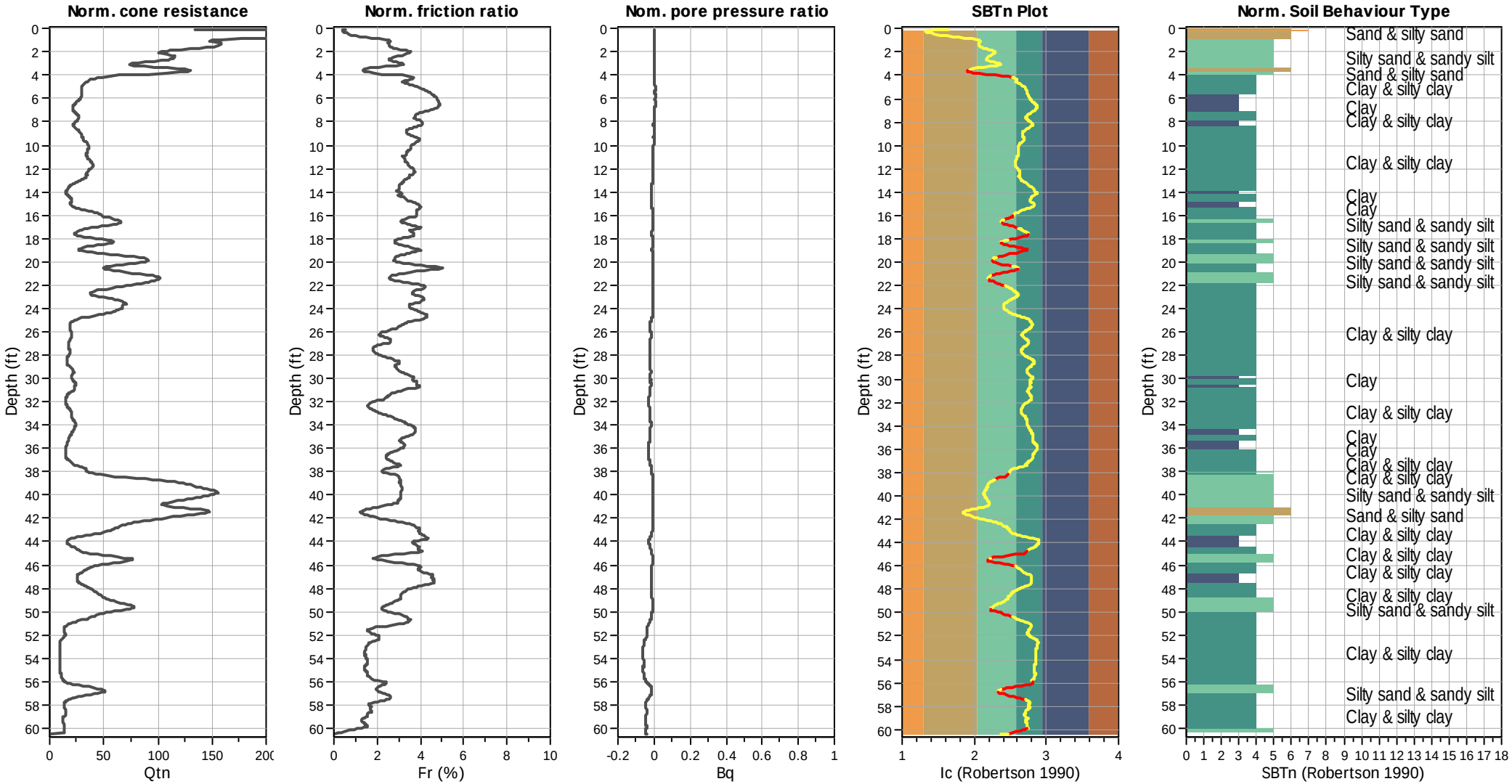
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	9.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	.	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.68	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	12.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

CPT basic interpretation plots (normalized)



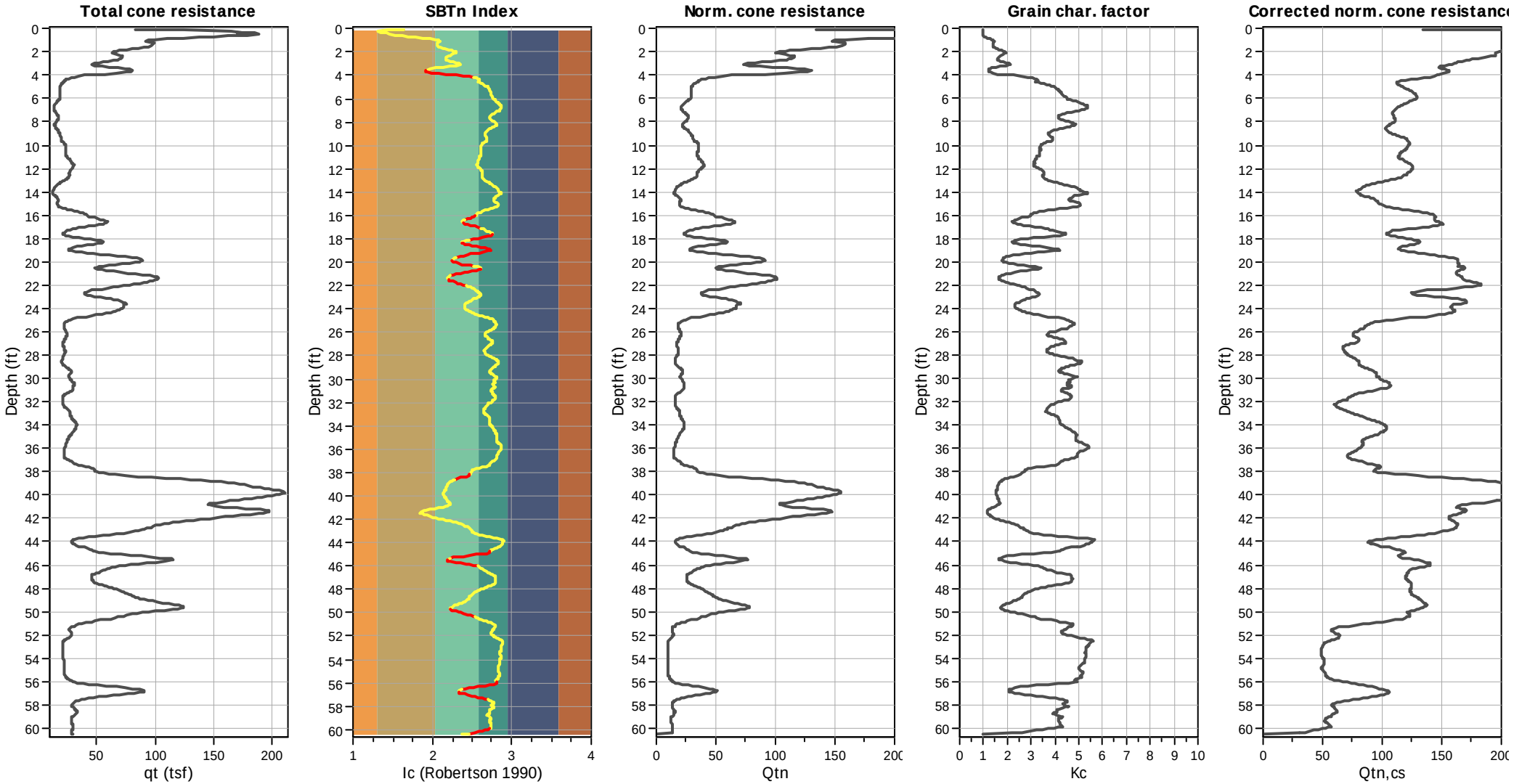
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	9.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	.	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.68	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	12.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

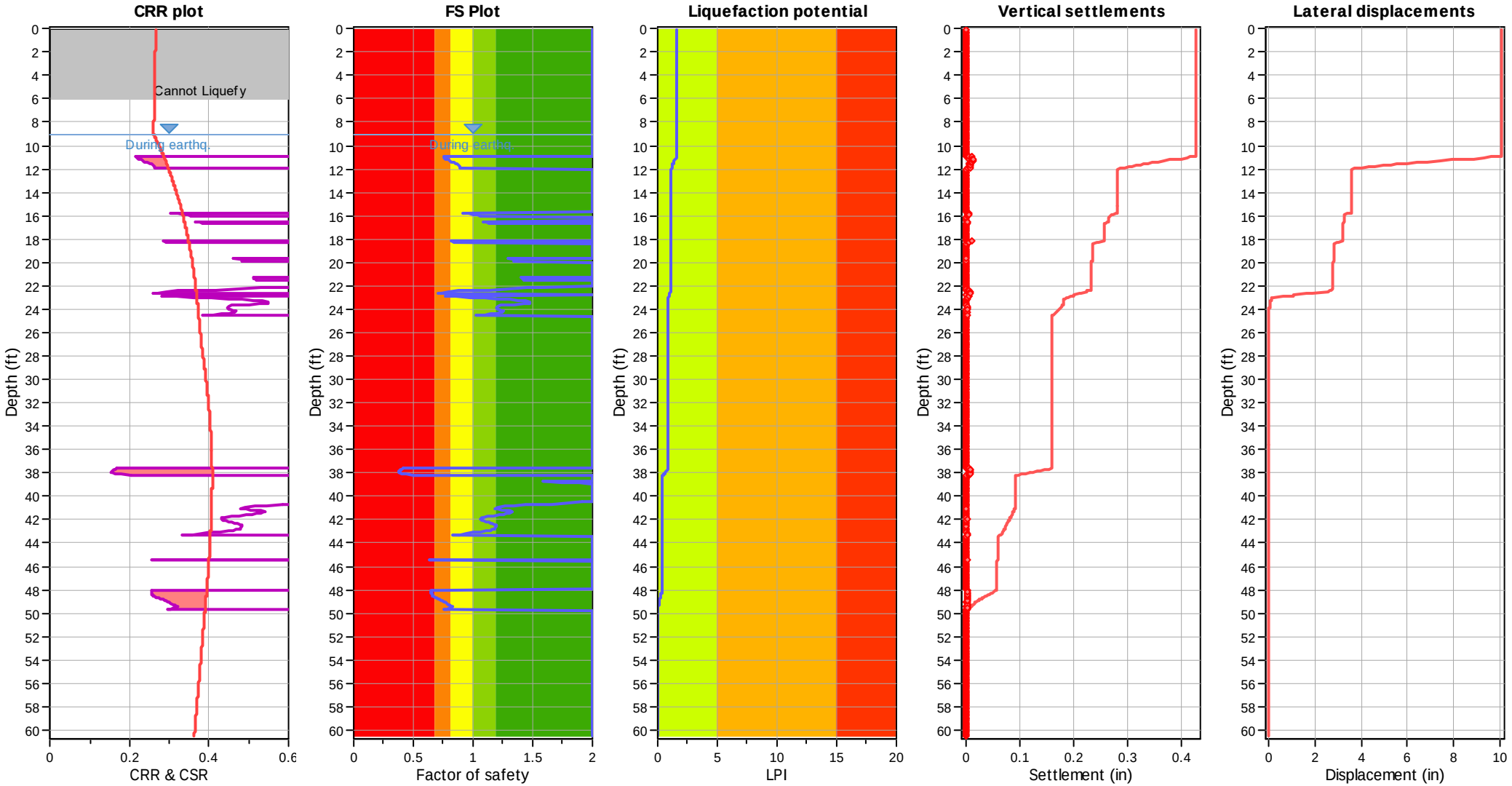
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	9.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	.	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.68	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	12.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	9.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	.	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.68	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	12.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

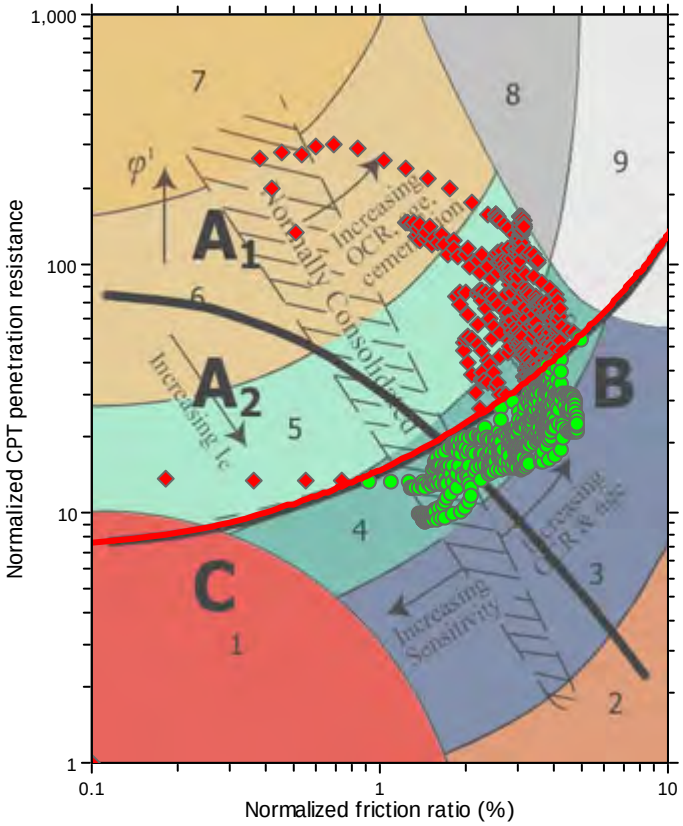
F.S. color scheme

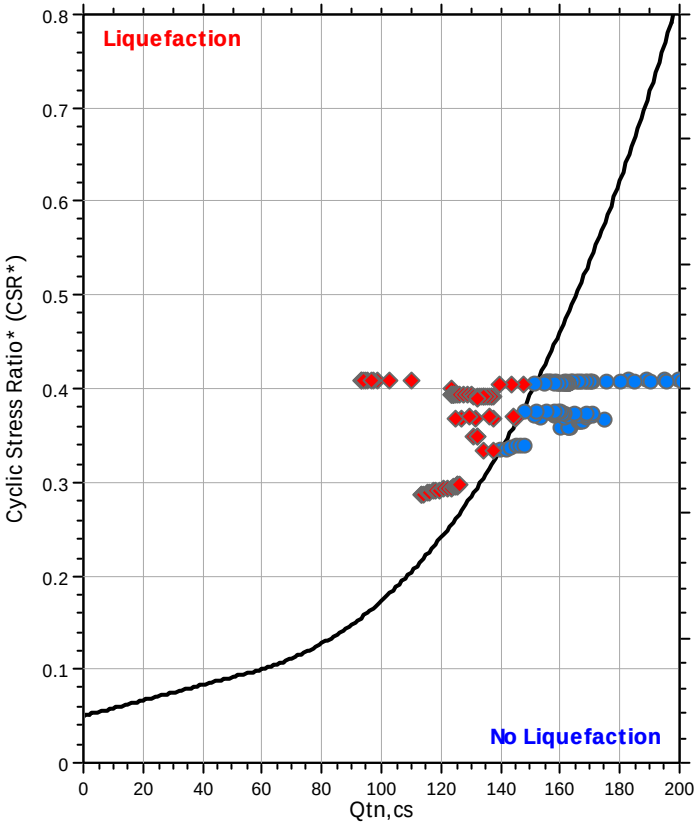
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

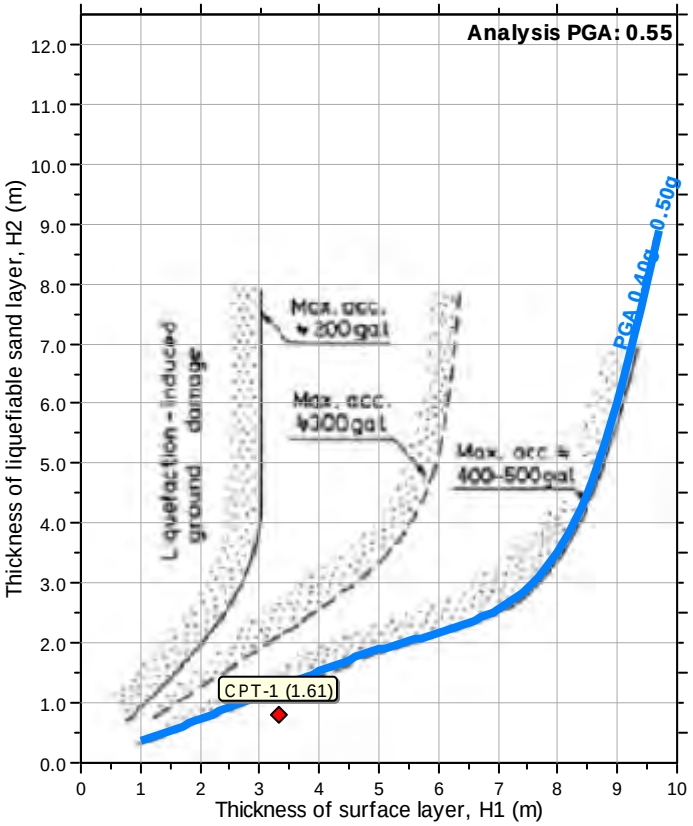
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



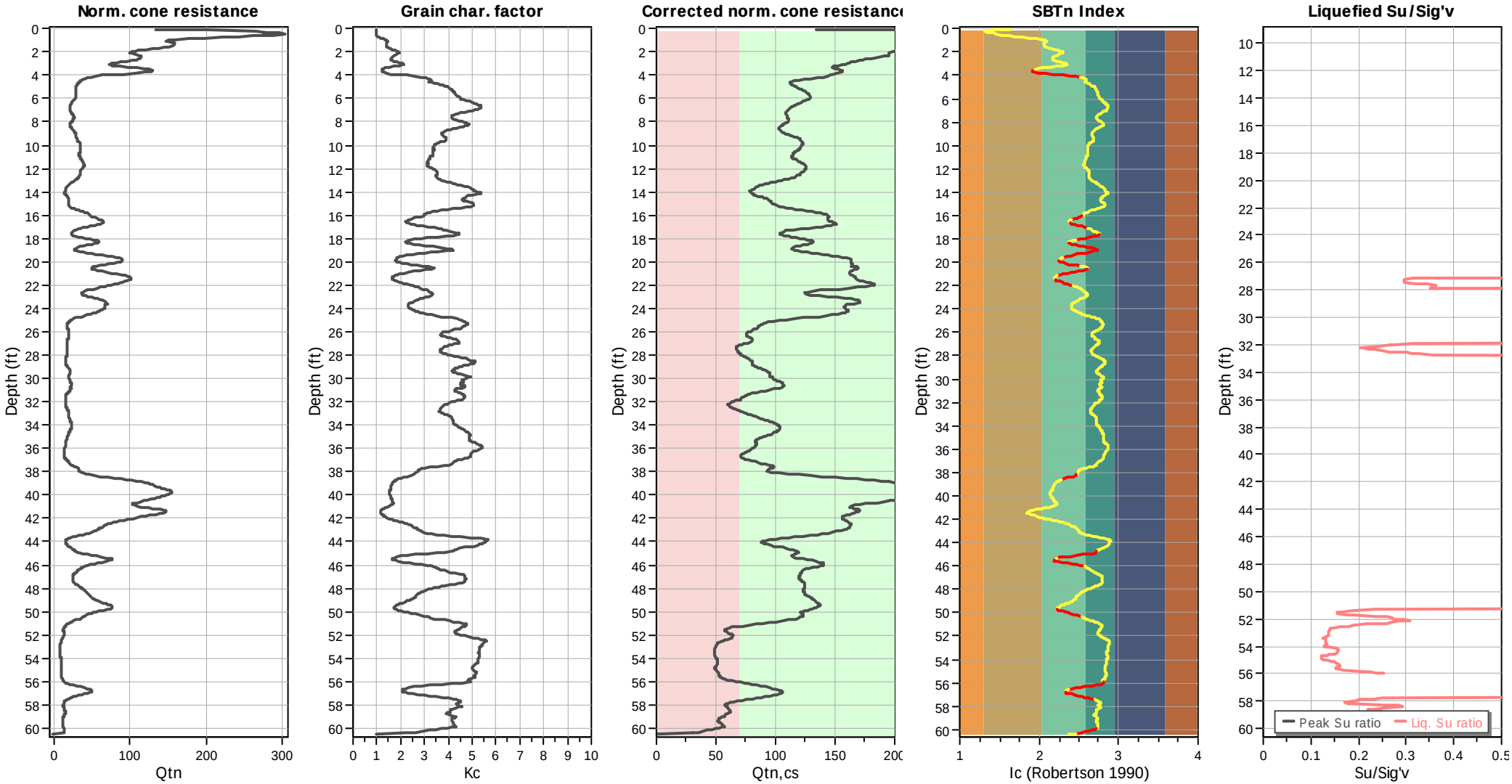




Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	9.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	.	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.68	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	12.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

Check for strength loss plots (Robertson (2010))



Input parameters and analysis data

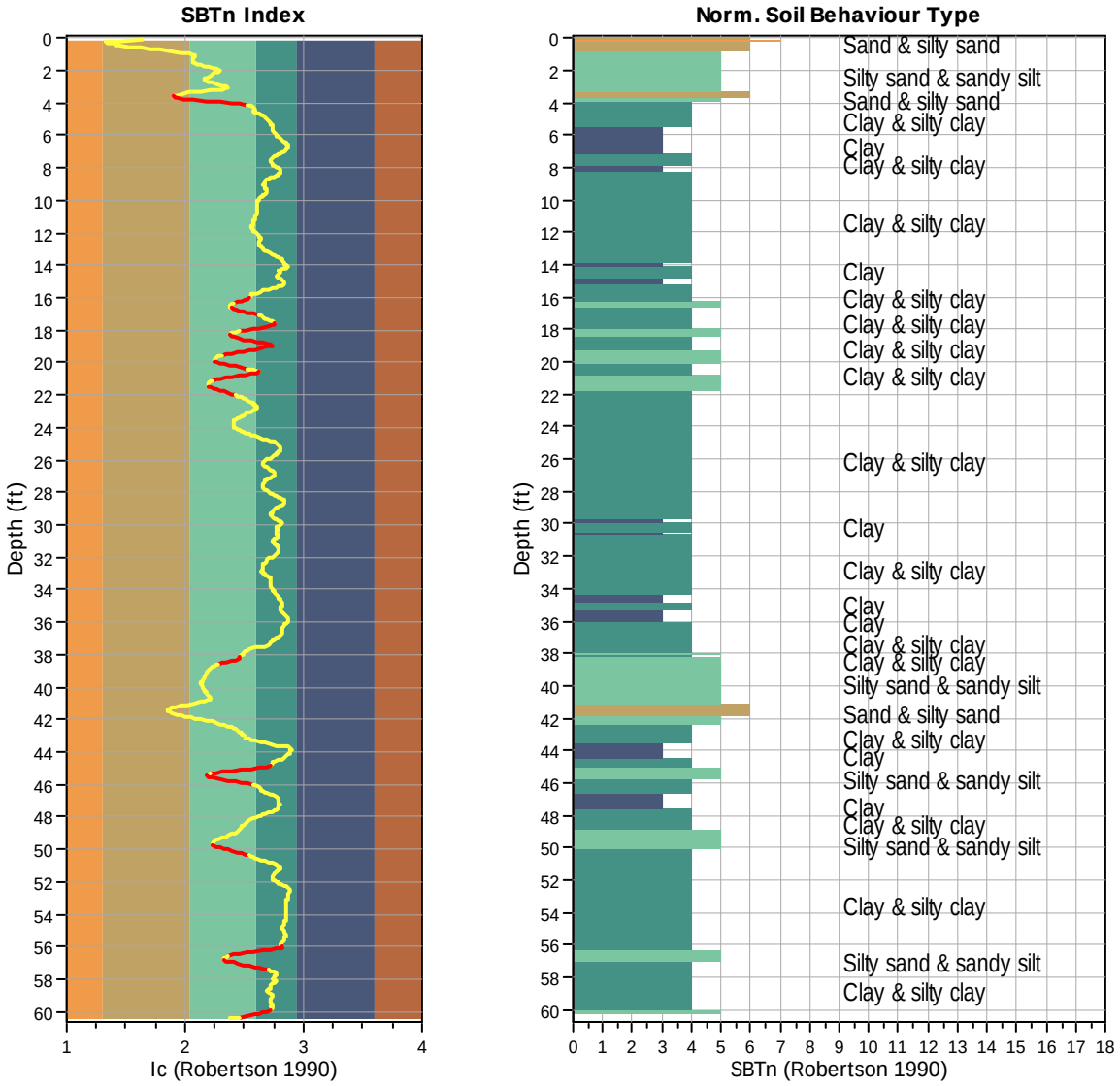
Analysis method:	NCEER (1998)	Depth to water table (erthq.):	9.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	.	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.68	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	12.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

TRANSITION LAYER DETECTION ALGORITHM REPORT
Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between 1.80 < I_c < 3.0) and a rate of change of I_c. Transitions typically occur when the rate of change of I_c is fast (i.e. delta I_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



Transition layer algorithm properties

I_c minimum check value:	1.70
I_c maximum check value:	3.00
I_c change ratio value:	0.0250
Minimum number of points in layer:	4

General statistics

Total points in CPT file:	922
Total points excluded:	144
Exclusion percentage:	15.62%
Number of layers detected:	16

Transition layer No	Number of points	Depth	SBT_n number	SBT_n description
Transition layer 1	10	Start depth: 3.64 (ft)	6	Sand & silty sand
		End depth: 4.20 (ft)	4	Clay & silty clay
Transition layer 2	6	Start depth: 16.10 (ft)	4	Clay & silty clay
		End depth: 16.41 (ft)	5	Silty sand & sandy silt
Transition layer 3	8	Start depth: 16.70 (ft)	5	Silty sand & sandy silt
		End depth: 17.14 (ft)	4	Clay & silty clay
Transition layer 4	8	Start depth: 17.67 (ft)	4	Clay & silty clay
		End depth: 18.12 (ft)	5	Silty sand & sandy silt
Transition layer 5	9	Start depth: 18.40 (ft)	5	Silty sand & sandy silt
		End depth: 18.91 (ft)	4	Clay & silty clay
Transition layer 6	11	Start depth: 18.98 (ft)	4	Clay & silty clay
		End depth: 19.63 (ft)	5	Silty sand & sandy silt
Transition layer 7	8	Start depth: 19.99 (ft)	5	Silty sand & sandy silt
		End depth: 20.42 (ft)	4	Clay & silty clay
Transition layer 8	10	Start depth: 20.62 (ft)	4	Clay & silty clay
		End depth: 21.21 (ft)	5	Silty sand & sandy silt
Transition layer 9	9	Start depth: 21.56 (ft)	5	Silty sand & sandy silt
		End depth: 22.05 (ft)	4	Clay & silty clay
Transition layer 10	7	Start depth: 38.26 (ft)	4	Clay & silty clay
		End depth: 38.65 (ft)	5	Silty sand & sandy silt
Transition layer 11	10	Start depth: 44.84 (ft)	4	Clay & silty clay
		End depth: 45.43 (ft)	5	Silty sand & sandy silt
Transition layer 12	9	Start depth: 45.58 (ft)	5	Silty sand & sandy silt
		End depth: 46.07 (ft)	4	Clay & silty clay
Transition layer 13	11	Start depth: 49.77 (ft)	5	Silty sand & sandy silt
		End depth: 50.42 (ft)	4	Clay & silty clay
Transition layer 14	10	Start depth: 56.05 (ft)	4	Clay & silty clay
		End depth: 56.65 (ft)	5	Silty sand & sandy silt
Transition layer 15	11	Start depth: 56.87 (ft)	5	Silty sand & sandy silt
		End depth: 57.48 (ft)	4	Clay & silty clay
Transition layer 16	7	Start depth: 60.01 (ft)	4	Clay & silty clay
		End depth: 60.40 (ft)	5	Silty sand & sandy silt

Start depth: Depth where the transition layer begins
End depth: Depth where the transition layer ends

:: Field input data ::

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
1	0.09	12.04	0.33	0.00	4.96	114.84
2	0.15	72.31	0.35	0.10	2.03	117.27
3	0.21	181.00	0.36	0.10	0.62	119.34
4	0.29	229.77	0.64	0.10	0.92	121.09
5	0.34	205.07	0.85	0.00	1.56	122.13
6	0.40	202.93	1.11	0.10	1.67	123.74
7	0.49	215.95	1.31	0.00	2.15	124.99
8	0.55	212.92	1.49	0.10	3.19	125.86
9	0.59	200.26	1.77	0.10	4.71	126.44
10	0.69	139.45	2.09	0.00	6.14	126.97
11	0.74	109.67	2.12	0.00	7.81	127.37
12	0.81	96.92	2.06	0.00	9.77	127.66
13	0.89	79.44	2.24	0.19	11.99	127.85
14	0.94	95.45	2.40	0.29	14.07	127.74
15	0.99	85.77	2.58	0.29	15.02	127.64
16	1.09	93.98	2.69	0.10	15.41	127.64
17	1.14	94.33	2.76	-0.95	15.51	127.76
18	1.19	94.33	2.26	-1.15	14.67	128.03
19	1.26	94.33	2.15	-0.29	14.63	128.15
20	1.34	94.33	2.25	-0.86	14.73	128.18
21	1.38	99.59	2.40	-0.33	14.75	128.18
22	1.50	128.21	2.64	-1.43	14.92	128.09
23	1.53	104.05	2.69	-0.38	15.22	127.90
24	1.59	83.37	2.69	0.10	15.95	127.72
25	1.68	92.99	2.70	-0.67	16.76	127.51
26	1.72	82.03	2.57	-1.34	17.68	127.24
27	1.78	72.13	1.90	-1.34	19.07	127.01
28	1.87	56.62	1.94	-0.86	20.70	126.79
29	1.93	54.39	1.97	-0.95	21.42	126.70
30	1.98	56.88	2.03	-0.67	22.17	126.44
31	2.06	76.59	2.48	-0.57	22.39	126.13
32	2.13	52.25	2.62	0.57	21.96	126.17
33	2.17	62.95	2.68	0.10	20.78	126.30
34	2.28	65.98	2.26	0.19	19.88	126.40
35	2.32	66.42	1.92	0.38	19.30	126.44
36	2.39	82.47	1.87	0.38	19.20	126.14
37	2.43	88.63	1.95	0.19	18.32	125.79
38	2.52	80.16	1.96	0.19	17.91	125.25
39	2.57	73.65	1.97	0.19	17.79	124.83
40	2.66	67.14	1.78	0.38	17.83	124.57
41	2.69	61.43	1.64	0.48	18.61	124.26
42	2.77	52.34	1.48	0.57	19.93	123.86
43	2.86	52.87	1.44	0.76	21.26	123.45
44	2.92	55.64	1.46	0.86	22.71	123.12
45	2.96	51.27	1.48	0.76	24.02	122.83
46	3.06	44.67	1.52	0.76	24.79	122.54
47	3.11	39.85	1.52	0.76	24.21	122.33
48	3.15	37.72	1.68	0.86	22.69	122.09

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
49	3.26	37.80	1.54	1.14	19.67	121.99
50	3.30	42.44	1.30	1.24	16.81	121.86
51	3.37	55.64	1.07	1.62	14.04	121.68
52	3.46	70.44	0.85	1.43	12.32	121.55
53	3.51	106.90	0.84	0.48	11.24	121.41
54	3.56	109.94	0.84	0.19	10.62	121.46
55	3.64	113.50	0.83	0.10	10.72	121.63
56	3.71	91.39	1.07	0.10	11.37	121.89
57	3.76	71.95	1.32	0.38	12.61	122.21
58	3.81	64.82	1.49	0.48	14.98	122.14
59	3.90	45.38	1.51	0.76	18.14	121.90
60	3.94	40.48	1.50	0.86	22.47	121.55
61	4.01	37.36	1.48	0.95	26.15	120.98
62	4.09	28.80	1.18	1.14	28.99	120.27
63	4.15	22.65	1.05	1.14	31.74	119.39
64	4.20	22.74	1.02	1.34	33.03	118.55
65	4.30	26.57	0.81	1.43	33.97	117.68
66	4.35	26.12	0.75	1.34	34.74	116.75
67	4.41	24.34	0.71	1.24	35.00	116.12
68	4.50	22.47	0.69	1.34	34.63	115.65
69	4.55	21.76	0.68	1.14	34.30	115.17
70	4.60	20.60	0.67	1.34	35.12	114.89
71	4.68	19.79	0.66	1.14	36.19	114.72
72	4.75	19.44	0.64	1.24	37.17	114.64
73	4.79	19.35	0.64	1.24	38.00	114.66
74	4.88	18.90	0.65	1.24	38.80	114.73
75	4.95	18.63	0.69	1.43	39.52	114.82
76	4.99	18.63	0.71	1.62	40.07	114.96
77	5.06	18.63	0.75	1.81	40.57	115.14
78	5.14	18.63	0.77	1.81	41.05	115.33
79	5.21	18.19	0.78	1.81	41.40	115.52
80	5.26	18.59	0.79	2.29	41.61	115.66
81	5.33	18.99	0.81	1.14	41.90	115.78
82	5.40	19.08	0.82	1.34	42.13	115.87
83	5.45	19.17	0.82	1.24	42.35	115.96
84	5.51	19.08	0.82	1.05	42.46	116.06
85	5.60	18.55	0.83	1.43	42.60	116.14
86	5.66	18.55	0.84	1.62	42.72	116.20
87	5.71	18.55	0.86	1.62	42.92	116.23
88	5.78	18.63	0.87	1.72	43.23	116.24
89	5.86	18.81	0.87	1.81	43.59	116.22
90	5.93	19.08	0.87	1.81	43.93	116.15
91	6.01	18.55	0.86	1.24	44.26	116.05
92	6.05	18.01	0.85	1.24	44.63	115.89
93	6.11	17.39	0.82	1.24	45.11	115.66
94	6.21	16.58	0.79	1.53	45.75	115.39
95	6.25	16.32	0.77	1.53	46.50	115.09
96	6.31	15.69	0.74	1.43	47.31	114.77

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
97	6.39	14.80	0.70	1.34	48.06	114.44
98	6.45	14.27	0.68	1.34	48.75	114.13
99	6.51	13.91	0.66	1.34	49.21	113.84
100	6.58	13.37	0.65	1.29	49.70	113.58
101	6.66	13.11	0.63	1.24	50.04	113.37
102	6.70	13.02	0.62	0.95	50.02	113.23
103	6.78	13.20	0.60	0.86	49.91	113.11
104	6.85	13.20	0.61	0.76	49.56	113.03
105	6.89	13.37	0.61	0.67	48.99	112.96
106	7.00	13.91	0.60	0.67	48.31	112.93
107	7.03	13.91	0.60	0.67	47.37	112.93
108	7.10	14.35	0.59	0.48	46.44	112.94
109	7.19	14.53	0.58	0.38	45.34	112.97
110	7.25	14.89	0.58	0.38	44.30	113.02
111	7.30	15.78	0.58	0.38	43.45	113.13
112	7.37	16.14	0.57	0.38	42.64	113.28
113	7.44	16.94	0.58	0.38	42.05	113.45
114	7.49	17.21	0.60	0.38	41.76	113.61
115	7.56	17.65	0.63	0.38	41.48	113.69
116	7.64	18.01	0.66	0.48	41.38	113.67
117	7.68	17.92	0.67	0.38	41.72	113.72
118	7.79	16.94	0.67	0.29	42.31	113.74
119	7.83	16.67	0.62	0.29	42.92	113.69
120	7.90	16.05	0.56	0.19	43.66	113.57
121	7.98	15.25	0.62	-0.19	44.43	113.35
122	8.02	14.89	0.62	-0.29	45.27	113.07
123	8.09	14.62	0.60	-0.48	45.76	112.80
124	8.15	14.00	0.58	-0.76	46.28	112.59
125	8.23	13.73	0.55	-0.27	46.56	112.49
126	8.29	13.11	0.53	-0.52	46.19	112.35
127	8.34	13.46	0.52	-0.27	45.58	112.21
128	8.41	13.64	0.51	-0.48	44.89	112.16
129	8.48	14.53	0.51	0.19	43.97	112.17
130	8.55	15.42	0.52	0.19	42.99	112.25
131	8.60	15.87	0.52	0.19	41.88	112.40
132	8.66	16.41	0.54	0.19	40.91	112.56
133	8.74	17.03	0.55	0.38	40.02	112.76
134	8.83	17.65	0.56	0.29	39.38	113.03
135	8.90	18.10	0.57	0.48	38.93	113.31
136	8.94	18.28	0.57	0.29	38.63	113.59
137	9.01	18.72	0.59	0.38	38.53	113.87
138	9.09	19.35	0.64	0.38	38.58	114.14
139	9.15	19.70	0.67	0.10	38.78	114.38
140	9.20	19.62	0.68	-0.29	39.05	114.63
141	9.29	19.44	0.72	-0.86	39.37	114.89
142	9.35	19.26	0.73	-0.57	39.64	115.15
143	9.39	19.08	0.74	-0.57	39.81	115.33
144	9.45	19.17	0.76	-0.48	39.87	115.46

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
145	9.55	19.35	0.78	-0.29	39.59	115.61
146	9.64	19.97	0.80	-0.19	39.12	115.75
147	9.65	20.33	0.79	-0.19	38.50	115.92
148	9.73	20.77	0.78	-0.19	37.86	116.09
149	9.79	22.38	0.78	-0.19	37.38	116.26
150	9.84	23.18	0.81	-0.19	36.94	116.38
151	9.91	23.98	0.83	-0.29	36.57	116.46
152	9.99	24.16	0.84	-0.38	36.26	116.53
153	10.08	23.72	0.87	-1.05	35.93	116.58
154	10.14	23.72	0.85	-1.24	35.79	116.61
155	10.19	23.72	0.84	-1.34	35.76	116.60
156	10.25	23.72	0.82	-1.15	35.75	116.56
157	10.34	24.16	0.79	-1.15	35.92	116.52
158	10.38	24.16	0.79	-1.15	35.85	116.47
159	10.44	23.63	0.79	-1.15	35.69	116.42
160	10.52	24.07	0.79	-1.34	35.59	116.33
161	10.59	23.36	0.81	-1.43	35.51	116.25
162	10.63	23.98	0.82	-1.53	35.58	116.20
163	10.70	24.61	0.79	-1.53	35.73	116.14
164	10.78	23.98	0.75	-2.10	35.80	116.09
165	10.87	23.90	0.74	-2.00	35.54	116.15
166	10.93	23.45	0.75	-1.81	34.88	116.22
167	10.97	23.00	0.74	-1.72	34.54	116.30
168	11.03	23.27	0.75	-1.91	34.55	116.45
169	11.12	27.10	0.81	-1.05	34.73	116.66
170	11.16	29.07	0.82	-1.05	34.52	116.89
171	11.23	27.64	0.86	-1.05	34.31	117.13
172	11.31	26.84	0.91	-1.05	34.11	117.39
173	11.37	26.04	0.93	-1.89	33.75	117.69
174	11.44	28.71	0.93	-2.14	33.71	117.96
175	11.51	28.71	0.94	-2.29	33.88	118.20
176	11.56	28.71	0.96	-2.38	33.77	118.42
177	11.63	30.67	1.00	-2.29	33.60	118.59
178	11.71	31.74	1.06	-2.48	33.53	118.73
179	11.76	31.83	1.07	-2.29	33.80	118.81
180	11.83	32.19	1.07	-2.48	34.12	118.84
181	11.91	31.47	1.07	-2.86	34.47	118.85
182	11.94	29.60	1.07	-2.77	34.99	118.78
183	12.05	28.00	1.03	-2.86	35.57	118.65
184	12.10	27.28	1.00	-2.86	35.98	118.50
185	12.14	26.66	0.99	-2.38	36.44	118.35
186	12.25	25.77	0.97	-2.29	36.85	118.21
187	12.29	26.04	0.96	-2.29	37.01	118.09
188	12.35	26.93	0.95	-2.19	37.11	118.01
189	12.44	26.93	0.95	-2.19	37.11	117.94
190	12.49	27.10	0.95	-2.19	36.89	117.86
191	12.55	26.93	0.95	-2.19	36.57	117.78
192	12.61	26.57	0.96	-2.19	36.33	117.65

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
193	12.70	26.66	0.92	-2.19	36.52	117.47
194	12.75	27.37	0.89	-2.19	36.82	117.24
195	12.81	27.10	0.86	-2.19	37.15	116.89
196	12.89	26.21	0.81	-2.19	37.47	116.43
197	12.94	23.63	0.79	-2.19	37.76	115.89
198	12.99	22.11	0.75	-2.38	38.26	115.33
199	13.08	20.77	0.65	-2.00	39.06	114.74
200	13.15	19.70	0.57	-2.00	40.07	114.10
201	13.20	18.72	0.53	-2.00	41.17	113.45
202	13.27	17.65	0.51	-1.91	41.96	112.77
203	13.32	17.12	0.50	-1.91	42.57	112.10
204	13.39	15.87	0.47	-1.91	43.31	111.52
205	13.48	15.16	0.44	-1.91	44.21	111.05
206	13.54	14.62	0.42	-1.91	45.28	110.62
207	13.59	14.35	0.40	-1.91	46.18	110.23
208	13.65	13.64	0.37	-1.91	47.03	109.85
209	13.74	13.29	0.37	-1.91	47.60	109.53
210	13.80	12.22	0.36	-1.91	47.85	109.20
211	13.89	12.30	0.36	-1.91	47.83	108.87
212	13.93	12.30	0.36	-1.81	48.20	108.69
213	13.99	12.48	0.35	-1.81	49.05	108.74
214	14.07	12.66	0.31	-1.81	49.73	108.86
215	14.12	13.02	0.29	-1.81	49.94	109.03
216	14.18	12.39	0.34	-1.81	49.09	109.31
217	14.26	11.77	0.41	-1.81	47.44	109.74
218	14.34	12.30	0.43	-1.72	46.06	110.20
219	14.38	12.66	0.43	-1.81	45.65	110.80
220	14.47	16.23	0.45	-1.81	45.75	111.44
221	14.53	19.62	0.49	-1.81	45.57	111.97
222	14.57	19.79	0.51	-1.81	45.00	112.37
223	14.64	18.01	0.57	-1.81	44.63	112.68
224	14.72	17.21	0.60	-1.72	44.38	112.94
225	14.80	16.94	0.61	-1.72	44.93	113.04
226	14.83	16.94	0.61	-1.72	45.96	113.03
227	14.92	16.23	0.59	-1.62	47.13	113.02
228	14.97	15.87	0.57	-1.62	47.59	113.04
229	15.06	15.07	0.53	-1.62	47.83	113.16
230	15.10	15.78	0.53	-1.62	47.97	113.40
231	15.17	15.69	0.55	-1.53	47.77	113.81
232	15.25	16.67	0.60	-1.53	46.87	114.41
233	15.31	17.48	0.68	-1.53	45.66	115.10
234	15.37	18.37	0.77	-1.53	43.93	115.94
235	15.44	20.95	0.87	-1.53	42.10	116.86
236	15.51	24.70	0.97	-1.53	40.31	117.76
237	15.56	26.84	1.02	-1.43	38.48	118.67
238	15.63	30.85	1.11	-1.53	36.98	119.59
239	15.71	34.86	1.23	-1.53	35.62	120.41
240	15.76	36.65	1.29	-1.53	34.51	121.11

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
241	15.82	40.48	1.41	-1.34	33.67	121.67
242	15.90	42.08	1.61	-1.34	33.11	122.14
243	15.95	43.06	1.67	-1.34	32.79	122.49
244	16.01	43.60	1.70	-1.43	32.40	122.74
245	16.10	43.78	1.68	-1.43	31.68	122.98
246	16.16	42.35	1.65	-1.43	30.85	123.18
247	16.21	41.91	1.62	-1.43	29.57	123.36
248	16.29	45.03	1.59	-1.34	28.18	123.58
249	16.36	51.09	1.59	-1.34	26.95	123.81
250	16.41	55.81	1.62	-1.43	26.17	124.07
251	16.49	63.93	1.72	-1.53	25.63	124.31
252	16.55	69.28	1.82	-1.62	25.49	124.52
253	16.60	69.90	1.90	-1.62	25.85	124.65
254	16.70	64.64	1.99	-1.62	26.60	124.74
255	16.74	60.01	2.00	-1.62	27.53	124.65
256	16.80	51.27	1.98	-1.62	28.60	124.20
257	16.89	42.80	1.91	-1.62	30.13	123.65
258	16.93	40.75	1.89	-1.53	32.06	122.98
259	17.00	37.45	1.63	-1.62	34.10	122.18
260	17.09	34.24	1.04	-1.43	36.18	121.24
261	17.14	32.99	1.05	-1.43	37.60	120.22
262	17.20	29.33	1.03	-1.43	38.27	119.19
263	17.28	25.05	0.95	-1.43	38.97	118.03
264	17.34	22.47	0.82	-1.24	39.73	117.00
265	17.41	22.29	0.73	-1.24	41.27	116.50
266	17.48	22.20	0.70	-1.24	42.83	116.03
267	17.56	20.06	0.68	-1.05	43.77	115.69
268	17.62	19.70	0.68	-1.05	43.79	115.59
269	17.67	19.79	0.70	-1.05	43.39	115.92
270	17.72	19.79	0.74	-1.05	42.12	116.58
271	17.78	21.40	0.80	-1.05	40.11	117.40
272	17.87	24.16	0.87	-1.05	36.88	118.40
273	17.94	27.82	1.06	-0.95	33.84	119.49
274	18.01	36.11	1.22	-0.95	31.30	120.47
275	18.06	43.60	1.32	-0.95	28.99	121.39
276	18.12	55.64	1.43	-0.95	27.28	122.18
277	18.21	62.23	1.60	-1.24	26.18	122.82
278	18.25	63.66	1.63	-1.24	25.54	123.11
279	18.31	67.05	1.67	-1.34	25.51	123.13
280	18.40	64.46	1.69	-1.34	25.86	122.96
281	18.44	58.67	1.67	-1.34	27.03	122.54
282	18.51	47.08	1.42	-1.34	28.73	121.89
283	18.58	37.63	1.25	-1.34	30.50	121.18
284	18.64	33.26	1.09	-1.24	32.96	120.37
285	18.71	25.59	0.96	-1.24	35.55	119.49
286	18.80	21.58	0.86	-1.05	38.15	118.63
287	18.86	25.46	0.86	-0.95	40.42	118.13
288	18.91	24.25	0.89	-0.86	41.68	118.11

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
289	18.98	25.32	0.87	-0.95	42.12	118.34
290	19.05	25.50	0.93	-0.95	40.21	118.97
291	19.10	25.14	1.07	-0.95	37.21	120.00
292	19.20	29.69	1.32	-0.95	34.90	120.98
293	19.23	33.70	1.36	-0.86	32.49	121.99
294	19.30	46.45	1.51	-0.95	30.23	123.00
295	19.39	59.38	1.82	-0.95	28.17	123.94
296	19.43	63.22	1.91	-0.95	26.01	124.82
297	19.50	69.55	2.06	-0.95	24.22	125.55
298	19.57	76.77	2.16	-0.86	22.66	126.25
299	19.63	80.78	2.23	-0.86	21.67	126.85
300	19.70	89.16	2.33	-0.95	21.22	127.32
301	19.77	91.30	2.42	-1.24	21.01	127.75
302	19.84	97.72	2.52	-1.15	20.60	127.70
303	19.90	98.34	2.63	-1.15	20.80	127.70
304	19.99	93.62	2.83	-1.05	21.28	127.67
305	20.02	90.05	2.92	-1.05	22.30	127.62
306	20.09	80.87	1.82	-0.95	23.77	127.49
307	20.19	70.70	2.20	-0.95	25.60	127.29
308	20.21	65.36	2.28	-0.95	27.62	127.00
309	20.29	57.42	2.48	-0.86	29.68	126.65
310	20.38	47.26	2.50	-0.68	31.85	126.25
311	20.42	46.27	2.46	-0.68	34.26	126.26
312	20.52	45.38	2.40	-0.68	35.69	126.18
313	20.55	43.96	2.40	-0.48	36.22	126.17
314	20.62	43.24	2.41	-0.38	35.29	126.18
315	20.68	46.99	2.34	-0.38	33.11	126.33
316	20.75	50.55	2.27	-0.29	30.92	126.55
317	20.81	58.67	2.36	-0.38	28.58	126.84
318	20.90	69.81	2.32	-0.38	26.41	127.14
319	20.96	81.23	2.42	-0.38	24.33	127.45
320	21.01	86.40	2.52	-0.38	22.59	127.75
321	21.09	95.76	2.60	-0.48	21.13	128.04
322	21.15	98.97	2.64	-0.48	19.98	128.26
323	21.21	103.60	2.67	-0.57	19.26	128.44
324	21.30	106.55	2.66	-0.57	18.90	128.54
325	21.36	107.97	2.61	-0.57	18.65	128.60
326	21.40	107.80	2.57	-0.76	18.67	128.63
327	21.49	105.30	2.58	-0.76	18.99	128.69
328	21.56	101.55	2.59	-0.76	19.52	128.77
329	21.60	99.41	2.59	-0.86	20.28	128.88
330	21.66	97.27	2.69	-0.76	21.29	129.07
331	21.75	90.77	2.90	-0.86	22.38	129.27
332	21.80	88.72	3.05	-0.76	23.47	129.44
333	21.85	85.51	3.22	-0.76	24.71	129.46
334	21.95	84.61	3.50	-0.67	26.03	129.40
335	21.99	83.72	3.53	-0.67	27.38	129.19
336	22.05	81.58	3.49	-0.67	28.49	128.79

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
337	22.14	67.41	3.05	-0.67	29.47	128.20
338	22.19	62.59	2.80	-0.67	30.37	127.52
339	22.26	55.73	2.42	-0.67	31.21	126.64
340	22.35	50.20	1.96	-0.67	32.11	125.65
341	22.44	46.54	1.51	-0.48	33.11	124.54
342	22.45	44.76	1.49	-0.48	33.70	123.59
343	22.54	41.82	1.37	-0.48	34.32	122.71
344	22.58	40.48	1.32	-0.48	34.79	122.02
345	22.65	38.07	1.29	-0.48	35.26	121.68
346	22.73	36.65	1.32	-0.48	35.59	121.70
347	22.79	35.75	1.35	-0.38	35.60	121.85
348	22.85	36.29	1.38	-0.29	35.20	122.44
349	22.93	38.78	1.50	-0.19	34.86	123.38
350	22.99	43.87	1.57	-0.10	34.22	124.47
351	23.04	47.97	1.72	-0.19	32.97	125.51
352	23.12	58.13	2.23	-0.19	31.84	126.40
353	23.19	65.18	2.88	-0.29	31.01	127.04
354	23.27	71.69	3.25	0.29	30.35	127.54
355	23.30	80.87	3.33	0.38	29.73	127.91
356	23.38	79.00	3.22	0.06	28.94	128.24
357	23.47	70.35	2.82	0.00	28.21	128.38
358	23.50	67.76	2.68	0.10	27.34	128.29
359	23.58	68.92	2.48	0.29	26.72	128.05
360	23.66	76.23	2.45	0.19	26.65	127.75
361	23.69	79.44	2.44	0.00	26.68	127.48
362	23.77	80.60	2.38	-0.19	26.73	127.38
363	23.84	76.41	2.39	0.00	26.66	127.35
364	23.92	70.70	2.46	-0.10	26.73	127.39
365	23.97	67.94	2.50	0.00	27.09	127.39
366	24.06	66.25	2.58	0.00	27.64	127.38
367	24.12	68.48	2.58	0.00	28.34	127.39
368	24.17	69.37	2.58	-0.19	28.98	127.40
369	24.23	68.74	2.53	-0.19	29.62	127.30
370	24.31	68.03	2.54	-0.19	30.30	127.13
371	24.36	67.41	2.59	-0.19	31.11	126.84
372	24.42	64.37	2.56	-0.29	32.22	126.39
373	24.51	55.28	2.33	-0.29	33.56	125.85
374	24.54	50.55	2.22	-0.29	34.93	125.18
375	24.62	42.71	1.99	-0.29	36.43	124.33
376	24.71	36.82	1.68	-0.29	38.19	123.30
377	24.74	34.24	1.54	-0.29	40.06	122.16
378	24.81	32.37	1.26	-0.29	41.76	121.03
379	24.89	29.60	0.99	-0.19	43.28	119.83
380	24.96	26.48	0.87	-0.19	44.17	118.67
381	25.01	25.14	0.84	-0.19	44.60	117.67
382	25.10	22.29	0.77	-0.19	44.86	116.71
383	25.14	21.76	0.74	-0.10	45.29	115.94
384	25.21	21.40	0.68	0.00	45.84	115.43

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
385	25.30	21.84	0.65	0.00	46.13	115.07
386	25.34	21.84	0.65	0.00	46.14	114.74
387	25.41	21.76	0.62	0.10	45.86	114.53
388	25.50	21.76	0.61	0.19	45.54	114.36
389	25.55	21.76	0.61	0.19	45.10	114.29
390	25.60	21.93	0.60	0.19	44.69	114.23
391	25.70	21.76	0.61	0.19	44.16	114.13
392	25.75	21.84	0.61	0.19	43.53	114.00
393	25.80	22.83	0.61	0.19	42.53	113.75
394	25.89	23.27	0.59	0.29	41.59	113.51
395	25.95	23.63	0.56	0.29	40.75	113.29
396	25.99	23.72	0.51	0.29	39.73	113.12
397	26.06	24.34	0.41	0.29	39.00	112.98
398	26.15	24.34	0.42	0.29	38.51	112.83
399	26.19	24.34	0.44	0.29	38.19	112.72
400	26.25	25.59	0.47	0.38	38.15	112.72
401	26.34	24.61	0.50	0.38	38.51	112.83
402	26.38	24.34	0.51	0.48	39.39	113.08
403	26.45	24.07	0.52	0.57	40.23	113.29
404	26.52	24.07	0.56	0.57	41.01	113.45
405	26.61	23.00	0.58	0.57	41.97	113.52
406	26.67	22.02	0.58	0.57	42.66	113.49
407	26.72	22.02	0.57	0.67	43.20	113.43
408	26.82	21.93	0.56	0.57	43.58	113.29
409	26.86	21.49	0.55	0.67	43.75	113.03
410	26.94	21.04	0.51	0.57	43.52	112.66
411	26.98	21.13	0.49	0.67	42.98	112.24
412	27.06	21.13	0.45	0.67	42.39	111.82
413	27.10	21.04	0.42	0.67	41.67	111.41
414	27.17	20.77	0.36	0.76	40.84	111.00
415	27.26	20.86	0.34	0.76	40.05	110.73
416	27.31	21.22	0.34	0.76	39.33	110.56
417	27.39	21.76	0.34	0.76	38.82	110.53
418	27.44	22.02	0.34	0.76	38.36	110.56
419	27.51	22.74	0.37	0.76	38.10	110.71
420	27.58	23.36	0.40	0.76	38.01	110.88
421	27.63	23.63	0.42	0.76	37.96	111.05
422	27.71	23.81	0.42	0.76	38.14	111.21
423	27.79	23.63	0.41	0.76	38.54	111.36
424	27.86	23.18	0.41	0.76	39.00	111.44
425	27.89	23.18	0.41	0.76	39.57	111.49
426	27.96	22.38	0.41	0.76	40.28	111.53
427	28.05	21.49	0.42	0.86	41.19	111.64
428	28.09	21.22	0.42	0.86	42.28	111.86
429	28.16	20.86	0.44	0.86	43.44	112.11
430	28.23	20.51	0.46	0.76	44.60	112.35
431	28.29	20.51	0.50	0.76	45.60	112.58
432	28.35	20.42	0.55	0.76	46.41	112.79

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
433	28.44	20.15	0.57	0.76	47.07	112.98
434	28.50	20.24	0.57	0.67	47.70	113.15
435	28.55	20.24	0.57	0.67	48.08	113.29
436	28.64	19.97	0.56	0.67	48.22	113.38
437	28.69	20.28	0.55	0.86	48.00	113.46
438	28.75	19.88	0.56	0.86	47.18	113.52
439	28.82	20.33	0.56	0.86	46.07	113.57
440	28.89	20.95	0.56	0.86	45.14	113.89
441	28.98	22.11	0.59	0.86	44.39	114.33
442	29.04	24.16	0.57	0.86	43.78	114.75
443	29.08	25.68	0.56	0.86	43.10	115.17
444	29.15	27.64	0.73	0.76	42.63	115.58
445	29.24	28.09	0.81	0.76	42.33	115.99
446	29.29	27.82	0.81	0.76	41.79	116.40
447	29.34	28.00	0.82	0.76	41.67	116.77
448	29.43	27.73	0.84	0.76	41.86	117.12
449	29.47	27.64	0.86	0.76	42.27	117.21
450	29.53	30.40	0.89	0.76	42.78	117.21
451	29.62	29.69	0.88	0.76	43.41	117.18
452	29.66	29.16	0.87	0.76	44.30	117.14
453	29.77	26.39	0.84	0.76	45.30	117.05
454	29.81	25.14	0.84	0.76	46.49	117.02
455	29.86	23.98	0.82	0.76	46.96	117.11
456	29.92	22.38	0.83	0.76	46.80	117.30
457	30.01	21.49	0.82	0.76	45.97	117.59
458	30.09	21.04	0.90	0.76	44.94	117.89
459	30.17	29.16	1.00	0.95	44.48	118.14
460	30.20	32.90	1.05	0.76	44.72	118.37
461	30.27	37.18	1.09	0.76	45.07	118.64
462	30.32	36.11	1.07	0.76	44.80	118.97
463	30.39	31.38	1.07	0.48	44.08	119.26
464	30.47	25.59	1.07	0.67	43.97	119.40
465	30.55	24.16	1.15	0.86	44.08	119.44
466	30.62	27.73	1.17	0.95	44.66	119.40
467	30.66	29.78	1.18	0.95	45.25	119.37
468	30.72	32.10	1.15	0.76	45.23	119.18
469	30.81	32.99	1.10	0.76	44.45	118.99
470	30.85	33.17	1.09	0.76	43.44	118.66
471	30.91	32.01	1.07	0.76	42.92	118.16
472	31.01	29.16	0.85	0.86	42.52	117.55
473	31.05	27.91	0.78	0.86	42.61	116.86
474	31.11	26.12	0.71	0.95	43.02	116.09
475	31.20	24.43	0.61	0.95	43.56	115.25
476	31.26	24.43	0.55	0.95	43.93	114.36
477	31.31	22.65	0.52	0.95	44.44	113.76
478	31.38	21.40	0.48	0.95	44.95	113.26
479	31.46	20.69	0.47	0.95	45.17	112.86
480	31.51	20.69	0.47	1.14	45.26	112.58

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
481	31.60	20.69	0.49	1.05	45.46	112.35
482	31.65	20.86	0.50	1.05	45.28	112.13
483	31.74	21.58	0.49	1.05	45.00	111.89
484	31.80	21.58	0.46	1.05	44.54	111.65
485	31.85	21.67	0.43	1.05	43.96	111.35
486	31.89	21.58	0.40	1.05	43.09	110.89
487	32.00	20.77	0.35	1.14	42.24	110.40
488	32.04	20.77	0.34	1.14	41.48	109.91
489	32.09	20.77	0.31	1.14	40.77	109.53
490	32.19	20.77	0.26	1.24	40.16	109.26
491	32.23	20.77	0.27	1.24	40.06	109.09
492	32.29	21.13	0.28	1.24	39.46	109.25
493	32.37	21.84	0.30	1.24	38.92	109.46
494	32.44	22.56	0.32	1.24	38.50	109.80
495	32.49	20.77	0.34	1.24	38.30	110.35
496	32.58	25.14	0.39	1.72	38.02	110.90
497	32.62	25.41	0.40	1.72	37.80	111.43
498	32.69	26.04	0.42	1.72	37.73	111.92
499	32.78	26.93	0.46	1.81	37.78	112.38
500	32.82	27.64	0.48	1.81	37.56	112.85
501	32.89	27.73	0.50	1.81	37.93	113.22
502	32.97	27.46	0.52	1.81	38.29	113.60
503	33.02	27.28	0.54	1.81	38.70	113.96
504	33.09	27.37	0.57	1.81	39.32	114.36
505	33.15	27.10	0.60	1.81	40.07	114.76
506	33.20	27.55	0.62	1.81	40.82	115.16
507	33.28	27.82	0.65	1.81	41.29	115.63
508	33.38	27.82	0.73	1.81	41.57	116.09
509	33.43	27.82	0.77	1.81	41.65	116.54
510	33.47	28.09	0.81	1.81	41.63	116.98
511	33.57	30.40	0.88	1.81	41.78	117.43
512	33.63	31.47	0.90	1.72	41.93	117.84
513	33.70	32.72	0.94	1.72	41.95	118.20
514	33.74	32.99	0.97	1.72	41.91	118.53
515	33.82	32.90	1.03	1.72	41.85	118.83
516	33.86	32.72	1.05	1.72	41.97	119.05
517	33.93	32.81	1.08	1.72	42.27	119.25
518	34.02	33.08	1.11	1.53	42.71	119.41
519	34.06	33.08	1.12	1.62	43.12	119.54
520	34.13	32.99	1.13	1.62	43.47	119.61
521	34.21	32.63	1.15	1.62	43.78	119.65
522	34.28	32.37	1.16	1.62	44.10	119.65
523	34.32	32.19	1.15	1.62	44.43	119.58
524	34.41	31.74	1.14	1.62	44.82	119.48
525	34.46	31.47	1.12	1.62	45.19	119.36
526	34.52	30.85	1.10	1.62	45.57	119.17
527	34.61	29.96	1.05	1.72	45.99	118.94
528	34.65	29.33	1.03	1.72	46.32	118.68

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
529	34.71	28.98	1.01	1.72	46.60	118.38
530	34.79	27.82	0.96	1.72	46.78	118.02
531	34.86	26.84	0.92	1.72	46.85	117.62
532	34.93	26.84	0.88	1.81	46.80	117.22
533	35.01	26.30	0.83	1.91	46.70	116.82
534	35.06	25.95	0.75	1.91	46.62	116.44
535	35.11	25.77	0.71	1.91	46.57	116.12
536	35.18	25.50	0.66	1.91	46.47	115.85
537	35.26	25.32	0.66	1.91	46.52	115.65
538	35.34	25.05	0.67	1.91	46.76	115.50
539	35.40	24.61	0.69	1.91	47.07	115.45
540	35.44	24.52	0.70	1.91	47.51	115.45
541	35.51	24.52	0.72	1.81	48.13	115.52
542	35.58	23.72	0.73	1.81	48.81	115.56
543	35.66	23.98	0.72	1.81	49.36	115.53
544	35.71	23.72	0.73	1.81	49.71	115.43
545	35.77	23.45	0.74	1.81	49.91	115.28
546	35.85	22.74	0.72	1.81	50.08	115.07
547	35.92	22.38	0.67	1.81	50.09	114.86
548	35.97	22.20	0.63	1.91	49.99	114.72
549	36.03	22.20	0.59	1.91	49.73	114.58
550	36.11	21.93	0.57	1.91	49.28	114.39
551	36.16	21.84	0.58	1.91	48.56	114.16
552	36.26	23.09	0.61	1.91	48.00	113.91
553	36.31	23.63	0.62	1.91	47.46	113.71
554	36.36	23.72	0.59	1.91	47.31	113.39
555	36.43	23.81	0.54	1.81	47.20	113.08
556	36.51	22.74	0.49	1.91	46.98	112.78
557	36.55	22.74	0.48	1.81	46.92	112.54
558	36.65	19.97	0.39	1.91	47.10	112.34
559	36.71	19.79	0.39	1.91	47.11	112.35
560	36.76	20.15	0.40	1.91	46.67	112.47
561	36.85	21.31	0.48	1.91	46.02	112.81
562	36.89	21.31	0.52	1.91	45.29	113.23
563	36.96	23.81	0.59	1.91	44.36	113.91
564	37.02	26.93	0.59	1.91	43.49	114.64
565	37.11	28.89	0.65	2.00	42.79	115.35
566	37.15	30.23	0.69	2.00	42.25	116.02
567	37.24	31.56	0.76	2.00	41.81	116.76
568	37.31	32.37	0.82	2.00	41.57	117.42
569	37.35	32.45	0.86	1.91	41.63	118.12
570	37.43	32.72	0.95	1.91	40.80	118.85
571	37.51	33.79	1.09	2.10	39.25	119.57
572	37.55	34.68	1.16	2.10	37.12	120.11
573	37.60	36.56	1.25	2.10	34.84	120.32
574	37.67	46.27	1.35	2.10	32.77	120.38
575	37.75	54.39	1.36	2.10	31.47	120.29
576	37.81	60.27	1.22	2.00	30.83	120.14

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
577	37.88	59.29	0.87	1.91	30.67	119.99
578	37.93	56.88	0.74	2.00	30.57	119.93
579	38.00	46.72	0.72	1.81	30.26	120.14
580	38.08	38.61	0.85	2.00	29.52	120.84
581	38.14	33.79	0.98	2.10	29.16	121.98
582	38.20	36.65	1.17	2.29	29.00	123.32
583	38.26	55.37	1.56	2.38	28.86	124.82
584	38.34	81.05	2.10	2.19	27.68	126.40
585	38.43	94.78	2.67	2.19	26.15	127.82
586	38.45	99.59	2.86	2.19	24.49	129.17
587	38.53	105.74	3.36	2.19	23.02	130.37
588	38.62	125.81	3.83	2.29	21.93	131.37
589	38.65	131.96	4.00	2.38	21.22	132.16
590	38.72	143.01	4.37	2.38	20.57	132.81
591	38.80	150.06	4.57	2.38	19.95	133.41
592	38.88	158.80	4.76	2.38	19.33	133.90
593	38.93	164.50	4.91	2.38	18.98	134.28
594	39.01	173.15	5.14	2.38	18.74	134.63
595	39.07	179.12	5.27	2.38	18.59	134.91
596	39.12	180.11	5.34	2.38	18.41	135.18
597	39.20	180.11	5.52	2.38	18.27	135.44
598	39.27	180.11	5.69	2.38	18.15	135.69
599	39.31	180.11	5.76	2.38	18.04	135.91
600	39.38	188.04	5.92	2.38	18.00	136.11
601	39.45	195.35	6.15	2.38	17.93	136.30
602	39.51	199.63	6.27	2.38	17.76	136.49
603	39.57	204.54	6.37	2.38	17.51	136.66
604	39.64	204.27	6.44	2.38	17.19	136.82
605	39.72	207.30	6.46	2.48	16.95	136.92
606	39.79	213.63	6.57	2.48	16.85	136.92
607	39.84	219.87	6.61	2.48	16.95	136.85
608	39.90	224.95	6.58	2.38	17.14	136.74
609	39.96	219.87	6.38	2.00	17.27	136.58
610	40.06	203.73	6.05	2.10	17.41	136.40
611	40.13	183.49	5.88	2.19	17.59	136.19
612	40.17	176.81	5.77	2.29	17.74	135.97
613	40.26	176.67	5.51	2.38	17.94	135.71
614	40.31	176.67	5.40	2.38	18.17	135.43
615	40.36	176.54	5.36	2.38	18.39	135.07
616	40.43	185.01	5.38	2.19	18.54	134.67
617	40.51	184.56	5.21	1.91	18.91	134.23
618	40.56	174.40	4.86	1.91	18.96	133.85
619	40.64	153.36	4.18	1.91	19.56	133.40
620	40.70	136.15	3.84	2.00	19.57	132.99
621	40.75	113.59	3.71	2.19	19.28	132.56
622	40.83	139.14	3.64	2.67	18.88	132.15
623	40.88	106.55	3.61	2.86	18.04	131.76
624	40.95	142.12	3.51	2.86	16.62	131.35

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
625	41.03	164.77	3.36	2.29	15.10	131.05
626	41.08	173.06	3.36	2.10	13.44	130.87
627	41.15	187.59	2.98	1.91	12.26	130.69
628	41.24	199.81	2.09	1.81	10.92	130.54
629	41.28	204.09	2.18	1.81	10.14	130.29
630	41.35	211.31	2.42	1.81	9.65	130.02
631	41.41	212.38	2.55	1.81	9.26	129.72
632	41.48	207.30	2.56	1.81	9.20	129.52
633	41.55	190.80	2.47	2.00	9.67	129.66
634	41.63	185.37	2.39	2.10	10.23	129.78
635	41.68	181.80	2.39	2.10	11.04	129.89
636	41.74	174.49	2.46	2.10	11.96	129.99
637	41.83	167.00	2.63	2.10	13.05	130.11
638	41.87	163.08	2.72	2.10	14.14	130.30
639	41.98	150.50	3.05	2.10	15.41	130.54
640	42.02	145.78	3.18	2.10	16.82	130.76
641	42.10	136.42	3.34	2.00	18.29	130.94
642	42.14	131.87	3.45	2.00	19.72	131.07
643	42.22	125.72	3.62	2.00	21.21	131.16
644	42.29	119.12	3.67	2.00	22.51	131.19
645	42.38	111.72	3.64	2.00	23.79	131.19
646	42.41	108.24	3.61	2.00	24.91	131.18
647	42.46	105.83	3.61	2.00	25.96	131.15
648	42.57	101.11	3.63	2.10	26.86	131.07
649	42.61	99.68	3.67	2.10	27.64	130.98
650	42.68	97.72	3.70	2.10	28.27	130.89
651	42.76	96.65	3.68	2.10	28.86	130.79
652	42.80	95.13	3.65	2.10	29.40	130.68
653	42.87	91.84	3.57	2.10	29.79	130.56
654	42.92	90.05	3.51	2.10	30.08	130.43
655	42.98	87.91	3.41	2.19	30.40	130.23
656	43.06	86.49	3.35	2.19	30.83	129.85
657	43.11	86.13	3.31	2.29	31.37	129.40
658	43.18	86.58	3.28	2.19	32.25	128.89
659	43.26	80.87	3.05	2.10	33.53	128.28
660	43.32	69.81	2.46	2.10	35.21	127.57
661	43.39	64.02	2.29	2.10	37.05	126.77
662	43.46	52.96	2.13	2.10	39.10	125.82
663	43.52	42.71	1.96	2.19	41.54	124.67
664	43.61	34.33	1.72	2.48	44.17	123.45
665	43.64	33.44	1.57	3.15	46.93	122.39
666	43.70	32.10	1.33	3.24	49.69	121.31
667	43.79	29.96	1.09	3.34	51.42	120.29
668	43.84	29.24	0.98	3.34	51.89	119.36
669	43.90	27.19	0.90	3.43	51.44	118.69
670	43.97	27.02	0.84	3.53	51.20	118.20
671	44.05	27.37	0.81	3.72	51.03	117.99
672	44.10	27.55	0.81	3.72	50.59	118.12

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
673	44.18	28.09	0.91	3.72	50.17	118.51
674	44.24	28.62	1.02	3.72	49.56	119.04
675	44.30	30.67	1.11	3.82	48.90	119.70
676	44.38	33.88	1.19	3.82	48.02	120.45
677	44.45	36.73	1.37	3.82	46.88	121.22
678	44.49	37.80	1.45	3.82	45.31	121.89
679	44.57	40.21	1.57	3.82	43.73	122.48
680	44.64	44.40	1.71	3.91	42.73	123.06
681	44.72	47.79	1.78	3.91	42.23	123.55
682	44.79	51.62	1.78	3.91	41.97	123.92
683	44.84	52.61	1.79	3.91	41.57	124.24
684	44.92	51.45	1.98	3.91	39.52	124.55
685	44.96	49.22	2.01	3.91	36.80	124.81
686	45.03	47.79	2.03	4.01	33.46	125.04
687	45.09	49.40	2.03	4.01	29.46	125.30
688	45.19	69.81	1.91	4.20	26.14	125.54
689	45.23	83.81	1.84	4.20	23.25	125.71
690	45.28	101.11	1.74	4.10	21.21	126.02
691	45.38	127.77	1.68	3.72	19.62	126.37
692	45.43	129.82	1.69	3.63	18.48	126.78
693	45.48	129.82	1.78	3.63	18.43	127.32
694	45.58	122.69	2.22	3.63	18.91	127.86
695	45.62	118.58	2.39	3.63	20.08	128.32
696	45.67	114.57	2.64	3.53	22.17	128.63
697	45.78	102.27	3.07	3.53	24.58	128.86
698	45.82	96.47	3.21	3.53	27.22	128.96
699	45.88	82.56	3.20	3.53	29.47	128.81
700	45.98	70.17	3.07	3.53	31.67	128.56
701	46.02	66.07	2.98	3.53	33.80	128.24
702	46.07	61.61	2.77	3.63	35.10	127.80
703	46.17	61.61	2.34	3.82	36.13	127.31
704	46.21	61.61	2.19	3.82	36.65	126.83
705	46.27	61.61	2.16	3.72	37.12	126.38
706	46.37	64.37	2.09	3.72	37.61	125.94
707	46.39	64.02	2.07	3.72	38.12	125.58
708	46.47	59.29	2.02	3.72	39.13	125.39
709	46.57	49.84	2.02	3.72	40.23	125.23
710	46.62	46.90	2.02	3.82	41.23	125.05
711	46.67	44.94	2.03	3.91	42.55	124.88
712	46.77	44.05	2.06	3.91	43.92	124.72
713	46.82	44.76	1.99	3.91	45.04	124.60
714	46.90	46.19	1.92	4.01	45.34	124.53
715	46.92	46.54	1.91	4.01	45.41	124.45
716	47.01	46.81	1.90	4.01	45.44	124.45
717	47.05	46.36	1.92	4.01	45.33	124.46
718	47.12	45.65	1.89	4.10	45.33	124.52
719	47.21	44.76	1.88	4.10	45.74	124.58
720	47.28	44.85	2.01	4.10	45.42	124.69

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
721	47.32	45.38	2.07	4.10	45.28	124.78
722	47.40	46.45	2.12	4.20	45.30	124.90
723	47.45	44.13	2.10	4.20	45.18	125.08
724	47.55	52.07	2.09	3.82	44.73	125.27
725	47.58	50.20	2.07	3.91	43.82	125.39
726	47.66	49.13	2.18	3.91	42.47	125.51
727	47.74	51.09	2.27	3.91	41.00	125.62
728	47.80	53.67	2.23	3.91	39.34	125.78
729	47.85	56.97	2.17	3.72	38.29	125.92
730	47.93	62.59	2.13	3.72	37.31	126.07
731	47.98	65.80	2.15	3.72	36.23	126.20
732	48.04	68.39	2.21	3.63	35.07	126.28
733	48.11	69.55	2.25	3.63	33.88	126.37
734	48.20	68.12	2.27	3.63	32.92	126.47
735	48.24	68.21	2.29	3.63	32.28	126.59
736	48.30	71.15	2.26	3.53	31.71	126.70
737	48.39	75.43	2.22	3.53	31.20	126.80
738	48.44	76.59	2.23	3.53	30.71	126.91
739	48.53	78.28	2.31	3.53	30.18	127.06
740	48.59	80.51	2.31	3.53	29.69	127.21
741	48.64	81.49	2.33	3.53	29.41	127.36
742	48.70	83.63	2.44	3.43	29.32	127.54
743	48.78	84.44	2.52	3.43	29.11	127.75
744	48.82	84.44	2.55	3.43	28.83	127.94
745	48.89	83.54	2.59	3.43	28.42	128.15
746	48.98	84.97	2.66	3.43	27.72	128.36
747	49.05	90.05	2.72	3.43	26.87	128.56
748	49.09	93.17	2.77	3.43	25.98	128.75
749	49.16	99.33	2.77	3.34	24.96	128.94
750	49.24	108.33	2.76	3.34	23.89	129.17
751	49.31	114.84	2.79	3.24	22.84	129.38
752	49.38	117.87	2.82	3.24	21.97	129.55
753	49.43	123.76	2.84	3.24	21.24	129.66
754	49.52	129.46	2.97	3.24	20.59	129.62
755	49.58	132.05	2.98	3.24	20.06	129.47
756	49.63	131.60	2.97	3.24	19.80	129.26
757	49.71	127.95	2.88	3.24	19.88	129.07
758	49.77	123.40	2.45	3.15	20.26	128.86
759	49.82	120.10	2.13	3.24	20.96	128.58
760	49.88	112.79	2.11	3.15	22.19	128.21
761	49.97	102.80	2.30	3.24	23.57	127.79
762	50.01	96.20	2.38	3.24	24.85	127.39
763	50.07	86.31	2.42	3.34	26.27	127.20
764	50.17	67.67	2.31	3.43	27.94	127.15
765	50.22	66.25	2.24	3.53	29.61	127.14
766	50.29	71.77	2.18	3.53	31.26	126.99
767	50.37	77.66	2.30	3.43	32.46	126.80
768	50.42	78.64	2.36	3.43	33.52	126.54

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
769	50.47	75.79	2.41	3.43	33.95	126.33
770	50.57	64.46	2.27	3.53	34.72	126.03
771	50.63	67.32	2.12	3.43	35.97	125.63
772	50.68	59.11	2.00	3.43	37.49	125.03
773	50.73	53.59	1.87	3.43	39.18	124.19
774	50.79	44.67	1.68	3.43	40.91	123.23
775	50.88	40.93	1.48	3.63	42.12	122.24
776	50.93	39.85	1.26	3.53	43.89	121.08
777	51.03	35.75	0.92	3.53	45.08	119.85
778	51.07	34.06	0.86	3.53	45.92	118.51
779	51.14	31.56	0.78	3.53	45.81	117.12
780	51.23	29.33	0.58	3.43	45.26	115.68
781	51.27	28.71	0.51	3.43	44.95	114.26
782	51.33	26.93	0.44	3.43	44.59	113.19
783	51.42	25.68	0.35	3.43	44.25	112.17
784	51.48	25.77	0.31	3.43	43.63	111.27
785	51.52	24.61	0.29	3.43	43.36	110.95
786	51.60	25.86	0.29	3.43	43.14	110.92
787	51.68	25.32	0.33	3.53	42.82	111.11
788	51.72	25.95	0.36	3.53	42.49	111.53
789	51.81	27.73	0.44	3.53	42.61	112.08
790	51.87	29.69	0.49	3.53	42.78	112.67
791	51.91	30.67	0.51	3.53	43.35	113.12
792	51.98	31.74	0.52	3.53	44.03	113.42
793	52.07	31.03	0.56	3.53	44.79	113.61
794	52.10	30.14	0.58	3.53	45.55	113.51
795	52.17	27.64	0.54	3.43	46.53	113.22
796	52.24	24.88	0.51	3.43	47.68	112.84
797	52.31	23.98	0.49	3.43	49.01	112.37
798	52.37	22.56	0.41	3.43	50.05	111.73
799	52.46	21.67	0.36	3.43	50.89	111.00
800	52.51	21.22	0.34	3.43	51.30	110.33
801	52.57	21.04	0.31	3.43	51.14	109.69
802	52.66	20.86	0.28	3.43	50.84	109.06
803	52.71	20.60	0.27	3.43	50.55	108.63
804	52.78	20.69	0.27	3.43	50.31	108.33
805	52.86	20.60	0.26	3.53	50.08	108.08
806	52.91	20.51	0.26	3.43	49.96	107.92
807	52.99	20.51	0.26	3.43	49.86	107.82
808	53.06	20.51	0.26	3.34	49.74	107.76
809	53.09	20.42	0.26	3.34	49.58	107.67
810	53.16	20.42	0.26	3.34	49.48	107.64
811	53.25	20.69	0.25	3.34	49.39	107.61
812	53.29	20.69	0.25	3.34	49.33	107.58
813	53.36	20.69	0.24	3.34	49.33	107.55
814	53.45	20.86	0.25	3.24	49.26	107.52
815	53.50	20.77	0.25	3.34	49.22	107.48
816	53.55	20.60	0.25	3.24	49.32	107.51

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
817	53.64	20.37	0.25	3.34	49.42	107.55
818	53.69	20.60	0.25	2.96	49.44	107.58
819	53.76	20.42	0.25	3.05	49.40	107.59
820	53.84	20.60	0.26	3.05	49.40	107.66
821	53.88	20.69	0.26	3.05	49.45	107.83
822	53.96	20.95	0.25	3.05	49.29	108.05
823	54.03	21.13	0.25	3.15	49.14	108.25
824	54.08	21.40	0.27	3.15	49.05	108.42
825	54.17	21.67	0.30	3.15	48.99	108.55
826	54.23	22.65	0.31	3.15	48.95	108.68
827	54.27	22.74	0.31	3.15	48.95	108.81
828	54.38	22.11	0.30	3.15	48.92	108.87
829	54.42	21.93	0.30	3.15	48.76	108.85
830	54.47	21.93	0.30	3.15	48.40	108.69
831	54.53	21.93	0.29	3.15	48.14	108.48
832	54.61	21.93	0.27	3.15	47.90	108.27
833	54.68	21.93	0.26	3.05	47.69	108.11
834	54.73	21.93	0.24	3.15	47.50	107.99
835	54.80	22.20	0.24	3.05	47.45	107.92
836	54.88	22.20	0.24	3.15	47.44	107.93
837	54.95	21.93	0.25	3.05	47.52	108.03
838	55.02	21.84	0.26	3.05	47.67	108.19
839	55.07	21.76	0.28	3.05	47.96	108.40
840	55.15	22.11	0.29	3.05	48.39	108.64
841	55.21	22.47	0.30	3.05	48.80	108.87
842	55.27	22.65	0.31	3.15	48.83	109.02
843	55.34	22.47	0.31	3.05	48.60	109.15
844	55.42	22.38	0.32	3.05	48.27	109.26
845	55.47	22.38	0.32	3.05	48.01	109.39
846	55.54	23.09	0.30	3.05	48.08	109.73
847	55.62	23.90	0.30	3.05	48.11	110.08
848	55.65	24.07	0.31	3.05	47.78	110.51
849	55.72	24.34	0.33	3.05	47.06	110.99
850	55.81	25.05	0.42	3.05	46.42	111.59
851	55.84	25.59	0.44	3.05	46.09	112.33
852	55.91	27.64	0.47	3.05	46.50	113.48
853	55.98	30.05	0.50	3.05	46.92	114.68
854	56.05	31.12	0.56	3.05	46.80	115.80
855	56.11	32.19	0.64	3.05	44.64	116.78
856	56.21	33.88	0.91	3.05	41.45	117.93
857	56.26	35.40	1.05	3.05	38.22	119.07
858	56.31	38.61	1.10	3.05	34.41	120.34
859	56.39	51.45	1.09	3.05	31.61	121.46
860	56.46	65.98	1.27	2.96	28.86	122.53
861	56.50	75.61	1.38	2.96	26.67	123.36
862	56.60	96.65	1.59	2.96	25.12	124.08
863	56.65	95.31	1.68	2.96	24.09	124.70
864	56.72	106.10	1.79	2.77	23.72	125.24

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
865	56.78	102.36	1.87	2.77	23.79	125.51
866	56.87	95.13	1.96	2.77	24.17	125.63
867	56.93	88.27	2.00	2.77	25.33	125.53
868	56.97	83.90	1.99	2.77	26.62	125.29
869	57.05	76.14	1.79	2.86	28.46	124.87
870	57.11	71.24	1.68	2.86	30.49	124.31
871	57.17	62.86	1.59	2.86	32.52	123.62
872	57.25	55.19	1.43	2.86	34.49	122.79
873	57.31	51.45	1.29	2.86	36.65	121.83
874	57.37	45.20	1.15	2.86	38.69	120.86
875	57.42	40.21	1.03	2.86	40.56	119.80
876	57.48	37.09	0.91	2.96	41.94	118.71
877	57.56	33.08	0.80	3.05	42.99	117.63
878	57.64	32.28	0.67	3.05	43.91	116.53
879	57.70	32.45	0.55	3.05	44.31	115.51
880	57.74	31.83	0.51	3.05	44.13	114.49
881	57.81	30.05	0.47	3.05	43.78	113.55
882	57.90	28.98	0.41	3.15	43.11	112.76
883	57.95	28.80	0.40	3.15	42.74	112.18
884	58.06	28.53	0.35	3.34	43.34	112.08
885	58.09	28.18	0.35	3.24	44.13	112.18
886	58.15	28.13	0.36	3.43	44.42	112.44
887	58.20	28.13	0.38	3.43	43.77	112.70
888	58.29	28.09	0.52	3.43	42.71	112.91
889	58.33	28.62	0.58	3.53	41.66	113.17
890	58.40	31.30	0.60	3.53	41.30	113.49
891	58.48	35.58	0.52	3.63	41.24	113.75
892	58.55	37.45	0.47	3.63	41.20	113.95
893	58.60	38.16	0.45	3.63	41.08	113.84
894	58.66	34.59	0.51	3.72	40.39	113.52
895	58.75	31.92	0.50	3.72	39.94	113.07
896	58.80	31.03	0.49	3.72	40.30	112.66
897	58.88	27.55	0.45	3.82	41.13	112.29
898	58.97	29.33	0.38	4.58	42.30	111.90
899	59.02	28.89	0.35	4.67	42.75	111.39
900	59.06	28.35	0.33	4.67	42.77	110.92
901	59.12	28.00	0.32	4.67	42.38	110.46
902	59.20	26.75	0.30	4.77	41.59	110.12
903	59.26	26.66	0.30	4.77	41.47	109.96
904	59.35	27.10	0.31	4.87	41.51	109.93
905	59.41	28.62	0.30	4.87	41.72	110.06
906	59.46	28.80	0.31	4.96	42.00	110.27
907	59.52	28.53	0.32	5.06	42.09	110.59
908	59.61	28.53	0.34	5.06	42.09	110.95
909	59.68	28.53	0.38	5.15	42.01	111.25
910	59.72	28.53	0.40	5.15	42.24	111.55
911	59.79	29.51	0.42	5.25	42.55	111.78
912	59.86	30.49	0.44	5.25	42.89	111.97

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
913	59.91	30.85	0.43	5.34	41.62	111.25
914	60.01	30.49	0.43	5.34	40.10	110.37
915	60.06	29.69	0.42	5.34	38.49	109.29
916	60.15	28.62	0.41	5.44	36.60	107.97
917	60.19	28.44	0.00	5.44	34.52	106.25
918	60.26	28.53	0.00	5.44	31.96	104.10
919	60.35	27.55	0.00	5.53	29.17	101.02
920	60.40	28.62	0.00	5.53	25.45	95.86
921	60.45	28.26	0.00	5.63	N/A	87.36
922	60.51	30.14	0.00	5.72	N/A	87.36

Abbreviations

Depth: Depth from free surface, at which CPT was performed (ft)
q_c: Measured cone resistance (tsf)
f_s: Sleeve friction resistance (tsf)
u: Pore pressure (tsf)
Fines content: Percentage of fines in soil (%)
Unit weight: Bulk soil unit weight (pcf)

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data ::

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
1	0.09	0.01	0.00	0.01	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
2	0.15	0.01	0.00	0.01	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
3	0.21	0.01	0.00	0.01	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
4	0.29	0.02	0.00	0.02	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
5	0.34	0.02	0.00	0.02	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
6	0.40	0.02	0.00	0.02	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
7	0.49	0.03	0.00	0.03	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
8	0.55	0.03	0.00	0.03	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
9	0.59	0.04	0.00	0.04	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
10	0.69	0.04	0.00	0.04	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
11	0.74	0.05	0.00	0.05	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
12	0.81	0.05	0.00	0.05	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
13	0.89	0.05	0.00	0.05	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
14	0.94	0.06	0.00	0.06	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
15	0.99	0.06	0.00	0.06	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
16	1.09	0.07	0.00	0.07	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
17	1.14	0.07	0.00	0.07	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
18	1.19	0.07	0.00	0.07	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
19	1.26	0.08	0.00	0.08	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
20	1.34	0.08	0.00	0.08	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
21	1.38	0.09	0.00	0.09	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
22	1.50	0.09	0.00	0.09	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
23	1.53	0.10	0.00	0.10	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
24	1.59	0.10	0.00	0.10	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
25	1.68	0.11	0.00	0.11	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
26	1.72	0.11	0.00	0.11	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
27	1.78	0.11	0.00	0.11	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
28	1.87	0.12	0.00	0.12	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
29	1.93	0.12	0.00	0.12	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
30	1.98	0.12	0.00	0.12	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
31	2.06	0.13	0.00	0.13	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
32	2.13	0.13	0.00	0.13	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
33	2.17	0.14	0.00	0.14	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
34	2.28	0.14	0.00	0.14	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
35	2.32	0.15	0.00	0.15	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
36	2.39	0.15	0.00	0.15	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
37	2.43	0.15	0.00	0.15	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
38	2.52	0.16	0.00	0.16	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
39	2.57	0.16	0.00	0.16	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
40	2.66	0.17	0.00	0.17	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
41	2.69	0.17	0.00	0.17	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
42	2.77	0.17	0.00	0.17	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
43	2.86	0.18	0.00	0.18	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
44	2.92	0.18	0.00	0.18	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
45	2.96	0.19	0.00	0.19	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
46	3.06	0.19	0.00	0.19	0.99	0.356	1.34	0.265	1.00	1.00	2.000	No
47	3.11	0.19	0.00	0.19	0.99	0.356	1.34	0.264	1.00	1.00	2.000	No
48	3.15	0.20	0.00	0.20	0.99	0.356	1.34	0.264	1.00	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
49	3.26	0.20	0.00	0.20	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
50	3.30	0.21	0.00	0.21	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
51	3.37	0.21	0.00	0.21	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
52	3.46	0.22	0.00	0.22	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
53	3.51	0.22	0.00	0.22	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
54	3.56	0.22	0.00	0.22	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
55	3.64	0.23	0.00	0.23	0.99	0.355	1.34	0.264	1.00	1.00	2.000	Yes
56	3.71	0.23	0.00	0.23	0.99	0.355	1.34	0.264	1.00	1.00	2.000	Yes
57	3.76	0.23	0.00	0.23	0.99	0.355	1.34	0.264	1.00	1.00	2.000	Yes
58	3.81	0.24	0.00	0.24	0.99	0.355	1.34	0.264	1.00	1.00	2.000	Yes
59	3.90	0.24	0.00	0.24	0.99	0.355	1.34	0.264	1.00	1.00	2.000	Yes
60	3.94	0.25	0.00	0.25	0.99	0.355	1.34	0.264	1.00	1.00	2.000	Yes
61	4.01	0.25	0.00	0.25	0.99	0.355	1.34	0.264	1.00	1.00	2.000	Yes
62	4.09	0.25	0.00	0.25	0.99	0.355	1.34	0.264	1.00	1.00	2.000	Yes
63	4.15	0.26	0.00	0.26	0.99	0.355	1.34	0.264	1.00	1.00	2.000	Yes
64	4.20	0.26	0.00	0.26	0.99	0.355	1.34	0.264	1.00	1.00	2.000	Yes
65	4.30	0.27	0.00	0.27	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
66	4.35	0.27	0.00	0.27	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
67	4.41	0.27	0.00	0.27	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
68	4.50	0.28	0.00	0.28	0.99	0.354	1.34	0.264	1.00	1.00	2.000	No
69	4.55	0.28	0.00	0.28	0.99	0.354	1.34	0.264	1.00	1.00	2.000	No
70	4.60	0.28	0.00	0.28	0.99	0.354	1.34	0.264	1.00	1.00	2.000	No
71	4.68	0.29	0.00	0.29	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
72	4.75	0.29	0.00	0.29	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
73	4.79	0.30	0.00	0.30	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
74	4.88	0.30	0.00	0.30	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
75	4.95	0.30	0.00	0.30	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
76	4.99	0.31	0.00	0.31	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
77	5.06	0.31	0.00	0.31	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
78	5.14	0.32	0.00	0.32	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
79	5.21	0.32	0.00	0.32	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
80	5.26	0.32	0.00	0.32	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
81	5.33	0.33	0.00	0.33	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
82	5.40	0.33	0.00	0.33	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
83	5.45	0.33	0.00	0.33	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
84	5.51	0.34	0.00	0.34	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
85	5.60	0.34	0.00	0.34	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
86	5.66	0.35	0.00	0.35	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
87	5.71	0.35	0.00	0.35	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
88	5.78	0.35	0.00	0.35	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
89	5.86	0.36	0.00	0.36	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
90	5.93	0.36	0.00	0.36	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
91	6.01	0.37	0.00	0.37	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
92	6.05	0.37	0.00	0.37	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
93	6.11	0.37	0.00	0.37	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
94	6.21	0.38	0.00	0.38	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
95	6.25	0.38	0.00	0.38	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
96	6.31	0.38	0.00	0.38	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
97	6.39	0.39	0.00	0.39	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
98	6.45	0.39	0.00	0.39	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
99	6.51	0.39	0.00	0.39	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
100	6.58	0.40	0.00	0.40	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
101	6.66	0.40	0.00	0.40	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
102	6.70	0.41	0.00	0.41	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
103	6.78	0.41	0.00	0.41	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
104	6.85	0.41	0.00	0.41	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
105	6.89	0.42	0.00	0.42	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
106	7.00	0.42	0.00	0.42	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
107	7.03	0.42	0.00	0.42	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
108	7.10	0.43	0.00	0.43	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
109	7.19	0.43	0.00	0.43	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
110	7.25	0.44	0.00	0.44	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
111	7.30	0.44	0.00	0.44	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
112	7.37	0.44	0.00	0.44	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
113	7.44	0.45	0.00	0.45	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
114	7.49	0.45	0.00	0.45	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
115	7.56	0.45	0.00	0.45	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
116	7.64	0.46	0.00	0.46	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
117	7.68	0.46	0.00	0.46	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
118	7.79	0.47	0.00	0.47	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
119	7.83	0.47	0.00	0.47	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
120	7.90	0.47	0.00	0.47	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
121	7.98	0.48	0.00	0.48	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
122	8.02	0.48	0.00	0.48	0.98	0.352	1.34	0.261	1.00	1.00	2.000	No
123	8.09	0.48	0.00	0.48	0.98	0.352	1.34	0.261	1.00	1.00	2.000	No
124	8.15	0.49	0.00	0.49	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
125	8.23	0.49	0.00	0.49	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
126	8.29	0.50	0.00	0.50	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
127	8.34	0.50	0.00	0.50	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
128	8.41	0.50	0.00	0.50	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
129	8.48	0.51	0.00	0.51	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
130	8.55	0.51	0.00	0.51	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
131	8.60	0.51	0.00	0.51	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
132	8.66	0.52	0.00	0.52	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
133	8.74	0.52	0.00	0.52	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
134	8.83	0.53	0.00	0.53	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
135	8.90	0.53	0.00	0.53	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
136	8.94	0.53	0.00	0.53	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
137	9.01	0.54	0.00	0.54	0.98	0.351	1.34	0.261	1.00	1.00	0.261	No
138	9.09	0.54	0.00	0.54	0.98	0.353	1.34	0.262	1.00	1.00	0.262	No
139	9.15	0.54	0.00	0.54	0.98	0.354	1.34	0.263	1.00	1.00	0.263	No
140	9.20	0.55	0.01	0.54	0.98	0.355	1.34	0.264	1.00	1.00	0.264	No
141	9.29	0.55	0.01	0.54	0.98	0.356	1.34	0.265	1.00	1.00	0.265	No
142	9.35	0.56	0.01	0.54	0.98	0.358	1.34	0.266	1.00	1.00	0.266	No
143	9.39	0.56	0.01	0.55	0.98	0.358	1.34	0.267	1.00	1.00	0.267	No
144	9.45	0.56	0.01	0.55	0.98	0.359	1.34	0.267	1.00	1.00	0.267	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
145	9.55	0.57	0.02	0.55	0.98	0.361	1.34	0.269	1.00	1.00	0.269	No
146	9.64	0.57	0.02	0.55	0.98	0.363	1.34	0.270	1.00	1.00	0.270	No
147	9.65	0.57	0.02	0.55	0.98	0.363	1.34	0.270	1.00	1.00	0.270	No
148	9.73	0.58	0.02	0.55	0.98	0.365	1.34	0.271	1.00	1.00	0.271	No
149	9.79	0.58	0.02	0.56	0.98	0.366	1.34	0.272	1.00	1.00	0.272	No
150	9.84	0.58	0.03	0.56	0.98	0.367	1.34	0.273	1.00	1.00	0.273	No
151	9.91	0.59	0.03	0.56	0.98	0.368	1.34	0.274	1.00	1.00	0.274	No
152	9.99	0.59	0.03	0.56	0.98	0.369	1.34	0.275	1.00	1.00	0.275	No
153	10.08	0.60	0.03	0.56	0.98	0.371	1.34	0.276	1.00	1.00	0.276	No
154	10.14	0.60	0.04	0.57	0.98	0.372	1.34	0.277	1.00	1.00	0.277	No
155	10.19	0.60	0.04	0.57	0.98	0.373	1.34	0.277	1.00	1.00	0.277	No
156	10.25	0.61	0.04	0.57	0.98	0.374	1.34	0.278	1.00	1.00	0.278	No
157	10.34	0.61	0.04	0.57	0.98	0.375	1.34	0.279	1.00	1.00	0.279	No
158	10.38	0.62	0.04	0.57	0.98	0.376	1.34	0.280	1.00	1.00	0.280	No
159	10.44	0.62	0.04	0.57	0.98	0.377	1.34	0.280	1.00	1.00	0.280	No
160	10.52	0.62	0.05	0.58	0.98	0.378	1.34	0.281	1.00	1.00	0.281	No
161	10.59	0.63	0.05	0.58	0.98	0.380	1.34	0.282	1.00	1.00	0.282	No
162	10.63	0.63	0.05	0.58	0.98	0.380	1.34	0.283	1.00	1.00	0.283	No
163	10.70	0.63	0.05	0.58	0.98	0.381	1.34	0.284	1.00	1.00	0.284	No
164	10.78	0.64	0.06	0.58	0.98	0.383	1.34	0.285	1.00	1.00	0.285	No
165	10.87	0.64	0.06	0.59	0.98	0.384	1.34	0.286	1.00	1.00	0.286	No
166	10.93	0.65	0.06	0.59	0.98	0.385	1.34	0.286	1.00	1.00	0.286	No
167	10.97	0.65	0.06	0.59	0.98	0.386	1.34	0.287	1.00	1.00	0.287	No
168	11.03	0.65	0.06	0.59	0.98	0.387	1.34	0.288	1.00	1.00	0.288	No
169	11.12	0.66	0.07	0.59	0.98	0.388	1.34	0.289	1.00	1.00	0.289	No
170	11.16	0.66	0.07	0.59	0.98	0.389	1.34	0.289	1.00	1.00	0.289	No
171	11.23	0.66	0.07	0.60	0.98	0.390	1.34	0.290	1.00	1.00	0.290	No
172	11.31	0.67	0.07	0.60	0.98	0.391	1.34	0.291	1.00	1.00	0.291	No
173	11.37	0.67	0.07	0.60	0.98	0.392	1.34	0.292	1.00	1.00	0.292	No
174	11.44	0.68	0.08	0.60	0.98	0.393	1.34	0.292	1.00	1.00	0.292	No
175	11.51	0.68	0.08	0.60	0.98	0.394	1.34	0.293	1.00	1.00	0.293	No
176	11.56	0.68	0.08	0.60	0.98	0.395	1.34	0.294	1.00	1.00	0.294	No
177	11.63	0.69	0.08	0.61	0.98	0.396	1.34	0.295	1.00	1.00	0.295	No
178	11.71	0.69	0.08	0.61	0.98	0.397	1.34	0.295	1.00	1.00	0.295	No
179	11.76	0.70	0.09	0.61	0.98	0.398	1.34	0.296	1.00	1.00	0.296	No
180	11.83	0.70	0.09	0.61	0.98	0.399	1.34	0.297	1.00	1.00	0.297	No
181	11.91	0.70	0.09	0.61	0.98	0.400	1.34	0.298	1.00	1.00	0.298	No
182	11.94	0.71	0.09	0.61	0.98	0.401	1.34	0.298	1.00	1.00	0.298	No
183	12.05	0.71	0.10	0.62	0.97	0.402	1.34	0.299	1.00	1.00	0.299	No
184	12.10	0.72	0.10	0.62	0.97	0.403	1.34	0.300	1.00	1.00	0.300	No
185	12.14	0.72	0.10	0.62	0.97	0.403	1.34	0.300	1.00	1.00	0.300	No
186	12.25	0.73	0.10	0.62	0.97	0.405	1.34	0.301	1.00	1.00	0.301	No
187	12.29	0.73	0.10	0.62	0.97	0.406	1.34	0.302	1.00	1.00	0.302	No
188	12.35	0.73	0.10	0.63	0.97	0.406	1.34	0.302	1.00	1.00	0.302	No
189	12.44	0.74	0.11	0.63	0.97	0.408	1.34	0.303	1.00	1.00	0.303	No
190	12.49	0.74	0.11	0.63	0.97	0.408	1.34	0.304	1.00	1.00	0.304	No
191	12.55	0.74	0.11	0.63	0.97	0.409	1.34	0.304	1.00	1.00	0.304	No
192	12.61	0.75	0.11	0.63	0.97	0.410	1.34	0.305	1.00	1.00	0.305	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
193	12.70	0.75	0.12	0.64	0.97	0.411	1.34	0.306	1.00	1.00	0.306	No
194	12.75	0.75	0.12	0.64	0.97	0.412	1.34	0.306	1.00	1.00	0.306	No
195	12.81	0.76	0.12	0.64	0.97	0.413	1.34	0.307	1.00	1.00	0.307	No
196	12.89	0.76	0.12	0.64	0.97	0.414	1.34	0.308	1.00	1.00	0.308	No
197	12.94	0.77	0.12	0.64	0.97	0.414	1.34	0.308	1.00	1.00	0.308	No
198	12.99	0.77	0.12	0.64	0.97	0.415	1.34	0.309	1.00	1.00	0.309	No
199	13.08	0.77	0.13	0.65	0.97	0.416	1.34	0.310	1.00	1.00	0.310	No
200	13.15	0.78	0.13	0.65	0.97	0.417	1.34	0.310	1.00	1.00	0.310	No
201	13.20	0.78	0.13	0.65	0.97	0.418	1.34	0.311	1.00	1.00	0.311	No
202	13.27	0.78	0.13	0.65	0.97	0.419	1.34	0.311	1.00	1.00	0.311	No
203	13.32	0.79	0.13	0.65	0.97	0.419	1.34	0.312	1.00	1.00	0.312	No
204	13.39	0.79	0.14	0.65	0.97	0.420	1.34	0.313	1.00	1.00	0.313	No
205	13.48	0.80	0.14	0.66	0.97	0.421	1.34	0.313	1.00	1.00	0.313	No
206	13.54	0.80	0.14	0.66	0.97	0.422	1.34	0.314	1.00	1.00	0.314	No
207	13.59	0.80	0.14	0.66	0.97	0.423	1.34	0.314	1.00	1.00	0.314	No
208	13.65	0.81	0.15	0.66	0.97	0.424	1.34	0.315	1.00	1.00	0.315	No
209	13.74	0.81	0.15	0.66	0.97	0.425	1.34	0.316	1.00	1.00	0.316	No
210	13.80	0.81	0.15	0.66	0.97	0.425	1.34	0.316	1.00	1.00	0.316	No
211	13.89	0.82	0.15	0.67	0.97	0.427	1.34	0.317	1.00	1.00	0.317	No
212	13.93	0.82	0.15	0.67	0.97	0.427	1.34	0.318	1.00	1.00	0.318	No
213	13.99	0.82	0.16	0.67	0.97	0.428	1.34	0.318	1.00	1.00	0.318	No
214	14.07	0.83	0.16	0.67	0.97	0.429	1.34	0.319	1.00	1.00	0.319	No
215	14.12	0.83	0.16	0.67	0.97	0.429	1.34	0.319	1.00	1.00	0.319	No
216	14.18	0.83	0.16	0.67	0.97	0.430	1.34	0.320	1.00	1.00	0.320	No
217	14.26	0.84	0.16	0.67	0.97	0.431	1.34	0.321	1.00	1.00	0.321	No
218	14.34	0.84	0.17	0.68	0.97	0.432	1.34	0.321	1.00	1.00	0.321	No
219	14.38	0.85	0.17	0.68	0.97	0.433	1.34	0.322	1.00	1.00	0.322	No
220	14.47	0.85	0.17	0.68	0.97	0.434	1.34	0.323	1.00	1.00	0.323	No
221	14.53	0.85	0.17	0.68	0.97	0.434	1.34	0.323	1.00	1.00	0.323	No
222	14.57	0.86	0.17	0.68	0.97	0.435	1.34	0.323	1.00	1.00	0.323	No
223	14.64	0.86	0.18	0.68	0.97	0.436	1.34	0.324	1.00	1.00	0.324	No
224	14.72	0.86	0.18	0.69	0.97	0.437	1.34	0.325	1.00	1.00	0.325	No
225	14.80	0.87	0.18	0.69	0.97	0.438	1.34	0.325	1.00	1.00	0.325	No
226	14.83	0.87	0.18	0.69	0.97	0.438	1.34	0.326	1.00	1.00	0.326	No
227	14.92	0.88	0.18	0.69	0.97	0.439	1.34	0.326	1.00	1.00	0.326	No
228	14.97	0.88	0.19	0.69	0.97	0.439	1.34	0.327	1.00	1.00	0.327	No
229	15.06	0.88	0.19	0.69	0.97	0.440	1.34	0.328	1.00	1.00	0.328	No
230	15.10	0.89	0.19	0.70	0.97	0.441	1.34	0.328	1.00	1.00	0.328	No
231	15.17	0.89	0.19	0.70	0.97	0.442	1.34	0.328	1.00	1.00	0.328	No
232	15.25	0.89	0.20	0.70	0.97	0.443	1.34	0.329	1.00	1.00	0.329	No
233	15.31	0.90	0.20	0.70	0.97	0.443	1.34	0.330	1.00	1.00	0.330	No
234	15.37	0.90	0.20	0.70	0.97	0.444	1.34	0.330	1.00	1.00	0.330	No
235	15.44	0.91	0.20	0.70	0.97	0.445	1.34	0.331	1.00	1.00	0.331	No
236	15.51	0.91	0.20	0.71	0.97	0.445	1.34	0.331	1.00	1.00	0.331	No
237	15.56	0.91	0.20	0.71	0.97	0.446	1.34	0.332	1.00	1.00	0.332	No
238	15.63	0.92	0.21	0.71	0.97	0.447	1.34	0.332	1.00	1.00	0.332	No
239	15.71	0.92	0.21	0.71	0.97	0.447	1.34	0.333	1.00	1.00	0.333	No
240	15.76	0.92	0.21	0.71	0.97	0.448	1.34	0.333	1.00	1.00	0.333	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
241	15.82	0.93	0.21	0.72	0.97	0.448	1.34	0.334	1.00	1.00	0.334	No
242	15.90	0.93	0.22	0.72	0.97	0.449	1.34	0.334	1.00	1.00	0.334	No
243	15.95	0.94	0.22	0.72	0.97	0.450	1.34	0.334	1.00	1.00	0.334	No
244	16.01	0.94	0.22	0.72	0.97	0.450	1.34	0.335	1.00	1.00	0.335	No
245	16.10	0.95	0.22	0.72	0.97	0.451	1.34	0.336	1.00	1.00	2.000	Yes
246	16.16	0.95	0.22	0.73	0.97	0.452	1.34	0.336	1.00	1.00	2.000	Yes
247	16.21	0.95	0.22	0.73	0.97	0.452	1.34	0.336	1.00	1.00	2.000	Yes
248	16.29	0.96	0.23	0.73	0.97	0.453	1.34	0.337	1.00	1.00	2.000	Yes
249	16.36	0.96	0.23	0.73	0.97	0.454	1.34	0.337	1.00	1.00	2.000	Yes
250	16.41	0.96	0.23	0.73	0.97	0.454	1.34	0.338	1.00	1.00	2.000	Yes
251	16.49	0.97	0.23	0.74	0.97	0.455	1.34	0.338	1.00	1.00	0.338	No
252	16.55	0.97	0.24	0.74	0.97	0.455	1.34	0.339	1.00	1.00	0.339	No
253	16.60	0.98	0.24	0.74	0.97	0.456	1.34	0.339	1.00	1.00	0.339	No
254	16.70	0.98	0.24	0.74	0.96	0.457	1.34	0.340	1.00	1.00	2.000	Yes
255	16.74	0.99	0.24	0.74	0.96	0.457	1.34	0.340	1.00	1.00	2.000	Yes
256	16.80	0.99	0.24	0.75	0.96	0.457	1.34	0.340	1.00	1.00	2.000	Yes
257	16.89	0.99	0.25	0.75	0.96	0.458	1.34	0.341	1.00	1.00	2.000	Yes
258	16.93	1.00	0.25	0.75	0.96	0.459	1.34	0.341	1.00	1.00	2.000	Yes
259	17.00	1.00	0.25	0.75	0.96	0.459	1.34	0.341	1.00	1.00	2.000	Yes
260	17.09	1.01	0.25	0.75	0.96	0.460	1.34	0.342	1.00	1.00	2.000	Yes
261	17.14	1.01	0.25	0.76	0.96	0.460	1.34	0.342	1.00	1.00	2.000	Yes
262	17.20	1.01	0.26	0.76	0.96	0.461	1.34	0.343	1.00	1.00	0.343	No
263	17.28	1.02	0.26	0.76	0.96	0.462	1.34	0.343	1.00	1.00	0.343	No
264	17.34	1.02	0.26	0.76	0.96	0.462	1.34	0.344	1.00	1.00	0.344	No
265	17.41	1.03	0.26	0.76	0.96	0.463	1.34	0.344	1.00	1.00	0.344	No
266	17.48	1.03	0.26	0.76	0.96	0.463	1.34	0.345	1.00	1.00	0.345	No
267	17.56	1.03	0.27	0.77	0.96	0.464	1.34	0.345	1.00	1.00	0.345	No
268	17.62	1.04	0.27	0.77	0.96	0.465	1.34	0.346	1.00	1.00	0.346	No
269	17.67	1.04	0.27	0.77	0.96	0.465	1.34	0.346	1.00	1.00	2.000	Yes
270	17.72	1.04	0.27	0.77	0.96	0.465	1.34	0.346	1.00	1.00	2.000	Yes
271	17.78	1.05	0.27	0.77	0.96	0.466	1.34	0.347	1.00	1.00	2.000	Yes
272	17.87	1.05	0.28	0.78	0.96	0.467	1.34	0.347	1.00	1.00	2.000	Yes
273	17.94	1.06	0.28	0.78	0.96	0.467	1.34	0.348	1.00	1.00	2.000	Yes
274	18.01	1.06	0.28	0.78	0.96	0.468	1.34	0.348	1.00	1.00	2.000	Yes
275	18.06	1.06	0.28	0.78	0.96	0.468	1.34	0.348	1.00	1.00	2.000	Yes
276	18.12	1.07	0.28	0.78	0.96	0.469	1.34	0.349	1.00	1.00	2.000	Yes
277	18.21	1.07	0.29	0.79	0.96	0.469	1.34	0.349	1.00	1.00	0.349	No
278	18.25	1.08	0.29	0.79	0.96	0.470	1.34	0.349	1.00	1.00	0.349	No
279	18.31	1.08	0.29	0.79	0.96	0.470	1.34	0.350	1.00	1.00	0.350	No
280	18.40	1.08	0.29	0.79	0.96	0.471	1.34	0.350	1.00	1.00	2.000	Yes
281	18.44	1.09	0.29	0.79	0.96	0.471	1.34	0.350	1.00	1.00	2.000	Yes
282	18.51	1.09	0.30	0.79	0.96	0.472	1.34	0.351	1.00	1.00	2.000	Yes
283	18.58	1.10	0.30	0.80	0.96	0.472	1.34	0.351	1.00	1.00	2.000	Yes
284	18.64	1.10	0.30	0.80	0.96	0.473	1.34	0.352	1.00	1.00	2.000	Yes
285	18.71	1.10	0.30	0.80	0.96	0.473	1.34	0.352	1.00	1.00	2.000	Yes
286	18.80	1.11	0.31	0.80	0.96	0.474	1.34	0.352	1.00	1.00	2.000	Yes
287	18.86	1.11	0.31	0.80	0.96	0.474	1.34	0.353	1.00	1.00	2.000	Yes
288	18.91	1.12	0.31	0.81	0.96	0.475	1.34	0.353	1.00	1.00	2.000	Yes

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
289	18.98	1.12	0.31	0.81	0.96	0.475	1.34	0.353	1.00	1.00	2.000	Yes
290	19.05	1.12	0.31	0.81	0.96	0.476	1.34	0.354	1.00	1.00	2.000	Yes
291	19.10	1.13	0.32	0.81	0.96	0.476	1.34	0.354	1.00	1.00	2.000	Yes
292	19.20	1.13	0.32	0.81	0.96	0.477	1.34	0.355	1.00	1.00	2.000	Yes
293	19.23	1.13	0.32	0.82	0.96	0.477	1.34	0.355	1.00	1.00	2.000	Yes
294	19.30	1.14	0.32	0.82	0.96	0.477	1.34	0.355	1.00	1.00	2.000	Yes
295	19.39	1.14	0.32	0.82	0.96	0.478	1.34	0.356	1.00	1.00	2.000	Yes
296	19.43	1.15	0.33	0.82	0.96	0.478	1.34	0.356	1.00	1.00	2.000	Yes
297	19.50	1.15	0.33	0.82	0.96	0.479	1.34	0.356	1.00	1.00	2.000	Yes
298	19.57	1.16	0.33	0.83	0.96	0.479	1.34	0.356	1.00	1.00	2.000	Yes
299	19.63	1.16	0.33	0.83	0.96	0.480	1.34	0.357	1.00	1.00	2.000	Yes
300	19.70	1.16	0.33	0.83	0.96	0.480	1.34	0.357	1.00	1.00	0.357	No
301	19.77	1.17	0.34	0.83	0.96	0.480	1.34	0.357	1.00	1.00	0.357	No
302	19.84	1.17	0.34	0.83	0.96	0.481	1.34	0.358	1.00	1.00	0.358	No
303	19.90	1.18	0.34	0.84	0.96	0.481	1.34	0.358	1.00	1.00	0.358	No
304	19.99	1.18	0.34	0.84	0.96	0.482	1.34	0.358	1.00	1.00	2.000	Yes
305	20.02	1.18	0.34	0.84	0.96	0.482	1.34	0.358	1.00	1.00	2.000	Yes
306	20.09	1.19	0.35	0.84	0.96	0.482	1.34	0.359	1.00	1.00	2.000	Yes
307	20.19	1.20	0.35	0.85	0.96	0.483	1.34	0.359	1.00	1.00	2.000	Yes
308	20.21	1.20	0.35	0.85	0.96	0.483	1.34	0.359	1.00	1.00	2.000	Yes
309	20.29	1.20	0.35	0.85	0.96	0.484	1.34	0.360	1.00	1.00	2.000	Yes
310	20.38	1.21	0.36	0.85	0.96	0.484	1.34	0.360	1.00	1.00	2.000	Yes
311	20.42	1.21	0.36	0.85	0.96	0.484	1.34	0.360	1.00	1.00	2.000	Yes
312	20.52	1.22	0.36	0.86	0.96	0.485	1.34	0.361	1.00	1.00	0.361	No
313	20.55	1.22	0.36	0.86	0.96	0.485	1.34	0.361	1.00	1.00	0.361	No
314	20.62	1.22	0.36	0.86	0.96	0.486	1.34	0.361	1.00	1.00	2.000	Yes
315	20.68	1.23	0.36	0.86	0.96	0.486	1.34	0.361	1.00	1.00	2.000	Yes
316	20.75	1.23	0.37	0.86	0.95	0.486	1.34	0.362	1.00	1.00	2.000	Yes
317	20.81	1.23	0.37	0.87	0.95	0.487	1.34	0.362	1.00	1.00	2.000	Yes
318	20.90	1.24	0.37	0.87	0.95	0.487	1.34	0.362	1.00	1.00	2.000	Yes
319	20.96	1.24	0.37	0.87	0.95	0.487	1.34	0.363	1.00	1.00	2.000	Yes
320	21.01	1.25	0.37	0.87	0.95	0.488	1.34	0.363	1.00	1.00	2.000	Yes
321	21.09	1.25	0.38	0.87	0.95	0.488	1.34	0.363	1.00	1.00	2.000	Yes
322	21.15	1.26	0.38	0.88	0.95	0.488	1.34	0.363	1.00	1.00	2.000	Yes
323	21.21	1.26	0.38	0.88	0.95	0.489	1.34	0.363	1.00	1.00	2.000	Yes
324	21.30	1.27	0.38	0.88	0.95	0.489	1.34	0.364	1.00	1.00	0.364	No
325	21.36	1.27	0.39	0.88	0.95	0.489	1.34	0.364	1.00	1.00	0.364	No
326	21.40	1.27	0.39	0.89	0.95	0.490	1.34	0.364	1.00	1.00	0.364	No
327	21.49	1.28	0.39	0.89	0.95	0.490	1.34	0.365	1.00	1.00	0.365	No
328	21.56	1.28	0.39	0.89	0.95	0.490	1.34	0.365	1.00	1.00	2.000	Yes
329	21.60	1.28	0.39	0.89	0.95	0.491	1.34	0.365	1.00	1.00	2.000	Yes
330	21.66	1.29	0.39	0.89	0.95	0.491	1.34	0.365	1.00	1.00	2.000	Yes
331	21.75	1.29	0.40	0.90	0.95	0.491	1.34	0.365	1.00	1.00	2.000	Yes
332	21.80	1.30	0.40	0.90	0.95	0.492	1.34	0.366	1.00	1.00	2.000	Yes
333	21.85	1.30	0.40	0.90	0.95	0.492	1.34	0.366	1.00	1.00	2.000	Yes
334	21.95	1.31	0.40	0.90	0.95	0.492	1.34	0.366	1.00	1.00	2.000	Yes
335	21.99	1.31	0.41	0.90	0.95	0.492	1.34	0.366	1.00	1.00	2.000	Yes
336	22.05	1.31	0.41	0.91	0.95	0.493	1.34	0.367	1.00	1.00	2.000	Yes

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
337	22.14	1.32	0.41	0.91	0.95	0.493	1.34	0.367	1.00	1.00	0.367	No
338	22.19	1.32	0.41	0.91	0.95	0.493	1.34	0.367	1.00	1.00	0.367	No
339	22.26	1.33	0.41	0.91	0.95	0.494	1.34	0.367	1.00	1.00	0.367	No
340	22.35	1.33	0.42	0.92	0.95	0.494	1.34	0.368	1.00	1.00	0.368	No
341	22.44	1.34	0.42	0.92	0.95	0.495	1.34	0.368	1.00	1.00	0.368	No
342	22.45	1.34	0.42	0.92	0.95	0.495	1.34	0.368	1.00	1.00	0.368	No
343	22.54	1.34	0.42	0.92	0.95	0.495	1.34	0.368	1.00	1.00	0.368	No
344	22.58	1.35	0.42	0.92	0.95	0.495	1.34	0.368	1.00	1.00	0.368	No
345	22.65	1.35	0.43	0.93	0.95	0.496	1.34	0.369	1.00	1.00	0.369	No
346	22.73	1.36	0.43	0.93	0.95	0.496	1.34	0.369	1.00	1.00	0.369	No
347	22.79	1.36	0.43	0.93	0.95	0.496	1.34	0.369	1.00	1.00	0.369	No
348	22.85	1.36	0.43	0.93	0.95	0.497	1.34	0.369	1.00	1.00	0.369	No
349	22.93	1.37	0.43	0.93	0.95	0.497	1.34	0.370	1.00	1.00	0.370	No
350	22.99	1.37	0.44	0.94	0.95	0.497	1.34	0.370	1.00	1.00	0.370	No
351	23.04	1.38	0.44	0.94	0.95	0.497	1.34	0.370	1.00	1.00	0.370	No
352	23.12	1.38	0.44	0.94	0.95	0.498	1.34	0.370	1.00	1.00	0.370	No
353	23.19	1.39	0.44	0.94	0.95	0.498	1.34	0.370	1.00	1.00	0.370	No
354	23.27	1.39	0.45	0.94	0.95	0.498	1.34	0.371	1.00	1.00	0.371	No
355	23.30	1.39	0.45	0.95	0.95	0.499	1.34	0.371	1.00	1.00	0.371	No
356	23.38	1.40	0.45	0.95	0.95	0.499	1.34	0.371	1.00	1.00	0.371	No
357	23.47	1.40	0.45	0.95	0.95	0.499	1.34	0.371	1.00	1.00	0.371	No
358	23.50	1.40	0.45	0.95	0.95	0.499	1.34	0.371	1.00	1.00	0.371	No
359	23.58	1.41	0.45	0.96	0.95	0.500	1.34	0.372	1.00	1.00	0.372	No
360	23.66	1.42	0.46	0.96	0.95	0.500	1.34	0.372	1.00	1.00	0.372	No
361	23.69	1.42	0.46	0.96	0.95	0.500	1.34	0.372	1.00	1.00	0.372	No
362	23.77	1.42	0.46	0.96	0.95	0.500	1.34	0.372	1.00	1.00	0.372	No
363	23.84	1.43	0.46	0.96	0.95	0.501	1.34	0.372	1.00	1.00	0.372	No
364	23.92	1.43	0.47	0.97	0.95	0.501	1.34	0.373	1.00	1.00	0.373	No
365	23.97	1.43	0.47	0.97	0.95	0.501	1.34	0.373	1.00	1.00	0.373	No
366	24.06	1.44	0.47	0.97	0.95	0.501	1.34	0.373	1.00	1.00	0.373	No
367	24.12	1.44	0.47	0.97	0.94	0.502	1.34	0.373	1.00	1.00	0.373	No
368	24.17	1.45	0.47	0.97	0.94	0.502	1.34	0.373	1.00	1.00	0.373	No
369	24.23	1.45	0.48	0.98	0.94	0.502	1.34	0.373	1.00	1.00	0.373	No
370	24.31	1.46	0.48	0.98	0.94	0.502	1.34	0.374	1.00	1.00	0.374	No
371	24.36	1.46	0.48	0.98	0.94	0.502	1.34	0.374	1.00	1.00	0.374	No
372	24.42	1.46	0.48	0.98	0.94	0.503	1.34	0.374	1.00	1.00	0.374	No
373	24.51	1.47	0.48	0.99	0.94	0.503	1.34	0.374	1.00	1.00	0.374	No
374	24.54	1.47	0.48	0.99	0.94	0.503	1.34	0.374	1.00	1.00	0.374	No
375	24.62	1.48	0.49	0.99	0.94	0.503	1.34	0.374	1.00	1.00	0.374	No
376	24.71	1.48	0.49	0.99	0.94	0.504	1.34	0.375	1.00	1.00	0.375	No
377	24.74	1.48	0.49	0.99	0.94	0.504	1.34	0.375	1.00	1.00	0.375	No
378	24.81	1.49	0.49	0.99	0.94	0.504	1.34	0.375	1.00	1.00	0.375	No
379	24.89	1.49	0.50	1.00	0.94	0.504	1.34	0.375	1.00	1.00	0.375	No
380	24.96	1.50	0.50	1.00	0.94	0.505	1.34	0.375	1.00	1.00	0.375	No
381	25.01	1.50	0.50	1.00	0.94	0.505	1.34	0.376	1.00	1.00	0.376	No
382	25.10	1.50	0.50	1.00	0.94	0.505	1.34	0.376	1.00	1.00	0.376	No
383	25.14	1.51	0.50	1.00	0.94	0.505	1.34	0.376	1.00	1.00	0.376	No
384	25.21	1.51	0.51	1.01	0.94	0.506	1.34	0.376	1.00	1.00	0.376	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
385	25.30	1.52	0.51	1.01	0.94	0.506	1.34	0.376	1.00	1.00	0.376	No
386	25.34	1.52	0.51	1.01	0.94	0.506	1.34	0.376	1.00	1.00	0.376	No
387	25.41	1.52	0.51	1.01	0.94	0.507	1.34	0.377	1.00	1.00	0.377	No
388	25.50	1.53	0.51	1.01	0.94	0.507	1.34	0.377	1.00	1.00	0.377	No
389	25.55	1.53	0.52	1.01	0.94	0.507	1.34	0.377	1.00	1.00	0.377	No
390	25.60	1.53	0.52	1.02	0.94	0.507	1.34	0.377	1.00	1.00	0.377	No
391	25.70	1.54	0.52	1.02	0.94	0.508	1.34	0.378	1.00	1.00	0.378	No
392	25.75	1.54	0.52	1.02	0.94	0.508	1.34	0.378	1.00	1.00	0.378	No
393	25.80	1.54	0.52	1.02	0.94	0.508	1.34	0.378	1.00	1.00	0.378	No
394	25.89	1.55	0.53	1.02	0.94	0.508	1.34	0.378	1.00	1.00	0.378	No
395	25.95	1.55	0.53	1.02	0.94	0.509	1.34	0.378	1.00	1.00	0.378	No
396	25.99	1.56	0.53	1.03	0.94	0.509	1.34	0.378	1.00	1.00	0.378	No
397	26.06	1.56	0.53	1.03	0.94	0.509	1.34	0.379	1.00	1.00	0.379	No
398	26.15	1.56	0.54	1.03	0.94	0.509	1.34	0.379	1.00	1.00	0.379	No
399	26.19	1.57	0.54	1.03	0.94	0.510	1.34	0.379	1.00	1.00	0.379	No
400	26.25	1.57	0.54	1.03	0.94	0.510	1.34	0.379	1.00	1.00	0.379	No
401	26.34	1.58	0.54	1.03	0.94	0.510	1.34	0.379	1.00	1.00	0.379	No
402	26.38	1.58	0.54	1.04	0.94	0.510	1.34	0.380	1.00	1.00	0.380	No
403	26.45	1.58	0.54	1.04	0.94	0.511	1.34	0.380	1.00	1.00	0.380	No
404	26.52	1.59	0.55	1.04	0.94	0.511	1.34	0.380	1.00	1.00	0.380	No
405	26.61	1.59	0.55	1.04	0.94	0.511	1.34	0.380	1.00	1.00	0.380	No
406	26.67	1.59	0.55	1.04	0.94	0.511	1.34	0.380	1.00	1.00	0.380	No
407	26.72	1.60	0.55	1.04	0.94	0.511	1.34	0.380	1.00	1.00	0.380	No
408	26.82	1.60	0.56	1.05	0.93	0.512	1.34	0.381	1.00	1.00	0.381	No
409	26.86	1.60	0.56	1.05	0.93	0.512	1.34	0.381	1.00	1.00	0.381	No
410	26.94	1.61	0.56	1.05	0.93	0.512	1.34	0.381	1.00	1.00	0.381	No
411	26.98	1.61	0.56	1.05	0.93	0.512	1.34	0.381	1.00	1.00	0.381	No
412	27.06	1.62	0.56	1.05	0.93	0.513	1.34	0.381	1.00	1.00	0.381	No
413	27.10	1.62	0.56	1.05	0.93	0.513	1.34	0.381	1.00	1.00	0.381	No
414	27.17	1.62	0.57	1.06	0.93	0.513	1.34	0.382	1.00	1.00	0.382	No
415	27.26	1.63	0.57	1.06	0.93	0.513	1.34	0.382	1.00	1.00	0.382	No
416	27.31	1.63	0.57	1.06	0.93	0.514	1.34	0.382	1.00	1.00	0.382	No
417	27.39	1.63	0.57	1.06	0.93	0.514	1.34	0.382	1.00	1.00	0.382	No
418	27.44	1.64	0.58	1.06	0.93	0.514	1.34	0.382	1.00	1.00	0.383	No
419	27.51	1.64	0.58	1.06	0.93	0.514	1.34	0.382	1.00	1.00	0.383	No
420	27.58	1.64	0.58	1.07	0.93	0.514	1.34	0.383	1.00	1.00	0.383	No
421	27.63	1.65	0.58	1.07	0.93	0.515	1.34	0.383	1.00	1.00	0.383	No
422	27.71	1.65	0.58	1.07	0.93	0.515	1.34	0.383	1.00	1.00	0.384	No
423	27.79	1.66	0.59	1.07	0.93	0.515	1.34	0.383	1.00	1.00	0.384	No
424	27.86	1.66	0.59	1.07	0.93	0.515	1.34	0.383	1.00	1.00	0.384	No
425	27.89	1.66	0.59	1.07	0.93	0.515	1.34	0.383	1.00	1.00	0.385	No
426	27.96	1.67	0.59	1.07	0.93	0.516	1.34	0.383	1.00	1.00	0.385	No
427	28.05	1.67	0.59	1.08	0.93	0.516	1.34	0.384	1.00	1.00	0.385	No
428	28.09	1.67	0.60	1.08	0.93	0.516	1.34	0.384	1.00	1.00	0.385	No
429	28.16	1.68	0.60	1.08	0.93	0.516	1.34	0.384	1.00	1.00	0.386	No
430	28.23	1.68	0.60	1.08	0.93	0.516	1.34	0.384	1.00	1.00	0.386	No
431	28.29	1.68	0.60	1.08	0.93	0.517	1.34	0.384	0.99	1.00	0.386	No
432	28.35	1.69	0.60	1.08	0.93	0.517	1.34	0.384	0.99	1.00	0.386	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
433	28.44	1.69	0.61	1.09	0.93	0.517	1.34	0.385	0.99	1.00	0.387	No
434	28.50	1.70	0.61	1.09	0.93	0.517	1.34	0.385	0.99	1.00	0.387	No
435	28.55	1.70	0.61	1.09	0.93	0.517	1.34	0.385	0.99	1.00	0.387	No
436	28.64	1.70	0.61	1.09	0.93	0.518	1.34	0.385	0.99	1.00	0.388	No
437	28.69	1.71	0.61	1.09	0.93	0.518	1.34	0.385	0.99	1.00	0.388	No
438	28.75	1.71	0.62	1.09	0.93	0.518	1.34	0.385	0.99	1.00	0.388	No
439	28.82	1.71	0.62	1.10	0.93	0.518	1.34	0.385	0.99	1.00	0.388	No
440	28.89	1.72	0.62	1.10	0.93	0.518	1.34	0.385	0.99	1.00	0.389	No
441	28.98	1.72	0.62	1.10	0.93	0.518	1.34	0.386	0.99	1.00	0.389	No
442	29.04	1.73	0.63	1.10	0.93	0.518	1.34	0.386	0.99	1.00	0.389	No
443	29.08	1.73	0.63	1.10	0.93	0.519	1.34	0.386	0.99	1.00	0.389	No
444	29.15	1.73	0.63	1.10	0.92	0.519	1.34	0.386	0.99	1.00	0.390	No
445	29.24	1.74	0.63	1.11	0.92	0.519	1.34	0.386	0.99	1.00	0.390	No
446	29.29	1.74	0.63	1.11	0.92	0.519	1.34	0.386	0.99	1.00	0.390	No
447	29.34	1.74	0.63	1.11	0.92	0.519	1.34	0.386	0.99	1.00	0.390	No
448	29.43	1.75	0.64	1.11	0.92	0.519	1.34	0.386	0.99	1.00	0.391	No
449	29.47	1.75	0.64	1.11	0.92	0.519	1.34	0.386	0.99	1.00	0.391	No
450	29.53	1.76	0.64	1.12	0.92	0.519	1.34	0.386	0.99	1.00	0.391	No
451	29.62	1.76	0.64	1.12	0.92	0.520	1.34	0.386	0.99	1.00	0.391	No
452	29.66	1.76	0.64	1.12	0.92	0.520	1.34	0.387	0.99	1.00	0.392	No
453	29.77	1.77	0.65	1.12	0.92	0.520	1.34	0.387	0.99	1.00	0.392	No
454	29.81	1.77	0.65	1.12	0.92	0.520	1.34	0.387	0.99	1.00	0.392	No
455	29.86	1.77	0.65	1.12	0.92	0.520	1.34	0.387	0.99	1.00	0.392	No
456	29.92	1.78	0.65	1.13	0.92	0.520	1.34	0.387	0.99	1.00	0.392	No
457	30.01	1.78	0.66	1.13	0.92	0.520	1.34	0.387	0.99	1.00	0.393	No
458	30.09	1.79	0.66	1.13	0.92	0.520	1.34	0.387	0.98	1.00	0.393	No
459	30.17	1.79	0.66	1.13	0.92	0.521	1.34	0.387	0.98	1.00	0.393	No
460	30.20	1.79	0.66	1.13	0.92	0.521	1.34	0.387	0.98	1.00	0.393	No
461	30.27	1.80	0.66	1.14	0.92	0.521	1.34	0.387	0.98	1.00	0.394	No
462	30.32	1.80	0.67	1.14	0.92	0.521	1.34	0.387	0.98	1.00	0.394	No
463	30.39	1.81	0.67	1.14	0.92	0.521	1.34	0.387	0.98	1.00	0.394	No
464	30.47	1.81	0.67	1.14	0.92	0.521	1.34	0.387	0.98	1.00	0.394	No
465	30.55	1.82	0.67	1.14	0.92	0.521	1.34	0.388	0.98	1.00	0.394	No
466	30.62	1.82	0.67	1.15	0.92	0.521	1.34	0.388	0.98	1.00	0.395	No
467	30.66	1.82	0.68	1.15	0.92	0.521	1.34	0.388	0.98	1.00	0.395	No
468	30.72	1.83	0.68	1.15	0.92	0.521	1.34	0.388	0.98	1.00	0.395	No
469	30.81	1.83	0.68	1.15	0.92	0.521	1.34	0.388	0.98	1.00	0.395	No
470	30.85	1.83	0.68	1.15	0.92	0.521	1.34	0.388	0.98	1.00	0.395	No
471	30.91	1.84	0.68	1.15	0.92	0.521	1.34	0.388	0.98	1.00	0.396	No
472	31.01	1.84	0.69	1.16	0.92	0.522	1.34	0.388	0.98	1.00	0.396	No
473	31.05	1.85	0.69	1.16	0.92	0.522	1.34	0.388	0.98	1.00	0.396	No
474	31.11	1.85	0.69	1.16	0.91	0.522	1.34	0.388	0.98	1.00	0.396	No
475	31.20	1.85	0.69	1.16	0.91	0.522	1.34	0.388	0.98	1.00	0.396	No
476	31.26	1.86	0.69	1.16	0.91	0.522	1.34	0.388	0.98	1.00	0.397	No
477	31.31	1.86	0.70	1.16	0.91	0.522	1.34	0.388	0.98	1.00	0.397	No
478	31.38	1.86	0.70	1.17	0.91	0.522	1.34	0.388	0.98	1.00	0.397	No
479	31.46	1.87	0.70	1.17	0.91	0.522	1.34	0.388	0.98	1.00	0.397	No
480	31.51	1.87	0.70	1.17	0.91	0.522	1.34	0.388	0.98	1.00	0.397	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
481	31.60	1.88	0.71	1.17	0.91	0.522	1.34	0.388	0.98	1.00	0.398	No
482	31.65	1.88	0.71	1.17	0.91	0.522	1.34	0.388	0.98	1.00	0.398	No
483	31.74	1.88	0.71	1.18	0.91	0.522	1.34	0.389	0.98	1.00	0.398	No
484	31.80	1.89	0.71	1.18	0.91	0.523	1.34	0.389	0.98	1.00	0.398	No
485	31.85	1.89	0.71	1.18	0.91	0.523	1.34	0.389	0.98	1.00	0.398	No
486	31.89	1.89	0.71	1.18	0.91	0.523	1.34	0.389	0.98	1.00	0.398	No
487	32.00	1.90	0.72	1.18	0.91	0.523	1.34	0.389	0.97	1.00	0.399	No
488	32.04	1.90	0.72	1.18	0.91	0.523	1.34	0.389	0.97	1.00	0.399	No
489	32.09	1.90	0.72	1.18	0.91	0.523	1.34	0.389	0.97	1.00	0.399	No
490	32.19	1.91	0.72	1.19	0.91	0.523	1.34	0.389	0.97	1.00	0.399	No
491	32.23	1.91	0.72	1.19	0.91	0.523	1.34	0.389	0.97	1.00	0.399	No
492	32.29	1.91	0.73	1.19	0.91	0.523	1.34	0.389	0.97	1.00	0.400	No
493	32.37	1.92	0.73	1.19	0.91	0.523	1.34	0.389	0.97	1.00	0.400	No
494	32.44	1.92	0.73	1.19	0.91	0.523	1.34	0.389	0.97	1.00	0.400	No
495	32.49	1.93	0.73	1.19	0.91	0.523	1.34	0.389	0.97	1.00	0.400	No
496	32.58	1.93	0.74	1.20	0.91	0.523	1.34	0.389	0.97	1.00	0.400	No
497	32.62	1.93	0.74	1.20	0.91	0.523	1.34	0.389	0.97	1.00	0.400	No
498	32.69	1.94	0.74	1.20	0.91	0.524	1.34	0.389	0.97	1.00	0.401	No
499	32.78	1.94	0.74	1.20	0.91	0.524	1.34	0.389	0.97	1.00	0.401	No
500	32.82	1.94	0.74	1.20	0.90	0.524	1.34	0.389	0.97	1.00	0.401	No
501	32.89	1.95	0.75	1.20	0.90	0.524	1.34	0.389	0.97	1.00	0.401	No
502	32.97	1.95	0.75	1.20	0.90	0.524	1.34	0.390	0.97	1.00	0.401	No
503	33.02	1.96	0.75	1.21	0.90	0.524	1.34	0.390	0.97	1.00	0.401	No
504	33.09	1.96	0.75	1.21	0.90	0.524	1.34	0.390	0.97	1.00	0.402	No
505	33.15	1.96	0.75	1.21	0.90	0.524	1.34	0.390	0.97	1.00	0.402	No
506	33.20	1.97	0.76	1.21	0.90	0.524	1.34	0.390	0.97	1.00	0.402	No
507	33.28	1.97	0.76	1.21	0.90	0.524	1.34	0.390	0.97	1.00	0.402	No
508	33.38	1.98	0.76	1.22	0.90	0.524	1.34	0.390	0.97	1.00	0.402	No
509	33.43	1.98	0.76	1.22	0.90	0.524	1.34	0.390	0.97	1.00	0.402	No
510	33.47	1.98	0.76	1.22	0.90	0.524	1.34	0.390	0.97	1.00	0.402	No
511	33.57	1.99	0.77	1.22	0.90	0.524	1.34	0.390	0.97	1.00	0.403	No
512	33.63	1.99	0.77	1.22	0.90	0.524	1.34	0.390	0.97	1.00	0.403	No
513	33.70	2.00	0.77	1.22	0.90	0.524	1.34	0.390	0.97	1.00	0.403	No
514	33.74	2.00	0.77	1.23	0.90	0.524	1.34	0.390	0.97	1.00	0.403	No
515	33.82	2.00	0.77	1.23	0.90	0.524	1.34	0.390	0.97	1.00	0.403	No
516	33.86	2.00	0.78	1.23	0.90	0.524	1.34	0.390	0.97	1.00	0.403	No
517	33.93	2.01	0.78	1.23	0.90	0.524	1.34	0.390	0.97	1.00	0.403	No
518	34.02	2.01	0.78	1.23	0.90	0.524	1.34	0.390	0.97	1.00	0.404	No
519	34.06	2.02	0.78	1.23	0.90	0.524	1.34	0.390	0.97	1.00	0.404	No
520	34.13	2.02	0.78	1.24	0.90	0.524	1.34	0.390	0.96	1.00	0.404	No
521	34.21	2.03	0.79	1.24	0.90	0.524	1.34	0.389	0.96	1.00	0.404	No
522	34.28	2.03	0.79	1.24	0.90	0.524	1.34	0.389	0.96	1.00	0.404	No
523	34.32	2.03	0.79	1.24	0.90	0.524	1.34	0.389	0.96	1.00	0.404	No
524	34.41	2.04	0.79	1.24	0.89	0.524	1.34	0.389	0.96	1.00	0.404	No
525	34.46	2.04	0.79	1.25	0.89	0.524	1.34	0.389	0.96	1.00	0.404	No
526	34.52	2.04	0.80	1.25	0.89	0.523	1.34	0.389	0.96	1.00	0.404	No
527	34.61	2.05	0.80	1.25	0.89	0.523	1.34	0.389	0.96	1.00	0.405	No
528	34.65	2.05	0.80	1.25	0.89	0.523	1.34	0.389	0.96	1.00	0.405	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
529	34.71	2.06	0.80	1.25	0.89	0.523	1.34	0.389	0.96	1.00	0.405	No
530	34.79	2.06	0.80	1.26	0.89	0.523	1.34	0.389	0.96	1.00	0.405	No
531	34.86	2.06	0.81	1.26	0.89	0.523	1.34	0.389	0.96	1.00	0.405	No
532	34.93	2.07	0.81	1.26	0.89	0.523	1.34	0.389	0.96	1.00	0.405	No
533	35.01	2.07	0.81	1.26	0.89	0.523	1.34	0.389	0.96	1.00	0.405	No
534	35.06	2.08	0.81	1.26	0.89	0.523	1.34	0.389	0.96	1.00	0.405	No
535	35.11	2.08	0.81	1.26	0.89	0.523	1.34	0.389	0.96	1.00	0.405	No
536	35.18	2.08	0.82	1.27	0.89	0.523	1.34	0.389	0.96	1.00	0.405	No
537	35.26	2.09	0.82	1.27	0.89	0.523	1.34	0.389	0.96	1.00	0.406	No
538	35.34	2.09	0.82	1.27	0.89	0.523	1.34	0.389	0.96	1.00	0.406	No
539	35.40	2.10	0.82	1.27	0.89	0.523	1.34	0.389	0.96	1.00	0.406	No
540	35.44	2.10	0.82	1.27	0.89	0.523	1.34	0.389	0.96	1.00	0.406	No
541	35.51	2.10	0.83	1.27	0.89	0.523	1.34	0.389	0.96	1.00	0.406	No
542	35.58	2.11	0.83	1.28	0.89	0.523	1.34	0.389	0.96	1.00	0.406	No
543	35.66	2.11	0.83	1.28	0.89	0.523	1.34	0.389	0.96	1.00	0.406	No
544	35.71	2.11	0.83	1.28	0.89	0.523	1.34	0.389	0.96	1.00	0.406	No
545	35.77	2.12	0.84	1.28	0.89	0.523	1.34	0.389	0.96	1.00	0.406	No
546	35.85	2.12	0.84	1.28	0.88	0.523	1.34	0.389	0.96	1.00	0.406	No
547	35.92	2.13	0.84	1.29	0.88	0.523	1.34	0.389	0.96	1.00	0.406	No
548	35.97	2.13	0.84	1.29	0.88	0.522	1.34	0.389	0.96	1.00	0.406	No
549	36.03	2.13	0.84	1.29	0.88	0.522	1.34	0.389	0.96	1.00	0.407	No
550	36.11	2.14	0.85	1.29	0.88	0.522	1.34	0.388	0.96	1.00	0.407	No
551	36.16	2.14	0.85	1.29	0.88	0.522	1.34	0.388	0.96	1.00	0.407	No
552	36.26	2.14	0.85	1.29	0.88	0.522	1.34	0.388	0.95	1.00	0.407	No
553	36.31	2.15	0.85	1.30	0.88	0.522	1.34	0.388	0.95	1.00	0.407	No
554	36.36	2.15	0.85	1.30	0.88	0.522	1.34	0.388	0.95	1.00	0.407	No
555	36.43	2.15	0.86	1.30	0.88	0.522	1.34	0.388	0.95	1.00	0.407	No
556	36.51	2.16	0.86	1.30	0.88	0.522	1.34	0.388	0.95	1.00	0.407	No
557	36.55	2.16	0.86	1.30	0.88	0.522	1.34	0.388	0.95	1.00	0.407	No
558	36.65	2.17	0.86	1.30	0.88	0.522	1.34	0.388	0.95	1.00	0.407	No
559	36.71	2.17	0.86	1.31	0.88	0.522	1.34	0.388	0.95	1.00	0.407	No
560	36.76	2.17	0.87	1.31	0.88	0.522	1.34	0.388	0.95	1.00	0.407	No
561	36.85	2.18	0.87	1.31	0.88	0.522	1.34	0.388	0.95	1.00	0.407	No
562	36.89	2.18	0.87	1.31	0.88	0.522	1.34	0.388	0.95	1.00	0.407	No
563	36.96	2.18	0.87	1.31	0.88	0.521	1.34	0.388	0.95	1.00	0.408	No
564	37.02	2.19	0.87	1.31	0.88	0.521	1.34	0.388	0.95	1.00	0.408	No
565	37.11	2.19	0.88	1.32	0.88	0.521	1.34	0.388	0.95	1.00	0.408	No
566	37.15	2.20	0.88	1.32	0.87	0.521	1.34	0.388	0.95	1.00	0.408	No
567	37.24	2.20	0.88	1.32	0.87	0.521	1.34	0.388	0.95	1.00	0.408	No
568	37.31	2.20	0.88	1.32	0.87	0.521	1.34	0.387	0.95	1.00	0.408	No
569	37.35	2.21	0.88	1.32	0.87	0.521	1.34	0.387	0.95	1.00	0.408	No
570	37.43	2.21	0.89	1.32	0.87	0.521	1.34	0.387	0.95	1.00	0.408	No
571	37.51	2.22	0.89	1.33	0.87	0.521	1.34	0.387	0.95	1.00	0.408	No
572	37.55	2.22	0.89	1.33	0.87	0.521	1.34	0.387	0.95	1.00	0.408	No
573	37.60	2.22	0.89	1.33	0.87	0.520	1.34	0.387	0.95	1.00	0.408	No
574	37.67	2.23	0.89	1.33	0.87	0.520	1.34	0.387	0.95	1.00	0.408	No
575	37.75	2.23	0.90	1.33	0.87	0.520	1.34	0.387	0.95	1.00	0.408	No
576	37.81	2.23	0.90	1.34	0.87	0.520	1.34	0.387	0.95	1.00	0.408	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
577	37.88	2.24	0.90	1.34	0.87	0.520	1.34	0.387	0.95	1.00	0.408	No
578	37.93	2.24	0.90	1.34	0.87	0.520	1.34	0.387	0.95	1.00	0.408	No
579	38.00	2.25	0.90	1.34	0.87	0.520	1.34	0.386	0.95	1.00	0.408	No
580	38.08	2.25	0.91	1.34	0.87	0.519	1.34	0.386	0.95	1.00	0.408	No
581	38.14	2.25	0.91	1.35	0.87	0.519	1.34	0.386	0.95	1.00	0.408	No
582	38.20	2.26	0.91	1.35	0.87	0.519	1.34	0.386	0.95	1.00	0.408	No
583	38.26	2.26	0.91	1.35	0.87	0.519	1.34	0.386	0.95	1.00	2.000	Yes
584	38.34	2.27	0.92	1.35	0.87	0.519	1.34	0.386	0.95	1.00	2.000	Yes
585	38.43	2.27	0.92	1.35	0.86	0.519	1.34	0.386	0.94	1.00	2.000	Yes
586	38.45	2.27	0.92	1.36	0.86	0.518	1.34	0.386	0.94	1.00	2.000	Yes
587	38.53	2.28	0.92	1.36	0.86	0.518	1.34	0.385	0.94	1.00	2.000	Yes
588	38.62	2.29	0.92	1.36	0.86	0.518	1.34	0.385	0.94	1.00	2.000	Yes
589	38.65	2.29	0.93	1.36	0.86	0.518	1.34	0.385	0.94	1.00	2.000	Yes
590	38.72	2.29	0.93	1.36	0.86	0.518	1.34	0.385	0.94	1.00	0.408	No
591	38.80	2.30	0.93	1.37	0.86	0.517	1.34	0.385	0.94	1.00	0.408	No
592	38.88	2.30	0.93	1.37	0.86	0.517	1.34	0.385	0.94	1.00	0.408	No
593	38.93	2.31	0.93	1.37	0.86	0.517	1.34	0.384	0.94	1.00	0.408	No
594	39.01	2.31	0.94	1.38	0.86	0.517	1.34	0.384	0.94	1.00	0.408	No
595	39.07	2.32	0.94	1.38	0.86	0.516	1.34	0.384	0.94	1.00	0.408	No
596	39.12	2.32	0.94	1.38	0.86	0.516	1.34	0.384	0.94	1.00	0.408	No
597	39.20	2.32	0.94	1.38	0.86	0.516	1.34	0.384	0.94	1.00	0.408	No
598	39.27	2.33	0.94	1.38	0.86	0.516	1.34	0.383	0.94	1.00	0.408	No
599	39.31	2.33	0.95	1.39	0.86	0.515	1.34	0.383	0.94	1.00	0.408	No
600	39.38	2.34	0.95	1.39	0.86	0.515	1.34	0.383	0.94	1.00	0.408	No
601	39.45	2.34	0.95	1.39	0.86	0.515	1.34	0.383	0.94	1.00	0.408	No
602	39.51	2.35	0.95	1.39	0.86	0.515	1.34	0.383	0.94	1.00	0.408	No
603	39.57	2.35	0.95	1.40	0.85	0.514	1.34	0.383	0.94	1.00	0.408	No
604	39.64	2.35	0.96	1.40	0.85	0.514	1.34	0.382	0.94	1.00	0.408	No
605	39.72	2.36	0.96	1.40	0.85	0.514	1.34	0.382	0.94	1.00	0.408	No
606	39.79	2.36	0.96	1.40	0.85	0.514	1.34	0.382	0.94	1.00	0.408	No
607	39.84	2.37	0.96	1.41	0.85	0.513	1.34	0.382	0.94	1.00	0.408	No
608	39.90	2.37	0.96	1.41	0.85	0.513	1.34	0.382	0.94	1.00	0.408	No
609	39.96	2.38	0.97	1.41	0.85	0.513	1.34	0.381	0.94	1.00	0.407	No
610	40.06	2.38	0.97	1.41	0.85	0.512	1.34	0.381	0.94	1.00	0.407	No
611	40.13	2.39	0.97	1.42	0.85	0.512	1.34	0.381	0.94	1.00	0.407	No
612	40.17	2.39	0.97	1.42	0.85	0.512	1.34	0.381	0.93	1.00	0.407	No
613	40.26	2.40	0.98	1.42	0.85	0.512	1.34	0.381	0.93	1.00	0.407	No
614	40.31	2.40	0.98	1.42	0.85	0.511	1.34	0.380	0.93	1.00	0.407	No
615	40.36	2.40	0.98	1.42	0.85	0.511	1.34	0.380	0.93	1.00	0.407	No
616	40.43	2.41	0.98	1.43	0.85	0.511	1.34	0.380	0.93	1.00	0.407	No
617	40.51	2.41	0.98	1.43	0.85	0.511	1.34	0.380	0.93	1.00	0.407	No
618	40.56	2.42	0.98	1.43	0.85	0.510	1.34	0.380	0.93	1.00	0.407	No
619	40.64	2.42	0.99	1.43	0.85	0.510	1.34	0.379	0.93	1.00	0.407	No
620	40.70	2.43	0.99	1.44	0.84	0.510	1.34	0.379	0.93	1.00	0.407	No
621	40.75	2.43	0.99	1.44	0.84	0.510	1.34	0.379	0.93	1.00	0.407	No
622	40.83	2.43	0.99	1.44	0.84	0.509	1.34	0.379	0.93	1.00	0.407	No
623	40.88	2.44	0.99	1.44	0.84	0.509	1.34	0.379	0.93	1.00	0.407	No
624	40.95	2.44	1.00	1.45	0.84	0.509	1.34	0.378	0.93	1.00	0.407	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
625	41.03	2.45	1.00	1.45	0.84	0.509	1.34	0.378	0.93	1.00	0.407	No
626	41.08	2.45	1.00	1.45	0.84	0.508	1.34	0.378	0.93	1.00	0.407	No
627	41.15	2.46	1.00	1.45	0.84	0.508	1.34	0.378	0.93	1.00	0.406	No
628	41.24	2.46	1.01	1.46	0.84	0.508	1.34	0.378	0.93	1.00	0.406	No
629	41.28	2.46	1.01	1.46	0.84	0.508	1.34	0.378	0.93	1.00	0.406	No
630	41.35	2.47	1.01	1.46	0.84	0.507	1.34	0.377	0.93	1.00	0.406	No
631	41.41	2.47	1.01	1.46	0.84	0.507	1.34	0.377	0.93	1.00	0.406	No
632	41.48	2.48	1.01	1.46	0.84	0.507	1.34	0.377	0.93	1.00	0.406	No
633	41.55	2.48	1.02	1.47	0.84	0.507	1.34	0.377	0.93	1.00	0.406	No
634	41.63	2.49	1.02	1.47	0.84	0.506	1.34	0.376	0.93	1.00	0.406	No
635	41.68	2.49	1.02	1.47	0.84	0.506	1.34	0.376	0.93	1.00	0.406	No
636	41.74	2.49	1.02	1.47	0.84	0.506	1.34	0.376	0.93	1.00	0.406	No
637	41.83	2.50	1.02	1.48	0.83	0.505	1.34	0.376	0.93	1.00	0.406	No
638	41.87	2.50	1.03	1.48	0.83	0.505	1.34	0.376	0.93	1.00	0.406	No
639	41.98	2.51	1.03	1.48	0.83	0.505	1.34	0.375	0.93	1.00	0.406	No
640	42.02	2.51	1.03	1.48	0.83	0.505	1.34	0.375	0.93	1.00	0.406	No
641	42.10	2.52	1.03	1.48	0.83	0.504	1.34	0.375	0.93	1.00	0.405	No
642	42.14	2.52	1.03	1.49	0.83	0.504	1.34	0.375	0.92	1.00	0.405	No
643	42.22	2.53	1.04	1.49	0.83	0.504	1.34	0.375	0.92	1.00	0.405	No
644	42.29	2.53	1.04	1.49	0.83	0.503	1.34	0.374	0.92	1.00	0.405	No
645	42.38	2.54	1.04	1.49	0.83	0.503	1.34	0.374	0.92	1.00	0.405	No
646	42.41	2.54	1.04	1.50	0.83	0.503	1.34	0.374	0.92	1.00	0.405	No
647	42.46	2.54	1.04	1.50	0.83	0.503	1.34	0.374	0.92	1.00	0.405	No
648	42.57	2.55	1.05	1.50	0.83	0.502	1.34	0.374	0.92	1.00	0.405	No
649	42.61	2.55	1.05	1.50	0.83	0.502	1.34	0.373	0.92	1.00	0.405	No
650	42.68	2.56	1.05	1.50	0.83	0.502	1.34	0.373	0.92	1.00	0.405	No
651	42.76	2.56	1.05	1.51	0.83	0.501	1.34	0.373	0.92	1.00	0.405	No
652	42.80	2.56	1.05	1.51	0.83	0.501	1.34	0.373	0.92	1.00	0.404	No
653	42.87	2.57	1.06	1.51	0.82	0.501	1.34	0.373	0.92	1.00	0.404	No
654	42.92	2.57	1.06	1.51	0.82	0.501	1.34	0.372	0.92	1.00	0.404	No
655	42.98	2.58	1.06	1.51	0.82	0.500	1.34	0.372	0.92	1.00	0.404	No
656	43.06	2.58	1.06	1.52	0.82	0.500	1.34	0.372	0.92	1.00	0.404	No
657	43.11	2.58	1.06	1.52	0.82	0.500	1.34	0.372	0.92	1.00	0.404	No
658	43.18	2.59	1.07	1.52	0.82	0.500	1.34	0.372	0.92	1.00	0.404	No
659	43.26	2.59	1.07	1.52	0.82	0.499	1.34	0.371	0.92	1.00	0.404	No
660	43.32	2.60	1.07	1.53	0.82	0.499	1.34	0.371	0.92	1.00	0.404	No
661	43.39	2.60	1.07	1.53	0.82	0.499	1.34	0.371	0.92	1.00	0.404	No
662	43.46	2.61	1.08	1.53	0.82	0.498	1.34	0.371	0.92	1.00	0.404	No
663	43.52	2.61	1.08	1.53	0.82	0.498	1.34	0.370	0.92	1.00	0.403	No
664	43.61	2.62	1.08	1.54	0.82	0.498	1.34	0.370	0.92	1.00	0.403	No
665	43.64	2.62	1.08	1.54	0.82	0.498	1.34	0.370	0.92	1.00	0.403	No
666	43.70	2.62	1.08	1.54	0.82	0.497	1.34	0.370	0.92	1.00	0.403	No
667	43.79	2.63	1.09	1.54	0.82	0.497	1.34	0.370	0.92	1.00	0.403	No
668	43.84	2.63	1.09	1.54	0.82	0.497	1.34	0.370	0.92	1.00	0.403	No
669	43.90	2.63	1.09	1.54	0.81	0.497	1.34	0.369	0.92	1.00	0.403	No
670	43.97	2.64	1.09	1.55	0.81	0.496	1.34	0.369	0.92	1.00	0.403	No
671	44.05	2.64	1.09	1.55	0.81	0.496	1.34	0.369	0.92	1.00	0.403	No
672	44.10	2.64	1.10	1.55	0.81	0.496	1.34	0.369	0.92	1.00	0.403	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
673	44.18	2.65	1.10	1.55	0.81	0.496	1.34	0.369	0.92	1.00	0.402	No
674	44.24	2.65	1.10	1.55	0.81	0.495	1.34	0.368	0.92	1.00	0.402	No
675	44.30	2.66	1.10	1.55	0.81	0.495	1.34	0.368	0.92	1.00	0.402	No
676	44.38	2.66	1.10	1.56	0.81	0.495	1.34	0.368	0.91	1.00	0.402	No
677	44.45	2.67	1.11	1.56	0.81	0.494	1.34	0.368	0.91	1.00	0.402	No
678	44.49	2.67	1.11	1.56	0.81	0.494	1.34	0.368	0.91	1.00	0.402	No
679	44.57	2.67	1.11	1.56	0.81	0.494	1.34	0.367	0.91	1.00	0.402	No
680	44.64	2.68	1.11	1.56	0.81	0.494	1.34	0.367	0.91	1.00	0.402	No
681	44.72	2.68	1.11	1.57	0.81	0.493	1.34	0.367	0.91	1.00	0.402	No
682	44.79	2.69	1.12	1.57	0.81	0.493	1.34	0.367	0.91	1.00	0.401	No
683	44.84	2.69	1.12	1.57	0.81	0.493	1.34	0.366	0.91	1.00	2.000	Yes
684	44.92	2.69	1.12	1.57	0.80	0.492	1.34	0.366	0.91	1.00	2.000	Yes
685	44.96	2.70	1.12	1.57	0.80	0.492	1.34	0.366	0.91	1.00	2.000	Yes
686	45.03	2.70	1.12	1.58	0.80	0.492	1.34	0.366	0.91	1.00	2.000	Yes
687	45.09	2.70	1.13	1.58	0.80	0.492	1.34	0.366	0.91	1.00	2.000	Yes
688	45.19	2.71	1.13	1.58	0.80	0.491	1.34	0.365	0.91	1.00	2.000	Yes
689	45.23	2.71	1.13	1.58	0.80	0.491	1.34	0.365	0.91	1.00	2.000	Yes
690	45.28	2.72	1.13	1.58	0.80	0.491	1.34	0.365	0.91	1.00	2.000	Yes
691	45.38	2.72	1.14	1.59	0.80	0.490	1.34	0.365	0.91	1.00	2.000	Yes
692	45.43	2.73	1.14	1.59	0.80	0.490	1.34	0.364	0.91	1.00	2.000	Yes
693	45.48	2.73	1.14	1.59	0.80	0.490	1.34	0.364	0.91	1.00	0.400	No
694	45.58	2.74	1.14	1.59	0.80	0.489	1.34	0.364	0.91	1.00	2.000	Yes
695	45.62	2.74	1.14	1.60	0.80	0.489	1.34	0.364	0.91	1.00	2.000	Yes
696	45.67	2.74	1.14	1.60	0.80	0.489	1.34	0.364	0.91	1.00	2.000	Yes
697	45.78	2.75	1.15	1.60	0.80	0.488	1.34	0.363	0.91	1.00	2.000	Yes
698	45.82	2.75	1.15	1.60	0.80	0.488	1.34	0.363	0.91	1.00	2.000	Yes
699	45.88	2.76	1.15	1.60	0.79	0.488	1.34	0.363	0.91	1.00	2.000	Yes
700	45.98	2.76	1.15	1.61	0.79	0.487	1.34	0.362	0.91	1.00	2.000	Yes
701	46.02	2.76	1.16	1.61	0.79	0.487	1.34	0.362	0.91	1.00	2.000	Yes
702	46.07	2.77	1.16	1.61	0.79	0.487	1.34	0.362	0.91	1.00	2.000	Yes
703	46.17	2.77	1.16	1.61	0.79	0.486	1.34	0.362	0.91	1.00	0.399	No
704	46.21	2.78	1.16	1.62	0.79	0.486	1.34	0.362	0.91	1.00	0.399	No
705	46.27	2.78	1.16	1.62	0.79	0.486	1.34	0.361	0.91	1.00	0.399	No
706	46.37	2.79	1.17	1.62	0.79	0.486	1.34	0.361	0.91	1.00	0.398	No
707	46.39	2.79	1.17	1.62	0.79	0.485	1.34	0.361	0.91	1.00	0.398	No
708	46.47	2.79	1.17	1.62	0.79	0.485	1.34	0.361	0.91	1.00	0.398	No
709	46.57	2.80	1.17	1.63	0.79	0.485	1.34	0.360	0.91	1.00	0.398	No
710	46.62	2.80	1.17	1.63	0.79	0.484	1.34	0.360	0.91	1.00	0.398	No
711	46.67	2.81	1.18	1.63	0.79	0.484	1.34	0.360	0.91	1.00	0.398	No
712	46.77	2.81	1.18	1.63	0.79	0.484	1.34	0.360	0.91	1.00	0.397	No
713	46.82	2.81	1.18	1.63	0.79	0.483	1.34	0.360	0.90	1.00	0.397	No
714	46.90	2.82	1.18	1.64	0.78	0.483	1.34	0.359	0.90	1.00	0.397	No
715	46.92	2.82	1.18	1.64	0.78	0.483	1.34	0.359	0.90	1.00	0.397	No
716	47.01	2.83	1.19	1.64	0.78	0.482	1.34	0.359	0.90	1.00	0.397	No
717	47.05	2.83	1.19	1.64	0.78	0.482	1.34	0.359	0.90	1.00	0.397	No
718	47.12	2.83	1.19	1.64	0.78	0.482	1.34	0.358	0.90	1.00	0.397	No
719	47.21	2.84	1.19	1.65	0.78	0.481	1.34	0.358	0.90	1.00	0.396	No
720	47.28	2.84	1.19	1.65	0.78	0.481	1.34	0.358	0.90	1.00	0.396	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
721	47.32	2.85	1.20	1.65	0.78	0.481	1.34	0.358	0.90	1.00	0.396	No
722	47.40	2.85	1.20	1.65	0.78	0.481	1.34	0.357	0.90	1.00	0.396	No
723	47.45	2.85	1.20	1.65	0.78	0.480	1.34	0.357	0.90	1.00	0.396	No
724	47.55	2.86	1.20	1.66	0.78	0.480	1.34	0.357	0.90	1.00	0.396	No
725	47.58	2.86	1.20	1.66	0.78	0.480	1.34	0.357	0.90	1.00	0.396	No
726	47.66	2.87	1.21	1.66	0.78	0.479	1.34	0.356	0.90	1.00	0.395	No
727	47.74	2.87	1.21	1.66	0.78	0.479	1.34	0.356	0.90	1.00	0.395	No
728	47.80	2.88	1.21	1.67	0.78	0.479	1.34	0.356	0.90	1.00	0.395	No
729	47.85	2.88	1.21	1.67	0.77	0.478	1.34	0.356	0.90	1.00	0.395	No
730	47.93	2.88	1.21	1.67	0.77	0.478	1.34	0.355	0.90	1.00	0.395	No
731	47.98	2.89	1.22	1.67	0.77	0.478	1.34	0.355	0.90	1.00	0.395	No
732	48.04	2.89	1.22	1.67	0.77	0.477	1.34	0.355	0.90	1.00	0.395	No
733	48.11	2.90	1.22	1.68	0.77	0.477	1.34	0.355	0.90	1.00	0.394	No
734	48.20	2.90	1.22	1.68	0.77	0.477	1.34	0.354	0.90	1.00	0.394	No
735	48.24	2.90	1.22	1.68	0.77	0.476	1.34	0.354	0.90	1.00	0.394	No
736	48.30	2.91	1.23	1.68	0.77	0.476	1.34	0.354	0.90	1.00	0.394	No
737	48.39	2.91	1.23	1.68	0.77	0.476	1.34	0.354	0.90	1.00	0.394	No
738	48.44	2.92	1.23	1.69	0.77	0.475	1.34	0.354	0.90	1.00	0.394	No
739	48.53	2.92	1.23	1.69	0.77	0.475	1.34	0.353	0.90	1.00	0.393	No
740	48.59	2.93	1.24	1.69	0.77	0.475	1.34	0.353	0.90	1.00	0.393	No
741	48.64	2.93	1.24	1.69	0.77	0.474	1.34	0.353	0.90	1.00	0.393	No
742	48.70	2.93	1.24	1.69	0.77	0.474	1.34	0.353	0.90	1.00	0.393	No
743	48.78	2.94	1.24	1.70	0.77	0.474	1.34	0.352	0.90	1.00	0.393	No
744	48.82	2.94	1.24	1.70	0.76	0.473	1.34	0.352	0.90	1.00	0.393	No
745	48.89	2.94	1.24	1.70	0.76	0.473	1.34	0.352	0.90	1.00	0.392	No
746	48.98	2.95	1.25	1.70	0.76	0.473	1.34	0.352	0.90	1.00	0.392	No
747	49.05	2.96	1.25	1.71	0.76	0.472	1.34	0.351	0.90	1.00	0.392	No
748	49.09	2.96	1.25	1.71	0.76	0.472	1.34	0.351	0.90	1.00	0.392	No
749	49.16	2.96	1.25	1.71	0.76	0.472	1.34	0.351	0.90	1.00	0.392	No
750	49.24	2.97	1.26	1.71	0.76	0.471	1.34	0.350	0.90	1.00	0.392	No
751	49.31	2.97	1.26	1.71	0.76	0.471	1.34	0.350	0.89	1.00	0.391	No
752	49.38	2.98	1.26	1.72	0.76	0.471	1.34	0.350	0.89	1.00	0.391	No
753	49.43	2.98	1.26	1.72	0.76	0.470	1.34	0.350	0.89	1.00	0.391	No
754	49.52	2.99	1.26	1.72	0.76	0.470	1.34	0.349	0.89	1.00	0.391	No
755	49.58	2.99	1.27	1.72	0.76	0.469	1.34	0.349	0.89	1.00	0.391	No
756	49.63	2.99	1.27	1.73	0.76	0.469	1.34	0.349	0.89	1.00	0.390	No
757	49.71	3.00	1.27	1.73	0.76	0.469	1.34	0.349	0.89	1.00	0.390	No
758	49.77	3.00	1.27	1.73	0.76	0.468	1.34	0.348	0.89	1.00	2.000	Yes
759	49.82	3.00	1.27	1.73	0.75	0.468	1.34	0.348	0.89	1.00	2.000	Yes
760	49.88	3.01	1.28	1.73	0.75	0.468	1.34	0.348	0.89	1.00	2.000	Yes
761	49.97	3.01	1.28	1.74	0.75	0.467	1.34	0.348	0.89	1.00	2.000	Yes
762	50.01	3.02	1.28	1.74	0.75	0.467	1.34	0.347	0.89	1.00	2.000	Yes
763	50.07	3.02	1.28	1.74	0.75	0.467	1.34	0.347	0.89	1.00	2.000	Yes
764	50.17	3.03	1.28	1.74	0.75	0.466	1.34	0.347	0.89	1.00	2.000	Yes
765	50.22	3.03	1.29	1.74	0.75	0.466	1.34	0.347	0.89	1.00	2.000	Yes
766	50.29	3.03	1.29	1.75	0.75	0.466	1.34	0.346	0.89	1.00	2.000	Yes
767	50.37	3.04	1.29	1.75	0.75	0.465	1.34	0.346	0.89	1.00	2.000	Yes
768	50.42	3.04	1.29	1.75	0.75	0.465	1.34	0.346	0.89	1.00	2.000	Yes

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
769	50.47	3.05	1.29	1.75	0.75	0.465	1.34	0.346	0.89	1.00	2.000	No
770	50.57	3.05	1.30	1.76	0.75	0.464	1.34	0.345	0.89	1.00	2.000	No
771	50.63	3.06	1.30	1.76	0.75	0.464	1.34	0.345	0.89	1.00	2.000	No
772	50.68	3.06	1.30	1.76	0.75	0.464	1.34	0.345	0.89	1.00	2.000	No
773	50.73	3.06	1.30	1.76	0.75	0.463	1.34	0.345	0.89	1.00	2.000	No
774	50.79	3.07	1.30	1.76	0.74	0.463	1.34	0.344	0.89	1.00	2.000	No
775	50.88	3.07	1.31	1.77	0.74	0.463	1.34	0.344	0.89	1.00	2.000	No
776	50.93	3.07	1.31	1.77	0.74	0.462	1.34	0.344	0.89	1.00	2.000	No
777	51.03	3.08	1.31	1.77	0.74	0.462	1.34	0.344	0.89	1.00	2.000	No
778	51.07	3.08	1.31	1.77	0.74	0.462	1.34	0.343	0.89	1.00	2.000	No
779	51.14	3.09	1.31	1.77	0.74	0.461	1.34	0.343	0.89	1.00	2.000	No
780	51.23	3.09	1.32	1.77	0.74	0.461	1.34	0.343	0.89	1.00	2.000	No
781	51.27	3.09	1.32	1.78	0.74	0.461	1.34	0.343	0.89	1.00	2.000	No
782	51.33	3.10	1.32	1.78	0.74	0.461	1.34	0.343	0.89	1.00	2.000	No
783	51.42	3.10	1.32	1.78	0.74	0.460	1.34	0.342	0.89	1.00	2.000	No
784	51.48	3.11	1.33	1.78	0.74	0.460	1.34	0.342	0.89	1.00	2.000	No
785	51.52	3.11	1.33	1.78	0.74	0.460	1.34	0.342	0.89	1.00	2.000	No
786	51.60	3.11	1.33	1.78	0.74	0.459	1.34	0.342	0.89	1.00	2.000	No
787	51.68	3.12	1.33	1.79	0.74	0.459	1.34	0.341	0.89	1.00	2.000	No
788	51.72	3.12	1.33	1.79	0.74	0.459	1.34	0.341	0.89	1.00	2.000	No
789	51.81	3.12	1.34	1.79	0.73	0.459	1.34	0.341	0.89	1.00	2.000	No
790	51.87	3.13	1.34	1.79	0.73	0.458	1.34	0.341	0.89	1.00	2.000	No
791	51.91	3.13	1.34	1.79	0.73	0.458	1.34	0.341	0.89	1.00	2.000	No
792	51.98	3.13	1.34	1.79	0.73	0.458	1.34	0.340	0.89	1.00	2.000	No
793	52.07	3.14	1.34	1.80	0.73	0.457	1.34	0.340	0.89	1.00	2.000	No
794	52.10	3.14	1.34	1.80	0.73	0.457	1.34	0.340	0.89	1.00	2.000	No
795	52.17	3.15	1.35	1.80	0.73	0.457	1.34	0.340	0.89	1.00	2.000	No
796	52.24	3.15	1.35	1.80	0.73	0.457	1.34	0.340	0.88	1.00	2.000	No
797	52.31	3.15	1.35	1.80	0.73	0.456	1.34	0.339	0.88	1.00	2.000	No
798	52.37	3.16	1.35	1.80	0.73	0.456	1.34	0.339	0.88	1.00	2.000	No
799	52.46	3.16	1.36	1.81	0.73	0.456	1.34	0.339	0.88	1.00	2.000	No
800	52.51	3.16	1.36	1.81	0.73	0.455	1.34	0.339	0.88	1.00	2.000	No
801	52.57	3.17	1.36	1.81	0.73	0.455	1.34	0.339	0.88	1.00	2.000	No
802	52.66	3.17	1.36	1.81	0.73	0.455	1.34	0.338	0.88	1.00	2.000	No
803	52.71	3.18	1.36	1.81	0.73	0.455	1.34	0.338	0.88	1.00	2.000	No
804	52.78	3.18	1.37	1.81	0.72	0.454	1.34	0.338	0.88	1.00	2.000	No
805	52.86	3.18	1.37	1.81	0.72	0.454	1.34	0.338	0.88	1.00	2.000	No
806	52.91	3.19	1.37	1.82	0.72	0.454	1.34	0.337	0.88	1.00	2.000	No
807	52.99	3.19	1.37	1.82	0.72	0.453	1.34	0.337	0.88	1.00	2.000	No
808	53.06	3.19	1.37	1.82	0.72	0.453	1.34	0.337	0.88	1.00	2.000	No
809	53.09	3.20	1.38	1.82	0.72	0.453	1.34	0.337	0.88	1.00	2.000	No
810	53.16	3.20	1.38	1.82	0.72	0.453	1.34	0.337	0.88	1.00	2.000	No
811	53.25	3.20	1.38	1.82	0.72	0.452	1.34	0.336	0.88	1.00	2.000	No
812	53.29	3.21	1.38	1.82	0.72	0.452	1.34	0.336	0.88	1.00	2.000	No
813	53.36	3.21	1.38	1.83	0.72	0.452	1.34	0.336	0.88	1.00	2.000	No
814	53.45	3.22	1.39	1.83	0.72	0.452	1.34	0.336	0.88	1.00	2.000	No
815	53.50	3.22	1.39	1.83	0.72	0.451	1.34	0.336	0.88	1.00	2.000	No
816	53.55	3.22	1.39	1.83	0.72	0.451	1.34	0.336	0.88	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
817	53.64	3.23	1.39	1.83	0.72	0.451	1.34	0.335	0.88	1.00	2.000	No
818	53.69	3.23	1.39	1.83	0.72	0.451	1.34	0.335	0.88	1.00	2.000	No
819	53.76	3.23	1.40	1.84	0.72	0.450	1.34	0.335	0.88	1.00	2.000	No
820	53.84	3.24	1.40	1.84	0.71	0.450	1.34	0.335	0.88	1.00	2.000	No
821	53.88	3.24	1.40	1.84	0.71	0.450	1.34	0.334	0.88	1.00	2.000	No
822	53.96	3.24	1.40	1.84	0.71	0.449	1.34	0.334	0.88	1.00	2.000	No
823	54.03	3.25	1.40	1.84	0.71	0.449	1.34	0.334	0.88	1.00	2.000	No
824	54.08	3.25	1.41	1.84	0.71	0.449	1.34	0.334	0.88	1.00	2.000	No
825	54.17	3.25	1.41	1.84	0.71	0.449	1.34	0.334	0.88	1.00	2.000	No
826	54.23	3.26	1.41	1.85	0.71	0.448	1.34	0.333	0.88	1.00	2.000	No
827	54.27	3.26	1.41	1.85	0.71	0.448	1.34	0.333	0.88	1.00	2.000	No
828	54.38	3.27	1.42	1.85	0.71	0.448	1.34	0.333	0.88	1.00	2.000	No
829	54.42	3.27	1.42	1.85	0.71	0.447	1.34	0.333	0.88	1.00	2.000	No
830	54.47	3.27	1.42	1.85	0.71	0.447	1.34	0.333	0.88	1.00	2.000	No
831	54.53	3.27	1.42	1.85	0.71	0.447	1.34	0.332	0.88	1.00	2.000	No
832	54.61	3.28	1.42	1.85	0.71	0.447	1.34	0.332	0.88	1.00	2.000	No
833	54.68	3.28	1.43	1.86	0.71	0.446	1.34	0.332	0.88	1.00	2.000	No
834	54.73	3.28	1.43	1.86	0.71	0.446	1.34	0.332	0.88	1.00	2.000	No
835	54.80	3.29	1.43	1.86	0.71	0.446	1.34	0.332	0.88	1.00	2.000	No
836	54.88	3.29	1.43	1.86	0.70	0.446	1.34	0.331	0.88	1.00	2.000	No
837	54.95	3.30	1.43	1.86	0.70	0.445	1.34	0.331	0.88	1.00	2.000	No
838	55.02	3.30	1.44	1.86	0.70	0.445	1.34	0.331	0.88	1.00	2.000	No
839	55.07	3.30	1.44	1.87	0.70	0.445	1.34	0.331	0.88	1.00	2.000	No
840	55.15	3.31	1.44	1.87	0.70	0.444	1.34	0.331	0.88	1.00	2.000	No
841	55.21	3.31	1.44	1.87	0.70	0.444	1.34	0.330	0.88	1.00	2.000	No
842	55.27	3.31	1.44	1.87	0.70	0.444	1.34	0.330	0.88	1.00	2.000	No
843	55.34	3.32	1.45	1.87	0.70	0.444	1.34	0.330	0.88	1.00	2.000	No
844	55.42	3.32	1.45	1.87	0.70	0.443	1.34	0.330	0.88	1.00	2.000	No
845	55.47	3.32	1.45	1.87	0.70	0.443	1.34	0.330	0.88	1.00	2.000	No
846	55.54	3.33	1.45	1.88	0.70	0.443	1.34	0.329	0.88	1.00	2.000	No
847	55.62	3.33	1.45	1.88	0.70	0.442	1.34	0.329	0.88	1.00	2.000	No
848	55.65	3.33	1.46	1.88	0.70	0.442	1.34	0.329	0.88	1.00	2.000	No
849	55.72	3.34	1.46	1.88	0.70	0.442	1.34	0.329	0.88	1.00	2.000	No
850	55.81	3.34	1.46	1.88	0.70	0.442	1.34	0.328	0.88	1.00	2.000	No
851	55.84	3.35	1.46	1.88	0.70	0.442	1.34	0.328	0.88	1.00	2.000	No
852	55.91	3.35	1.46	1.89	0.69	0.441	1.34	0.328	0.88	1.00	2.000	No
853	55.98	3.35	1.47	1.89	0.69	0.441	1.34	0.328	0.88	1.00	2.000	No
854	56.05	3.36	1.47	1.89	0.69	0.441	1.34	0.328	0.88	1.00	2.000	Yes
855	56.11	3.36	1.47	1.89	0.69	0.440	1.34	0.328	0.88	1.00	2.000	Yes
856	56.21	3.37	1.47	1.89	0.69	0.440	1.34	0.327	0.87	1.00	2.000	Yes
857	56.26	3.37	1.47	1.89	0.69	0.440	1.34	0.327	0.87	1.00	2.000	Yes
858	56.31	3.37	1.48	1.90	0.69	0.439	1.34	0.327	0.87	1.00	2.000	Yes
859	56.39	3.38	1.48	1.90	0.69	0.439	1.34	0.327	0.87	1.00	2.000	Yes
860	56.46	3.38	1.48	1.90	0.69	0.439	1.34	0.326	0.87	1.00	2.000	Yes
861	56.50	3.38	1.48	1.90	0.69	0.439	1.34	0.326	0.87	1.00	2.000	Yes
862	56.60	3.39	1.49	1.91	0.69	0.438	1.34	0.326	0.87	1.00	2.000	Yes
863	56.65	3.39	1.49	1.91	0.69	0.438	1.34	0.326	0.87	1.00	2.000	Yes
864	56.72	3.40	1.49	1.91	0.69	0.437	1.34	0.325	0.87	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
865	56.78	3.40	1.49	1.91	0.69	0.437	1.34	0.325	0.87	1.00	2.000	No
866	56.87	3.41	1.49	1.91	0.69	0.437	1.34	0.325	0.87	1.00	2.000	Yes
867	56.93	3.41	1.50	1.92	0.69	0.436	1.34	0.325	0.87	1.00	2.000	Yes
868	56.97	3.41	1.50	1.92	0.69	0.436	1.34	0.324	0.87	1.00	2.000	Yes
869	57.05	3.42	1.50	1.92	0.68	0.436	1.34	0.324	0.87	1.00	2.000	Yes
870	57.11	3.42	1.50	1.92	0.68	0.436	1.34	0.324	0.87	1.00	2.000	Yes
871	57.17	3.43	1.50	1.92	0.68	0.435	1.34	0.324	0.87	1.00	2.000	Yes
872	57.25	3.43	1.51	1.93	0.68	0.435	1.34	0.323	0.87	1.00	2.000	Yes
873	57.31	3.43	1.51	1.93	0.68	0.435	1.34	0.323	0.87	1.00	2.000	Yes
874	57.37	3.44	1.51	1.93	0.68	0.434	1.34	0.323	0.87	1.00	2.000	Yes
875	57.42	3.44	1.51	1.93	0.68	0.434	1.34	0.323	0.87	1.00	2.000	Yes
876	57.48	3.44	1.51	1.93	0.68	0.434	1.34	0.323	0.87	1.00	2.000	Yes
877	57.56	3.45	1.52	1.93	0.68	0.433	1.34	0.322	0.87	1.00	2.000	No
878	57.64	3.45	1.52	1.94	0.68	0.433	1.34	0.322	0.87	1.00	2.000	No
879	57.70	3.46	1.52	1.94	0.68	0.433	1.34	0.322	0.87	1.00	2.000	No
880	57.74	3.46	1.52	1.94	0.68	0.433	1.34	0.322	0.87	1.00	2.000	No
881	57.81	3.46	1.52	1.94	0.68	0.432	1.34	0.322	0.87	1.00	2.000	No
882	57.90	3.47	1.53	1.94	0.68	0.432	1.34	0.321	0.87	1.00	2.000	No
883	57.95	3.47	1.53	1.94	0.68	0.432	1.34	0.321	0.87	1.00	2.000	No
884	58.06	3.48	1.53	1.95	0.68	0.431	1.34	0.321	0.87	1.00	2.000	No
885	58.09	3.48	1.53	1.95	0.68	0.431	1.34	0.321	0.87	1.00	2.000	No
886	58.15	3.48	1.53	1.95	0.67	0.431	1.34	0.321	0.87	1.00	2.000	No
887	58.20	3.49	1.54	1.95	0.67	0.431	1.34	0.320	0.87	1.00	2.000	No
888	58.29	3.49	1.54	1.95	0.67	0.430	1.34	0.320	0.87	1.00	2.000	No
889	58.33	3.49	1.54	1.95	0.67	0.430	1.34	0.320	0.87	1.00	2.000	No
890	58.40	3.50	1.54	1.96	0.67	0.430	1.34	0.320	0.87	1.00	2.000	No
891	58.48	3.50	1.54	1.96	0.67	0.430	1.34	0.320	0.87	1.00	2.000	No
892	58.55	3.51	1.55	1.96	0.67	0.429	1.34	0.319	0.87	1.00	2.000	No
893	58.60	3.51	1.55	1.96	0.67	0.429	1.34	0.319	0.87	1.00	2.000	No
894	58.66	3.51	1.55	1.96	0.67	0.429	1.34	0.319	0.87	1.00	2.000	No
895	58.75	3.52	1.55	1.96	0.67	0.429	1.34	0.319	0.87	1.00	2.000	No
896	58.80	3.52	1.55	1.97	0.67	0.428	1.34	0.319	0.87	1.00	2.000	No
897	58.88	3.52	1.56	1.97	0.67	0.428	1.34	0.318	0.87	1.00	2.000	No
898	58.97	3.53	1.56	1.97	0.67	0.428	1.34	0.318	0.87	1.00	2.000	No
899	59.02	3.53	1.56	1.97	0.67	0.427	1.34	0.318	0.87	1.00	2.000	No
900	59.06	3.53	1.56	1.97	0.67	0.427	1.34	0.318	0.87	1.00	2.000	No
901	59.12	3.54	1.56	1.97	0.67	0.427	1.34	0.318	0.87	1.00	2.000	No
902	59.20	3.54	1.57	1.98	0.67	0.427	1.34	0.317	0.87	1.00	2.000	No
903	59.26	3.55	1.57	1.98	0.67	0.427	1.34	0.317	0.87	1.00	2.000	No
904	59.35	3.55	1.57	1.98	0.66	0.426	1.34	0.317	0.87	1.00	2.000	No
905	59.41	3.55	1.57	1.98	0.66	0.426	1.34	0.317	0.87	1.00	2.000	No
906	59.46	3.56	1.57	1.98	0.66	0.426	1.34	0.317	0.87	1.00	2.000	No
907	59.52	3.56	1.58	1.98	0.66	0.426	1.34	0.316	0.87	1.00	2.000	No
908	59.61	3.56	1.58	1.99	0.66	0.425	1.34	0.316	0.87	1.00	2.000	No
909	59.68	3.57	1.58	1.99	0.66	0.425	1.34	0.316	0.87	1.00	2.000	No
910	59.72	3.57	1.58	1.99	0.66	0.425	1.34	0.316	0.86	1.00	2.000	No
911	59.79	3.57	1.58	1.99	0.66	0.424	1.34	0.316	0.86	1.00	2.000	No
912	59.86	3.58	1.59	1.99	0.66	0.424	1.34	0.315	0.86	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
913	59.91	3.58	1.59	1.99	0.66	0.424	1.34	0.315	0.86	1.00	2.000	No
914	60.01	3.59	1.59	2.00	0.66	0.424	1.34	0.315	0.86	1.00	2.000	Yes
915	60.06	3.59	1.59	2.00	0.66	0.423	1.34	0.315	0.86	1.00	2.000	Yes
916	60.15	3.59	1.60	2.00	0.66	0.423	1.34	0.315	0.86	1.00	2.000	Yes
917	60.19	3.60	1.60	2.00	0.66	0.423	1.34	0.315	0.86	1.00	2.000	Yes
918	60.26	3.60	1.60	2.00	0.66	0.423	1.34	0.314	0.86	1.00	2.000	Yes
919	60.35	3.60	1.60	2.00	0.66	0.422	1.34	0.314	0.86	1.00	2.000	Yes
920	60.40	3.61	1.60	2.00	0.66	0.422	1.34	0.314	0.86	1.00	2.000	Yes
921	60.45	3.61	1.61	2.00	0.66	0.422	1.34	0.314	0.86	1.00	2.000	No
922	60.51	3.61	1.61	2.00	0.66	0.422	1.34	0.314	0.86	1.00	2.000	No

Abbreviations

Depth: Depth from free surface, at which CPT was performed (ft)
σ_v: Total overburden pressure at test point (tsf)
u_0: Water pressure at test point (tsf)
σ_v': Effective overburden pressure based on GWT during earthquake (tsf)
r_d: Nonlinear shear mass factor
CSR: Cyclic Stress Ratio
MSF: Magnitude Scaling Factor
CSR_{eq}: CSR adjusted for M=7.5
K_σ: Effective overburden stress factor
CSR^*: CSR fully adjusted

:: Cyclic Resistance Ratio (CRR) calculation data ::

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
1	0.09	83.15	1.64	0.51	0.50	133.58	1.00	133.58	4.000	No	No	2.00
2	0.15	124.45	1.44	0.42	0.50	199.93	1.00	199.93	4.000	No	No	2.00
3	0.21	164.56	1.32	0.38	0.50	264.38	1.00	264.38	4.000	No	No	2.00
4	0.29	173.53	1.35	0.45	0.50	278.77	1.00	278.77	4.000	No	No	2.00
5	0.34	170.25	1.40	0.54	0.50	273.50	1.00	273.50	4.000	No	No	2.00
6	0.40	184.41	1.41	0.60	0.50	296.24	1.00	296.24	4.000	No	No	2.00
7	0.49	188.56	1.45	0.69	0.50	302.90	1.00	302.90	4.000	No	No	2.00
8	0.55	179.22	1.52	0.83	0.50	287.88	1.00	287.88	4.000	No	No	2.00
9	0.59	162.51	1.62	1.03	0.50	261.04	1.00	261.04	4.000	No	No	2.00
10	0.69	150.33	1.70	1.23	0.52	241.46	1.04	250.82	4.000	No	No	2.00
11	0.74	137.32	1.79	1.46	0.56	220.54	1.10	241.72	4.000	No	No	2.00
12	0.81	123.76	1.87	1.75	0.59	198.76	1.16	231.55	4.000	No	No	2.00
13	0.89	110.59	1.96	2.08	0.62	177.58	1.26	222.96	4.000	No	No	2.00
14	0.94	98.81	2.04	2.39	0.65	158.66	1.36	215.26	4.000	No	No	2.00
15	0.99	93.80	2.07	2.52	0.67	150.60	1.41	212.11	4.000	No	No	2.00
16	1.09	92.09	2.09	2.58	0.67	147.85	1.43	211.59	4.000	No	No	2.00
17	1.14	92.39	2.09	2.62	0.67	148.32	1.44	213.14	4.000	No	No	2.00
18	1.19	97.81	2.06	2.52	0.66	157.02	1.39	218.13	4.000	No	No	2.00
19	1.26	98.76	2.06	2.52	0.66	158.55	1.39	219.88	4.000	No	No	2.00
20	1.34	98.49	2.06	2.54	0.66	158.11	1.39	220.12	4.000	No	No	2.00
21	1.38	98.38	2.06	2.55	0.66	157.93	1.39	220.09	4.000	No	No	2.00
22	1.50	97.02	2.07	2.56	0.66	155.72	1.40	218.45	4.000	No	No	2.00
23	1.53	94.55	2.08	2.59	0.67	151.75	1.42	215.48	4.000	No	No	2.00
24	1.59	90.36	2.10	2.68	0.68	145.01	1.46	212.18	4.000	No	No	2.00
25	1.68	85.92	2.13	2.78	0.69	137.87	1.51	208.71	4.000	No	No	2.00
26	1.72	81.17	2.16	2.90	0.70	130.24	1.57	205.01	4.000	No	No	2.00
27	1.78	75.44	2.20	3.09	0.71	121.02	1.67	202.37	4.000	No	No	2.00
28	1.87	69.69	2.25	3.34	0.73	111.77	1.80	200.88	4.000	No	No	2.00
29	1.93	67.42	2.27	3.45	0.74	108.12	1.86	200.61	4.000	No	No	2.00
30	1.98	64.42	2.29	3.53	0.75	103.29	1.92	198.19	4.000	No	No	2.00
31	2.06	62.68	2.30	3.52	0.75	100.50	1.94	194.72	4.000	No	No	2.00
32	2.13	63.84	2.28	3.45	0.75	102.35	1.90	194.57	4.000	No	No	2.00
33	2.17	67.39	2.25	3.27	0.73	108.06	1.80	194.87	4.000	No	No	2.00
34	2.28	70.26	2.23	3.13	0.72	112.65	1.73	195.27	4.000	No	No	2.00
35	2.32	72.12	2.21	3.04	0.72	115.64	1.69	195.38	4.000	No	No	2.00
36	2.39	71.08	2.21	2.98	0.72	113.95	1.68	191.64	4.000	No	No	2.00
37	2.43	72.10	2.18	2.78	0.71	115.59	1.62	187.09	4.000	No	No	2.00
38	2.52	70.92	2.17	2.64	0.70	113.69	1.59	180.76	4.000	No	No	2.00
39	2.57	69.46	2.16	2.57	0.70	111.34	1.58	176.14	4.000	No	No	2.00
40	2.66	68.27	2.16	2.54	0.70	109.41	1.58	173.38	4.000	No	No	2.00
41	2.69	64.80	2.19	2.61	0.71	103.84	1.64	170.20	4.000	No	No	2.00
42	2.77	59.92	2.23	2.74	0.72	95.98	1.74	166.69	4.000	No	No	2.00
43	2.86	55.44	2.27	2.87	0.74	88.78	1.84	163.61	4.000	No	No	2.00
44	2.92	51.45	2.30	3.03	0.75	82.36	1.96	161.82	4.000	No	No	2.00
45	2.96	48.19	2.34	3.19	0.77	77.12	2.08	160.64	4.000	No	No	2.00
46	3.06	46.08	2.36	3.25	0.77	73.72	2.15	158.82	4.000	No	No	2.00
47	3.11	46.45	2.34	3.13	0.77	74.31	2.10	156.09	4.000	No	No	2.00
48	3.15	48.40	2.30	2.86	0.75	77.45	1.96	152.07	4.000	No	No	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
49	3.26	54.10	2.22	2.43	0.72	86.58	1.72	148.68	4.000	No	No	2.00
50	3.30	60.61	2.13	2.05	0.69	97.05	1.52	147.19	4.000	No	No	2.00
51	3.37	68.26	2.04	1.71	0.65	109.33	1.36	148.15	4.000	No	No	2.00
52	3.46	73.99	1.98	1.51	0.63	118.52	1.27	150.56	4.000	No	No	2.00
53	3.51	77.79	1.93	1.38	0.61	124.63	1.22	152.41	4.000	No	No	2.00
54	3.56	80.79	1.91	1.33	0.60	129.44	1.20	155.05	4.000	No	No	2.00
55	3.64	81.12	1.91	1.35	0.60	129.96	1.20	156.20	4.000	Yes	No	2.00
56	3.71	79.43	1.94	1.44	0.61	127.24	1.23	156.34	4.000	Yes	No	2.00
57	3.76	75.75	1.99	1.60	0.63	121.33	1.28	155.78	4.000	Yes	No	2.00
58	3.81	67.08	2.07	1.87	0.66	107.39	1.41	151.01	4.000	Yes	No	2.00
59	3.90	57.38	2.17	2.22	0.70	91.80	1.61	147.39	4.000	Yes	No	2.00
60	3.94	47.30	2.30	2.74	0.75	75.59	1.94	146.95	4.000	Yes	No	2.00
61	4.01	40.10	2.39	3.17	0.79	64.02	2.29	146.35	4.000	Yes	No	2.00
62	4.09	35.01	2.46	3.45	0.81	55.83	2.58	144.12	4.000	Yes	No	2.00
63	4.15	30.51	2.52	3.68	0.84	48.60	2.89	140.47	4.000	Yes	No	2.00
64	4.20	27.97	2.55	3.69	0.85	44.51	3.04	135.41	4.000	Yes	No	2.00
65	4.30	25.89	2.57	3.63	0.85	41.16	3.15	129.86	4.000	No	No	2.00
66	4.35	24.02	2.59	3.54	0.86	38.16	3.25	124.00	4.000	No	No	2.00
67	4.41	23.02	2.59	3.44	0.86	36.55	3.28	119.96	4.000	No	No	2.00
68	4.50	22.67	2.58	3.29	0.86	35.97	3.24	116.38	4.000	No	No	2.00
69	4.55	22.29	2.58	3.16	0.86	35.36	3.20	113.01	4.000	No	No	2.00
70	4.60	21.44	2.60	3.20	0.86	33.98	3.30	112.03	4.000	No	No	2.00
71	4.68	20.60	2.62	3.30	0.87	32.64	3.43	112.02	4.000	No	Yes	2.00
72	4.75	19.97	2.64	3.40	0.88	31.62	3.56	112.48	4.000	No	Yes	2.00
73	4.79	19.55	2.65	3.52	0.89	30.93	3.67	113.38	4.000	No	Yes	2.00
74	4.88	19.20	2.67	3.63	0.89	30.36	3.77	114.53	4.000	No	Yes	2.00
75	4.95	18.93	2.68	3.75	0.90	29.93	3.87	115.81	4.000	No	Yes	2.00
76	4.99	18.80	2.69	3.86	0.90	29.71	3.94	117.17	4.000	No	Yes	2.00
77	5.06	18.75	2.70	3.97	0.90	29.62	4.01	118.85	4.000	No	Yes	2.00
78	5.14	18.72	2.71	4.09	0.91	29.57	4.08	120.60	4.000	No	Yes	2.00
79	5.21	18.75	2.72	4.18	0.91	29.61	4.13	122.18	4.000	No	Yes	2.00
80	5.26	18.80	2.72	4.25	0.91	29.69	4.16	123.37	4.000	No	Yes	2.00
81	5.33	18.79	2.73	4.33	0.91	29.66	4.20	124.49	4.000	No	Yes	2.00
82	5.40	18.78	2.73	4.38	0.92	29.64	4.23	125.33	4.000	No	Yes	2.00
83	5.45	18.77	2.74	4.44	0.92	29.62	4.26	126.17	4.000	No	Yes	2.00
84	5.51	18.82	2.74	4.48	0.92	29.70	4.28	126.96	4.000	No	Yes	2.00
85	5.60	18.84	2.74	4.53	0.92	29.73	4.30	127.68	4.000	No	Yes	2.00
86	5.66	18.86	2.74	4.56	0.92	29.74	4.31	128.22	4.000	No	Yes	2.00
87	5.71	18.80	2.75	4.60	0.92	29.64	4.34	128.62	4.000	No	Yes	2.00
88	5.78	18.67	2.75	4.65	0.92	29.43	4.38	128.99	4.000	No	Yes	2.00
89	5.86	18.48	2.76	4.70	0.93	29.12	4.44	129.14	4.000	No	Yes	2.00
90	5.93	18.26	2.76	4.74	0.93	28.76	4.48	128.94	4.000	No	Yes	2.00
91	6.01	18.01	2.77	4.76	0.93	28.35	4.53	128.49	4.000	No	Yes	2.00
92	6.05	17.70	2.78	4.77	0.93	27.84	4.58	127.63	4.000	No	Yes	2.00
93	6.11	17.27	2.78	4.78	0.94	27.15	4.66	126.38	4.000	No	Yes	2.00
94	6.21	16.76	2.80	4.80	0.94	26.33	4.75	124.99	4.000	No	Yes	2.00
95	6.25	16.19	2.81	4.83	0.95	25.40	4.86	123.43	4.000	No	Yes	2.00
96	6.31	15.61	2.82	4.86	0.95	24.47	4.98	121.84	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
97	6.39	15.07	2.84	4.87	0.96	23.59	5.09	120.11	4.000	No	Yes	2.00
98	6.45	14.58	2.85	4.89	0.96	22.80	5.20	118.49	4.000	No	Yes	2.00
99	6.51	14.21	2.85	4.87	0.96	22.19	5.27	116.87	4.000	No	Yes	2.00
100	6.58	13.86	2.86	4.86	0.97	21.62	5.34	115.50	4.000	No	Yes	2.00
101	6.66	13.60	2.87	4.85	0.97	21.20	5.39	114.37	4.000	No	Yes	2.00
102	6.70	13.50	2.87	4.80	0.97	21.04	5.39	113.43	4.000	No	Yes	2.00
103	6.78	13.46	2.87	4.75	0.97	20.96	5.37	112.65	4.000	No	Yes	2.00
104	6.85	13.51	2.86	4.68	0.96	21.03	5.32	111.91	4.000	No	Yes	2.00
105	6.89	13.63	2.85	4.57	0.96	21.23	5.23	111.13	4.000	No	Yes	2.00
106	7.00	13.83	2.84	4.47	0.96	21.54	5.13	110.50	4.000	No	Yes	2.00
107	7.03	14.14	2.82	4.34	0.95	22.03	4.99	109.89	4.000	No	Yes	2.00
108	7.10	14.46	2.81	4.21	0.94	22.55	4.85	109.37	4.000	No	Yes	2.00
109	7.19	14.88	2.79	4.07	0.94	23.20	4.69	108.77	4.000	No	Yes	2.00
110	7.25	15.30	2.77	3.95	0.93	23.88	4.54	108.37	4.000	No	Yes	2.00
111	7.30	15.72	2.76	3.86	0.92	24.55	4.42	108.39	4.000	No	Yes	2.00
112	7.37	16.17	2.74	3.79	0.92	25.27	4.30	108.69	4.000	No	Yes	2.00
113	7.44	16.57	2.73	3.76	0.92	25.90	4.22	109.23	4.000	No	Yes	2.00
114	7.49	16.84	2.72	3.76	0.91	26.33	4.18	109.96	4.000	No	Yes	2.00
115	7.56	17.03	2.72	3.74	0.91	26.64	4.14	110.23	4.000	No	Yes	2.00
116	7.64	17.06	2.72	3.72	0.91	26.68	4.12	110.01	4.000	No	Yes	2.00
117	7.68	16.96	2.72	3.78	0.91	26.52	4.17	110.59	4.000	No	Yes	2.00
118	7.79	16.74	2.73	3.86	0.92	26.14	4.25	111.18	4.000	No	Yes	2.00
119	7.83	16.45	2.75	3.93	0.92	25.67	4.34	111.39	4.000	No	Yes	2.00
120	7.90	16.04	2.76	4.00	0.93	25.01	4.45	111.18	4.000	No	Yes	2.00
121	7.98	15.56	2.77	4.04	0.93	24.23	4.56	110.40	4.000	No	Yes	2.00
122	8.02	15.03	2.79	4.09	0.94	23.37	4.68	109.33	4.000	No	Yes	2.00
123	8.09	14.64	2.80	4.08	0.94	22.74	4.75	108.03	4.000	No	Yes	2.00
124	8.15	14.30	2.80	4.09	0.94	22.19	4.83	107.10	4.000	No	Yes	2.00
125	8.23	14.13	2.81	4.11	0.95	21.91	4.87	106.69	4.000	No	Yes	2.00
126	8.29	14.15	2.80	4.02	0.94	21.94	4.81	105.61	4.000	No	Yes	2.00
127	8.34	14.26	2.79	3.91	0.94	22.11	4.72	104.46	4.000	No	Yes	2.00
128	8.41	14.46	2.78	3.80	0.93	22.43	4.62	103.67	4.000	No	Yes	2.00
129	8.48	14.80	2.76	3.69	0.93	22.96	4.49	103.11	4.000	No	Yes	2.00
130	8.55	15.24	2.75	3.59	0.92	23.66	4.35	102.91	4.000	No	Yes	2.00
131	8.60	15.79	2.73	3.49	0.91	24.55	4.19	102.94	4.000	No	Yes	2.00
132	8.66	16.33	2.71	3.41	0.91	25.40	4.06	103.10	4.000	No	Yes	2.00
133	8.74	16.89	2.69	3.35	0.90	26.31	3.94	103.55	4.000	No	Yes	2.00
134	8.83	17.43	2.68	3.33	0.90	27.16	3.85	104.55	4.000	No	Yes	2.00
135	8.90	17.91	2.67	3.33	0.89	27.92	3.79	105.79	4.000	No	Yes	2.00
136	8.94	18.32	2.67	3.35	0.89	28.58	3.75	107.17	4.000	No	Yes	2.00
137	9.01	18.66	2.66	3.40	0.89	29.11	3.74	108.78	4.000	No	Yes	2.00
138	9.09	18.90	2.66	3.47	0.89	29.50	3.74	110.44	4.000	No	Yes	2.00
139	9.15	19.06	2.67	3.55	0.89	29.75	3.77	112.13	4.000	No	Yes	2.00
140	9.20	19.18	2.67	3.64	0.89	29.93	3.81	113.94	4.000	No	Yes	2.00
141	9.29	19.30	2.68	3.74	0.90	30.11	3.85	115.92	4.000	No	Yes	2.00
142	9.35	19.43	2.68	3.84	0.90	30.33	3.89	117.85	4.000	No	Yes	2.00
143	9.39	19.54	2.69	3.90	0.90	30.50	3.91	119.21	4.000	No	Yes	2.00
144	9.45	19.66	2.69	3.94	0.90	30.68	3.92	120.17	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
145	9.55	19.97	2.68	3.94	0.90	31.17	3.88	120.89	4.000	No	Yes	2.00
146	9.64	20.38	2.67	3.91	0.89	31.83	3.81	121.43	4.000	No	Yes	2.00
147	9.65	20.91	2.66	3.86	0.89	32.67	3.73	121.97	4.000	No	Yes	2.00
148	9.73	21.47	2.65	3.81	0.88	33.57	3.65	122.48	4.000	No	Yes	2.00
149	9.79	21.98	2.64	3.78	0.88	34.31	3.59	123.03	4.000	No	Yes	2.00
150	9.84	22.46	2.63	3.73	0.88	34.86	3.53	122.99	4.000	No	Yes	2.00
151	9.91	22.88	2.62	3.68	0.88	35.24	3.48	122.67	4.000	No	Yes	2.00
152	9.99	23.25	2.62	3.64	0.87	35.53	3.44	122.26	4.000	No	Yes	2.00
153	10.08	23.63	2.61	3.58	0.87	35.78	3.40	121.63	4.000	No	Yes	2.00
154	10.14	23.82	2.61	3.56	0.87	35.88	3.38	121.31	4.000	No	Yes	2.00
155	10.19	23.87	2.61	3.54	0.87	35.79	3.38	120.88	4.000	No	Yes	2.00
156	10.25	23.88	2.61	3.52	0.87	35.62	3.38	120.28	4.000	No	Yes	2.00
157	10.34	23.79	2.61	3.52	0.87	35.24	3.40	119.75	4.000	No	Yes	2.00
158	10.38	23.82	2.61	3.50	0.87	35.15	3.39	119.11	4.000	No	Yes	2.00
159	10.44	23.92	2.61	3.45	0.87	35.10	3.37	118.25	4.000	No	Yes	2.00
160	10.52	23.94	2.60	3.41	0.87	34.89	3.36	117.11	4.000	No	Yes	2.00
161	10.59	23.96	2.60	3.37	0.87	34.70	3.35	116.11	4.000	No	Yes	2.00
162	10.63	23.88	2.60	3.36	0.87	34.48	3.35	115.67	4.000	No	Yes	2.00
163	10.70	23.75	2.61	3.35	0.87	34.11	3.37	115.08	4.000	No	Yes	2.00
164	10.78	23.71	2.61	3.34	0.87	33.84	3.38	114.48	4.000	No	Yes	2.00
165	10.87	24.05	2.60	3.30	0.87	34.05	3.35	114.07	4.000	No	Yes	2.00
166	10.93	24.68	2.59	3.22	0.86	34.72	3.27	113.43	0.216	No	No	0.75
167	10.97	25.09	2.58	3.19	0.86	35.14	3.22	113.33	0.215	No	No	0.75
168	11.03	25.34	2.58	3.21	0.86	35.34	3.23	114.00	0.218	No	No	0.76
169	11.12	25.57	2.59	3.26	0.86	35.43	3.25	115.11	0.222	No	No	0.77
170	11.16	26.10	2.58	3.28	0.86	36.05	3.22	116.20	0.226	No	No	0.78
171	11.23	26.69	2.58	3.28	0.86	36.65	3.20	117.14	0.229	No	No	0.79
172	11.31	27.32	2.57	3.30	0.86	37.28	3.17	118.24	0.234	No	No	0.80
173	11.37	28.14	2.57	3.30	0.85	38.20	3.13	119.49	0.239	No	No	0.82
174	11.44	28.65	2.57	3.34	0.85	38.70	3.12	120.91	0.244	No	No	0.84
175	11.51	28.96	2.57	3.40	0.85	38.94	3.14	122.45	0.251	No	No	0.86
176	11.56	29.46	2.57	3.42	0.85	39.47	3.13	123.56	0.255	No	No	0.87
177	11.63	29.97	2.56	3.43	0.85	39.93	3.11	124.20	0.258	No	No	0.88
178	11.71	30.37	2.56	3.43	0.85	40.22	3.10	124.71	0.260	No	No	0.88
179	11.76	30.29	2.57	3.48	0.85	39.99	3.13	125.36	0.263	No	No	0.89
180	11.83	30.13	2.57	3.52	0.86	39.61	3.17	125.68	0.265	No	No	0.89
181	11.91	29.90	2.58	3.56	0.86	39.12	3.22	125.79	0.265	No	No	0.89
182	11.94	29.36	2.59	3.62	0.86	38.36	3.28	125.85	0.265	No	No	0.89
183	12.05	28.72	2.60	3.66	0.87	37.35	3.35	125.25	4.000	No	Yes	2.00
184	12.10	28.18	2.61	3.69	0.87	36.60	3.41	124.65	4.000	No	Yes	2.00
185	12.14	27.59	2.62	3.72	0.87	35.82	3.46	124.10	4.000	No	Yes	2.00
186	12.25	27.11	2.63	3.74	0.88	35.08	3.52	123.36	4.000	No	Yes	2.00
187	12.29	26.81	2.63	3.73	0.88	34.65	3.54	122.58	4.000	No	Yes	2.00
188	12.35	26.66	2.64	3.72	0.88	34.38	3.55	122.06	4.000	No	Yes	2.00
189	12.44	26.59	2.64	3.70	0.88	34.17	3.55	121.34	4.000	No	Yes	2.00
190	12.49	26.67	2.63	3.64	0.88	34.20	3.52	120.41	4.000	No	Yes	2.00
191	12.55	26.82	2.62	3.58	0.88	34.29	3.48	119.34	4.000	No	Yes	2.00
192	12.61	26.84	2.62	3.51	0.87	34.21	3.45	118.04	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
193	12.70	26.47	2.62	3.49	0.88	33.64	3.47	116.91	4.000	No	Yes	2.00
194	12.75	25.93	2.63	3.48	0.88	32.91	3.51	115.62	4.000	No	Yes	2.00
195	12.81	25.23	2.64	3.44	0.88	31.96	3.56	113.61	4.000	No	Yes	2.00
196	12.89	24.43	2.64	3.38	0.88	30.85	3.60	110.95	4.000	No	Yes	2.00
197	12.94	23.55	2.65	3.30	0.88	29.68	3.63	107.89	4.000	No	Yes	2.00
198	12.99	22.55	2.66	3.24	0.89	28.37	3.70	105.01	4.000	No	Yes	2.00
199	13.08	21.42	2.67	3.21	0.89	26.86	3.81	102.27	4.000	No	Yes	2.00
200	13.15	20.17	2.69	3.20	0.90	25.24	3.94	99.55	4.000	No	Yes	2.00
201	13.20	18.94	2.71	3.19	0.91	23.67	4.09	96.93	4.000	No	Yes	2.00
202	13.27	17.94	2.73	3.13	0.91	22.36	4.20	94.01	4.000	No	Yes	2.00
203	13.32	17.08	2.74	3.06	0.92	21.23	4.29	91.09	4.000	No	Yes	2.00
204	13.39	16.29	2.75	3.02	0.92	20.19	4.39	88.71	4.000	No	Yes	2.00
205	13.48	15.57	2.77	3.01	0.93	19.24	4.52	87.03	4.000	No	Yes	2.00
206	13.54	14.85	2.79	3.04	0.94	18.31	4.68	85.67	4.000	No	Yes	2.00
207	13.59	14.26	2.80	3.05	0.94	17.54	4.81	84.40	4.000	No	Yes	2.00
208	13.65	13.72	2.82	3.05	0.95	16.84	4.94	83.16	4.000	No	Yes	2.00
209	13.74	13.35	2.83	3.04	0.95	16.32	5.02	81.98	4.000	No	Yes	2.00
210	13.80	13.07	2.83	2.99	0.95	15.93	5.06	80.63	4.000	No	Yes	2.00
211	13.89	12.89	2.83	2.92	0.95	15.65	5.06	79.16	4.000	No	Yes	2.00
212	13.93	12.67	2.84	2.92	0.96	15.36	5.11	78.57	4.000	No	Yes	2.00
213	13.99	12.47	2.85	3.01	0.96	15.09	5.24	79.11	4.000	No	Yes	2.00
214	14.07	12.36	2.86	3.09	0.97	14.93	5.35	79.81	4.000	No	Yes	2.00
215	14.12	12.41	2.87	3.15	0.97	14.97	5.38	80.54	4.000	No	Yes	2.00
216	14.18	12.84	2.85	3.12	0.96	15.48	5.25	81.24	4.000	No	Yes	2.00
217	14.26	13.66	2.82	3.03	0.95	16.43	5.00	82.12	4.000	No	Yes	2.00
218	14.34	14.47	2.80	2.98	0.94	17.37	4.79	83.28	4.000	No	Yes	2.00
219	14.38	15.06	2.79	3.06	0.94	18.09	4.73	85.64	4.000	No	Yes	2.00
220	14.47	15.53	2.80	3.20	0.94	18.63	4.75	88.46	4.000	No	Yes	2.00
221	14.53	16.03	2.79	3.29	0.94	19.23	4.72	90.78	4.000	No	Yes	2.00
222	14.57	16.61	2.78	3.32	0.94	19.90	4.64	92.32	4.000	No	Yes	2.00
223	14.64	17.04	2.78	3.34	0.93	20.39	4.59	93.50	4.000	No	Yes	2.00
224	14.72	17.40	2.77	3.36	0.93	20.77	4.55	94.50	4.000	No	Yes	2.00
225	14.80	17.27	2.78	3.44	0.94	20.58	4.63	95.26	4.000	No	Yes	2.00
226	14.83	16.85	2.80	3.56	0.94	20.07	4.78	95.90	4.000	No	Yes	2.00
227	14.92	16.39	2.82	3.70	0.95	19.48	4.95	96.48	4.000	No	Yes	2.00
228	14.97	16.24	2.83	3.75	0.95	19.28	5.02	96.80	4.000	No	Yes	2.00
229	15.06	16.27	2.83	3.80	0.95	19.26	5.06	97.42	4.000	No	Yes	2.00
230	15.10	16.43	2.83	3.88	0.95	19.44	5.08	98.73	4.000	No	Yes	2.00
231	15.17	16.88	2.83	3.95	0.95	19.94	5.05	100.69	4.000	No	Yes	2.00
232	15.25	17.82	2.82	3.98	0.95	21.02	4.91	103.31	4.000	No	Yes	2.00
233	15.31	19.04	2.79	3.99	0.94	22.44	4.73	106.25	4.000	No	Yes	2.00
234	15.37	20.79	2.76	3.97	0.93	24.48	4.48	109.75	4.000	No	Yes	2.00
235	15.44	22.91	2.73	3.94	0.92	26.92	4.22	113.74	4.000	No	Yes	2.00
236	15.51	25.24	2.70	3.90	0.90	29.60	3.98	117.67	4.000	No	Yes	2.00
237	15.56	27.89	2.66	3.85	0.89	32.64	3.73	121.72	4.000	No	Yes	2.00
238	15.63	30.62	2.63	3.85	0.88	35.75	3.53	126.33	4.000	No	Yes	2.00
239	15.71	33.36	2.61	3.83	0.87	38.84	3.36	130.50	4.000	No	Yes	2.00
240	15.76	35.88	2.58	3.82	0.86	41.68	3.22	134.26	0.305	No	No	0.92

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
241	15.82	38.00	2.56	3.81	0.85	44.04	3.12	137.37	0.321	No	No	0.96
242	15.90	39.72	2.55	3.82	0.85	45.92	3.05	140.10	0.336	No	No	1.00
243	15.95	40.95	2.55	3.85	0.85	47.26	3.01	142.38	0.348	No	No	1.04
244	16.01	42.08	2.54	3.84	0.84	48.46	2.97	143.78	0.356	No	No	1.06
245	16.10	43.69	2.52	3.77	0.84	50.12	2.88	144.51	4.000	Yes	No	2.00
246	16.16	45.39	2.50	3.68	0.83	51.93	2.79	144.76	4.000	Yes	No	2.00
247	16.21	47.82	2.47	3.52	0.82	54.52	2.64	144.17	4.000	Yes	No	2.00
248	16.29	50.73	2.44	3.35	0.81	57.59	2.49	143.67	4.000	Yes	No	2.00
249	16.36	53.65	2.41	3.20	0.79	60.67	2.37	143.61	4.000	Yes	No	2.00
250	16.41	55.97	2.39	3.13	0.79	63.12	2.29	144.46	4.000	Yes	No	2.00
251	16.49	57.93	2.38	3.09	0.78	65.13	2.24	145.59	0.367	No	No	1.09
252	16.55	58.97	2.38	3.11	0.78	66.18	2.22	147.05	0.376	No	No	1.11
253	16.60	58.73	2.39	3.18	0.78	65.85	2.26	148.63	0.385	No	No	1.14
254	16.70	57.58	2.40	3.30	0.79	64.45	2.33	150.28	4.000	Yes	No	2.00
255	16.74	55.54	2.43	3.43	0.80	62.18	2.43	150.89	4.000	Yes	No	2.00
256	16.80	52.24	2.45	3.50	0.81	58.44	2.54	148.41	4.000	Yes	No	2.00
257	16.89	48.21	2.49	3.62	0.82	53.86	2.71	145.75	4.000	Yes	No	2.00
258	16.93	43.70	2.53	3.78	0.84	48.84	2.93	142.95	4.000	Yes	No	2.00
259	17.00	39.30	2.57	3.91	0.86	43.87	3.17	139.12	4.000	Yes	No	2.00
260	17.09	35.13	2.62	4.01	0.87	39.12	3.43	134.22	4.000	Yes	Yes	2.00
261	17.14	31.91	2.65	3.97	0.88	35.46	3.61	128.18	4.000	Yes	Yes	2.00
262	17.20	29.62	2.66	3.82	0.89	32.81	3.70	121.48	4.000	No	Yes	2.00
263	17.28	27.32	2.67	3.65	0.89	30.13	3.80	114.37	4.000	No	Yes	2.00
264	17.34	25.35	2.69	3.51	0.90	27.85	3.90	108.56	4.000	No	Yes	2.00
265	17.41	23.75	2.72	3.59	0.91	26.02	4.11	106.90	4.000	No	Yes	2.00
266	17.48	22.28	2.74	3.68	0.92	24.34	4.33	105.33	4.000	No	Yes	2.00
267	17.56	21.40	2.76	3.71	0.93	23.31	4.46	103.98	4.000	No	Yes	2.00
268	17.62	21.30	2.76	3.68	0.93	23.15	4.46	103.34	4.000	No	Yes	2.00
269	17.67	21.90	2.75	3.71	0.92	23.78	4.41	104.80	4.000	Yes	Yes	2.00
270	17.72	23.43	2.73	3.70	0.92	25.45	4.23	107.56	4.000	Yes	Yes	2.00
271	17.78	25.81	2.69	3.62	0.90	28.02	3.95	110.64	4.000	Yes	Yes	2.00
272	17.87	29.76	2.63	3.41	0.88	32.25	3.52	113.53	4.000	Yes	Yes	2.00
273	17.94	34.49	2.57	3.24	0.85	37.30	3.14	117.09	4.000	Yes	No	2.00
274	18.01	39.36	2.51	3.10	0.83	42.48	2.84	120.59	4.000	Yes	No	2.00
275	18.06	44.61	2.46	2.96	0.81	48.05	2.58	124.00	4.000	Yes	No	2.00
276	18.12	49.40	2.42	2.87	0.80	53.08	2.40	127.40	4.000	Yes	No	2.00
277	18.21	53.23	2.39	2.83	0.79	57.04	2.29	130.57	0.287	No	No	0.82
278	18.25	55.37	2.38	2.79	0.78	59.24	2.23	131.91	0.293	No	No	0.84
279	18.31	55.54	2.38	2.79	0.78	59.32	2.22	131.93	0.294	No	No	0.84
280	18.40	54.39	2.39	2.80	0.78	57.96	2.26	130.84	4.000	Yes	No	2.00
281	18.44	51.05	2.42	2.89	0.80	54.37	2.37	129.13	4.000	Yes	No	2.00
282	18.51	46.53	2.46	2.99	0.81	49.50	2.55	126.35	4.000	Yes	No	2.00
283	18.58	42.29	2.50	3.09	0.83	44.90	2.75	123.40	4.000	Yes	No	2.00
284	18.64	37.54	2.55	3.26	0.85	39.79	3.03	120.70	4.000	Yes	No	2.00
285	18.71	33.19	2.60	3.42	0.87	35.09	3.35	117.60	4.000	Yes	Yes	2.00
286	18.80	29.50	2.66	3.57	0.89	31.08	3.69	114.60	4.000	Yes	Yes	2.00
287	18.86	27.07	2.70	3.76	0.90	28.44	3.99	113.53	4.000	Yes	Yes	2.00
288	18.91	26.18	2.72	3.92	0.91	27.47	4.17	114.45	4.000	Yes	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
289	18.98	26.23	2.73	4.03	0.92	27.48	4.23	116.18	4.000	Yes	Yes	2.00
290	19.05	28.55	2.70	3.92	0.90	29.89	3.96	118.43	4.000	Yes	Yes	2.00
291	19.10	32.75	2.64	3.73	0.88	34.30	3.56	122.20	4.000	Yes	Yes	2.00
292	19.20	36.95	2.59	3.62	0.86	38.62	3.27	126.30	4.000	Yes	No	2.00
293	19.23	41.98	2.54	3.50	0.84	43.88	2.98	130.67	4.000	Yes	No	2.00
294	19.30	47.70	2.49	3.37	0.82	49.78	2.72	135.29	4.000	Yes	No	2.00
295	19.39	53.84	2.44	3.26	0.81	56.05	2.49	139.78	4.000	Yes	No	2.00
296	19.43	60.95	2.39	3.10	0.79	63.36	2.27	144.00	4.000	Yes	No	2.00
297	19.50	67.80	2.34	2.97	0.77	70.30	2.10	147.71	4.000	Yes	No	2.00
298	19.57	74.91	2.30	2.86	0.75	77.48	1.96	151.93	4.000	Yes	No	2.00
299	19.63	80.68	2.28	2.81	0.74	83.29	1.88	156.25	4.000	Yes	No	2.00
300	19.70	84.48	2.26	2.81	0.74	87.05	1.84	160.14	0.462	No	No	1.29
301	19.77	87.46	2.26	2.85	0.74	89.97	1.82	163.96	0.490	No	No	1.37
302	19.84	88.72	2.25	2.77	0.73	91.06	1.79	162.94	0.482	No	No	1.35
303	19.90	88.05	2.25	2.80	0.73	90.24	1.81	162.93	0.482	No	No	1.35
304	19.99	86.33	2.27	2.86	0.74	88.30	1.84	162.87	4.000	Yes	No	2.00
305	20.02	82.81	2.29	3.01	0.75	84.69	1.93	163.44	4.000	Yes	No	2.00
306	20.09	77.91	2.33	3.21	0.76	79.61	2.06	163.98	4.000	Yes	No	2.00
307	20.19	72.20	2.38	3.46	0.78	73.64	2.23	164.40	4.000	Yes	No	2.00
308	20.21	66.31	2.43	3.74	0.80	67.65	2.44	164.76	4.000	Yes	No	2.00
309	20.29	60.80	2.48	4.00	0.82	61.90	2.66	164.43	4.000	Yes	No	2.00
310	20.38	55.60	2.53	4.28	0.84	56.47	2.90	163.92	4.000	Yes	No	2.00
311	20.42	51.83	2.58	4.71	0.86	52.62	3.19	167.91	4.000	Yes	No	2.00
312	20.52	49.59	2.61	4.95	0.87	50.20	3.37	169.09	4.000	No	Yes	2.00
313	20.55	48.85	2.62	5.04	0.87	49.41	3.44	169.77	4.000	No	Yes	2.00
314	20.62	50.23	2.60	4.87	0.87	50.69	3.32	168.19	4.000	Yes	No	2.00
315	20.68	54.00	2.55	4.50	0.85	54.40	3.05	165.95	4.000	Yes	No	2.00
316	20.75	58.46	2.51	4.16	0.83	58.77	2.79	164.25	4.000	Yes	No	2.00
317	20.81	64.06	2.45	3.83	0.81	64.27	2.54	163.09	4.000	Yes	No	2.00
318	20.90	70.17	2.40	3.53	0.79	70.22	2.31	162.34	4.000	Yes	No	2.00
319	20.96	76.88	2.35	3.25	0.77	76.78	2.11	162.12	4.000	Yes	No	2.00
320	21.01	83.50	2.30	3.03	0.75	83.25	1.95	162.71	4.000	Yes	No	2.00
321	21.09	89.88	2.26	2.86	0.74	89.40	1.83	163.78	4.000	Yes	No	2.00
322	21.15	95.34	2.23	2.72	0.72	94.66	1.74	164.75	4.000	Yes	No	2.00
323	21.21	99.28	2.21	2.64	0.72	98.41	1.69	165.97	4.000	Yes	No	2.00
324	21.30	101.54	2.20	2.60	0.71	100.41	1.66	166.66	0.511	No	No	1.40
325	21.36	102.98	2.19	2.57	0.71	101.69	1.64	166.99	0.513	No	No	1.41
326	21.40	103.15	2.19	2.57	0.71	101.76	1.64	167.23	0.515	No	No	1.41
327	21.49	102.24	2.20	2.63	0.71	100.65	1.67	167.75	0.519	No	No	1.42
328	21.56	100.58	2.22	2.71	0.72	98.87	1.71	168.66	4.000	Yes	No	2.00
329	21.60	98.24	2.24	2.84	0.73	96.51	1.76	170.27	4.000	Yes	No	2.00
330	21.66	95.65	2.27	3.03	0.74	93.85	1.84	173.11	4.000	Yes	No	2.00
331	21.75	92.97	2.30	3.23	0.75	91.05	1.94	176.31	4.000	Yes	No	2.00
332	21.80	90.34	2.33	3.44	0.76	88.38	2.03	179.61	4.000	Yes	No	2.00
333	21.85	86.54	2.36	3.65	0.77	84.57	2.15	181.57	4.000	Yes	No	2.00
334	21.95	82.45	2.39	3.87	0.79	80.35	2.27	182.77	4.000	Yes	No	2.00
335	21.99	77.84	2.42	4.06	0.80	75.75	2.41	182.63	4.000	Yes	No	2.00
336	22.05	73.33	2.45	4.17	0.81	71.22	2.53	179.99	4.000	Yes	No	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
337	22.14	68.64	2.47	4.21	0.82	66.45	2.63	175.01	0.579	No	No	1.58
338	22.19	64.12	2.49	4.20	0.82	61.92	2.73	169.22	0.531	No	No	1.45
339	22.26	59.36	2.51	4.14	0.83	57.14	2.83	161.62	0.473	No	No	1.29
340	22.35	54.56	2.53	4.05	0.84	52.30	2.93	153.37	0.415	No	No	1.13
341	22.44	49.73	2.55	3.95	0.85	47.45	3.05	144.80	0.362	No	No	0.99
342	22.45	46.31	2.57	3.82	0.85	44.10	3.12	137.69	0.323	No	No	0.88
343	22.54	43.33	2.58	3.71	0.86	41.08	3.20	131.39	0.291	No	No	0.79
344	22.58	41.17	2.59	3.62	0.86	38.93	3.26	126.75	0.269	No	No	0.73
345	22.65	39.90	2.60	3.61	0.86	37.63	3.31	124.71	0.260	No	No	0.71
346	22.73	39.60	2.60	3.66	0.87	37.26	3.36	125.06	4.000	No	Yes	2.00
347	22.79	39.96	2.61	3.69	0.87	37.55	3.36	126.08	4.000	No	Yes	2.00
348	22.85	41.77	2.60	3.76	0.86	39.25	3.31	129.80	0.283	No	No	0.77
349	22.93	44.52	2.59	3.92	0.86	41.82	3.27	136.54	0.317	No	No	0.86
350	22.99	48.25	2.58	4.08	0.86	45.36	3.19	144.50	0.361	No	No	0.98
351	23.04	53.17	2.55	4.12	0.85	50.03	3.03	151.83	0.405	No	No	1.10
352	23.12	57.97	2.53	4.14	0.84	54.54	2.90	158.22	0.448	No	No	1.21
353	23.19	61.76	2.51	4.14	0.83	58.07	2.81	162.95	0.482	No	No	1.30
354	23.27	64.98	2.49	4.14	0.82	61.03	2.73	166.65	0.510	No	No	1.38
355	23.30	67.76	2.48	4.12	0.82	63.65	2.66	169.44	0.532	No	No	1.44
356	23.38	70.90	2.46	4.05	0.81	66.51	2.58	171.29	0.547	No	No	1.48
357	23.47	73.27	2.44	3.95	0.81	68.60	2.50	171.31	0.548	No	No	1.47
358	23.50	74.99	2.42	3.78	0.80	70.18	2.41	168.91	0.528	No	No	1.42
359	23.58	75.51	2.41	3.63	0.79	70.53	2.34	165.30	0.500	No	No	1.35
360	23.66	74.38	2.41	3.55	0.79	69.31	2.34	161.96	0.475	No	No	1.28
361	23.69	73.15	2.41	3.50	0.79	68.09	2.34	159.30	0.456	No	No	1.23
362	23.77	72.69	2.41	3.49	0.79	67.52	2.34	158.28	0.449	No	No	1.21
363	23.84	72.77	2.41	3.47	0.79	67.48	2.34	157.74	0.445	No	No	1.20
364	23.92	72.82	2.41	3.48	0.79	67.39	2.34	157.99	0.447	No	No	1.20
365	23.97	71.99	2.42	3.53	0.80	66.52	2.38	158.38	0.449	No	No	1.21
366	24.06	70.72	2.43	3.61	0.80	65.17	2.44	158.89	0.453	No	No	1.21
367	24.12	69.26	2.45	3.73	0.81	63.69	2.51	159.96	0.461	No	No	1.23
368	24.17	67.92	2.46	3.83	0.81	62.35	2.58	160.90	0.467	No	No	1.25
369	24.23	66.21	2.48	3.91	0.82	60.65	2.65	160.73	0.466	No	No	1.25
370	24.31	64.27	2.49	3.98	0.82	58.71	2.73	160.00	0.461	No	No	1.23
371	24.36	61.66	2.51	4.05	0.83	56.19	2.82	158.28	0.449	No	No	1.20
372	24.42	58.14	2.53	4.12	0.84	52.82	2.95	155.55	0.430	No	No	1.15
373	24.51	54.24	2.56	4.21	0.85	49.05	3.10	152.30	0.409	No	No	1.09
374	24.54	50.19	2.59	4.27	0.86	45.25	3.27	148.14	0.382	No	No	1.02
375	24.62	45.92	2.62	4.29	0.87	41.19	3.46	142.60	4.000	No	Yes	2.00
376	24.71	41.38	2.66	4.30	0.89	36.87	3.69	136.14	4.000	No	Yes	2.00
377	24.74	37.02	2.69	4.29	0.90	32.81	3.94	129.34	4.000	No	Yes	2.00
378	24.81	33.35	2.72	4.24	0.91	29.36	4.18	122.62	4.000	No	Yes	2.00
379	24.89	30.15	2.75	4.14	0.92	26.35	4.39	115.71	4.000	No	Yes	2.00
380	24.96	27.79	2.77	3.96	0.93	24.12	4.52	109.01	4.000	No	Yes	2.00
381	25.01	26.12	2.78	3.76	0.93	22.57	4.58	103.36	4.000	No	Yes	2.00
382	25.10	24.74	2.78	3.56	0.93	21.25	4.62	98.16	4.000	No	Yes	2.00
383	25.14	23.57	2.79	3.43	0.94	20.15	4.68	94.33	4.000	No	Yes	2.00
384	25.21	22.70	2.80	3.37	0.94	19.32	4.76	92.00	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
385	25.30	22.17	2.80	3.32	0.94	18.80	4.80	90.31	4.000	No	Yes	2.00
386	25.34	21.82	2.80	3.25	0.94	18.46	4.81	88.71	4.000	No	Yes	2.00
387	25.41	21.76	2.80	3.17	0.94	18.37	4.76	87.53	4.000	No	Yes	2.00
388	25.50	21.77	2.79	3.10	0.94	18.34	4.72	86.53	4.000	No	Yes	2.00
389	25.55	21.93	2.78	3.03	0.94	18.47	4.65	85.93	4.000	No	Yes	2.00
390	25.60	22.09	2.78	2.98	0.93	18.59	4.59	85.40	4.000	No	Yes	2.00
391	25.70	22.29	2.77	2.90	0.93	18.73	4.52	84.60	4.000	No	Yes	2.00
392	25.75	22.50	2.76	2.81	0.93	18.90	4.43	83.67	4.000	No	Yes	2.00
393	25.80	22.79	2.74	2.67	0.92	19.15	4.28	82.04	4.000	No	Yes	2.00
394	25.89	23.08	2.72	2.54	0.91	19.37	4.15	80.44	4.000	No	Yes	2.00
395	25.95	23.34	2.71	2.43	0.91	19.59	4.04	79.07	4.000	No	Yes	2.00
396	25.99	23.77	2.69	2.31	0.90	19.96	3.90	77.81	4.000	No	Yes	2.00
397	26.06	24.08	2.67	2.23	0.89	20.21	3.80	76.79	4.000	No	Yes	2.00
398	26.15	24.25	2.66	2.16	0.89	20.33	3.73	75.89	4.000	No	Yes	2.00
399	26.19	24.34	2.66	2.12	0.89	20.39	3.69	75.28	4.000	No	Yes	2.00
400	26.25	24.39	2.66	2.11	0.89	20.41	3.69	75.23	4.000	No	Yes	2.00
401	26.34	24.31	2.66	2.16	0.89	20.30	3.73	75.77	4.000	No	Yes	2.00
402	26.38	24.05	2.68	2.26	0.90	20.04	3.85	77.18	4.000	No	Yes	2.00
403	26.45	23.79	2.70	2.37	0.90	19.77	3.97	78.40	4.000	No	Yes	2.00
404	26.52	23.52	2.71	2.46	0.91	19.49	4.07	79.37	4.000	No	Yes	2.00
405	26.61	23.07	2.73	2.55	0.91	19.04	4.21	80.09	4.000	No	Yes	2.00
406	26.67	22.67	2.74	2.60	0.92	18.66	4.30	80.27	4.000	No	Yes	2.00
407	26.72	22.32	2.75	2.64	0.92	18.31	4.38	80.21	4.000	No	Yes	2.00
408	26.82	21.99	2.76	2.64	0.93	17.98	4.43	79.73	4.000	No	Yes	2.00
409	26.86	21.65	2.76	2.61	0.93	17.67	4.46	78.75	4.000	No	Yes	2.00
410	26.94	21.41	2.76	2.52	0.93	17.42	4.43	77.07	4.000	No	Yes	2.00
411	26.98	21.28	2.75	2.40	0.92	17.29	4.35	75.19	4.000	No	Yes	2.00
412	27.06	21.19	2.74	2.28	0.92	17.19	4.27	73.31	4.000	No	Yes	2.00
413	27.10	21.17	2.72	2.16	0.91	17.16	4.16	71.47	4.000	No	Yes	2.00
414	27.17	21.23	2.71	2.03	0.91	17.20	4.05	69.64	4.000	No	Yes	2.00
415	27.26	21.42	2.69	1.94	0.90	17.34	3.94	68.32	4.000	No	Yes	2.00
416	27.31	21.67	2.68	1.86	0.90	17.54	3.84	67.44	4.000	No	Yes	2.00
417	27.39	21.94	2.67	1.82	0.89	17.76	3.77	67.05	4.000	No	Yes	2.00
418	27.44	22.25	2.66	1.79	0.89	18.02	3.71	66.93	4.000	No	Yes	2.00
419	27.51	22.57	2.65	1.79	0.89	18.27	3.68	67.24	4.000	No	Yes	2.00
420	27.58	22.83	2.65	1.81	0.89	18.47	3.67	67.74	4.000	No	Yes	2.00
421	27.63	23.05	2.65	1.83	0.89	18.64	3.66	68.26	4.000	No	Yes	2.00
422	27.71	23.11	2.66	1.86	0.89	18.67	3.69	68.80	4.000	No	Yes	2.00
423	27.79	23.06	2.66	1.91	0.89	18.58	3.74	69.46	4.000	No	Yes	2.00
424	27.86	22.89	2.67	1.95	0.89	18.40	3.80	69.90	4.000	No	Yes	2.00
425	27.89	22.61	2.68	1.99	0.90	18.14	3.88	70.31	4.000	No	Yes	2.00
426	27.96	22.26	2.70	2.05	0.90	17.80	3.97	70.72	4.000	No	Yes	2.00
427	28.05	21.90	2.71	2.13	0.91	17.44	4.10	71.46	4.000	No	Yes	2.00
428	28.09	21.54	2.73	2.25	0.92	17.11	4.25	72.69	4.000	No	Yes	2.00
429	28.16	21.20	2.75	2.38	0.92	16.78	4.41	74.05	4.000	No	Yes	2.00
430	28.23	20.88	2.78	2.51	0.93	16.46	4.58	75.37	4.000	No	Yes	2.00
431	28.29	20.64	2.79	2.64	0.94	16.22	4.73	76.64	4.000	No	Yes	2.00
432	28.35	20.47	2.81	2.75	0.94	16.04	4.85	77.72	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
433	28.44	20.36	2.82	2.84	0.95	15.91	4.94	78.67	4.000	No	Yes	2.00
434	28.50	20.26	2.83	2.93	0.95	15.79	5.04	79.55	4.000	No	Yes	2.00
435	28.55	20.24	2.84	2.99	0.96	15.75	5.10	80.26	4.000	No	Yes	2.00
436	28.64	20.28	2.84	3.02	0.96	15.76	5.12	80.62	4.000	No	Yes	2.00
437	28.69	20.47	2.83	3.01	0.96	15.90	5.08	80.83	4.000	No	Yes	2.00
438	28.75	20.92	2.82	2.94	0.95	16.26	4.96	80.68	4.000	No	Yes	2.00
439	28.82	21.52	2.80	2.85	0.94	16.76	4.80	80.40	4.000	No	Yes	2.00
440	28.89	22.35	2.79	2.82	0.94	17.44	4.66	81.27	4.000	No	Yes	2.00
441	28.98	23.25	2.77	2.83	0.93	18.18	4.55	82.71	4.000	No	Yes	2.00
442	29.04	24.09	2.76	2.86	0.93	18.87	4.46	84.22	4.000	No	Yes	2.00
443	29.08	24.99	2.75	2.87	0.92	19.62	4.37	85.67	4.000	No	Yes	2.00
444	29.15	25.81	2.74	2.90	0.92	20.29	4.30	87.23	4.000	No	Yes	2.00
445	29.24	26.55	2.73	2.95	0.92	20.88	4.26	88.89	4.000	No	Yes	2.00
446	29.29	27.47	2.72	2.98	0.91	21.64	4.18	90.48	4.000	No	Yes	2.00
447	29.34	28.09	2.72	3.04	0.91	22.14	4.16	92.19	4.000	No	Yes	2.00
448	29.43	28.47	2.73	3.12	0.91	22.41	4.19	93.91	4.000	No	Yes	2.00
449	29.47	28.34	2.73	3.18	0.92	22.27	4.25	94.60	4.000	No	Yes	2.00
450	29.53	28.01	2.74	3.24	0.92	21.95	4.32	94.84	4.000	No	Yes	2.00
451	29.62	27.58	2.75	3.30	0.92	21.54	4.41	94.97	4.000	No	Yes	2.00
452	29.66	26.96	2.77	3.38	0.93	20.98	4.54	95.20	4.000	No	Yes	2.00
453	29.77	26.26	2.79	3.47	0.94	20.33	4.68	95.20	4.000	No	Yes	2.00
454	29.81	25.53	2.81	3.60	0.95	19.68	4.86	95.62	4.000	No	Yes	2.00
455	29.86	25.39	2.82	3.67	0.95	19.54	4.93	96.27	4.000	No	Yes	2.00
456	29.92	25.75	2.81	3.69	0.95	19.81	4.90	97.12	4.000	No	Yes	2.00
457	30.01	26.64	2.80	3.66	0.94	20.51	4.78	98.08	4.000	No	Yes	2.00
458	30.09	27.72	2.78	3.61	0.93	21.39	4.63	99.03	4.000	No	Yes	2.00
459	30.17	28.41	2.77	3.61	0.93	21.93	4.56	100.07	4.000	No	Yes	2.00
460	30.20	28.59	2.78	3.69	0.93	22.05	4.60	101.40	4.000	No	Yes	2.00
461	30.27	28.79	2.78	3.80	0.94	22.17	4.65	103.06	4.000	No	Yes	2.00
462	30.32	29.48	2.78	3.84	0.93	22.72	4.61	104.73	4.000	No	Yes	2.00
463	30.39	30.45	2.77	3.82	0.93	23.50	4.51	105.88	4.000	No	Yes	2.00
464	30.47	30.78	2.76	3.84	0.93	23.72	4.49	106.51	4.000	No	Yes	2.00
465	30.55	30.79	2.77	3.85	0.93	23.68	4.51	106.70	4.000	No	Yes	2.00
466	30.62	30.35	2.78	3.91	0.93	23.27	4.59	106.77	4.000	No	Yes	2.00
467	30.66	29.89	2.79	3.98	0.94	22.86	4.67	106.87	4.000	No	Yes	2.00
468	30.72	29.64	2.79	3.93	0.94	22.63	4.67	105.71	4.000	No	Yes	2.00
469	30.81	29.90	2.77	3.78	0.93	22.81	4.56	103.99	4.000	No	Yes	2.00
470	30.85	30.12	2.75	3.57	0.92	22.99	4.41	101.48	4.000	No	Yes	2.00
471	30.91	29.75	2.75	3.40	0.92	22.67	4.34	98.41	4.000	No	Yes	2.00
472	31.01	29.16	2.74	3.22	0.92	22.15	4.28	94.88	4.000	No	Yes	2.00
473	31.05	28.11	2.74	3.08	0.92	21.28	4.30	91.42	4.000	No	Yes	2.00
474	31.11	26.82	2.75	2.96	0.92	20.20	4.35	87.95	4.000	No	Yes	2.00
475	31.20	25.44	2.76	2.85	0.93	19.03	4.43	84.32	4.000	No	Yes	2.00
476	31.26	24.18	2.76	2.71	0.93	17.98	4.48	80.64	4.000	No	Yes	2.00
477	31.31	23.24	2.77	2.64	0.93	17.20	4.56	78.37	4.000	No	Yes	2.00
478	31.38	22.45	2.78	2.59	0.94	16.53	4.63	76.56	4.000	No	Yes	2.00
479	31.46	21.95	2.79	2.53	0.94	16.09	4.66	75.05	4.000	No	Yes	2.00
480	31.51	21.63	2.79	2.49	0.94	15.82	4.68	74.00	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
481	31.60	21.33	2.79	2.46	0.94	15.54	4.71	73.14	4.000	No	Yes	2.00
482	31.65	21.21	2.79	2.41	0.94	15.44	4.68	72.24	4.000	No	Yes	2.00
483	31.74	21.14	2.78	2.34	0.94	15.36	4.64	71.22	4.000	No	Yes	2.00
484	31.80	21.15	2.77	2.27	0.93	15.35	4.57	70.19	4.000	No	Yes	2.00
485	31.85	21.16	2.76	2.17	0.93	15.35	4.49	68.91	4.000	No	Yes	2.00
486	31.89	21.17	2.75	2.04	0.92	15.37	4.36	67.05	4.000	No	Yes	2.00
487	32.00	21.16	2.73	1.91	0.92	15.34	4.24	65.11	4.000	No	Yes	2.00
488	32.04	21.11	2.72	1.79	0.91	15.30	4.14	63.32	4.000	No	Yes	2.00
489	32.09	21.14	2.71	1.70	0.91	15.33	4.04	61.91	4.000	No	Yes	2.00
490	32.19	21.23	2.69	1.63	0.90	15.39	3.96	60.88	4.000	No	Yes	2.00
491	32.23	21.15	2.69	1.60	0.90	15.31	3.94	60.35	4.000	No	Yes	2.00
492	32.29	21.63	2.68	1.58	0.90	15.69	3.86	60.57	4.000	No	Yes	2.00
493	32.37	22.15	2.67	1.58	0.89	16.09	3.79	60.95	4.000	No	Yes	2.00
494	32.44	22.73	2.66	1.59	0.89	16.54	3.73	61.75	4.000	No	Yes	2.00
495	32.49	23.42	2.66	1.64	0.89	17.08	3.71	63.28	4.000	No	Yes	2.00
496	32.58	24.18	2.65	1.69	0.89	17.66	3.67	64.80	4.000	No	Yes	2.00
497	32.62	24.92	2.65	1.75	0.88	18.23	3.64	66.38	4.000	No	Yes	2.00
498	32.69	25.54	2.65	1.80	0.88	18.71	3.63	67.92	4.000	No	Yes	2.00
499	32.78	26.07	2.65	1.87	0.88	19.09	3.64	69.43	4.000	No	Yes	2.00
500	32.82	26.80	2.64	1.91	0.88	19.66	3.61	70.95	4.000	No	Yes	2.00
501	32.89	27.02	2.65	1.99	0.89	19.79	3.66	72.39	4.000	No	Yes	2.00
502	32.97	27.26	2.66	2.07	0.89	19.94	3.70	73.87	4.000	No	Yes	2.00
503	33.02	27.46	2.67	2.15	0.89	20.06	3.76	75.41	4.000	No	Yes	2.00
504	33.09	27.56	2.68	2.26	0.90	20.09	3.84	77.21	4.000	No	Yes	2.00
505	33.15	27.58	2.69	2.39	0.90	20.06	3.94	79.12	4.000	No	Yes	2.00
506	33.20	27.62	2.71	2.52	0.91	20.05	4.05	81.12	4.000	No	Yes	2.00
507	33.28	27.94	2.72	2.64	0.91	20.26	4.11	83.29	4.000	No	Yes	2.00
508	33.38	28.41	2.72	2.75	0.91	20.57	4.15	85.36	4.000	No	Yes	2.00
509	33.43	29.00	2.72	2.84	0.91	21.01	4.16	87.41	4.000	No	Yes	2.00
510	33.47	29.66	2.72	2.92	0.91	21.50	4.16	89.41	4.000	No	Yes	2.00
511	33.57	30.25	2.72	3.02	0.91	21.91	4.18	91.56	4.000	No	Yes	2.00
512	33.63	30.80	2.73	3.12	0.91	22.30	4.20	93.64	4.000	No	Yes	2.00
513	33.70	31.35	2.73	3.19	0.91	22.69	4.20	95.39	4.000	No	Yes	2.00
514	33.74	31.93	2.73	3.26	0.91	23.12	4.20	97.06	4.000	No	Yes	2.00
515	33.82	32.49	2.73	3.31	0.91	23.51	4.19	98.51	4.000	No	Yes	2.00
516	33.86	32.78	2.73	3.37	0.91	23.71	4.21	99.73	4.000	No	Yes	2.00
517	33.93	32.90	2.73	3.45	0.92	23.76	4.25	100.95	4.000	No	Yes	2.00
518	34.02	32.86	2.74	3.53	0.92	23.67	4.31	102.03	4.000	No	Yes	2.00
519	34.06	32.78	2.75	3.61	0.92	23.57	4.37	102.94	4.000	No	Yes	2.00
520	34.13	32.65	2.76	3.66	0.93	23.42	4.42	103.48	4.000	No	Yes	2.00
521	34.21	32.51	2.76	3.70	0.93	23.26	4.46	103.80	4.000	No	Yes	2.00
522	34.28	32.29	2.77	3.74	0.93	23.05	4.51	103.90	4.000	No	Yes	2.00
523	34.32	31.94	2.77	3.76	0.93	22.75	4.56	103.65	4.000	No	Yes	2.00
524	34.41	31.53	2.78	3.78	0.93	22.38	4.61	103.23	4.000	No	Yes	2.00
525	34.46	31.08	2.79	3.79	0.94	22.00	4.67	102.68	4.000	No	Yes	2.00
526	34.52	30.55	2.79	3.79	0.94	21.56	4.72	101.80	4.000	No	Yes	2.00
527	34.61	29.93	2.80	3.78	0.94	21.04	4.78	100.63	4.000	No	Yes	2.00
528	34.65	29.34	2.81	3.75	0.94	20.56	4.83	99.34	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
529	34.71	28.73	2.81	3.71	0.95	20.07	4.87	97.80	4.000	No	Yes	2.00
530	34.79	28.12	2.81	3.64	0.95	19.57	4.90	95.91	4.000	No	Yes	2.00
531	34.86	27.56	2.81	3.55	0.95	19.11	4.91	93.87	4.000	No	Yes	2.00
532	34.93	27.06	2.81	3.45	0.95	18.72	4.90	91.78	4.000	No	Yes	2.00
533	35.01	26.62	2.81	3.34	0.95	18.35	4.89	89.74	4.000	No	Yes	2.00
534	35.06	26.18	2.81	3.25	0.95	18.01	4.88	87.84	4.000	No	Yes	2.00
535	35.11	25.82	2.81	3.17	0.95	17.73	4.87	86.31	4.000	No	Yes	2.00
536	35.18	25.57	2.81	3.10	0.95	17.51	4.85	85.02	4.000	No	Yes	2.00
537	35.26	25.31	2.81	3.06	0.95	17.29	4.86	84.06	4.000	No	Yes	2.00
538	35.34	25.02	2.81	3.05	0.95	17.04	4.90	83.47	4.000	No	Yes	2.00
539	35.40	24.80	2.82	3.06	0.95	16.85	4.94	83.29	4.000	No	Yes	2.00
540	35.44	24.58	2.83	3.10	0.95	16.65	5.01	83.43	4.000	No	Yes	2.00
541	35.51	24.35	2.84	3.18	0.96	16.44	5.10	83.91	4.000	No	Yes	2.00
542	35.58	24.06	2.85	3.25	0.96	16.19	5.21	84.27	4.000	No	Yes	2.00
543	35.66	23.76	2.86	3.29	0.96	15.93	5.29	84.26	4.000	No	Yes	2.00
544	35.71	23.50	2.86	3.30	0.97	15.70	5.34	83.91	4.000	No	Yes	2.00
545	35.77	23.24	2.87	3.29	0.97	15.49	5.37	83.26	4.000	No	Yes	2.00
546	35.85	22.95	2.87	3.25	0.97	15.25	5.40	82.35	4.000	No	Yes	2.00
547	35.92	22.74	2.87	3.21	0.97	15.07	5.40	81.42	4.000	No	Yes	2.00
548	35.97	22.64	2.87	3.16	0.97	14.99	5.39	80.74	4.000	No	Yes	2.00
549	36.03	22.63	2.86	3.11	0.97	14.97	5.35	80.03	4.000	No	Yes	2.00
550	36.11	22.66	2.86	3.02	0.96	14.98	5.28	79.05	4.000	No	Yes	2.00
551	36.16	22.78	2.84	2.91	0.96	15.07	5.17	77.87	4.000	No	Yes	2.00
552	36.26	22.82	2.83	2.80	0.96	15.08	5.08	76.66	4.000	No	Yes	2.00
553	36.31	22.88	2.83	2.72	0.95	15.12	5.00	75.65	4.000	No	Yes	2.00
554	36.36	22.63	2.82	2.64	0.95	14.93	4.98	74.35	4.000	No	Yes	2.00
555	36.43	22.40	2.82	2.57	0.95	14.74	4.96	73.14	4.000	No	Yes	2.00
556	36.51	22.21	2.82	2.50	0.95	14.58	4.93	71.91	4.000	No	Yes	2.00
557	36.55	22.01	2.82	2.45	0.95	14.43	4.92	71.02	4.000	No	Yes	2.00
558	36.65	21.75	2.82	2.43	0.95	14.21	4.95	70.32	4.000	No	Yes	2.00
559	36.71	21.76	2.82	2.43	0.95	14.20	4.95	70.29	4.000	No	Yes	2.00
560	36.76	22.11	2.81	2.41	0.95	14.45	4.88	70.57	4.000	No	Yes	2.00
561	36.85	22.79	2.80	2.42	0.94	14.94	4.79	71.52	4.000	No	Yes	2.00
562	36.89	23.63	2.79	2.44	0.94	15.55	4.68	72.78	4.000	No	Yes	2.00
563	36.96	24.91	2.77	2.48	0.93	16.49	4.55	74.96	4.000	No	Yes	2.00
564	37.02	26.31	2.76	2.53	0.93	17.51	4.42	77.41	4.000	No	Yes	2.00
565	37.11	27.68	2.74	2.60	0.92	18.50	4.32	79.93	4.000	No	Yes	2.00
566	37.15	28.95	2.73	2.67	0.92	19.42	4.25	82.45	4.000	No	Yes	2.00
567	37.24	30.33	2.73	2.76	0.91	20.41	4.18	85.40	4.000	No	Yes	2.00
568	37.31	31.54	2.72	2.87	0.91	21.27	4.15	88.27	4.000	No	Yes	2.00
569	37.35	32.61	2.72	3.01	0.91	22.02	4.16	91.57	4.000	No	Yes	2.00
570	37.43	34.54	2.71	3.07	0.91	23.43	4.04	94.72	4.000	No	Yes	2.00
571	37.51	37.23	2.68	3.05	0.90	25.41	3.83	97.40	4.000	No	Yes	2.00
572	37.55	40.42	2.64	2.93	0.88	27.84	3.55	98.85	4.000	No	Yes	2.00
573	37.60	43.41	2.59	2.73	0.86	30.14	3.26	98.34	0.168	No	No	0.41
574	37.67	46.12	2.55	2.53	0.85	32.25	3.01	97.10	0.165	No	No	0.40
575	37.75	47.68	2.52	2.39	0.83	33.45	2.86	95.62	0.161	No	No	0.40
576	37.81	48.21	2.50	2.30	0.83	33.86	2.79	94.32	0.158	No	No	0.39

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
577	37.88	48.12	2.50	2.26	0.83	33.76	2.77	93.42	0.156	No	No	0.38
578	37.93	48.13	2.50	2.24	0.83	33.75	2.76	93.00	0.155	No	No	0.38
579	38.00	49.14	2.49	2.24	0.82	34.47	2.72	93.80	0.157	No	No	0.38
580	38.08	52.10	2.47	2.28	0.82	36.67	2.64	96.77	0.164	No	No	0.40
581	38.14	55.93	2.47	2.41	0.81	39.49	2.60	102.67	0.181	No	No	0.44
582	38.20	60.41	2.46	2.61	0.81	42.75	2.58	110.38	0.205	No	No	0.50
583	38.26	65.84	2.46	2.84	0.81	46.71	2.57	119.90	4.000	Yes	No	2.00
584	38.34	74.63	2.43	2.98	0.80	53.26	2.44	130.07	4.000	Yes	No	2.00
585	38.43	85.00	2.39	3.03	0.79	61.06	2.29	139.63	4.000	Yes	No	2.00
586	38.45	97.14	2.35	3.04	0.77	70.35	2.13	149.58	4.000	Yes	No	2.00
587	38.53	109.74	2.31	3.03	0.76	79.94	1.99	159.28	4.000	Yes	No	2.00
588	38.62	121.23	2.28	3.04	0.75	88.66	1.90	168.28	4.000	Yes	No	2.00
589	38.65	130.51	2.26	3.06	0.74	95.75	1.84	176.10	4.000	Yes	No	2.00
590	38.72	139.21	2.25	3.07	0.73	102.35	1.79	182.90	0.649	No	No	1.59
591	38.80	148.05	2.23	3.07	0.72	109.03	1.74	189.51	0.713	No	No	1.75
592	38.88	156.31	2.21	3.04	0.72	115.30	1.69	195.08	0.770	No	No	1.89
593	38.93	162.35	2.20	3.05	0.71	119.87	1.67	199.70	0.821	No	No	2.00
594	39.01	167.70	2.19	3.06	0.71	123.81	1.65	204.11	4.000	No	No	2.00
595	39.07	171.82	2.19	3.08	0.71	126.83	1.64	207.67	4.000	No	No	2.00
596	39.12	176.04	2.18	3.09	0.71	129.96	1.62	211.17	4.000	No	No	2.00
597	39.20	180.10	2.18	3.11	0.71	132.88	1.62	214.63	4.000	No	No	2.00
598	39.27	184.00	2.17	3.12	0.70	135.69	1.61	217.99	4.000	No	No	2.00
599	39.31	187.49	2.17	3.14	0.70	138.26	1.60	221.07	4.000	No	No	2.00
600	39.38	190.29	2.17	3.16	0.70	140.19	1.60	223.77	4.000	No	No	2.00
601	39.45	193.31	2.17	3.18	0.70	142.31	1.59	226.42	4.000	No	No	2.00
602	39.51	197.03	2.16	3.17	0.70	145.04	1.58	229.13	4.000	No	No	2.00
603	39.57	201.45	2.15	3.16	0.70	148.33	1.56	231.77	4.000	No	No	2.00
604	39.64	206.43	2.14	3.12	0.69	152.05	1.54	234.36	4.000	No	No	2.00
605	39.72	209.97	2.14	3.10	0.69	154.62	1.53	235.92	4.000	No	No	2.00
606	39.79	210.90	2.13	3.08	0.69	155.19	1.52	235.81	4.000	No	No	2.00
607	39.84	209.11	2.14	3.08	0.69	153.65	1.53	234.48	4.000	No	No	2.00
608	39.90	206.02	2.14	3.10	0.69	151.08	1.54	232.41	4.000	No	No	2.00
609	39.96	202.96	2.15	3.09	0.69	148.57	1.55	229.77	4.000	No	No	2.00
610	40.06	199.55	2.15	3.09	0.69	145.71	1.56	226.70	4.000	No	No	2.00
611	40.13	195.43	2.16	3.08	0.70	142.38	1.57	223.26	4.000	No	No	2.00
612	40.17	191.56	2.16	3.07	0.70	139.34	1.58	219.92	4.000	No	No	2.00
613	40.26	187.07	2.17	3.06	0.70	135.71	1.59	216.05	4.000	No	No	2.00
614	40.31	182.02	2.18	3.06	0.70	131.75	1.61	211.86	4.000	No	No	2.00
615	40.36	176.42	2.18	3.04	0.71	127.42	1.62	206.86	4.000	No	No	2.00
616	40.43	171.16	2.19	3.00	0.71	123.34	1.63	201.52	4.000	No	No	2.00
617	40.51	164.14	2.20	2.99	0.71	117.86	1.66	195.74	0.777	No	No	1.91
618	40.56	159.97	2.20	2.93	0.71	114.70	1.66	190.93	0.727	No	No	1.79
619	40.64	152.18	2.22	2.95	0.72	108.61	1.71	185.56	0.674	No	No	1.66
620	40.70	148.35	2.22	2.89	0.72	105.73	1.71	180.74	0.629	No	No	1.55
621	40.75	146.10	2.21	2.78	0.72	104.13	1.69	175.76	0.585	No	No	1.44
622	40.83	144.83	2.20	2.66	0.71	103.24	1.66	171.24	0.547	No	No	1.34
623	40.88	146.29	2.17	2.49	0.70	104.60	1.60	167.25	0.515	No	No	1.27
624	40.95	151.45	2.13	2.24	0.69	108.92	1.50	163.89	0.489	No	No	1.20

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
625	41.03	159.00	2.08	2.02	0.67	115.12	1.41	162.69	0.480	No	No	1.18
626	41.08	169.86	2.02	1.80	0.64	124.05	1.32	164.27	0.492	No	No	1.21
627	41.15	178.00	1.97	1.65	0.63	130.77	1.27	165.80	0.504	No	No	1.24
628	41.24	189.19	1.92	1.49	0.61	140.00	1.21	169.37	0.532	No	No	1.31
629	41.28	194.60	1.89	1.39	0.60	144.65	1.18	170.54	0.541	No	No	1.33
630	41.35	196.88	1.87	1.31	0.59	146.68	1.16	170.24	0.539	No	No	1.33
631	41.41	197.86	1.85	1.25	0.58	147.66	1.15	169.29	0.531	No	No	1.31
632	41.48	196.40	1.85	1.23	0.58	146.49	1.14	167.63	0.518	No	No	1.28
633	41.55	192.75	1.87	1.29	0.59	143.17	1.16	166.29	0.508	No	No	1.25
634	41.63	188.20	1.89	1.35	0.60	139.10	1.18	164.51	0.494	No	No	1.22
635	41.68	181.44	1.93	1.44	0.61	133.30	1.21	161.92	0.475	No	No	1.17
636	41.74	174.04	1.96	1.54	0.62	127.00	1.25	159.25	0.456	No	No	1.12
637	41.83	166.17	2.00	1.67	0.64	120.27	1.30	156.93	0.439	No	No	1.08
638	41.87	159.62	2.04	1.81	0.65	114.71	1.36	156.04	0.433	No	No	1.07
639	41.98	152.99	2.09	1.98	0.67	108.97	1.43	155.95	0.433	No	No	1.07
640	42.02	146.03	2.13	2.18	0.69	103.14	1.52	156.49	0.436	No	No	1.08
641	42.10	139.05	2.18	2.38	0.71	97.32	1.62	157.32	0.442	No	No	1.09
642	42.14	132.52	2.22	2.59	0.72	92.01	1.72	158.36	0.449	No	No	1.11
643	42.22	126.16	2.26	2.80	0.74	86.83	1.84	159.59	0.458	No	No	1.13
644	42.29	120.67	2.30	2.99	0.75	82.42	1.95	160.51	0.465	No	No	1.15
645	42.38	115.55	2.33	3.17	0.76	78.32	2.06	161.46	0.471	No	No	1.16
646	42.41	111.25	2.36	3.33	0.78	74.95	2.17	162.34	0.478	No	No	1.18
647	42.46	107.34	2.39	3.48	0.79	71.90	2.27	163.00	0.483	No	No	1.19
648	42.57	103.94	2.41	3.60	0.79	69.19	2.36	163.11	0.484	No	No	1.19
649	42.61	100.91	2.43	3.70	0.80	66.88	2.44	163.01	0.483	No	No	1.19
650	42.68	98.50	2.44	3.78	0.81	65.01	2.50	162.77	0.481	No	No	1.19
651	42.76	96.24	2.46	3.85	0.81	63.25	2.57	162.34	0.478	No	No	1.18
652	42.80	94.09	2.47	3.91	0.82	61.63	2.63	161.80	0.474	No	No	1.17
653	42.87	92.43	2.48	3.94	0.82	60.35	2.67	161.02	0.468	No	No	1.16
654	42.92	90.98	2.49	3.95	0.82	59.26	2.70	160.04	0.461	No	No	1.14
655	42.98	89.10	2.49	3.96	0.83	57.87	2.74	158.36	0.449	No	No	1.11
656	43.06	86.12	2.50	3.94	0.83	55.71	2.79	155.17	0.427	No	No	1.06
657	43.11	82.66	2.52	3.92	0.83	53.25	2.85	151.63	0.404	No	No	1.00
658	43.18	78.34	2.53	3.93	0.84	50.16	2.95	147.91	0.381	No	No	0.94
659	43.26	73.08	2.56	3.98	0.85	46.41	3.10	143.94	0.357	No	No	0.88
660	43.32	67.13	2.60	4.05	0.86	42.20	3.31	139.61	0.333	No	No	0.82
661	43.39	61.24	2.63	4.13	0.88	38.07	3.54	134.85	4.000	No	Yes	2.00
662	43.46	55.24	2.67	4.18	0.89	33.90	3.81	129.27	4.000	No	Yes	2.00
663	43.52	48.95	2.72	4.22	0.91	29.60	4.15	122.72	4.000	No	Yes	2.00
664	43.61	43.21	2.77	4.25	0.93	25.69	4.52	116.06	4.000	No	Yes	2.00
665	43.64	38.48	2.82	4.33	0.95	22.50	4.92	110.79	4.000	No	Yes	2.00
666	43.70	34.37	2.86	4.38	0.97	19.75	5.34	105.47	4.000	No	Yes	2.00
667	43.79	31.53	2.89	4.31	0.98	17.87	5.61	100.21	4.000	No	Yes	2.00
668	43.84	29.85	2.90	4.10	0.98	16.79	5.68	95.39	4.000	No	Yes	2.00
669	43.90	29.16	2.89	3.87	0.98	16.37	5.61	91.83	4.000	No	Yes	2.00
670	43.97	28.62	2.89	3.72	0.98	16.03	5.57	89.31	4.000	No	Yes	2.00
671	44.05	28.46	2.88	3.64	0.97	15.91	5.55	88.25	4.000	No	Yes	2.00
672	44.10	28.90	2.88	3.63	0.97	16.18	5.48	88.67	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
673	44.18	29.73	2.87	3.68	0.97	16.69	5.41	90.36	4.000	No	Yes	2.00
674	44.24	30.91	2.86	3.74	0.97	17.43	5.32	92.72	4.000	No	Yes	2.00
675	44.30	32.38	2.85	3.83	0.96	18.35	5.22	95.76	4.000	No	Yes	2.00
676	44.38	34.27	2.83	3.92	0.96	19.53	5.09	99.36	4.000	No	Yes	2.00
677	44.45	36.52	2.82	3.97	0.95	20.96	4.92	103.06	4.000	No	Yes	2.00
678	44.49	39.14	2.79	3.95	0.94	22.67	4.68	106.18	4.000	No	Yes	2.00
679	44.57	41.80	2.76	3.90	0.93	24.41	4.46	108.75	4.000	No	Yes	2.00
680	44.64	44.11	2.74	3.92	0.92	25.89	4.31	111.67	4.000	No	Yes	2.00
681	44.72	45.81	2.73	3.98	0.92	26.96	4.24	114.40	4.000	No	Yes	2.00
682	44.79	47.04	2.73	4.03	0.91	27.72	4.21	116.56	4.000	No	Yes	2.00
683	44.84	48.33	2.72	4.06	0.91	28.53	4.15	118.40	4.000	Yes	Yes	2.00
684	44.92	51.62	2.68	3.87	0.90	30.75	3.87	118.97	4.000	Yes	Yes	2.00
685	44.96	56.00	2.63	3.57	0.88	33.79	3.51	118.61	4.000	Yes	Yes	2.00
686	45.03	61.93	2.56	3.21	0.85	37.94	3.09	117.38	4.000	Yes	No	2.00
687	45.09	70.39	2.47	2.79	0.82	43.99	2.63	115.79	4.000	Yes	No	2.00
688	45.19	78.97	2.39	2.46	0.79	50.19	2.29	114.70	4.000	Yes	No	2.00
689	45.23	87.67	2.32	2.19	0.76	56.61	2.01	113.97	4.000	Yes	No	2.00
690	45.28	95.84	2.26	2.02	0.74	62.61	1.84	115.12	4.000	Yes	No	2.00
691	45.38	103.70	2.22	1.90	0.72	68.35	1.71	117.08	4.000	Yes	No	2.00
692	45.43	110.94	2.18	1.84	0.71	73.64	1.63	119.99	4.000	Yes	No	2.00
693	45.48	114.55	2.18	1.89	0.71	76.05	1.63	123.69	0.256	No	No	0.64
694	45.58	115.95	2.20	2.00	0.71	76.70	1.66	127.38	4.000	Yes	No	2.00
695	45.62	113.89	2.23	2.19	0.73	74.81	1.75	130.77	4.000	Yes	No	2.00
696	45.67	107.49	2.29	2.47	0.75	69.71	1.92	133.73	4.000	Yes	No	2.00
697	45.78	100.41	2.35	2.79	0.77	64.15	2.13	136.92	4.000	Yes	No	2.00
698	45.82	92.83	2.42	3.15	0.80	58.44	2.39	139.92	4.000	Yes	No	2.00
699	45.88	86.04	2.47	3.42	0.82	53.46	2.63	140.77	4.000	Yes	No	2.00
700	45.98	79.71	2.52	3.68	0.84	48.88	2.88	140.84	4.000	Yes	No	2.00
701	46.02	73.83	2.57	3.91	0.85	44.74	3.13	140.23	4.000	Yes	No	2.00
702	46.07	69.62	2.59	3.99	0.86	41.84	3.29	137.86	4.000	Yes	No	2.00
703	46.17	66.01	2.62	4.02	0.87	39.37	3.42	134.82	4.000	No	Yes	2.00
704	46.21	63.43	2.63	3.97	0.88	37.66	3.49	131.48	4.000	No	Yes	2.00
705	46.27	61.17	2.64	3.93	0.88	36.16	3.55	128.41	4.000	No	Yes	2.00
706	46.37	59.04	2.65	3.89	0.88	34.72	3.62	125.52	4.000	No	Yes	2.00
707	46.39	57.19	2.66	3.87	0.89	33.50	3.68	123.35	4.000	No	Yes	2.00
708	46.47	55.24	2.67	3.95	0.89	32.14	3.82	122.66	4.000	No	Yes	2.00
709	46.57	53.36	2.70	4.06	0.90	30.82	3.97	122.21	4.000	No	Yes	2.00
710	46.62	51.65	2.71	4.14	0.91	29.64	4.10	121.62	4.000	No	Yes	2.00
711	46.67	49.67	2.74	4.28	0.92	28.29	4.29	121.27	4.000	No	Yes	2.00
712	46.77	47.76	2.76	4.42	0.93	26.96	4.48	120.87	4.000	No	Yes	2.00
713	46.82	46.32	2.78	4.54	0.94	25.98	4.64	120.67	4.000	No	Yes	2.00
714	46.90	45.86	2.79	4.55	0.94	25.64	4.69	120.21	4.000	No	Yes	2.00
715	46.92	45.62	2.79	4.54	0.94	25.48	4.70	119.75	4.000	No	Yes	2.00
716	47.01	45.61	2.79	4.54	0.94	25.43	4.70	119.60	4.000	No	Yes	2.00
717	47.05	45.76	2.79	4.53	0.94	25.51	4.69	119.58	4.000	No	Yes	2.00
718	47.12	45.95	2.79	4.54	0.94	25.59	4.69	119.93	4.000	No	Yes	2.00
719	47.21	45.72	2.80	4.61	0.94	25.38	4.75	120.48	4.000	No	Yes	2.00
720	47.28	46.33	2.79	4.59	0.94	25.74	4.70	120.95	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
721	47.32	46.71	2.79	4.60	0.94	25.95	4.68	121.44	4.000	No	Yes	2.00
722	47.40	47.02	2.79	4.63	0.94	26.10	4.68	122.19	4.000	No	Yes	2.00
723	47.45	47.62	2.79	4.66	0.94	26.44	4.66	123.33	4.000	No	Yes	2.00
724	47.55	48.61	2.78	4.65	0.93	27.01	4.60	124.26	4.000	No	Yes	2.00
725	47.58	49.96	2.76	4.55	0.93	27.88	4.47	124.59	4.000	No	Yes	2.00
726	47.66	51.87	2.74	4.39	0.92	29.11	4.28	124.45	4.000	No	Yes	2.00
727	47.74	54.02	2.71	4.21	0.91	30.50	4.07	124.17	4.000	No	Yes	2.00
728	47.80	56.71	2.68	4.02	0.90	32.27	3.84	124.05	4.000	No	Yes	2.00
729	47.85	58.65	2.66	3.92	0.89	33.53	3.70	124.22	4.000	No	Yes	2.00
730	47.93	60.64	2.64	3.82	0.88	34.81	3.58	124.49	4.000	No	Yes	2.00
731	47.98	62.76	2.62	3.71	0.87	36.21	3.44	124.46	4.000	No	Yes	2.00
732	48.04	64.99	2.59	3.57	0.86	37.69	3.29	124.03	0.257	No	No	0.65
733	48.11	67.41	2.57	3.44	0.85	39.30	3.14	123.57	0.255	No	No	0.65
734	48.20	69.59	2.55	3.33	0.85	40.73	3.03	123.38	0.255	No	No	0.65
735	48.24	71.33	2.54	3.28	0.84	41.88	2.95	123.68	0.256	No	No	0.65
736	48.30	72.97	2.52	3.23	0.84	42.95	2.89	123.93	0.257	No	No	0.65
737	48.39	74.42	2.51	3.18	0.83	43.87	2.83	124.05	0.258	No	No	0.65
738	48.44	75.99	2.50	3.14	0.83	44.91	2.77	124.44	0.259	No	No	0.66
739	48.53	77.80	2.49	3.10	0.82	46.06	2.71	124.94	0.261	No	No	0.66
740	48.59	79.60	2.48	3.07	0.82	47.23	2.66	125.51	0.264	No	No	0.67
741	48.64	80.98	2.47	3.06	0.82	48.11	2.63	126.34	0.268	No	No	0.68
742	48.70	82.04	2.47	3.08	0.82	48.73	2.62	127.52	0.273	No	No	0.69
743	48.78	83.53	2.46	3.09	0.81	49.64	2.59	128.78	0.279	No	No	0.71
744	48.82	85.19	2.46	3.09	0.81	50.69	2.56	129.97	0.284	No	No	0.72
745	48.89	87.28	2.45	3.08	0.81	52.03	2.52	131.08	0.289	No	No	0.74
746	48.98	90.26	2.43	3.03	0.80	53.97	2.45	132.03	0.294	No	No	0.75
747	49.05	93.73	2.41	2.95	0.79	56.28	2.36	132.78	0.298	No	No	0.76
748	49.09	97.44	2.39	2.87	0.79	58.81	2.27	133.45	0.301	No	No	0.77
749	49.16	101.81	2.36	2.78	0.78	61.78	2.17	134.12	0.304	No	No	0.78
750	49.24	106.91	2.34	2.68	0.77	65.26	2.07	135.13	0.309	No	No	0.79
751	49.31	112.14	2.31	2.59	0.75	68.86	1.98	136.11	0.315	No	No	0.80
752	49.38	116.76	2.29	2.51	0.75	72.05	1.90	137.00	0.319	No	No	0.82
753	49.43	120.62	2.26	2.43	0.74	74.75	1.84	137.59	0.322	No	No	0.82
754	49.52	123.30	2.25	2.35	0.73	76.64	1.79	137.04	0.319	No	No	0.82
755	49.58	124.61	2.23	2.27	0.73	77.65	1.75	135.66	0.312	No	No	0.80
756	49.63	124.38	2.22	2.21	0.72	77.57	1.73	133.96	0.304	No	No	0.78
757	49.71	122.70	2.23	2.19	0.72	76.38	1.73	132.38	0.296	No	No	0.76
758	49.77	119.64	2.24	2.21	0.73	74.19	1.76	130.76	4.000	Yes	No	2.00
759	49.82	114.85	2.26	2.25	0.74	70.80	1.82	128.74	4.000	Yes	No	2.00
760	49.88	107.69	2.29	2.33	0.75	65.75	1.92	126.27	4.000	Yes	No	2.00
761	49.97	100.43	2.33	2.42	0.76	60.65	2.04	123.80	4.000	Yes	No	2.00
762	50.01	94.19	2.36	2.50	0.77	56.34	2.16	121.67	4.000	Yes	No	2.00
763	50.07	89.11	2.40	2.63	0.79	52.76	2.30	121.25	4.000	Yes	No	2.00
764	50.17	84.50	2.44	2.81	0.80	49.44	2.47	122.07	4.000	Yes	No	2.00
765	50.22	80.39	2.48	3.00	0.82	46.53	2.65	123.24	4.000	Yes	No	2.00
766	50.29	76.13	2.51	3.17	0.83	43.58	2.83	123.52	4.000	Yes	No	2.00
767	50.37	72.92	2.54	3.28	0.84	41.37	2.97	123.02	4.000	Yes	No	2.00
768	50.42	69.90	2.56	3.36	0.85	39.36	3.10	122.05	4.000	Yes	No	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
769	50.47	68.34	2.57	3.36	0.86	38.34	3.15	120.84	4.000	No	No	2.00
770	50.57	65.94	2.59	3.39	0.86	36.74	3.25	119.31	4.000	No	No	2.00
771	50.63	62.51	2.61	3.46	0.87	34.52	3.40	117.49	4.000	No	Yes	2.00
772	50.68	58.31	2.64	3.51	0.88	31.85	3.60	114.64	4.000	No	Yes	2.00
773	50.73	53.55	2.68	3.52	0.90	28.88	3.82	110.42	4.000	No	Yes	2.00
774	50.79	48.91	2.71	3.50	0.91	26.02	4.06	105.58	4.000	No	Yes	2.00
775	50.88	45.25	2.73	3.42	0.92	23.79	4.23	100.57	4.000	No	Yes	2.00
776	50.93	41.03	2.76	3.35	0.93	21.25	4.48	95.16	4.000	No	Yes	2.00
777	51.03	37.66	2.78	3.19	0.94	19.24	4.65	89.48	4.000	No	Yes	2.00
778	51.07	34.69	2.80	2.99	0.94	17.53	4.77	83.65	4.000	No	Yes	2.00
779	51.14	32.58	2.80	2.70	0.94	16.34	4.76	77.75	4.000	No	Yes	2.00
780	51.23	30.90	2.79	2.40	0.94	15.42	4.68	72.12	4.000	No	Yes	2.00
781	51.27	29.21	2.78	2.14	0.94	14.49	4.63	67.10	4.000	No	Yes	2.00
782	51.33	28.11	2.78	1.96	0.93	13.89	4.58	63.59	4.000	No	Yes	2.00
783	51.42	27.14	2.77	1.79	0.93	13.35	4.53	60.46	4.000	No	Yes	2.00
784	51.48	26.51	2.76	1.64	0.93	13.02	4.44	57.82	4.000	No	Yes	2.00
785	51.52	26.33	2.75	1.59	0.92	12.93	4.40	56.91	4.000	No	Yes	2.00
786	51.60	26.44	2.75	1.57	0.92	12.98	4.37	56.75	4.000	No	Yes	2.00
787	51.68	26.86	2.74	1.58	0.92	13.22	4.32	57.16	4.000	No	Yes	2.00
788	51.72	27.53	2.74	1.61	0.92	13.60	4.28	58.21	4.000	No	Yes	2.00
789	51.81	28.12	2.74	1.68	0.92	13.90	4.30	59.73	4.000	No	Yes	2.00
790	51.87	28.73	2.74	1.77	0.92	14.22	4.32	61.44	4.000	No	Yes	2.00
791	51.91	28.93	2.75	1.86	0.92	14.29	4.40	62.90	4.000	No	Yes	2.00
792	51.98	28.88	2.77	1.95	0.93	14.21	4.50	63.93	4.000	No	Yes	2.00
793	52.07	28.66	2.78	2.02	0.93	14.03	4.61	64.66	4.000	No	Yes	2.00
794	52.10	28.09	2.79	2.05	0.94	13.67	4.72	64.51	4.000	No	Yes	2.00
795	52.17	27.20	2.81	2.07	0.95	13.12	4.86	63.79	4.000	No	Yes	2.00
796	52.24	26.15	2.83	2.08	0.95	12.48	5.03	62.82	4.000	No	Yes	2.00
797	52.31	24.96	2.85	2.09	0.96	11.76	5.24	61.59	4.000	No	Yes	2.00
798	52.37	23.83	2.87	2.05	0.97	11.10	5.40	59.89	4.000	No	Yes	2.00
799	52.46	22.77	2.88	1.99	0.97	10.48	5.52	57.92	4.000	No	Yes	2.00
800	52.51	21.99	2.89	1.91	0.98	10.05	5.59	56.16	4.000	No	Yes	2.00
801	52.57	21.52	2.89	1.81	0.97	9.79	5.56	54.48	4.000	No	Yes	2.00
802	52.66	21.13	2.88	1.71	0.97	9.58	5.52	52.88	4.000	No	Yes	2.00
803	52.71	20.91	2.88	1.64	0.97	9.46	5.47	51.80	4.000	No	Yes	2.00
804	52.78	20.78	2.87	1.58	0.97	9.39	5.44	51.06	4.000	No	Yes	2.00
805	52.86	20.69	2.87	1.54	0.97	9.34	5.40	50.46	4.000	No	Yes	2.00
806	52.91	20.62	2.87	1.52	0.97	9.30	5.38	50.07	4.000	No	Yes	2.00
807	52.99	20.60	2.87	1.50	0.97	9.29	5.37	49.83	4.000	No	Yes	2.00
808	53.06	20.61	2.86	1.49	0.97	9.29	5.35	49.67	4.000	No	Yes	2.00
809	53.09	20.61	2.86	1.47	0.97	9.29	5.32	49.44	4.000	No	Yes	2.00
810	53.16	20.64	2.86	1.46	0.96	9.30	5.31	49.35	4.000	No	Yes	2.00
811	53.25	20.67	2.86	1.45	0.96	9.30	5.29	49.26	4.000	No	Yes	2.00
812	53.29	20.68	2.86	1.44	0.96	9.31	5.28	49.17	4.000	No	Yes	2.00
813	53.36	20.66	2.86	1.44	0.96	9.29	5.28	49.08	4.000	No	Yes	2.00
814	53.45	20.68	2.86	1.43	0.96	9.29	5.27	48.99	4.000	No	Yes	2.00
815	53.50	20.68	2.85	1.43	0.96	9.28	5.27	48.90	4.000	No	Yes	2.00
816	53.55	20.67	2.86	1.43	0.96	9.27	5.28	48.97	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
817	53.64	20.67	2.86	1.44	0.96	9.25	5.30	49.03	4.000	No	Yes	2.00
818	53.69	20.70	2.86	1.44	0.96	9.26	5.30	49.09	4.000	No	Yes	2.00
819	53.76	20.73	2.86	1.44	0.96	9.27	5.30	49.08	4.000	No	Yes	2.00
820	53.84	20.80	2.86	1.45	0.96	9.29	5.30	49.22	4.000	No	Yes	2.00
821	53.88	20.91	2.86	1.47	0.96	9.35	5.30	49.59	4.000	No	Yes	2.00
822	53.96	21.17	2.86	1.49	0.96	9.48	5.28	50.03	4.000	No	Yes	2.00
823	54.03	21.41	2.85	1.51	0.96	9.60	5.26	50.46	4.000	No	Yes	2.00
824	54.08	21.59	2.85	1.52	0.96	9.69	5.24	50.82	4.000	No	Yes	2.00
825	54.17	21.74	2.85	1.53	0.96	9.76	5.23	51.09	4.000	No	Yes	2.00
826	54.23	21.88	2.85	1.55	0.96	9.83	5.23	51.37	4.000	No	Yes	2.00
827	54.27	21.99	2.85	1.56	0.96	9.88	5.23	51.65	4.000	No	Yes	2.00
828	54.38	22.08	2.85	1.57	0.96	9.91	5.22	51.77	4.000	No	Yes	2.00
829	54.42	22.14	2.85	1.55	0.96	9.94	5.20	51.69	4.000	No	Yes	2.00
830	54.47	22.17	2.84	1.52	0.96	9.97	5.14	51.26	4.000	No	Yes	2.00
831	54.53	22.12	2.84	1.48	0.96	9.94	5.10	50.74	4.000	No	Yes	2.00
832	54.61	22.06	2.83	1.44	0.95	9.91	5.07	50.22	4.000	No	Yes	2.00
833	54.68	22.03	2.83	1.42	0.95	9.90	5.04	49.84	4.000	No	Yes	2.00
834	54.73	22.02	2.83	1.39	0.95	9.89	5.01	49.53	4.000	No	Yes	2.00
835	54.80	22.01	2.82	1.38	0.95	9.87	5.00	49.37	4.000	No	Yes	2.00
836	54.88	22.03	2.82	1.38	0.95	9.87	5.00	49.35	4.000	No	Yes	2.00
837	54.95	22.09	2.83	1.40	0.95	9.89	5.01	49.56	4.000	No	Yes	2.00
838	55.02	22.17	2.83	1.42	0.95	9.92	5.03	49.92	4.000	No	Yes	2.00
839	55.07	22.23	2.83	1.46	0.96	9.93	5.08	50.42	4.000	No	Yes	2.00
840	55.15	22.25	2.84	1.50	0.96	9.91	5.14	50.97	4.000	No	Yes	2.00
841	55.21	22.27	2.85	1.55	0.96	9.90	5.20	51.52	4.000	No	Yes	2.00
842	55.27	22.39	2.85	1.57	0.96	9.96	5.21	51.86	4.000	No	Yes	2.00
843	55.34	22.62	2.84	1.57	0.96	10.08	5.17	52.13	4.000	No	Yes	2.00
844	55.42	22.88	2.84	1.57	0.96	10.21	5.12	52.33	4.000	No	Yes	2.00
845	55.47	23.13	2.83	1.57	0.96	10.34	5.08	52.59	4.000	No	Yes	2.00
846	55.54	23.41	2.84	1.62	0.96	10.48	5.09	53.39	4.000	No	Yes	2.00
847	55.62	23.74	2.84	1.66	0.96	10.64	5.10	54.24	4.000	No	Yes	2.00
848	55.65	24.32	2.83	1.70	0.95	10.95	5.05	55.28	4.000	No	Yes	2.00
849	55.72	25.17	2.82	1.73	0.95	11.41	4.94	56.41	4.000	No	Yes	2.00
850	55.81	26.14	2.81	1.77	0.95	11.94	4.85	57.86	4.000	No	Yes	2.00
851	55.84	27.15	2.80	1.85	0.94	12.48	4.80	59.87	4.000	No	Yes	2.00
852	55.91	28.26	2.81	2.04	0.95	13.02	4.86	63.28	4.000	No	Yes	2.00
853	55.98	29.52	2.82	2.26	0.95	13.64	4.92	67.15	4.000	No	Yes	2.00
854	56.05	31.10	2.81	2.44	0.95	14.46	4.90	70.92	4.000	Yes	Yes	2.00
855	56.11	34.04	2.78	2.45	0.93	16.12	4.59	73.94	4.000	Yes	Yes	2.00
856	56.21	38.52	2.72	2.40	0.91	18.71	4.13	77.33	4.000	Yes	Yes	2.00
857	56.26	43.85	2.66	2.33	0.89	21.85	3.70	80.74	4.000	Yes	Yes	2.00
858	56.31	51.25	2.58	2.23	0.86	26.31	3.21	84.44	4.000	Yes	No	2.00
859	56.39	58.39	2.52	2.16	0.84	30.64	2.88	88.08	4.000	Yes	No	2.00
860	56.46	66.60	2.46	2.08	0.81	35.71	2.57	91.68	4.000	Yes	No	2.00
861	56.50	74.21	2.41	2.01	0.79	40.49	2.34	94.69	4.000	Yes	No	2.00
862	56.60	80.84	2.37	1.97	0.78	44.64	2.19	97.58	4.000	Yes	No	2.00
863	56.65	86.36	2.34	1.96	0.77	48.10	2.09	100.49	4.000	Yes	No	2.00
864	56.72	89.96	2.33	1.99	0.76	50.26	2.06	103.30	4.000	No	No	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
865	56.78	91.09	2.33	2.03	0.76	50.86	2.06	104.84	4.000	No	No	2.00
866	56.87	90.61	2.34	2.08	0.77	50.39	2.10	105.65	4.000	Yes	No	2.00
867	56.93	86.85	2.37	2.18	0.78	47.84	2.21	105.54	4.000	Yes	No	2.00
868	56.97	82.39	2.41	2.26	0.79	44.91	2.33	104.79	4.000	Yes	No	2.00
869	57.05	76.32	2.45	2.38	0.81	40.97	2.52	103.41	4.000	Yes	No	2.00
870	57.11	69.97	2.50	2.48	0.83	36.95	2.75	101.47	4.000	Yes	No	2.00
871	57.17	63.87	2.54	2.56	0.84	33.16	2.98	98.86	4.000	Yes	No	2.00
872	57.25	58.18	2.58	2.61	0.86	29.71	3.22	95.61	4.000	Yes	No	2.00
873	57.31	52.54	2.63	2.64	0.88	26.32	3.49	91.87	4.000	Yes	Yes	2.00
874	57.37	47.66	2.67	2.65	0.89	23.46	3.76	88.15	4.000	Yes	Yes	2.00
875	57.42	43.35	2.70	2.62	0.91	20.97	4.01	84.11	4.000	Yes	Yes	2.00
876	57.48	39.91	2.73	2.54	0.91	19.02	4.20	79.93	4.000	Yes	Yes	2.00
877	57.56	37.11	2.75	2.44	0.92	17.46	4.35	75.95	4.000	No	Yes	2.00
878	57.64	34.62	2.76	2.32	0.93	16.08	4.48	72.08	4.000	No	Yes	2.00
879	57.70	32.80	2.77	2.18	0.93	15.10	4.54	68.55	4.000	No	Yes	2.00
880	57.74	31.50	2.77	2.01	0.93	14.44	4.51	65.16	4.000	No	Yes	2.00
881	57.81	30.51	2.76	1.85	0.93	13.94	4.46	62.19	4.000	No	Yes	2.00
882	57.90	29.96	2.75	1.71	0.92	13.68	4.37	59.72	4.000	No	Yes	2.00
883	57.95	29.50	2.74	1.61	0.92	13.45	4.31	58.04	4.000	No	Yes	2.00
884	58.06	29.02	2.75	1.63	0.92	13.15	4.40	57.86	4.000	No	Yes	2.00
885	58.09	28.66	2.77	1.69	0.93	12.92	4.51	58.28	4.000	No	Yes	2.00
886	58.15	28.80	2.77	1.73	0.93	12.96	4.55	59.02	4.000	No	Yes	2.00
887	58.20	29.53	2.76	1.73	0.93	13.36	4.46	59.61	4.000	No	Yes	2.00
888	58.29	30.50	2.74	1.70	0.92	13.91	4.31	59.94	4.000	No	Yes	2.00
889	58.33	31.57	2.72	1.67	0.91	14.52	4.16	60.44	4.000	No	Yes	2.00
890	58.40	32.28	2.72	1.69	0.91	14.90	4.11	61.27	4.000	No	Yes	2.00
891	58.48	32.70	2.71	1.72	0.91	15.11	4.10	62.00	4.000	No	Yes	2.00
892	58.55	33.02	2.71	1.75	0.91	15.26	4.10	62.56	4.000	No	Yes	2.00
893	58.60	32.96	2.71	1.72	0.91	15.23	4.08	62.16	4.000	No	Yes	2.00
894	58.66	33.04	2.70	1.64	0.90	15.31	3.99	61.04	4.000	No	Yes	2.00
895	58.75	32.78	2.69	1.56	0.90	15.19	3.93	59.62	4.000	No	Yes	2.00
896	58.80	31.98	2.70	1.53	0.90	14.73	3.98	58.57	4.000	No	Yes	2.00
897	58.88	30.93	2.71	1.53	0.91	14.12	4.09	57.74	4.000	No	Yes	2.00
898	58.97	29.66	2.73	1.54	0.92	13.38	4.25	56.89	4.000	No	Yes	2.00
899	59.02	28.78	2.74	1.50	0.92	12.89	4.32	55.64	4.000	No	Yes	2.00
900	59.06	28.25	2.74	1.45	0.92	12.61	4.32	54.47	4.000	No	Yes	2.00
901	59.12	27.98	2.74	1.38	0.92	12.49	4.26	53.25	4.000	No	Yes	2.00
902	59.20	28.12	2.72	1.31	0.91	12.60	4.15	52.31	4.000	No	Yes	2.00
903	59.26	28.04	2.72	1.29	0.91	12.55	4.14	51.90	4.000	No	Yes	2.00
904	59.35	28.00	2.72	1.29	0.91	12.51	4.14	51.82	4.000	No	Yes	2.00
905	59.41	28.02	2.72	1.31	0.91	12.50	4.17	52.14	4.000	No	Yes	2.00
906	59.46	28.08	2.73	1.34	0.92	12.51	4.21	52.66	4.000	No	Yes	2.00
907	59.52	28.38	2.73	1.38	0.92	12.65	4.22	53.41	4.000	No	Yes	2.00
908	59.61	28.81	2.73	1.42	0.92	12.85	4.22	54.27	4.000	No	Yes	2.00
909	59.68	29.23	2.73	1.45	0.92	13.06	4.21	54.99	4.000	No	Yes	2.00
910	59.72	29.44	2.73	1.49	0.92	13.14	4.24	55.77	4.000	No	Yes	2.00
911	59.79	29.54	2.74	1.53	0.92	13.16	4.29	56.42	4.000	No	Yes	2.00
912	59.86	29.55	2.75	1.57	0.92	13.13	4.34	56.94	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
913	59.91	29.54	2.72	1.43	0.91	13.20	4.16	54.87	4.000	No	Yes	2.00
914	60.01	29.54	2.69	1.26	0.90	13.28	3.95	52.42	4.000	Yes	Yes	2.00
915	60.06	29.43	2.66	1.10	0.89	13.32	3.73	49.70	4.000	Yes	Yes	2.00
916	60.15	29.33	2.63	0.92	0.88	13.39	3.48	46.66	4.000	Yes	Yes	2.00
917	60.19	29.08	2.58	0.74	0.86	13.40	3.22	43.20	4.000	Yes	No	2.00
918	60.26	29.01	2.53	0.55	0.84	13.54	2.91	39.48	4.000	Yes	No	2.00
919	60.35	28.68	2.47	0.37	0.81	13.58	2.60	35.31	4.000	Yes	No	2.00
920	60.40	28.68	2.38	0.18	0.78	13.89	2.22	30.80	4.000	Yes	No	2.00
921	60.45	28.56	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
922	60.51	29.38	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00

Abbreviations

Depth: Depth from free surface, at which CPT was performed (ft)
q_t: Total cone resistance
I_c: Soil behavior type index
Fr: Normalized friction ratio (%)
n: Stress exponent
Q_{tn}: Normalized cone resistance
K_c: Cone resistance correction factor due to fines
$Q_{tn,cs}$: Normalized and adjusted cone resistance
$CRR_{7.5}$: Cyclic resistance ratio for M_w=7.5
FS: Factor of safety against soil liquefaction

:: Liquefaction Potential Index calculation data ::

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
0.09	2.00	0.00	0.00	0.02	0.00	0.15	2.00	0.00	0.00	0.02	0.00
0.21	2.00	0.00	0.00	0.02	0.00	0.29	2.00	0.00	0.00	0.02	0.00
0.34	2.00	0.00	0.00	0.02	0.00	0.40	2.00	0.00	0.00	0.02	0.00
0.49	2.00	0.00	0.00	0.03	0.00	0.55	2.00	0.00	0.00	0.02	0.00
0.59	2.00	0.00	0.00	0.01	0.00	0.69	2.00	0.00	0.00	0.03	0.00
0.74	2.00	0.00	0.00	0.02	0.00	0.81	2.00	0.00	0.00	0.02	0.00
0.89	2.00	0.00	0.00	0.02	0.00	0.94	2.00	0.00	0.00	0.02	0.00
0.99	2.00	0.00	0.00	0.02	0.00	1.09	2.00	0.00	0.00	0.03	0.00
1.14	2.00	0.00	0.00	0.02	0.00	1.19	2.00	0.00	0.00	0.02	0.00
1.26	2.00	0.00	0.00	0.02	0.00	1.34	2.00	0.00	0.00	0.02	0.00
1.38	2.00	0.00	0.00	0.01	0.00	1.50	2.00	0.00	0.00	0.04	0.00
1.53	2.00	0.00	0.00	0.01	0.00	1.59	2.00	0.00	0.00	0.02	0.00
1.68	2.00	0.00	0.00	0.03	0.00	1.72	2.00	0.00	0.00	0.01	0.00
1.78	2.00	0.00	0.00	0.02	0.00	1.87	2.00	0.00	0.00	0.03	0.00
1.93	2.00	0.00	0.00	0.02	0.00	1.98	2.00	0.00	0.00	0.02	0.00
2.06	2.00	0.00	0.00	0.02	0.00	2.13	2.00	0.00	0.00	0.02	0.00
2.17	2.00	0.00	0.00	0.01	0.00	2.28	2.00	0.00	0.00	0.03	0.00
2.32	2.00	0.00	0.00	0.01	0.00	2.39	2.00	0.00	0.00	0.02	0.00
2.43	2.00	0.00	0.00	0.01	0.00	2.52	2.00	0.00	0.00	0.03	0.00
2.57	2.00	0.00	0.00	0.02	0.00	2.66	2.00	0.00	0.00	0.03	0.00
2.69	2.00	0.00	0.00	0.01	0.00	2.77	2.00	0.00	0.00	0.02	0.00
2.86	2.00	0.00	0.00	0.03	0.00	2.92	2.00	0.00	0.00	0.02	0.00
2.96	2.00	0.00	0.00	0.01	0.00	3.06	2.00	0.00	0.00	0.03	0.00
3.11	2.00	0.00	0.00	0.02	0.00	3.15	2.00	0.00	0.00	0.01	0.00
3.26	2.00	0.00	0.00	0.03	0.00	3.30	2.00	0.00	0.00	0.01	0.00
3.37	2.00	0.00	0.00	0.02	0.00	3.46	2.00	0.00	0.00	0.03	0.00
3.51	2.00	0.00	0.00	0.02	0.00	3.56	2.00	0.00	0.00	0.02	0.00
3.64	2.00	0.00	0.00	0.02	0.00	3.71	2.00	0.00	0.00	0.02	0.00
3.76	2.00	0.00	0.00	0.02	0.00	3.81	2.00	0.00	0.00	0.02	0.00
3.90	2.00	0.00	0.00	0.03	0.00	3.94	2.00	0.00	0.00	0.01	0.00
4.01	2.00	0.00	0.00	0.02	0.00	4.09	2.00	0.00	0.00	0.02	0.00
4.15	2.00	0.00	0.00	0.02	0.00	4.20	2.00	0.00	0.00	0.02	0.00
4.30	2.00	0.00	0.00	0.03	0.00	4.35	2.00	0.00	0.00	0.02	0.00
4.41	2.00	0.00	0.00	0.02	0.00	4.50	2.00	0.00	0.00	0.03	0.00
4.55	2.00	0.00	0.00	0.02	0.00	4.60	2.00	0.00	0.00	0.02	0.00
4.68	2.00	0.00	0.00	0.02	0.00	4.75	2.00	0.00	0.00	0.02	0.00
4.79	2.00	0.00	0.00	0.01	0.00	4.88	2.00	0.00	0.00	0.03	0.00
4.95	2.00	0.00	0.00	0.02	0.00	4.99	2.00	0.00	0.00	0.01	0.00
5.06	2.00	0.00	0.00	0.02	0.00	5.14	2.00	0.00	0.00	0.02	0.00
5.21	2.00	0.00	0.00	0.02	0.00	5.26	2.00	0.00	0.00	0.02	0.00
5.33	2.00	0.00	0.00	0.02	0.00	5.40	2.00	0.00	0.00	0.02	0.00
5.45	2.00	0.00	0.00	0.02	0.00	5.51	2.00	0.00	0.00	0.02	0.00
5.60	2.00	0.00	0.00	0.03	0.00	5.66	2.00	0.00	0.00	0.02	0.00
5.71	2.00	0.00	0.00	0.02	0.00	5.78	2.00	0.00	0.00	0.02	0.00
5.86	2.00	0.00	0.00	0.02	0.00	5.93	2.00	0.00	0.00	0.02	0.00
6.01	2.00	0.00	0.00	0.02	0.00	6.05	2.00	0.00	0.00	0.01	0.00
6.11	2.00	0.00	0.00	0.02	0.00	6.21	2.00	0.00	0.00	0.03	0.00
6.25	2.00	0.00	0.00	0.01	0.00	6.31	2.00	0.00	0.00	0.02	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
6.39	2.00	0.00	0.00	0.02	0.00	6.45	2.00	0.00	0.00	0.02	0.00
6.51	2.00	0.00	0.00	0.02	0.00	6.58	2.00	0.00	0.00	0.02	0.00
6.66	2.00	0.00	0.00	0.02	0.00	6.70	2.00	0.00	0.00	0.01	0.00
6.78	2.00	0.00	0.00	0.02	0.00	6.85	2.00	0.00	0.00	0.02	0.00
6.89	2.00	0.00	0.00	0.01	0.00	7.00	2.00	0.00	0.00	0.03	0.00
7.03	2.00	0.00	0.00	0.01	0.00	7.10	2.00	0.00	0.00	0.02	0.00
7.19	2.00	0.00	0.00	0.03	0.00	7.25	2.00	0.00	0.00	0.02	0.00
7.30	2.00	0.00	0.00	0.02	0.00	7.37	2.00	0.00	0.00	0.02	0.00
7.44	2.00	0.00	0.00	0.02	0.00	7.49	2.00	0.00	0.00	0.02	0.00
7.56	2.00	0.00	0.00	0.02	0.00	7.64	2.00	0.00	0.00	0.02	0.00
7.68	2.00	0.00	0.00	0.01	0.00	7.79	2.00	0.00	0.00	0.03	0.00
7.83	2.00	0.00	0.00	0.01	0.00	7.90	2.00	0.00	0.00	0.02	0.00
7.98	2.00	0.00	0.00	0.02	0.00	8.02	2.00	0.00	0.00	0.01	0.00
8.09	2.00	0.00	0.00	0.02	0.00	8.15	2.00	0.00	0.00	0.02	0.00
8.23	2.00	0.00	0.00	0.02	0.00	8.29	2.00	0.00	0.00	0.02	0.00
8.34	2.00	0.00	0.00	0.02	0.00	8.41	2.00	0.00	0.00	0.02	0.00
8.48	2.00	0.00	0.00	0.02	0.00	8.55	2.00	0.00	0.00	0.02	0.00
8.60	2.00	0.00	0.00	0.02	0.00	8.66	2.00	0.00	0.00	0.02	0.00
8.74	2.00	0.00	0.00	0.02	0.00	8.83	2.00	0.00	0.00	0.03	0.00
8.90	2.00	0.00	0.00	0.02	0.00	8.94	2.00	0.00	0.00	0.01	0.00
9.01	2.00	0.00	0.00	0.02	0.00	9.09	2.00	0.00	0.00	0.02	0.00
9.15	2.00	0.00	0.00	0.02	0.00	9.20	2.00	0.00	0.00	0.02	0.00
9.29	2.00	0.00	0.00	0.03	0.00	9.35	2.00	0.00	0.00	0.02	0.00
9.39	2.00	0.00	0.00	0.01	0.00	9.45	2.00	0.00	0.00	0.02	0.00
9.55	2.00	0.00	0.00	0.03	0.00	9.64	2.00	0.00	0.00	0.03	0.00
9.65	2.00	0.00	0.00	0.00	0.00	9.73	2.00	0.00	0.00	0.02	0.00
9.79	2.00	0.00	0.00	0.02	0.00	9.84	2.00	0.00	0.00	0.02	0.00
9.91	2.00	0.00	0.00	0.02	0.00	9.99	2.00	0.00	0.00	0.02	0.00
10.08	2.00	0.00	0.00	0.03	0.00	10.14	2.00	0.00	0.00	0.02	0.00
10.19	2.00	0.00	0.00	0.02	0.00	10.25	2.00	0.00	0.00	0.02	0.00
10.34	2.00	0.00	0.00	0.03	0.00	10.38	2.00	0.00	0.00	0.01	0.00
10.44	2.00	0.00	0.00	0.02	0.00	10.52	2.00	0.00	0.00	0.02	0.00
10.59	2.00	0.00	0.00	0.02	0.00	10.63	2.00	0.00	0.00	0.01	0.00
10.70	2.00	0.00	0.00	0.02	0.00	10.78	2.00	0.00	0.00	0.02	0.00
10.87	2.00	0.00	0.00	0.03	0.00	10.93	0.75	0.00	0.00	0.02	0.04
10.97	0.75	0.00	0.00	0.01	0.03	11.03	0.76	0.00	0.00	0.02	0.04
11.12	0.77	0.00	0.00	0.03	0.05	11.16	0.78	0.00	0.00	0.01	0.02
11.23	0.79	0.00	0.00	0.02	0.04	11.31	0.80	0.00	0.00	0.02	0.04
11.37	0.82	0.00	0.00	0.02	0.03	11.44	0.84	0.00	0.00	0.02	0.03
11.51	0.86	0.00	0.00	0.02	0.03	11.56	0.87	0.00	0.00	0.02	0.02
11.63	0.88	0.00	0.00	0.02	0.02	11.71	0.88	0.00	0.00	0.02	0.02
11.76	0.89	0.00	0.00	0.02	0.01	11.83	0.89	0.00	0.00	0.02	0.02
11.91	0.89	0.00	0.00	0.02	0.02	11.94	0.89	0.00	0.00	0.01	0.01
12.05	2.00	0.00	0.00	0.03	0.00	12.10	2.00	0.00	0.00	0.02	0.00
12.14	2.00	0.00	0.00	0.01	0.00	12.25	2.00	0.00	0.00	0.03	0.00
12.29	2.00	0.00	0.00	0.01	0.00	12.35	2.00	0.00	0.00	0.02	0.00
12.44	2.00	0.00	0.00	0.03	0.00	12.49	2.00	0.00	0.00	0.02	0.00
12.55	2.00	0.00	0.00	0.02	0.00	12.61	2.00	0.00	0.00	0.02	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
12.70	2.00	0.00	0.00	0.03	0.00	12.75	2.00	0.00	0.00	0.02	0.00
12.81	2.00	0.00	0.00	0.02	0.00	12.89	2.00	0.00	0.00	0.02	0.00
12.94	2.00	0.00	0.00	0.02	0.00	12.99	2.00	0.00	0.00	0.02	0.00
13.08	2.00	0.00	0.00	0.03	0.00	13.15	2.00	0.00	0.00	0.02	0.00
13.20	2.00	0.00	0.00	0.02	0.00	13.27	2.00	0.00	0.00	0.02	0.00
13.32	2.00	0.00	0.00	0.02	0.00	13.39	2.00	0.00	0.00	0.02	0.00
13.48	2.00	0.00	0.00	0.03	0.00	13.54	2.00	0.00	0.00	0.02	0.00
13.59	2.00	0.00	0.00	0.02	0.00	13.65	2.00	0.00	0.00	0.02	0.00
13.74	2.00	0.00	0.00	0.03	0.00	13.80	2.00	0.00	0.00	0.02	0.00
13.89	2.00	0.00	0.00	0.03	0.00	13.93	2.00	0.00	0.00	0.01	0.00
13.99	2.00	0.00	0.00	0.02	0.00	14.07	2.00	0.00	0.00	0.02	0.00
14.12	2.00	0.00	0.00	0.02	0.00	14.18	2.00	0.00	0.00	0.02	0.00
14.26	2.00	0.00	0.00	0.02	0.00	14.34	2.00	0.00	0.00	0.02	0.00
14.38	2.00	0.00	0.00	0.01	0.00	14.47	2.00	0.00	0.00	0.03	0.00
14.53	2.00	0.00	0.00	0.02	0.00	14.57	2.00	0.00	0.00	0.01	0.00
14.64	2.00	0.00	0.00	0.02	0.00	14.72	2.00	0.00	0.00	0.02	0.00
14.80	2.00	0.00	0.00	0.02	0.00	14.83	2.00	0.00	0.00	0.01	0.00
14.92	2.00	0.00	0.00	0.03	0.00	14.97	2.00	0.00	0.00	0.02	0.00
15.06	2.00	0.00	0.00	0.03	0.00	15.10	2.00	0.00	0.00	0.01	0.00
15.17	2.00	0.00	0.00	0.02	0.00	15.25	2.00	0.00	0.00	0.02	0.00
15.31	2.00	0.00	0.00	0.02	0.00	15.37	2.00	0.00	0.00	0.02	0.00
15.44	2.00	0.00	0.00	0.02	0.00	15.51	2.00	0.00	0.00	0.02	0.00
15.56	2.00	0.00	0.00	0.02	0.00	15.63	2.00	0.00	0.00	0.02	0.00
15.71	2.00	0.00	0.00	0.02	0.00	15.76	0.92	0.00	0.00	0.02	0.01
15.82	0.96	0.00	0.00	0.02	0.01	15.90	1.00	0.00	0.00	0.02	0.00
15.95	1.04	0.00	0.00	0.02	0.00	16.01	1.06	0.00	0.00	0.02	0.00
16.10	2.00	0.00	0.00	0.03	0.00	16.16	2.00	0.00	0.00	0.02	0.00
16.21	2.00	0.00	0.00	0.02	0.00	16.29	2.00	0.00	0.00	0.02	0.00
16.36	2.00	0.00	0.00	0.02	0.00	16.41	2.00	0.00	0.00	0.02	0.00
16.49	1.09	0.00	0.00	0.02	0.00	16.55	1.11	0.00	0.00	0.02	0.00
16.60	1.14	0.00	0.00	0.02	0.00	16.70	2.00	0.00	0.00	0.03	0.00
16.74	2.00	0.00	0.00	0.01	0.00	16.80	2.00	0.00	0.00	0.02	0.00
16.89	2.00	0.00	0.00	0.03	0.00	16.93	2.00	0.00	0.00	0.01	0.00
17.00	2.00	0.00	0.00	0.02	0.00	17.09	2.00	0.00	0.00	0.03	0.00
17.14	2.00	0.00	0.00	0.02	0.00	17.20	2.00	0.00	0.00	0.02	0.00
17.28	2.00	0.00	0.00	0.02	0.00	17.34	2.00	0.00	0.00	0.02	0.00
17.41	2.00	0.00	0.00	0.02	0.00	17.48	2.00	0.00	0.00	0.02	0.00
17.56	2.00	0.00	0.00	0.02	0.00	17.62	2.00	0.00	0.00	0.02	0.00
17.67	2.00	0.00	0.00	0.02	0.00	17.72	2.00	0.00	0.00	0.02	0.00
17.78	2.00	0.00	0.00	0.02	0.00	17.87	2.00	0.00	0.00	0.03	0.00
17.94	2.00	0.00	0.00	0.02	0.00	18.01	2.00	0.00	0.00	0.02	0.00
18.06	2.00	0.00	0.00	0.02	0.00	18.12	2.00	0.00	0.00	0.02	0.00
18.21	0.82	0.00	0.00	0.03	0.04	18.25	0.84	0.00	0.00	0.01	0.01
18.31	0.84	0.00	0.00	0.02	0.02	18.40	2.00	0.00	0.00	0.03	0.00
18.44	2.00	0.00	0.00	0.01	0.00	18.51	2.00	0.00	0.00	0.02	0.00
18.58	2.00	0.00	0.00	0.02	0.00	18.64	2.00	0.00	0.00	0.02	0.00
18.71	2.00	0.00	0.00	0.02	0.00	18.80	2.00	0.00	0.00	0.03	0.00
18.86	2.00	0.00	0.00	0.02	0.00	18.91	2.00	0.00	0.00	0.02	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
18.98	2.00	0.00	0.00	0.02	0.00	19.05	2.00	0.00	0.00	0.02	0.00
19.10	2.00	0.00	0.00	0.02	0.00	19.20	2.00	0.00	0.00	0.03	0.00
19.23	2.00	0.00	0.00	0.01	0.00	19.30	2.00	0.00	0.00	0.02	0.00
19.39	2.00	0.00	0.00	0.03	0.00	19.43	2.00	0.00	0.00	0.01	0.00
19.50	2.00	0.00	0.00	0.02	0.00	19.57	2.00	0.00	0.00	0.02	0.00
19.63	2.00	0.00	0.00	0.02	0.00	19.70	1.29	0.00	0.00	0.02	0.00
19.77	1.37	0.00	0.00	0.02	0.00	19.84	1.35	0.00	0.00	0.02	0.00
19.90	1.35	0.00	0.00	0.02	0.00	19.99	2.00	0.00	0.00	0.03	0.00
20.02	2.00	0.00	0.00	0.01	0.00	20.09	2.00	0.00	0.00	0.02	0.00
20.19	2.00	0.00	0.00	0.03	0.00	20.21	2.00	0.00	0.00	0.01	0.00
20.29	2.00	0.00	0.00	0.02	0.00	20.38	2.00	0.00	0.00	0.03	0.00
20.42	2.00	0.00	0.00	0.01	0.00	20.52	2.00	0.00	0.00	0.03	0.00
20.55	2.00	0.00	0.00	0.01	0.00	20.62	2.00	0.00	0.00	0.02	0.00
20.68	2.00	0.00	0.00	0.02	0.00	20.75	2.00	0.00	0.00	0.02	0.00
20.81	2.00	0.00	0.00	0.02	0.00	20.90	2.00	0.00	0.00	0.03	0.00
20.96	2.00	0.00	0.00	0.02	0.00	21.01	2.00	0.00	0.00	0.02	0.00
21.09	2.00	0.00	0.00	0.02	0.00	21.15	2.00	0.00	0.00	0.02	0.00
21.21	2.00	0.00	0.00	0.02	0.00	21.30	1.40	0.00	0.00	0.03	0.00
21.36	1.41	0.00	0.00	0.02	0.00	21.40	1.41	0.00	0.00	0.01	0.00
21.49	1.42	0.00	0.00	0.03	0.00	21.56	2.00	0.00	0.00	0.02	0.00
21.60	2.00	0.00	0.00	0.01	0.00	21.66	2.00	0.00	0.00	0.02	0.00
21.75	2.00	0.00	0.00	0.03	0.00	21.80	2.00	0.00	0.00	0.02	0.00
21.85	2.00	0.00	0.00	0.02	0.00	21.95	2.00	0.00	0.00	0.03	0.00
21.99	2.00	0.00	0.00	0.01	0.00	22.05	2.00	0.00	0.00	0.02	0.00
22.14	1.58	0.00	0.00	0.03	0.00	22.19	1.45	0.00	0.00	0.02	0.00
22.26	1.29	0.00	0.00	0.02	0.00	22.35	1.13	0.00	0.00	0.03	0.00
22.44	0.99	0.00	0.00	0.03	0.00	22.45	0.88	0.00	0.00	0.00	0.00
22.54	0.79	0.00	0.00	0.03	0.04	22.58	0.73	0.00	0.00	0.01	0.02
22.65	0.71	0.00	0.00	0.02	0.04	22.73	2.00	0.00	0.00	0.02	0.00
22.79	2.00	0.00	0.00	0.02	0.00	22.85	0.77	0.00	0.00	0.02	0.03
22.93	0.86	0.00	0.00	0.02	0.02	22.99	0.98	0.00	0.00	0.02	0.00
23.04	1.10	0.00	0.00	0.02	0.00	23.12	1.21	0.00	0.00	0.02	0.00
23.19	1.30	0.00	0.00	0.02	0.00	23.27	1.38	0.00	0.00	0.02	0.00
23.30	1.44	0.00	0.00	0.01	0.00	23.38	1.48	0.00	0.00	0.02	0.00
23.47	1.47	0.00	0.00	0.03	0.00	23.50	1.42	0.00	0.00	0.01	0.00
23.58	1.35	0.00	0.00	0.02	0.00	23.66	1.28	0.00	0.00	0.02	0.00
23.69	1.23	0.00	0.00	0.01	0.00	23.77	1.21	0.00	0.00	0.02	0.00
23.84	1.20	0.00	0.00	0.02	0.00	23.92	1.20	0.00	0.00	0.02	0.00
23.97	1.21	0.00	0.00	0.02	0.00	24.06	1.21	0.00	0.00	0.03	0.00
24.12	1.23	0.00	0.00	0.02	0.00	24.17	1.25	0.00	0.00	0.02	0.00
24.23	1.25	0.00	0.00	0.02	0.00	24.31	1.23	0.00	0.00	0.02	0.00
24.36	1.20	0.00	0.00	0.02	0.00	24.42	1.15	0.00	0.00	0.02	0.00
24.51	1.09	0.00	0.00	0.03	0.00	24.54	1.02	0.00	0.00	0.01	0.00
24.62	2.00	0.00	0.00	0.02	0.00	24.71	2.00	0.00	0.00	0.03	0.00
24.74	2.00	0.00	0.00	0.01	0.00	24.81	2.00	0.00	0.00	0.02	0.00
24.89	2.00	0.00	0.00	0.02	0.00	24.96	2.00	0.00	0.00	0.02	0.00
25.01	2.00	0.00	0.00	0.02	0.00	25.10	2.00	0.00	0.00	0.03	0.00
25.14	2.00	0.00	0.00	0.01	0.00	25.21	2.00	0.00	0.00	0.02	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
25.30	2.00	0.00	0.00	0.03	0.00	25.34	2.00	0.00	0.00	0.01	0.00
25.41	2.00	0.00	0.00	0.02	0.00	25.50	2.00	0.00	0.00	0.03	0.00
25.55	2.00	0.00	0.00	0.02	0.00	25.60	2.00	0.00	0.00	0.02	0.00
25.70	2.00	0.00	0.00	0.03	0.00	25.75	2.00	0.00	0.00	0.02	0.00
25.80	2.00	0.00	0.00	0.02	0.00	25.89	2.00	0.00	0.00	0.03	0.00
25.95	2.00	0.00	0.00	0.02	0.00	25.99	2.00	0.00	0.00	0.01	0.00
26.06	2.00	0.00	0.00	0.02	0.00	26.15	2.00	0.00	0.00	0.03	0.00
26.19	2.00	0.00	0.00	0.01	0.00	26.25	2.00	0.00	0.00	0.02	0.00
26.34	2.00	0.00	0.00	0.03	0.00	26.38	2.00	0.00	0.00	0.01	0.00
26.45	2.00	0.00	0.00	0.02	0.00	26.52	2.00	0.00	0.00	0.02	0.00
26.61	2.00	0.00	0.00	0.03	0.00	26.67	2.00	0.00	0.00	0.02	0.00
26.72	2.00	0.00	0.00	0.02	0.00	26.82	2.00	0.00	0.00	0.03	0.00
26.86	2.00	0.00	0.00	0.01	0.00	26.94	2.00	0.00	0.00	0.02	0.00
26.98	2.00	0.00	0.00	0.01	0.00	27.06	2.00	0.00	0.00	0.02	0.00
27.10	2.00	0.00	0.00	0.01	0.00	27.17	2.00	0.00	0.00	0.02	0.00
27.26	2.00	0.00	0.00	0.03	0.00	27.31	2.00	0.00	0.00	0.02	0.00
27.39	2.00	0.00	0.00	0.02	0.00	27.44	2.00	0.00	0.00	0.02	0.00
27.51	2.00	0.00	0.00	0.02	0.00	27.58	2.00	0.00	0.00	0.02	0.00
27.63	2.00	0.00	0.00	0.02	0.00	27.71	2.00	0.00	0.00	0.02	0.00
27.79	2.00	0.00	0.00	0.02	0.00	27.86	2.00	0.00	0.00	0.02	0.00
27.89	2.00	0.00	0.00	0.01	0.00	27.96	2.00	0.00	0.00	0.02	0.00
28.05	2.00	0.00	0.00	0.03	0.00	28.09	2.00	0.00	0.00	0.01	0.00
28.16	2.00	0.00	0.00	0.02	0.00	28.23	2.00	0.00	0.00	0.02	0.00
28.29	2.00	0.00	0.00	0.02	0.00	28.35	2.00	0.00	0.00	0.02	0.00
28.44	2.00	0.00	0.00	0.03	0.00	28.50	2.00	0.00	0.00	0.02	0.00
28.55	2.00	0.00	0.00	0.02	0.00	28.64	2.00	0.00	0.00	0.03	0.00
28.69	2.00	0.00	0.00	0.02	0.00	28.75	2.00	0.00	0.00	0.02	0.00
28.82	2.00	0.00	0.00	0.02	0.00	28.89	2.00	0.00	0.00	0.02	0.00
28.98	2.00	0.00	0.00	0.03	0.00	29.04	2.00	0.00	0.00	0.02	0.00
29.08	2.00	0.00	0.00	0.01	0.00	29.15	2.00	0.00	0.00	0.02	0.00
29.24	2.00	0.00	0.00	0.03	0.00	29.29	2.00	0.00	0.00	0.02	0.00
29.34	2.00	0.00	0.00	0.02	0.00	29.43	2.00	0.00	0.00	0.03	0.00
29.47	2.00	0.00	0.00	0.01	0.00	29.53	2.00	0.00	0.00	0.02	0.00
29.62	2.00	0.00	0.00	0.03	0.00	29.66	2.00	0.00	0.00	0.01	0.00
29.77	2.00	0.00	0.00	0.03	0.00	29.81	2.00	0.00	0.00	0.01	0.00
29.86	2.00	0.00	0.00	0.02	0.00	29.92	2.00	0.00	0.00	0.02	0.00
30.01	2.00	0.00	0.00	0.03	0.00	30.09	2.00	0.00	0.00	0.02	0.00
30.17	2.00	0.00	0.00	0.02	0.00	30.20	2.00	0.00	0.00	0.01	0.00
30.27	2.00	0.00	0.00	0.02	0.00	30.32	2.00	0.00	0.00	0.02	0.00
30.39	2.00	0.00	0.00	0.02	0.00	30.47	2.00	0.00	0.00	0.02	0.00
30.55	2.00	0.00	0.00	0.02	0.00	30.62	2.00	0.00	0.00	0.02	0.00
30.66	2.00	0.00	0.00	0.01	0.00	30.72	2.00	0.00	0.00	0.02	0.00
30.81	2.00	0.00	0.00	0.03	0.00	30.85	2.00	0.00	0.00	0.01	0.00
30.91	2.00	0.00	0.00	0.02	0.00	31.01	2.00	0.00	0.00	0.03	0.00
31.05	2.00	0.00	0.00	0.01	0.00	31.11	2.00	0.00	0.00	0.02	0.00
31.20	2.00	0.00	0.00	0.03	0.00	31.26	2.00	0.00	0.00	0.02	0.00
31.31	2.00	0.00	0.00	0.02	0.00	31.38	2.00	0.00	0.00	0.02	0.00
31.46	2.00	0.00	0.00	0.02	0.00	31.51	2.00	0.00	0.00	0.02	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
31.60	2.00	0.00	0.00	0.03	0.00	31.65	2.00	0.00	0.00	0.02	0.00
31.74	2.00	0.00	0.00	0.03	0.00	31.80	2.00	0.00	0.00	0.02	0.00
31.85	2.00	0.00	0.00	0.02	0.00	31.89	2.00	0.00	0.00	0.01	0.00
32.00	2.00	0.00	0.00	0.03	0.00	32.04	2.00	0.00	0.00	0.01	0.00
32.09	2.00	0.00	0.00	0.02	0.00	32.19	2.00	0.00	0.00	0.03	0.00
32.23	2.00	0.00	0.00	0.01	0.00	32.29	2.00	0.00	0.00	0.02	0.00
32.37	2.00	0.00	0.00	0.02	0.00	32.44	2.00	0.00	0.00	0.02	0.00
32.49	2.00	0.00	0.00	0.02	0.00	32.58	2.00	0.00	0.00	0.03	0.00
32.62	2.00	0.00	0.00	0.01	0.00	32.69	2.00	0.00	0.00	0.02	0.00
32.78	2.00	0.00	0.00	0.03	0.00	32.82	2.00	0.00	0.00	0.01	0.00
32.89	2.00	0.00	0.00	0.02	0.00	32.97	2.00	0.00	0.00	0.02	0.00
33.02	2.00	0.00	0.00	0.02	0.00	33.09	2.00	0.00	0.00	0.02	0.00
33.15	2.00	0.00	0.00	0.02	0.00	33.20	2.00	0.00	0.00	0.02	0.00
33.28	2.00	0.00	0.00	0.02	0.00	33.38	2.00	0.00	0.00	0.03	0.00
33.43	2.00	0.00	0.00	0.02	0.00	33.47	2.00	0.00	0.00	0.01	0.00
33.57	2.00	0.00	0.00	0.03	0.00	33.63	2.00	0.00	0.00	0.02	0.00
33.70	2.00	0.00	0.00	0.02	0.00	33.74	2.00	0.00	0.00	0.01	0.00
33.82	2.00	0.00	0.00	0.02	0.00	33.86	2.00	0.00	0.00	0.01	0.00
33.93	2.00	0.00	0.00	0.02	0.00	34.02	2.00	0.00	0.00	0.03	0.00
34.06	2.00	0.00	0.00	0.01	0.00	34.13	2.00	0.00	0.00	0.02	0.00
34.21	2.00	0.00	0.00	0.02	0.00	34.28	2.00	0.00	0.00	0.02	0.00
34.32	2.00	0.00	0.00	0.01	0.00	34.41	2.00	0.00	0.00	0.03	0.00
34.46	2.00	0.00	0.00	0.02	0.00	34.52	2.00	0.00	0.00	0.02	0.00
34.61	2.00	0.00	0.00	0.03	0.00	34.65	2.00	0.00	0.00	0.01	0.00
34.71	2.00	0.00	0.00	0.02	0.00	34.79	2.00	0.00	0.00	0.02	0.00
34.86	2.00	0.00	0.00	0.02	0.00	34.93	2.00	0.00	0.00	0.02	0.00
35.01	2.00	0.00	0.00	0.02	0.00	35.06	2.00	0.00	0.00	0.02	0.00
35.11	2.00	0.00	0.00	0.02	0.00	35.18	2.00	0.00	0.00	0.02	0.00
35.26	2.00	0.00	0.00	0.02	0.00	35.34	2.00	0.00	0.00	0.02	0.00
35.40	2.00	0.00	0.00	0.02	0.00	35.44	2.00	0.00	0.00	0.01	0.00
35.51	2.00	0.00	0.00	0.02	0.00	35.58	2.00	0.00	0.00	0.02	0.00
35.66	2.00	0.00	0.00	0.02	0.00	35.71	2.00	0.00	0.00	0.02	0.00
35.77	2.00	0.00	0.00	0.02	0.00	35.85	2.00	0.00	0.00	0.02	0.00
35.92	2.00	0.00	0.00	0.02	0.00	35.97	2.00	0.00	0.00	0.02	0.00
36.03	2.00	0.00	0.00	0.02	0.00	36.11	2.00	0.00	0.00	0.02	0.00
36.16	2.00	0.00	0.00	0.02	0.00	36.26	2.00	0.00	0.00	0.03	0.00
36.31	2.00	0.00	0.00	0.02	0.00	36.36	2.00	0.00	0.00	0.02	0.00
36.43	2.00	0.00	0.00	0.02	0.00	36.51	2.00	0.00	0.00	0.02	0.00
36.55	2.00	0.00	0.00	0.01	0.00	36.65	2.00	0.00	0.00	0.03	0.00
36.71	2.00	0.00	0.00	0.02	0.00	36.76	2.00	0.00	0.00	0.02	0.00
36.85	2.00	0.00	0.00	0.03	0.00	36.89	2.00	0.00	0.00	0.01	0.00
36.96	2.00	0.00	0.00	0.02	0.00	37.02	2.00	0.00	0.00	0.02	0.00
37.11	2.00	0.00	0.00	0.03	0.00	37.15	2.00	0.00	0.00	0.01	0.00
37.24	2.00	0.00	0.00	0.03	0.00	37.31	2.00	0.00	0.00	0.02	0.00
37.35	2.00	0.00	0.00	0.01	0.00	37.43	2.00	0.00	0.00	0.02	0.00
37.51	2.00	0.00	0.00	0.02	0.00	37.55	2.00	0.00	0.00	0.01	0.00
37.60	0.41	0.59	0.40	0.05	0.04	37.67	0.40	0.60	0.39	0.07	0.05
37.75	0.40	0.60	0.38	0.08	0.06	37.81	0.39	0.61	0.38	0.06	0.05

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
37.88	0.38	0.62	0.37	0.07	0.06	37.93	0.38	0.62	0.37	0.05	0.04
38.00	0.38	0.62	0.37	0.07	0.06	38.08	0.40	0.60	0.39	0.08	0.06
38.14	0.44	0.56	0.42	0.06	0.04	38.20	0.50	0.50	0.48	0.06	0.04
38.26	2.00	0.00	0.00	0.02	0.00	38.34	2.00	0.00	0.00	0.02	0.00
38.43	2.00	0.00	0.00	0.03	0.00	38.45	2.00	0.00	0.00	0.01	0.00
38.53	2.00	0.00	0.00	0.02	0.00	38.62	2.00	0.00	0.00	0.03	0.00
38.65	2.00	0.00	0.00	0.01	0.00	38.72	1.59	0.00	0.00	0.02	0.00
38.80	1.75	0.00	0.00	0.02	0.00	38.88	1.89	0.00	0.00	0.02	0.00
38.93	2.00	0.00	0.00	0.02	0.00	39.01	2.00	0.00	0.00	0.02	0.00
39.07	2.00	0.00	0.00	0.02	0.00	39.12	2.00	0.00	0.00	0.02	0.00
39.20	2.00	0.00	0.00	0.02	0.00	39.27	2.00	0.00	0.00	0.02	0.00
39.31	2.00	0.00	0.00	0.01	0.00	39.38	2.00	0.00	0.00	0.02	0.00
39.45	2.00	0.00	0.00	0.02	0.00	39.51	2.00	0.00	0.00	0.02	0.00
39.57	2.00	0.00	0.00	0.02	0.00	39.64	2.00	0.00	0.00	0.02	0.00
39.72	2.00	0.00	0.00	0.02	0.00	39.79	2.00	0.00	0.00	0.02	0.00
39.84	2.00	0.00	0.00	0.02	0.00	39.90	2.00	0.00	0.00	0.02	0.00
39.96	2.00	0.00	0.00	0.02	0.00	40.06	2.00	0.00	0.00	0.03	0.00
40.13	2.00	0.00	0.00	0.02	0.00	40.17	2.00	0.00	0.00	0.01	0.00
40.26	2.00	0.00	0.00	0.03	0.00	40.31	2.00	0.00	0.00	0.02	0.00
40.36	2.00	0.00	0.00	0.02	0.00	40.43	2.00	0.00	0.00	0.02	0.00
40.51	1.91	0.00	0.00	0.02	0.00	40.56	1.79	0.00	0.00	0.02	0.00
40.64	1.66	0.00	0.00	0.02	0.00	40.70	1.55	0.00	0.00	0.02	0.00
40.75	1.44	0.00	0.00	0.02	0.00	40.83	1.34	0.00	0.00	0.02	0.00
40.88	1.27	0.00	0.00	0.02	0.00	40.95	1.20	0.00	0.00	0.02	0.00
41.03	1.18	0.00	0.00	0.02	0.00	41.08	1.21	0.00	0.00	0.02	0.00
41.15	1.24	0.00	0.00	0.02	0.00	41.24	1.31	0.00	0.00	0.03	0.00
41.28	1.33	0.00	0.00	0.01	0.00	41.35	1.33	0.00	0.00	0.02	0.00
41.41	1.31	0.00	0.00	0.02	0.00	41.48	1.28	0.00	0.00	0.02	0.00
41.55	1.25	0.00	0.00	0.02	0.00	41.63	1.22	0.00	0.00	0.02	0.00
41.68	1.17	0.00	0.00	0.02	0.00	41.74	1.12	0.00	0.00	0.02	0.00
41.83	1.08	0.00	0.00	0.03	0.00	41.87	1.07	0.00	0.00	0.01	0.00
41.98	1.07	0.00	0.00	0.03	0.00	42.02	1.08	0.00	0.00	0.01	0.00
42.10	1.09	0.00	0.00	0.02	0.00	42.14	1.11	0.00	0.00	0.01	0.00
42.22	1.13	0.00	0.00	0.02	0.00	42.29	1.15	0.00	0.00	0.02	0.00
42.38	1.16	0.00	0.00	0.03	0.00	42.41	1.18	0.00	0.00	0.01	0.00
42.46	1.19	0.00	0.00	0.02	0.00	42.57	1.19	0.00	0.00	0.03	0.00
42.61	1.19	0.00	0.00	0.01	0.00	42.68	1.19	0.00	0.00	0.02	0.00
42.76	1.18	0.00	0.00	0.02	0.00	42.80	1.17	0.00	0.00	0.01	0.00
42.87	1.16	0.00	0.00	0.02	0.00	42.92	1.14	0.00	0.00	0.02	0.00
42.98	1.11	0.00	0.00	0.02	0.00	43.06	1.06	0.00	0.00	0.02	0.00
43.11	1.00	0.00	0.00	0.02	0.00	43.18	0.94	0.00	0.00	0.02	0.00
43.26	0.88	0.00	0.00	0.02	0.01	43.32	0.82	0.00	0.00	0.02	0.01
43.39	2.00	0.00	0.00	0.02	0.00	43.46	2.00	0.00	0.00	0.02	0.00
43.52	2.00	0.00	0.00	0.02	0.00	43.61	2.00	0.00	0.00	0.03	0.00
43.64	2.00	0.00	0.00	0.01	0.00	43.70	2.00	0.00	0.00	0.02	0.00
43.79	2.00	0.00	0.00	0.03	0.00	43.84	2.00	0.00	0.00	0.02	0.00
43.90	2.00	0.00	0.00	0.02	0.00	43.97	2.00	0.00	0.00	0.02	0.00
44.05	2.00	0.00	0.00	0.02	0.00	44.10	2.00	0.00	0.00	0.02	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
44.18	2.00	0.00	0.00	0.02	0.00	44.24	2.00	0.00	0.00	0.02	0.00
44.30	2.00	0.00	0.00	0.02	0.00	44.38	2.00	0.00	0.00	0.02	0.00
44.45	2.00	0.00	0.00	0.02	0.00	44.49	2.00	0.00	0.00	0.01	0.00
44.57	2.00	0.00	0.00	0.02	0.00	44.64	2.00	0.00	0.00	0.02	0.00
44.72	2.00	0.00	0.00	0.02	0.00	44.79	2.00	0.00	0.00	0.02	0.00
44.84	2.00	0.00	0.00	0.02	0.00	44.92	2.00	0.00	0.00	0.02	0.00
44.96	2.00	0.00	0.00	0.01	0.00	45.03	2.00	0.00	0.00	0.02	0.00
45.09	2.00	0.00	0.00	0.02	0.00	45.19	2.00	0.00	0.00	0.03	0.00
45.23	2.00	0.00	0.00	0.01	0.00	45.28	2.00	0.00	0.00	0.02	0.00
45.38	2.00	0.00	0.00	0.03	0.00	45.43	2.00	0.00	0.00	0.02	0.00
45.48	0.64	0.36	0.72	0.05	0.02	45.58	2.00	0.00	0.00	0.03	0.00
45.62	2.00	0.00	0.00	0.01	0.00	45.67	2.00	0.00	0.00	0.02	0.00
45.78	2.00	0.00	0.00	0.03	0.00	45.82	2.00	0.00	0.00	0.01	0.00
45.88	2.00	0.00	0.00	0.02	0.00	45.98	2.00	0.00	0.00	0.03	0.00
46.02	2.00	0.00	0.00	0.01	0.00	46.07	2.00	0.00	0.00	0.02	0.00
46.17	2.00	0.00	0.00	0.03	0.00	46.21	2.00	0.00	0.00	0.01	0.00
46.27	2.00	0.00	0.00	0.02	0.00	46.37	2.00	0.00	0.00	0.03	0.00
46.39	2.00	0.00	0.00	0.01	0.00	46.47	2.00	0.00	0.00	0.02	0.00
46.57	2.00	0.00	0.00	0.03	0.00	46.62	2.00	0.00	0.00	0.02	0.00
46.67	2.00	0.00	0.00	0.02	0.00	46.77	2.00	0.00	0.00	0.03	0.00
46.82	2.00	0.00	0.00	0.02	0.00	46.90	2.00	0.00	0.00	0.02	0.00
46.92	2.00	0.00	0.00	0.01	0.00	47.01	2.00	0.00	0.00	0.03	0.00
47.05	2.00	0.00	0.00	0.01	0.00	47.12	2.00	0.00	0.00	0.02	0.00
47.21	2.00	0.00	0.00	0.03	0.00	47.28	2.00	0.00	0.00	0.02	0.00
47.32	2.00	0.00	0.00	0.01	0.00	47.40	2.00	0.00	0.00	0.02	0.00
47.45	2.00	0.00	0.00	0.02	0.00	47.55	2.00	0.00	0.00	0.03	0.00
47.58	2.00	0.00	0.00	0.01	0.00	47.66	2.00	0.00	0.00	0.02	0.00
47.74	2.00	0.00	0.00	0.02	0.00	47.80	2.00	0.00	0.00	0.02	0.00
47.85	2.00	0.00	0.00	0.02	0.00	47.93	2.00	0.00	0.00	0.02	0.00
47.98	2.00	0.00	0.00	0.02	0.00	48.04	0.65	0.35	0.76	0.06	0.02
48.11	0.65	0.35	0.74	0.07	0.02	48.20	0.65	0.35	0.74	0.09	0.03
48.24	0.65	0.35	0.75	0.04	0.01	48.30	0.65	0.35	0.76	0.06	0.02
48.39	0.65	0.35	0.76	0.09	0.02	48.44	0.66	0.34	0.77	0.05	0.01
48.53	0.66	0.34	0.79	0.09	0.02	48.59	0.67	0.33	0.81	0.06	0.02
48.64	0.68	0.32	0.85	0.05	0.01	48.70	0.69	0.31	0.90	0.06	0.01
48.78	0.71	0.00	0.00	0.02	0.02	48.82	0.72	0.00	0.00	0.01	0.01
48.89	0.74	0.00	0.00	0.02	0.01	48.98	0.75	0.00	0.00	0.03	0.02
49.05	0.76	0.00	0.00	0.02	0.01	49.09	0.77	0.00	0.00	0.01	0.01
49.16	0.78	0.00	0.00	0.02	0.01	49.24	0.79	0.00	0.00	0.02	0.01
49.31	0.80	0.00	0.00	0.02	0.01	49.38	0.82	0.00	0.00	0.02	0.01
49.43	0.82	0.00	0.00	0.02	0.01	49.52	0.82	0.00	0.00	0.03	0.01
49.58	0.80	0.00	0.00	0.02	0.01	49.63	0.78	0.00	0.00	0.02	0.01
49.71	0.76	0.00	0.00	0.02	0.01	49.77	2.00	0.00	0.00	0.02	0.00
49.82	2.00	0.00	0.00	0.02	0.00	49.88	2.00	0.00	0.00	0.02	0.00
49.97	2.00	0.00	0.00	0.03	0.00	50.01	2.00	0.00	0.00	0.01	0.00
50.07	2.00	0.00	0.00	0.02	0.00	50.17	2.00	0.00	0.00	0.03	0.00
50.22	2.00	0.00	0.00	0.02	0.00	50.29	2.00	0.00	0.00	0.02	0.00
50.37	2.00	0.00	0.00	0.02	0.00	50.42	2.00	0.00	0.00	0.02	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
50.47	2.00	0.00	0.00	0.02	0.00	50.57	2.00	0.00	0.00	0.03	0.00
50.63	2.00	0.00	0.00	0.02	0.00	50.68	2.00	0.00	0.00	0.02	0.00
50.73	2.00	0.00	0.00	0.02	0.00	50.79	2.00	0.00	0.00	0.02	0.00
50.88	2.00	0.00	0.00	0.03	0.00	50.93	2.00	0.00	0.00	0.02	0.00
51.03	2.00	0.00	0.00	0.03	0.00	51.07	2.00	0.00	0.00	0.01	0.00
51.14	2.00	0.00	0.00	0.02	0.00	51.23	2.00	0.00	0.00	0.03	0.00
51.27	2.00	0.00	0.00	0.01	0.00	51.33	2.00	0.00	0.00	0.02	0.00
51.42	2.00	0.00	0.00	0.03	0.00	51.48	2.00	0.00	0.00	0.02	0.00
51.52	2.00	0.00	0.00	0.01	0.00	51.60	2.00	0.00	0.00	0.02	0.00
51.68	2.00	0.00	0.00	0.02	0.00	51.72	2.00	0.00	0.00	0.01	0.00
51.81	2.00	0.00	0.00	0.03	0.00	51.87	2.00	0.00	0.00	0.02	0.00
51.91	2.00	0.00	0.00	0.01	0.00	51.98	2.00	0.00	0.00	0.02	0.00
52.07	2.00	0.00	0.00	0.03	0.00	52.10	2.00	0.00	0.00	0.01	0.00
52.17	2.00	0.00	0.00	0.02	0.00	52.24	2.00	0.00	0.00	0.02	0.00
52.31	2.00	0.00	0.00	0.02	0.00	52.37	2.00	0.00	0.00	0.02	0.00
52.46	2.00	0.00	0.00	0.03	0.00	52.51	2.00	0.00	0.00	0.02	0.00
52.57	2.00	0.00	0.00	0.02	0.00	52.66	2.00	0.00	0.00	0.03	0.00
52.71	2.00	0.00	0.00	0.02	0.00	52.78	2.00	0.00	0.00	0.02	0.00
52.86	2.00	0.00	0.00	0.02	0.00	52.91	2.00	0.00	0.00	0.02	0.00
52.99	2.00	0.00	0.00	0.02	0.00	53.06	2.00	0.00	0.00	0.02	0.00
53.09	2.00	0.00	0.00	0.01	0.00	53.16	2.00	0.00	0.00	0.02	0.00
53.25	2.00	0.00	0.00	0.03	0.00	53.29	2.00	0.00	0.00	0.01	0.00
53.36	2.00	0.00	0.00	0.02	0.00	53.45	2.00	0.00	0.00	0.03	0.00
53.50	2.00	0.00	0.00	0.02	0.00	53.55	2.00	0.00	0.00	0.02	0.00
53.64	2.00	0.00	0.00	0.03	0.00	53.69	2.00	0.00	0.00	0.02	0.00
53.76	2.00	0.00	0.00	0.02	0.00	53.84	2.00	0.00	0.00	0.02	0.00
53.88	2.00	0.00	0.00	0.01	0.00	53.96	2.00	0.00	0.00	0.02	0.00
54.03	2.00	0.00	0.00	0.02	0.00	54.08	2.00	0.00	0.00	0.02	0.00
54.17	2.00	0.00	0.00	0.03	0.00	54.23	2.00	0.00	0.00	0.02	0.00
54.27	2.00	0.00	0.00	0.01	0.00	54.38	2.00	0.00	0.00	0.03	0.00
54.42	2.00	0.00	0.00	0.01	0.00	54.47	2.00	0.00	0.00	0.02	0.00
54.53	2.00	0.00	0.00	0.02	0.00	54.61	2.00	0.00	0.00	0.02	0.00
54.68	2.00	0.00	0.00	0.02	0.00	54.73	2.00	0.00	0.00	0.02	0.00
54.80	2.00	0.00	0.00	0.02	0.00	54.88	2.00	0.00	0.00	0.02	0.00
54.95	2.00	0.00	0.00	0.02	0.00	55.02	2.00	0.00	0.00	0.02	0.00
55.07	2.00	0.00	0.00	0.02	0.00	55.15	2.00	0.00	0.00	0.02	0.00
55.21	2.00	0.00	0.00	0.02	0.00	55.27	2.00	0.00	0.00	0.02	0.00
55.34	2.00	0.00	0.00	0.02	0.00	55.42	2.00	0.00	0.00	0.02	0.00
55.47	2.00	0.00	0.00	0.02	0.00	55.54	2.00	0.00	0.00	0.02	0.00
55.62	2.00	0.00	0.00	0.02	0.00	55.65	2.00	0.00	0.00	0.01	0.00
55.72	2.00	0.00	0.00	0.02	0.00	55.81	2.00	0.00	0.00	0.03	0.00
55.84	2.00	0.00	0.00	0.01	0.00	55.91	2.00	0.00	0.00	0.02	0.00
55.98	2.00	0.00	0.00	0.02	0.00	56.05	2.00	0.00	0.00	0.02	0.00
56.11	2.00	0.00	0.00	0.02	0.00	56.21	2.00	0.00	0.00	0.03	0.00
56.26	2.00	0.00	0.00	0.02	0.00	56.31	2.00	0.00	0.00	0.02	0.00
56.39	2.00	0.00	0.00	0.02	0.00	56.46	2.00	0.00	0.00	0.02	0.00
56.50	2.00	0.00	0.00	0.01	0.00	56.60	2.00	0.00	0.00	0.03	0.00
56.65	2.00	0.00	0.00	0.02	0.00	56.72	2.00	0.00	0.00	0.02	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
56.78	2.00	0.00	0.00	0.02	0.00	56.87	2.00	0.00	0.00	0.03	0.00
56.93	2.00	0.00	0.00	0.02	0.00	56.97	2.00	0.00	0.00	0.01	0.00
57.05	2.00	0.00	0.00	0.02	0.00	57.11	2.00	0.00	0.00	0.02	0.00
57.17	2.00	0.00	0.00	0.02	0.00	57.25	2.00	0.00	0.00	0.02	0.00
57.31	2.00	0.00	0.00	0.02	0.00	57.37	2.00	0.00	0.00	0.02	0.00
57.42	2.00	0.00	0.00	0.02	0.00	57.48	2.00	0.00	0.00	0.02	0.00
57.56	2.00	0.00	0.00	0.02	0.00	57.64	2.00	0.00	0.00	0.02	0.00
57.70	2.00	0.00	0.00	0.02	0.00	57.74	2.00	0.00	0.00	0.01	0.00
57.81	2.00	0.00	0.00	0.02	0.00	57.90	2.00	0.00	0.00	0.03	0.00
57.95	2.00	0.00	0.00	0.02	0.00	58.06	2.00	0.00	0.00	0.03	0.00
58.09	2.00	0.00	0.00	0.01	0.00	58.15	2.00	0.00	0.00	0.02	0.00
58.20	2.00	0.00	0.00	0.02	0.00	58.29	2.00	0.00	0.00	0.03	0.00
58.33	2.00	0.00	0.00	0.01	0.00	58.40	2.00	0.00	0.00	0.02	0.00
58.48	2.00	0.00	0.00	0.02	0.00	58.55	2.00	0.00	0.00	0.02	0.00
58.60	2.00	0.00	0.00	0.02	0.00	58.66	2.00	0.00	0.00	0.02	0.00
58.75	2.00	0.00	0.00	0.03	0.00	58.80	2.00	0.00	0.00	0.02	0.00
58.88	2.00	0.00	0.00	0.02	0.00	58.97	2.00	0.00	0.00	0.03	0.00
59.02	2.00	0.00	0.00	0.02	0.00	59.06	2.00	0.00	0.00	0.01	0.00
59.12	2.00	0.00	0.00	0.02	0.00	59.20	2.00	0.00	0.00	0.02	0.00
59.26	2.00	0.00	0.00	0.02	0.00	59.35	2.00	0.00	0.00	0.03	0.00
59.41	2.00	0.00	0.00	0.02	0.00	59.46	2.00	0.00	0.00	0.02	0.00
59.52	2.00	0.00	0.00	0.02	0.00	59.61	2.00	0.00	0.00	0.03	0.00
59.68	2.00	0.00	0.00	0.02	0.00	59.72	2.00	0.00	0.00	0.01	0.00
59.79	2.00	0.00	0.00	0.02	0.00	59.86	2.00	0.00	0.00	0.02	0.00
59.91	2.00	0.00	0.00	0.02	0.00	60.01	2.00	0.00	0.00	0.03	0.00
60.06	2.00	0.00	0.00	0.02	0.00	60.15	2.00	0.00	0.00	0.03	0.00
60.19	2.00	0.00	0.00	0.01	0.00	60.26	2.00	0.00	0.00	0.02	0.00
60.35	2.00	0.00	0.00	0.03	0.00	60.40	2.00	0.00	0.00	0.02	0.00
60.45	2.00	0.00	0.00	0.02	0.00	60.51	2.00	0.00	0.00	0.02	0.00

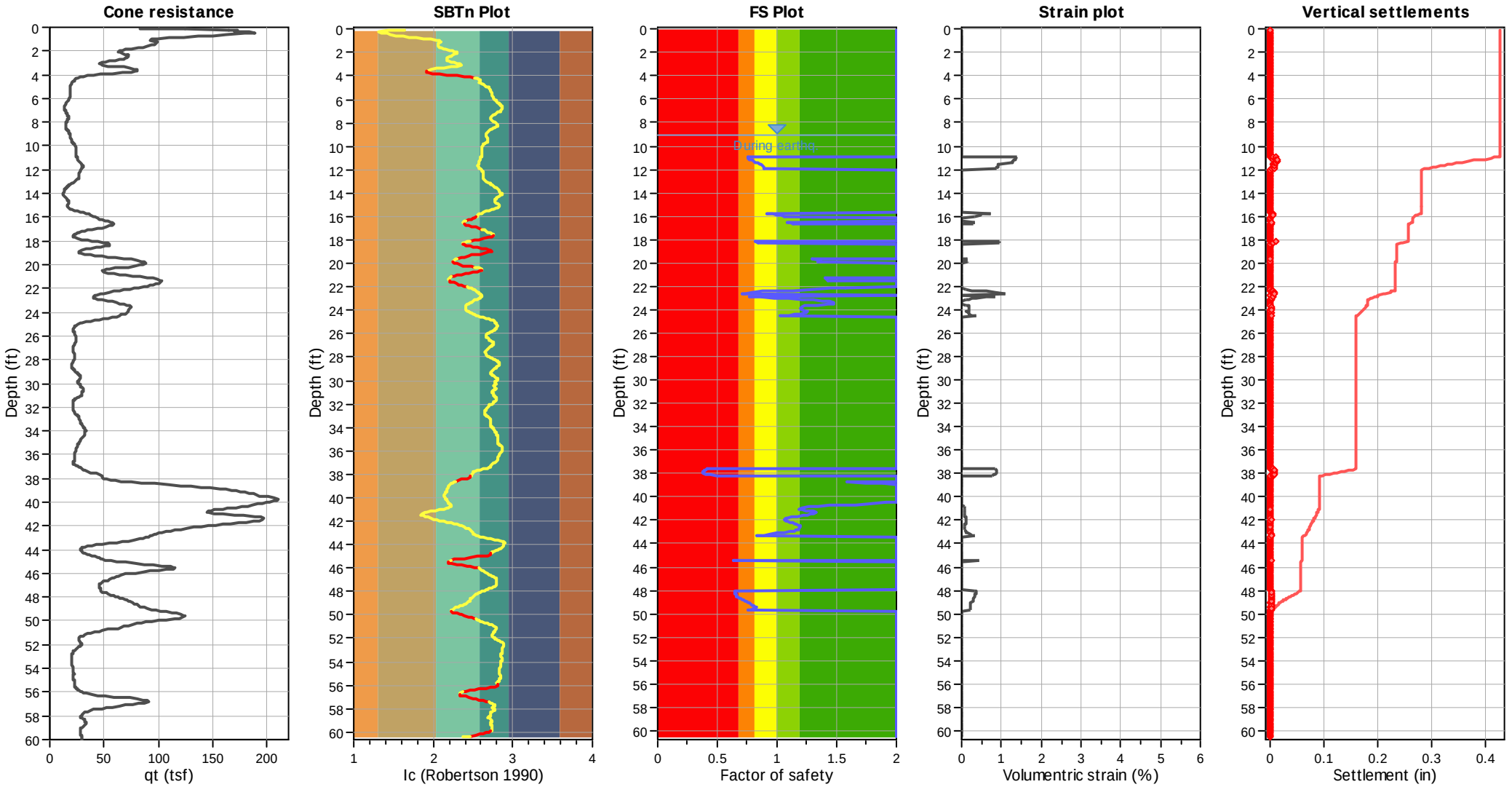
Overall liquefaction potential: 1.61

LPI = 0.00 - Liquefaction risk very low
LPI between 0.00 and 5.00 - Liquefaction risk low
LPI between 5.00 and 15.00 - Liquefaction risk high
LPI > 15.00 - Liquefaction risk very high

Abbreviations

FS: Calculated factor of safety for test point
F_L: 1 - FS
w_z: Function value of the extend of soil liquefaction according to depth
d_z: Layer thickness (ft)
LPI: Liquefaction potential index value for test point

Estimation of post-earthquake settlements



Abbreviations

q_t:	Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c:	Soil Behaviour Type Index
FS:	Calculated Factor of Safety against liquefaction
Volumentric strain:	Post-liquefaction volumentric strain

:: Lateral displacement index calculation ::

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
9.01	18.66	29.11	3.31	108.78	2.00	26.27	0.00	0.00
9.09	18.90	29.50	3.37	110.44	2.00	26.71	0.00	0.00
9.15	19.06	29.75	3.45	112.13	2.00	26.98	0.00	0.00
9.20	19.18	29.93	3.53	113.94	2.00	27.19	0.00	0.00
9.29	19.30	30.11	3.63	115.92	2.00	27.39	0.00	0.00
9.35	19.43	30.33	3.73	117.85	2.00	27.62	0.00	0.00
9.39	19.54	30.50	3.79	119.21	2.00	27.81	0.00	0.00
9.45	19.66	30.68	3.83	120.17	2.00	28.01	0.00	0.00
9.55	19.97	31.17	3.83	120.89	2.00	28.52	0.00	0.00
9.64	20.38	31.83	3.80	121.43	2.00	29.21	0.00	0.00
9.65	20.91	32.67	3.76	121.97	2.00	30.08	0.00	0.00
9.73	21.47	33.57	3.71	122.48	2.00	30.97	0.00	0.00
9.79	21.98	34.31	3.68	123.03	2.00	31.69	0.00	0.00
9.84	22.46	34.86	3.64	122.99	2.00	32.21	0.00	0.00
9.91	22.88	35.24	3.59	122.67	2.00	32.57	0.00	0.00
9.99	23.25	35.53	3.55	122.26	2.00	32.85	0.00	0.00
10.08	23.63	35.78	3.49	121.63	2.00	33.08	0.00	0.00
10.14	23.82	35.88	3.47	121.31	2.00	33.17	0.00	0.00
10.19	23.87	35.79	3.45	120.88	2.00	33.09	0.00	0.00
10.25	23.88	35.62	3.43	120.28	2.00	32.93	0.00	0.00
10.34	23.79	35.24	3.43	119.75	2.00	32.57	0.00	0.00
10.38	23.82	35.15	3.41	119.11	2.00	32.49	0.00	0.00
10.44	23.92	35.10	3.36	118.25	2.00	32.44	0.00	0.00
10.52	23.94	34.89	3.32	117.11	2.00	32.25	0.00	0.00
10.59	23.96	34.70	3.28	116.11	2.00	32.07	0.00	0.00
10.63	23.88	34.48	3.27	115.67	2.00	31.86	0.00	0.00
10.70	23.75	34.11	3.27	115.08	2.00	31.50	0.00	0.00
10.78	23.71	33.84	3.25	114.48	2.00	31.24	0.00	0.00
10.87	24.05	34.05	3.22	114.07	2.00	31.44	0.00	0.00
10.93	24.68	34.72	3.14	113.43	0.75	32.08	51.20	0.44
10.97	25.09	35.14	3.10	113.33	0.75	32.49	51.20	0.29
11.03	25.34	35.34	3.13	114.00	0.76	32.66	51.20	0.44
11.12	25.57	35.43	3.18	115.11	0.77	32.76	51.20	0.66
11.16	26.10	36.05	3.19	116.20	0.78	33.33	51.20	0.29
11.23	26.69	36.65	3.20	117.14	0.79	33.87	51.20	0.51
11.31	27.32	37.28	3.22	118.24	0.80	34.43	51.20	0.59
11.37	28.14	38.20	3.22	119.49	0.82	35.24	48.90	0.42
11.44	28.65	38.70	3.26	120.91	0.84	35.67	44.57	0.45
11.51	28.96	38.94	3.32	122.45	0.86	35.87	39.72	0.40
11.56	29.46	39.47	3.35	123.56	0.87	36.31	36.11	0.26
11.63	29.97	39.93	3.35	124.20	0.88	36.70	34.38	0.35
11.71	30.37	40.22	3.36	124.71	0.88	36.93	33.15	0.38
11.76	30.29	39.99	3.40	125.36	0.89	36.75	31.18	0.22
11.83	30.13	39.61	3.44	125.68	0.89	36.43	30.56	0.31
11.91	29.90	39.12	3.48	125.79	0.89	36.02	30.81	0.35
11.94	29.36	38.36	3.53	125.85	0.89	35.38	30.83	0.13
12.05	28.72	37.35	3.57	125.25	2.00	34.49	0.00	0.00
12.10	28.18	36.60	3.59	124.65	2.00	33.83	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
12.14	27.59	35.82	3.62	124.10	2.00	33.12	0.00	0.00
12.25	27.11	35.08	3.64	123.36	2.00	32.42	0.00	0.00
12.29	26.81	34.65	3.63	122.58	2.00	32.02	0.00	0.00
12.35	26.66	34.38	3.62	122.06	2.00	31.76	0.00	0.00
12.44	26.59	34.17	3.59	121.34	2.00	31.56	0.00	0.00
12.49	26.67	34.20	3.54	120.41	2.00	31.58	0.00	0.00
12.55	26.82	34.29	3.48	119.34	2.00	31.67	0.00	0.00
12.61	26.84	34.21	3.41	118.04	2.00	31.60	0.00	0.00
12.70	26.47	33.64	3.39	116.91	2.00	31.05	0.00	0.00
12.75	25.93	32.91	3.38	115.62	2.00	30.32	0.00	0.00
12.81	25.23	31.96	3.34	113.61	2.00	29.35	0.00	0.00
12.89	24.43	30.85	3.28	110.95	2.00	28.18	0.00	0.00
12.94	23.55	29.68	3.19	107.89	2.00	26.91	0.00	0.00
12.99	22.55	28.37	3.13	105.01	2.00	25.42	0.00	0.00
13.08	21.42	26.86	3.10	102.27	2.00	23.61	0.00	0.00
13.15	20.17	25.24	3.07	99.55	2.00	21.56	0.00	0.00
13.20	18.94	23.67	3.06	96.93	2.00	19.44	0.00	0.00
13.27	17.94	22.36	3.00	94.01	2.00	17.56	0.00	0.00
13.32	17.08	21.23	2.92	91.09	2.00	15.85	0.00	0.00
13.39	16.29	20.19	2.87	88.71	2.00	14.18	0.00	0.00
13.48	15.57	19.24	2.86	87.03	2.00	12.60	0.00	0.00
13.54	14.85	18.31	2.87	85.67	2.00	10.96	0.00	0.00
13.59	14.26	17.54	2.88	84.40	2.00	9.55	0.00	0.00
13.65	13.72	16.84	2.87	83.16	2.00	8.20	0.00	0.00
13.74	13.35	16.32	2.86	81.98	2.00	7.16	0.00	0.00
13.80	13.07	15.93	2.81	80.63	2.00	6.37	0.00	0.00
13.89	12.89	15.65	2.73	79.16	2.00	5.79	0.00	0.00
13.93	12.67	15.36	2.73	78.57	2.00	5.17	0.00	0.00
13.99	12.47	15.09	2.81	79.11	2.00	4.58	0.00	0.00
14.07	12.36	14.93	2.89	79.81	2.00	4.22	0.00	0.00
14.12	12.41	14.97	2.94	80.54	2.00	4.32	0.00	0.00
14.18	12.84	15.48	2.92	81.24	2.00	5.42	0.00	0.00
14.26	13.66	16.43	2.85	82.12	2.00	7.38	0.00	0.00
14.34	14.47	17.37	2.81	83.28	2.00	9.23	0.00	0.00
14.38	15.06	18.09	2.89	85.64	2.00	10.56	0.00	0.00
14.47	15.53	18.63	3.03	88.46	2.00	11.54	0.00	0.00
14.53	16.03	19.23	3.12	90.78	2.00	12.57	0.00	0.00
14.57	16.61	19.90	3.14	92.32	2.00	13.72	0.00	0.00
14.64	17.04	20.39	3.17	93.50	2.00	14.52	0.00	0.00
14.72	17.40	20.77	3.19	94.50	2.00	15.13	0.00	0.00
14.80	17.27	20.58	3.27	95.26	2.00	14.82	0.00	0.00
14.83	16.85	20.07	3.38	95.90	2.00	13.99	0.00	0.00
14.92	16.39	19.48	3.50	96.48	2.00	13.01	0.00	0.00
14.97	16.24	19.28	3.55	96.80	2.00	12.66	0.00	0.00
15.06	16.27	19.26	3.60	97.42	2.00	12.64	0.00	0.00
15.10	16.43	19.44	3.67	98.73	2.00	12.94	0.00	0.00
15.17	16.88	19.94	3.75	100.69	2.00	13.78	0.00	0.00
15.25	17.82	21.02	3.78	103.31	2.00	15.52	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
15.31	19.04	22.44	3.81	106.25	2.00	17.68	0.00	0.00
15.37	20.79	24.48	3.79	109.75	2.00	20.54	0.00	0.00
15.44	22.91	26.92	3.78	113.74	2.00	23.69	0.00	0.00
15.51	25.24	29.60	3.76	117.67	2.00	26.82	0.00	0.00
15.56	27.89	32.64	3.73	121.72	2.00	30.04	0.00	0.00
15.63	30.62	35.75	3.73	126.33	2.00	33.05	0.00	0.00
15.71	33.36	38.84	3.72	130.50	2.00	35.78	0.00	0.00
15.76	35.88	41.68	3.72	134.26	0.92	38.12	24.52	0.18
15.82	38.00	44.04	3.72	137.37	0.96	39.94	12.83	0.11
15.90	39.72	45.92	3.73	140.10	1.00	41.31	0.00	0.00
15.95	40.95	47.26	3.76	142.38	1.04	42.26	0.00	0.00
16.01	42.08	48.46	3.75	143.78	1.06	43.09	0.00	0.00
16.10	43.69	50.12	3.69	144.51	2.00	44.20	0.00	0.00
16.16	45.39	51.93	3.61	144.76	2.00	45.37	0.00	0.00
16.21	47.82	54.52	3.45	144.17	2.00	46.98	0.00	0.00
16.29	50.73	57.59	3.28	143.67	2.00	48.78	0.00	0.00
16.36	53.65	60.67	3.15	143.61	2.00	50.50	0.00	0.00
16.41	55.97	63.12	3.08	144.46	2.00	51.81	0.00	0.00
16.49	57.93	65.13	3.04	145.59	1.09	52.85	2.50	0.03
16.55	58.97	66.18	3.05	147.05	1.11	53.38	2.17	0.02
16.60	58.73	65.85	3.13	148.63	1.14	53.21	1.86	0.01
16.70	57.58	64.45	3.25	150.28	2.00	52.50	0.00	0.00
16.74	55.54	62.18	3.37	150.89	2.00	51.32	0.00	0.00
16.80	52.24	58.44	3.44	148.41	2.00	49.27	0.00	0.00
16.89	48.21	53.86	3.55	145.75	2.00	46.57	0.00	0.00
16.93	43.70	48.84	3.69	142.95	2.00	43.34	0.00	0.00
17.00	39.30	43.87	3.81	139.12	2.00	39.81	0.00	0.00
17.09	35.13	39.12	3.89	134.22	2.00	36.03	0.00	0.00
17.14	31.91	35.46	3.85	128.18	2.00	32.78	0.00	0.00
17.20	29.62	32.81	3.69	121.48	2.00	30.22	0.00	0.00
17.28	27.32	30.13	3.51	114.37	2.00	27.41	0.00	0.00
17.34	25.35	27.85	3.37	108.56	2.00	24.81	0.00	0.00
17.41	23.75	26.02	3.43	106.90	2.00	22.56	0.00	0.00
17.48	22.28	24.34	3.51	105.33	2.00	20.37	0.00	0.00
17.56	21.40	23.31	3.53	103.98	2.00	18.93	0.00	0.00
17.62	21.30	23.15	3.51	103.34	2.00	18.71	0.00	0.00
17.67	21.90	23.78	3.53	104.80	2.00	19.59	0.00	0.00
17.72	23.43	25.45	3.53	107.56	2.00	21.83	0.00	0.00
17.78	25.81	28.02	3.47	110.64	2.00	25.00	0.00	0.00
17.87	29.76	32.25	3.29	113.53	2.00	29.65	0.00	0.00
17.94	34.49	37.30	3.14	117.09	2.00	34.45	0.00	0.00
18.01	39.36	42.48	3.01	120.59	2.00	38.74	0.00	0.00
18.06	44.61	48.05	2.89	124.00	2.00	42.81	0.00	0.00
18.12	49.40	53.08	2.81	127.40	2.00	46.10	0.00	0.00
18.21	53.23	57.04	2.77	130.57	0.82	48.47	14.74	0.19
18.25	55.37	59.24	2.74	131.91	0.84	49.72	12.86	0.07
18.31	55.54	59.32	2.74	131.93	0.84	49.77	12.90	0.11
18.40	54.39	57.96	2.75	130.84	2.00	49.00	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
18.44	51.05	54.37	2.83	129.13	2.00	46.89	0.00	0.00
18.51	46.53	49.50	2.92	126.35	2.00	43.79	0.00	0.00
18.58	42.29	44.90	3.01	123.40	2.00	40.57	0.00	0.00
18.64	37.54	39.79	3.16	120.70	2.00	36.58	0.00	0.00
18.71	33.19	35.09	3.30	117.60	2.00	32.44	0.00	0.00
18.80	29.50	31.08	3.44	114.60	2.00	28.43	0.00	0.00
18.86	27.07	28.44	3.60	113.53	2.00	25.50	0.00	0.00
18.91	26.18	27.47	3.76	114.45	2.00	24.36	0.00	0.00
18.98	26.23	27.48	3.86	116.18	2.00	24.37	0.00	0.00
19.05	28.55	29.89	3.76	118.43	2.00	27.14	0.00	0.00
19.10	32.75	34.30	3.61	122.20	2.00	31.68	0.00	0.00
19.20	36.95	38.62	3.51	126.30	2.00	35.60	0.00	0.00
19.23	41.98	43.88	3.40	130.67	2.00	39.81	0.00	0.00
19.30	47.70	49.78	3.29	135.29	2.00	43.98	0.00	0.00
19.39	53.84	56.05	3.19	139.78	2.00	47.89	0.00	0.00
19.43	60.95	63.36	3.04	144.00	2.00	51.94	0.00	0.00
19.50	67.80	70.30	2.92	147.71	2.00	55.37	0.00	0.00
19.57	74.91	77.48	2.81	151.93	2.00	58.58	0.00	0.00
19.63	80.68	83.29	2.77	156.25	2.00	60.96	0.00	0.00
19.70	84.48	87.05	2.77	160.14	1.29	62.42	1.15	0.01
19.77	87.46	89.97	2.81	163.96	1.37	63.51	0.89	0.01
19.84	88.72	91.06	2.74	162.94	1.35	63.91	0.96	0.01
19.90	88.05	90.24	2.76	162.93	1.35	63.61	0.96	0.01
19.99	86.33	88.30	2.83	162.87	2.00	62.89	0.00	0.00
20.02	82.81	84.69	2.97	163.44	2.00	61.52	0.00	0.00
20.09	77.91	79.61	3.16	163.98	2.00	59.47	0.00	0.00
20.19	72.20	73.64	3.40	164.40	2.00	56.90	0.00	0.00
20.21	66.31	67.65	3.67	164.76	2.00	54.10	0.00	0.00
20.29	60.80	61.90	3.92	164.43	2.00	51.17	0.00	0.00
20.38	55.60	56.47	4.19	163.92	2.00	48.14	0.00	0.00
20.42	51.83	52.62	4.60	167.91	2.00	45.81	0.00	0.00
20.52	49.59	50.20	4.83	169.09	2.00	44.25	0.00	0.00
20.55	48.85	49.41	4.92	169.77	2.00	43.73	0.00	0.00
20.62	50.23	50.69	4.75	168.19	2.00	44.57	0.00	0.00
20.68	54.00	54.40	4.40	165.95	2.00	46.90	0.00	0.00
20.75	58.46	58.77	4.07	164.25	2.00	49.45	0.00	0.00
20.81	64.06	64.27	3.75	163.09	2.00	52.41	0.00	0.00
20.90	70.17	70.22	3.46	162.34	2.00	55.33	0.00	0.00
20.96	76.88	76.78	3.20	162.12	2.00	58.28	0.00	0.00
21.01	83.50	83.25	2.99	162.71	2.00	60.95	0.00	0.00
21.09	89.88	89.40	2.82	163.78	2.00	63.30	0.00	0.00
21.15	95.34	94.66	2.68	164.75	2.00	65.19	0.00	0.00
21.21	99.28	98.41	2.60	165.97	2.00	66.47	0.00	0.00
21.30	101.54	100.41	2.57	166.66	1.40	67.14	1.20	0.02
21.36	102.98	101.69	2.54	166.99	1.41	67.55	1.19	0.01
21.40	103.15	101.76	2.54	167.23	1.41	67.57	1.18	0.01
21.49	102.24	100.65	2.59	167.75	1.42	67.21	1.15	0.01
21.56	100.58	98.87	2.68	168.66	2.00	66.63	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
21.60	98.24	96.51	2.80	170.27	2.00	65.83	0.00	0.00
21.66	95.65	93.85	2.98	173.11	2.00	64.90	0.00	0.00
21.75	92.97	91.05	3.18	176.31	2.00	63.90	0.00	0.00
21.80	90.34	88.38	3.39	179.61	2.00	62.92	0.00	0.00
21.85	86.54	84.57	3.60	181.57	2.00	61.47	0.00	0.00
21.95	82.45	80.35	3.80	182.77	2.00	59.78	0.00	0.00
21.99	77.84	75.75	3.99	182.63	2.00	57.84	0.00	0.00
22.05	73.33	71.22	4.09	179.99	2.00	55.80	0.00	0.00
22.14	68.64	66.45	4.12	175.01	1.58	53.51	0.23	0.00
22.19	64.12	61.92	4.12	169.22	1.45	51.18	0.40	0.00
22.26	59.36	57.14	4.05	161.62	1.29	48.53	0.84	0.01
22.35	54.56	52.30	3.95	153.37	1.13	45.61	1.93	0.02
22.44	49.73	47.45	3.85	144.80	0.99	42.40	7.23	0.09
22.45	46.31	44.10	3.71	137.69	0.88	39.98	34.16	0.05
22.54	43.33	41.08	3.60	131.39	0.79	37.64	51.20	0.66
22.58	41.17	38.93	3.51	126.75	0.73	35.86	51.20	0.29
22.65	39.90	37.63	3.49	124.71	0.71	34.74	51.20	0.51
22.73	39.60	37.26	3.53	125.06	2.00	34.42	0.00	0.00
22.79	39.96	37.55	3.56	126.08	2.00	34.67	0.00	0.00
22.85	41.77	39.25	3.64	129.80	0.77	36.13	51.20	0.44
22.93	44.52	41.82	3.80	136.54	0.86	38.22	39.27	0.45
22.99	48.25	45.36	3.96	144.50	0.98	40.91	9.74	0.08
23.04	53.17	50.03	4.01	151.83	1.10	44.14	0.00	0.00
23.12	57.97	54.54	4.04	158.22	1.21	46.99	1.24	0.01
23.19	61.76	58.07	4.05	162.95	1.30	49.06	0.78	0.01
23.27	64.98	61.03	4.05	166.65	1.38	50.70	0.55	0.01
23.30	67.76	63.65	4.04	169.44	1.44	52.09	0.42	0.00
23.38	70.90	66.51	3.97	171.29	1.48	53.54	0.35	0.00
23.47	73.27	68.60	3.87	171.31	1.47	54.56	0.35	0.00
23.50	74.99	70.18	3.71	168.91	1.42	55.31	0.75	0.00
23.58	75.51	70.53	3.56	165.30	1.35	55.48	0.96	0.01
23.66	74.38	69.31	3.48	161.96	1.28	54.90	0.88	0.01
23.69	73.15	68.09	3.43	159.30	1.23	54.31	1.15	0.00
23.77	72.69	67.52	3.42	158.28	1.21	54.04	1.27	0.01
23.84	72.77	67.48	3.40	157.74	1.20	54.02	1.35	0.01
23.92	72.82	67.39	3.41	157.99	1.20	53.97	1.32	0.02
23.97	71.99	66.52	3.46	158.38	1.21	53.54	1.27	0.01
24.06	70.72	65.17	3.54	158.89	1.21	52.87	1.22	0.00
24.12	69.26	63.69	3.65	159.96	1.23	52.11	1.10	0.00
24.17	67.92	62.35	3.75	160.90	1.25	51.41	1.00	0.00
24.23	66.21	60.65	3.82	160.73	1.25	50.49	1.02	0.00
24.31	64.27	58.71	3.89	160.00	1.23	49.42	1.10	0.00
24.36	61.66	56.19	3.95	158.28	1.20	47.97	1.31	0.00
24.42	58.14	52.82	4.02	155.55	1.15	45.93	1.73	0.00
24.51	54.24	49.05	4.09	152.30	1.09	43.49	0.00	0.00
24.54	50.19	45.25	4.14	148.14	1.02	40.83	0.00	0.00
24.62	45.92	41.19	4.15	142.60	2.00	37.72	0.00	0.00
24.71	41.38	36.87	4.15	136.14	2.00	34.07	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
24.74	37.02	32.81	4.12	129.34	2.00	30.21	0.00	0.00
24.81	33.35	29.36	4.05	122.62	2.00	26.55	0.00	0.00
24.89	30.15	26.35	3.94	115.71	2.00	22.98	0.00	0.00
24.96	27.79	24.12	3.75	109.01	2.00	20.07	0.00	0.00
25.01	26.12	22.57	3.55	103.36	2.00	17.86	0.00	0.00
25.10	24.74	21.25	3.35	98.16	2.00	15.88	0.00	0.00
25.14	23.57	20.15	3.21	94.33	2.00	14.13	0.00	0.00
25.21	22.70	19.32	3.15	92.00	2.00	12.74	0.00	0.00
25.30	22.17	18.80	3.09	90.31	2.00	11.83	0.00	0.00
25.34	21.82	18.46	3.02	88.71	2.00	11.23	0.00	0.00
25.41	21.76	18.37	2.95	87.53	2.00	11.08	0.00	0.00
25.50	21.77	18.34	2.88	86.53	2.00	11.02	0.00	0.00
25.55	21.93	18.47	2.82	85.93	2.00	11.24	0.00	0.00
25.60	22.09	18.59	2.77	85.40	2.00	11.46	0.00	0.00
25.70	22.29	18.73	2.70	84.60	2.00	11.71	0.00	0.00
25.75	22.50	18.90	2.62	83.67	2.00	12.02	0.00	0.00
25.80	22.79	19.15	2.49	82.04	2.00	12.44	0.00	0.00
25.89	23.08	19.37	2.37	80.44	2.00	12.82	0.00	0.00
25.95	23.34	19.59	2.27	79.07	2.00	13.20	0.00	0.00
25.99	23.77	19.96	2.16	77.81	2.00	13.82	0.00	0.00
26.06	24.08	20.21	2.08	76.79	2.00	14.23	0.00	0.00
26.15	24.25	20.33	2.02	75.89	2.00	14.42	0.00	0.00
26.19	24.34	20.39	1.98	75.28	2.00	14.52	0.00	0.00
26.25	24.39	20.41	1.98	75.23	2.00	14.55	0.00	0.00
26.34	24.31	20.30	2.02	75.77	2.00	14.36	0.00	0.00
26.38	24.05	20.04	2.12	77.18	2.00	13.94	0.00	0.00
26.45	23.79	19.77	2.21	78.40	2.00	13.50	0.00	0.00
26.52	23.52	19.49	2.29	79.37	2.00	13.03	0.00	0.00
26.61	23.07	19.04	2.37	80.09	2.00	12.26	0.00	0.00
26.67	22.67	18.66	2.42	80.27	2.00	11.58	0.00	0.00
26.72	22.32	18.31	2.45	80.21	2.00	10.97	0.00	0.00
26.82	21.99	17.98	2.45	79.73	2.00	10.36	0.00	0.00
26.86	21.65	17.67	2.42	78.75	2.00	9.78	0.00	0.00
26.94	21.41	17.42	2.33	77.07	2.00	9.31	0.00	0.00
26.98	21.28	17.29	2.22	75.19	2.00	9.08	0.00	0.00
27.06	21.19	17.19	2.11	73.31	2.00	8.88	0.00	0.00
27.10	21.17	17.16	1.99	71.47	2.00	8.83	0.00	0.00
27.17	21.23	17.20	1.88	69.64	2.00	8.90	0.00	0.00
27.26	21.42	17.34	1.79	68.32	2.00	9.16	0.00	0.00
27.31	21.67	17.54	1.72	67.44	2.00	9.55	0.00	0.00
27.39	21.94	17.76	1.69	67.05	2.00	9.96	0.00	0.00
27.44	22.25	18.02	1.66	66.93	2.00	10.43	0.00	0.00
27.51	22.57	18.27	1.66	67.24	2.00	10.90	0.00	0.00
27.58	22.83	18.47	1.68	67.74	2.00	11.25	0.00	0.00
27.63	23.05	18.64	1.70	68.26	2.00	11.56	0.00	0.00
27.71	23.11	18.67	1.73	68.80	2.00	11.60	0.00	0.00
27.79	23.06	18.58	1.77	69.46	2.00	11.45	0.00	0.00
27.86	22.89	18.40	1.81	69.90	2.00	11.13	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
27.89	22.61	18.14	1.85	70.31	2.00	10.66	0.00	0.00
27.96	22.26	17.80	1.90	70.72	2.00	10.04	0.00	0.00
28.05	21.90	17.44	1.97	71.46	2.00	9.36	0.00	0.00
28.09	21.54	17.11	2.07	72.69	2.00	8.72	0.00	0.00
28.16	21.20	16.78	2.19	74.05	2.00	8.08	0.00	0.00
28.23	20.88	16.46	2.31	75.37	2.00	7.44	0.00	0.00
28.29	20.64	16.22	2.42	76.64	2.00	6.96	0.00	0.00
28.35	20.47	16.04	2.52	77.72	2.00	6.60	0.00	0.00
28.44	20.36	15.91	2.60	78.67	2.00	6.33	0.00	0.00
28.50	20.26	15.79	2.68	79.55	2.00	6.07	0.00	0.00
28.55	20.24	15.75	2.74	80.26	2.00	5.99	0.00	0.00
28.64	20.28	15.76	2.77	80.62	2.00	6.00	0.00	0.00
28.69	20.47	15.90	2.76	80.83	2.00	6.30	0.00	0.00
28.75	20.92	16.26	2.70	80.68	2.00	7.05	0.00	0.00
28.82	21.52	16.76	2.62	80.40	2.00	8.05	0.00	0.00
28.89	22.35	17.44	2.61	81.27	2.00	9.36	0.00	0.00
28.98	23.25	18.18	2.62	82.71	2.00	10.73	0.00	0.00
29.04	24.09	18.87	2.65	84.22	2.00	11.96	0.00	0.00
29.08	24.99	19.62	2.67	85.67	2.00	13.25	0.00	0.00
29.15	25.81	20.29	2.71	87.23	2.00	14.36	0.00	0.00
29.24	26.55	20.88	2.76	88.89	2.00	15.30	0.00	0.00
29.29	27.47	21.64	2.79	90.48	2.00	16.49	0.00	0.00
29.34	28.09	22.14	2.85	92.19	2.00	17.23	0.00	0.00
29.43	28.47	22.41	2.93	93.91	2.00	17.64	0.00	0.00
29.47	28.34	22.27	2.99	94.60	2.00	17.42	0.00	0.00
29.53	28.01	21.95	3.03	94.84	2.00	16.95	0.00	0.00
29.62	27.58	21.54	3.09	94.97	2.00	16.32	0.00	0.00
29.66	26.96	20.98	3.16	95.20	2.00	15.46	0.00	0.00
29.77	26.26	20.33	3.24	95.20	2.00	14.42	0.00	0.00
29.81	25.53	19.68	3.35	95.62	2.00	13.35	0.00	0.00
29.86	25.39	19.54	3.41	96.27	2.00	13.10	0.00	0.00
29.92	25.75	19.81	3.44	97.12	2.00	13.56	0.00	0.00
30.01	26.64	20.51	3.42	98.08	2.00	14.72	0.00	0.00
30.09	27.72	21.39	3.38	99.03	2.00	16.09	0.00	0.00
30.17	28.41	21.93	3.38	100.07	2.00	16.91	0.00	0.00
30.20	28.59	22.05	3.46	101.40	2.00	17.10	0.00	0.00
30.27	28.79	22.17	3.56	103.06	2.00	17.28	0.00	0.00
30.32	29.48	22.72	3.61	104.73	2.00	18.09	0.00	0.00
30.39	30.45	23.50	3.59	105.88	2.00	19.20	0.00	0.00
30.47	30.78	23.72	3.61	106.51	2.00	19.51	0.00	0.00
30.55	30.79	23.68	3.63	106.70	2.00	19.46	0.00	0.00
30.62	30.35	23.27	3.68	106.77	2.00	18.87	0.00	0.00
30.66	29.89	22.86	3.74	106.87	2.00	18.29	0.00	0.00
30.72	29.64	22.63	3.68	105.71	2.00	17.95	0.00	0.00
30.81	29.90	22.81	3.54	103.99	2.00	18.22	0.00	0.00
30.85	30.12	22.99	3.36	101.48	2.00	18.48	0.00	0.00
30.91	29.75	22.67	3.19	98.41	2.00	18.02	0.00	0.00
31.01	29.16	22.15	3.01	94.88	2.00	17.25	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
31.05	28.11	21.28	2.88	91.42	2.00	15.92	0.00	0.00
31.11	26.82	20.20	2.76	87.95	2.00	14.21	0.00	0.00
31.20	25.44	19.03	2.64	84.32	2.00	12.24	0.00	0.00
31.26	24.18	17.98	2.50	80.64	2.00	10.37	0.00	0.00
31.31	23.24	17.20	2.43	78.37	2.00	8.89	0.00	0.00
31.38	22.45	16.53	2.38	76.56	2.00	7.59	0.00	0.00
31.46	21.95	16.09	2.32	75.05	2.00	6.71	0.00	0.00
31.51	21.63	15.82	2.28	74.00	2.00	6.14	0.00	0.00
31.60	21.33	15.54	2.25	73.14	2.00	5.56	0.00	0.00
31.65	21.21	15.44	2.20	72.24	2.00	5.33	0.00	0.00
31.74	21.14	15.36	2.13	71.22	2.00	5.16	0.00	0.00
31.80	21.15	15.35	2.06	70.19	2.00	5.15	0.00	0.00
31.85	21.16	15.35	1.98	68.91	2.00	5.15	0.00	0.00
31.89	21.17	15.37	1.86	67.05	2.00	5.18	0.00	0.00
32.00	21.16	15.34	1.74	65.11	2.00	5.12	0.00	0.00
32.04	21.11	15.30	1.63	63.32	2.00	5.05	0.00	0.00
32.09	21.14	15.33	1.55	61.91	2.00	5.09	0.00	0.00
32.19	21.23	15.39	1.48	60.88	2.00	5.23	0.00	0.00
32.23	21.15	15.31	1.46	60.35	2.00	5.05	0.00	0.00
32.29	21.63	15.69	1.44	60.57	2.00	5.87	0.00	0.00
32.37	22.15	16.09	1.44	60.95	2.00	6.69	0.00	0.00
32.44	22.73	16.54	1.46	61.75	2.00	7.61	0.00	0.00
32.49	23.42	17.08	1.51	63.28	2.00	8.66	0.00	0.00
32.58	24.18	17.66	1.56	64.80	2.00	9.77	0.00	0.00
32.62	24.92	18.23	1.61	66.38	2.00	10.83	0.00	0.00
32.69	25.54	18.71	1.67	67.92	2.00	11.67	0.00	0.00
32.78	26.07	19.09	1.73	69.43	2.00	12.34	0.00	0.00
32.82	26.80	19.66	1.77	70.95	2.00	13.31	0.00	0.00
32.89	27.02	19.79	1.85	72.39	2.00	13.54	0.00	0.00
32.97	27.26	19.94	1.92	73.87	2.00	13.78	0.00	0.00
33.02	27.46	20.06	2.00	75.41	2.00	13.98	0.00	0.00
33.09	27.56	20.09	2.10	77.21	2.00	14.03	0.00	0.00
33.15	27.58	20.06	2.22	79.12	2.00	13.98	0.00	0.00
33.20	27.62	20.05	2.34	81.12	2.00	13.96	0.00	0.00
33.28	27.94	20.26	2.45	83.29	2.00	14.30	0.00	0.00
33.38	28.41	20.57	2.55	85.36	2.00	14.81	0.00	0.00
33.43	29.00	21.01	2.64	87.41	2.00	15.50	0.00	0.00
33.47	29.66	21.50	2.72	89.41	2.00	16.26	0.00	0.00
33.57	30.25	21.91	2.82	91.56	2.00	16.89	0.00	0.00
33.63	30.80	22.30	2.92	93.64	2.00	17.47	0.00	0.00
33.70	31.35	22.69	2.99	95.39	2.00	18.05	0.00	0.00
33.74	31.93	23.12	3.05	97.06	2.00	18.67	0.00	0.00
33.82	32.49	23.51	3.11	98.51	2.00	19.22	0.00	0.00
33.86	32.78	23.71	3.16	99.73	2.00	19.50	0.00	0.00
33.93	32.90	23.76	3.24	100.95	2.00	19.57	0.00	0.00
34.02	32.86	23.67	3.31	102.03	2.00	19.44	0.00	0.00
34.06	32.78	23.57	3.38	102.94	2.00	19.30	0.00	0.00
34.13	32.65	23.42	3.43	103.48	2.00	19.09	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
34.21	32.51	23.26	3.47	103.80	2.00	18.86	0.00	0.00
34.28	32.29	23.05	3.50	103.90	2.00	18.56	0.00	0.00
34.32	31.94	22.75	3.52	103.65	2.00	18.13	0.00	0.00
34.41	31.53	22.38	3.53	103.23	2.00	17.59	0.00	0.00
34.46	31.08	22.00	3.54	102.68	2.00	17.03	0.00	0.00
34.52	30.55	21.56	3.54	101.80	2.00	16.35	0.00	0.00
34.61	29.93	21.04	3.52	100.63	2.00	15.55	0.00	0.00
34.65	29.34	20.56	3.49	99.34	2.00	14.79	0.00	0.00
34.71	28.73	20.07	3.44	97.80	2.00	13.99	0.00	0.00
34.79	28.12	19.57	3.37	95.91	2.00	13.16	0.00	0.00
34.86	27.56	19.11	3.28	93.87	2.00	12.38	0.00	0.00
34.93	27.06	18.72	3.18	91.78	2.00	11.69	0.00	0.00
35.01	26.62	18.35	3.08	89.74	2.00	11.04	0.00	0.00
35.06	26.18	18.01	2.99	87.84	2.00	10.42	0.00	0.00
35.11	25.82	17.73	2.91	86.31	2.00	9.90	0.00	0.00
35.18	25.57	17.51	2.85	85.02	2.00	9.49	0.00	0.00
35.26	25.31	17.29	2.81	84.06	2.00	9.07	0.00	0.00
35.34	25.02	17.04	2.79	83.47	2.00	8.59	0.00	0.00
35.40	24.80	16.85	2.80	83.29	2.00	8.22	0.00	0.00
35.44	24.58	16.65	2.84	83.43	2.00	7.83	0.00	0.00
35.51	24.35	16.44	2.90	83.91	2.00	7.41	0.00	0.00
35.58	24.06	16.19	2.96	84.27	2.00	6.90	0.00	0.00
35.66	23.76	15.93	3.00	84.26	2.00	6.36	0.00	0.00
35.71	23.50	15.70	3.01	83.91	2.00	5.90	0.00	0.00
35.77	23.24	15.49	2.99	83.26	2.00	5.44	0.00	0.00
35.85	22.95	15.25	2.95	82.35	2.00	4.93	0.00	0.00
35.92	22.74	15.07	2.91	81.42	2.00	4.54	0.00	0.00
35.97	22.64	14.99	2.87	80.74	2.00	4.36	0.00	0.00
36.03	22.63	14.97	2.81	80.03	2.00	4.31	0.00	0.00
36.11	22.66	14.98	2.74	79.05	2.00	4.33	0.00	0.00
36.16	22.78	15.07	2.63	77.87	2.00	4.53	0.00	0.00
36.26	22.82	15.08	2.54	76.66	2.00	4.56	0.00	0.00
36.31	22.88	15.12	2.46	75.65	2.00	4.65	0.00	0.00
36.36	22.63	14.93	2.39	74.35	2.00	4.23	0.00	0.00
36.43	22.40	14.74	2.33	73.14	2.00	3.80	0.00	0.00
36.51	22.21	14.58	2.26	71.91	2.00	3.46	0.00	0.00
36.55	22.01	14.43	2.21	71.02	2.00	3.11	0.00	0.00
36.65	21.75	14.21	2.19	70.32	2.00	2.60	0.00	0.00
36.71	21.76	14.20	2.19	70.29	2.00	2.58	0.00	0.00
36.76	22.11	14.45	2.18	70.57	2.00	3.15	0.00	0.00
36.85	22.79	14.94	2.19	71.52	2.00	4.24	0.00	0.00
36.89	23.63	15.55	2.21	72.78	2.00	5.57	0.00	0.00
36.96	24.91	16.49	2.26	74.96	2.00	7.51	0.00	0.00
37.02	26.31	17.51	2.32	77.41	2.00	9.49	0.00	0.00
37.11	27.68	18.50	2.39	79.93	2.00	11.30	0.00	0.00
37.15	28.95	19.42	2.47	82.45	2.00	12.91	0.00	0.00
37.24	30.33	20.41	2.56	85.40	2.00	14.55	0.00	0.00
37.31	31.54	21.27	2.67	88.27	2.00	15.91	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
37.35	32.61	22.02	2.80	91.57	2.00	17.06	0.00	0.00
37.43	34.54	23.43	2.87	94.72	2.00	19.10	0.00	0.00
37.51	37.23	25.41	2.87	97.40	2.00	21.79	0.00	0.00
37.55	40.42	27.84	2.77	98.85	2.00	24.79	0.00	0.00
37.60	43.41	30.14	2.59	98.34	0.41	27.42	51.20	0.00
37.67	46.12	32.25	2.41	97.10	0.40	29.65	51.20	0.00
37.75	47.68	33.45	2.27	95.62	0.40	30.85	51.20	0.00
37.81	48.21	33.86	2.19	94.32	0.39	31.26	51.20	0.00
37.88	48.12	33.76	2.16	93.42	0.38	31.16	51.20	0.00
37.93	48.13	33.75	2.14	93.00	0.38	31.14	51.20	0.00
38.00	49.14	34.47	2.14	93.80	0.38	31.85	51.20	0.00
38.08	52.10	36.67	2.18	96.77	0.40	33.89	51.20	0.00
38.14	55.93	39.49	2.32	102.67	0.44	36.33	51.20	0.00
38.20	60.41	42.75	2.51	110.38	0.50	38.95	51.20	0.00
38.26	65.84	46.71	2.75	119.90	2.00	41.88	0.00	0.00
38.34	74.63	53.26	2.89	130.07	2.00	46.21	0.00	0.00
38.43	85.00	61.06	2.94	139.63	2.00	50.72	0.00	0.00
38.45	97.14	70.35	2.96	149.58	2.00	55.39	0.00	0.00
38.53	109.74	79.94	2.97	159.28	2.00	59.61	0.00	0.00
38.62	121.23	88.66	2.98	168.28	2.00	63.03	0.00	0.00
38.65	130.51	95.75	3.01	176.10	2.00	65.57	0.00	0.00
38.72	139.21	102.35	3.02	182.90	1.59	67.77	0.84	0.00
38.80	148.05	109.03	3.02	189.51	1.75	69.85	0.64	0.00
38.88	156.31	115.30	3.00	195.08	1.89	71.70	0.51	0.00
38.93	162.35	119.87	3.00	199.70	2.00	72.98	0.00	0.00
39.01	167.70	123.81	3.02	204.11	2.00	74.05	0.00	0.00
39.07	171.82	126.83	3.04	207.67	2.00	74.85	0.00	0.00
39.12	176.04	129.96	3.05	211.17	2.00	75.65	0.00	0.00
39.20	180.10	132.88	3.07	214.63	2.00	76.38	0.00	0.00
39.27	184.00	135.69	3.08	217.99	2.00	77.07	0.00	0.00
39.31	187.49	138.26	3.10	221.07	2.00	77.69	0.00	0.00
39.38	190.29	140.19	3.12	223.77	2.00	78.15	0.00	0.00
39.45	193.31	142.31	3.14	226.42	2.00	78.65	0.00	0.00
39.51	197.03	145.04	3.14	229.13	2.00	79.27	0.00	0.00
39.57	201.45	148.33	3.12	231.77	2.00	80.01	0.00	0.00
39.64	206.43	152.05	3.09	234.36	2.00	80.83	0.00	0.00
39.72	209.97	154.62	3.06	235.92	2.00	81.38	0.00	0.00
39.79	210.90	155.19	3.04	235.81	2.00	81.50	0.00	0.00
39.84	209.11	153.65	3.05	234.48	2.00	81.18	0.00	0.00
39.90	206.02	151.08	3.06	232.41	2.00	80.62	0.00	0.00
39.96	202.96	148.57	3.06	229.77	2.00	80.07	0.00	0.00
40.06	199.55	145.71	3.05	226.70	2.00	79.43	0.00	0.00
40.13	195.43	142.38	3.04	223.26	2.00	78.66	0.00	0.00
40.17	191.56	139.34	3.03	219.92	2.00	77.95	0.00	0.00
40.26	187.07	135.71	3.03	216.05	2.00	77.08	0.00	0.00
40.31	182.02	131.75	3.02	211.86	2.00	76.10	0.00	0.00
40.36	176.42	127.42	2.99	206.86	2.00	75.00	0.00	0.00
40.43	171.16	123.34	2.95	201.52	2.00	73.93	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
40.51	164.14	117.86	2.94	195.74	1.91	72.42	0.49	0.00
40.56	159.97	114.70	2.89	190.93	1.79	71.53	0.60	0.00
40.64	152.18	108.61	2.91	185.56	1.66	69.73	0.74	0.00
40.70	148.35	105.73	2.84	180.74	1.55	68.84	0.91	0.00
40.75	146.10	104.13	2.73	175.76	1.44	68.34	1.12	0.00
40.83	144.83	103.24	2.61	171.24	1.34	68.05	1.36	0.00
40.88	146.29	104.60	2.44	167.25	1.27	68.48	1.62	0.00
40.95	151.45	108.92	2.21	163.89	1.20	69.82	1.87	0.00
41.03	159.00	115.12	1.99	162.69	1.18	71.65	1.97	0.00
41.08	169.86	124.05	1.78	164.27	1.21	74.11	1.84	0.00
41.15	178.00	130.77	1.63	165.80	1.24	75.85	2.06	0.00
41.24	189.19	140.00	1.47	169.37	1.31	78.11	1.84	0.00
41.28	194.60	144.65	1.37	170.54	1.33	79.18	1.77	0.00
41.35	196.88	146.68	1.30	170.24	1.33	79.64	1.79	0.00
41.41	197.86	147.66	1.24	169.29	1.31	79.86	1.84	0.00
41.48	196.40	146.49	1.22	167.63	1.28	79.60	1.94	0.00
41.55	192.75	143.17	1.27	166.29	1.25	78.84	2.02	0.00
41.63	188.20	139.10	1.33	164.51	1.22	77.89	2.14	0.00
41.68	181.44	133.30	1.42	161.92	1.17	76.49	2.32	0.00
41.74	174.04	127.00	1.52	159.25	1.12	74.89	2.29	0.00
41.83	166.17	120.27	1.65	156.93	1.08	73.09	2.54	0.00
41.87	159.62	114.71	1.78	156.04	1.07	71.53	2.65	0.00
41.98	152.99	108.97	1.95	155.95	1.07	69.84	2.65	0.00
42.02	146.03	103.14	2.14	156.49	1.08	68.02	2.59	0.00
42.10	139.05	97.32	2.34	157.32	1.09	66.10	2.49	0.00
42.14	132.52	92.01	2.54	158.36	1.11	64.25	2.27	0.00
42.22	126.16	86.83	2.75	159.59	1.13	62.34	2.08	0.00
42.29	120.67	82.42	2.92	160.51	1.15	60.62	1.96	0.00
42.38	115.55	78.32	3.10	161.46	1.16	58.93	1.83	0.00
42.41	111.25	74.95	3.26	162.34	1.18	57.48	1.72	0.00
42.46	107.34	71.90	3.40	163.00	1.19	56.11	1.65	0.00
42.57	103.94	69.19	3.51	163.11	1.19	54.84	1.35	0.00
42.61	100.91	66.88	3.61	163.01	1.19	53.72	1.37	0.00
42.68	98.50	65.01	3.68	162.77	1.19	52.78	1.40	0.00
42.76	96.24	63.25	3.74	162.34	1.18	51.88	1.46	0.00
42.80	94.09	61.63	3.80	161.80	1.17	51.03	1.53	0.00
42.87	92.43	60.35	3.83	161.02	1.16	50.33	1.65	0.00
42.92	90.98	59.26	3.84	160.04	1.14	49.73	1.82	0.00
42.98	89.10	57.87	3.84	158.36	1.11	48.95	2.15	0.00
43.06	86.12	55.71	3.82	155.17	1.06	47.69	2.95	0.00
43.11	82.66	53.25	3.79	151.63	1.00	46.20	4.21	0.00
43.18	78.34	50.16	3.80	147.91	0.94	44.23	17.73	0.00
43.26	73.08	46.41	3.84	143.94	0.88	41.66	32.26	0.00
43.32	67.13	42.20	3.90	139.61	0.82	38.52	47.25	0.00
43.39	61.24	38.07	3.95	134.85	2.00	35.12	0.00	0.00
43.46	55.24	33.90	3.98	129.27	2.00	31.30	0.00	0.00
43.52	48.95	29.60	4.00	122.72	2.00	26.81	0.00	0.00
43.61	43.21	25.69	3.99	116.06	2.00	22.14	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
43.64	38.48	22.50	4.03	110.79	2.00	17.77	0.00	0.00
43.70	34.37	19.75	4.05	105.47	2.00	13.46	0.00	0.00
43.79	31.53	17.87	3.95	100.21	2.00	10.16	0.00	0.00
43.84	29.85	16.79	3.74	95.39	2.00	8.11	0.00	0.00
43.90	29.16	16.37	3.52	91.83	2.00	7.26	0.00	0.00
43.97	28.62	16.03	3.37	89.31	2.00	6.57	0.00	0.00
44.05	28.46	15.91	3.31	88.25	2.00	6.33	0.00	0.00
44.10	28.90	16.18	3.29	88.67	2.00	6.89	0.00	0.00
44.18	29.73	16.69	3.35	90.36	2.00	7.91	0.00	0.00
44.24	30.91	17.43	3.42	92.72	2.00	9.34	0.00	0.00
44.30	32.38	18.35	3.51	95.76	2.00	11.03	0.00	0.00
44.38	34.27	19.53	3.61	99.36	2.00	13.10	0.00	0.00
44.45	36.52	20.96	3.68	103.06	2.00	15.43	0.00	0.00
44.49	39.14	22.67	3.69	106.18	2.00	18.02	0.00	0.00
44.57	41.80	24.41	3.65	108.75	2.00	20.45	0.00	0.00
44.64	44.11	25.89	3.68	111.67	2.00	22.40	0.00	0.00
44.72	45.81	26.96	3.74	114.40	2.00	23.74	0.00	0.00
44.79	47.04	27.72	3.80	116.56	2.00	24.65	0.00	0.00
44.84	48.33	28.53	3.83	118.40	2.00	25.61	0.00	0.00
44.92	51.62	30.75	3.66	118.97	2.00	28.07	0.00	0.00
44.96	56.00	33.79	3.40	118.61	2.00	31.18	0.00	0.00
45.03	61.93	37.94	3.07	117.38	2.00	35.02	0.00	0.00
45.09	70.39	43.99	2.69	115.79	2.00	39.90	0.00	0.00
45.19	78.97	50.19	2.38	114.70	2.00	44.24	0.00	0.00
45.23	87.67	56.61	2.12	113.97	2.00	48.22	0.00	0.00
45.28	95.84	62.61	1.96	115.12	2.00	51.55	0.00	0.00
45.38	103.70	68.35	1.85	117.08	2.00	54.44	0.00	0.00
45.43	110.94	73.64	1.79	119.99	2.00	56.90	0.00	0.00
45.48	114.55	76.05	1.85	123.69	0.64	57.97	22.70	0.00
45.58	115.95	76.70	1.96	127.38	2.00	58.25	0.00	0.00
45.62	113.89	74.81	2.13	130.77	2.00	57.42	0.00	0.00
45.67	107.49	69.71	2.41	133.73	2.00	55.09	0.00	0.00
45.78	100.41	64.15	2.72	136.92	2.00	52.35	0.00	0.00
45.82	92.83	58.44	3.06	139.92	2.00	49.27	0.00	0.00
45.88	86.04	53.46	3.31	140.77	2.00	46.33	0.00	0.00
45.98	79.71	48.88	3.55	140.84	2.00	43.37	0.00	0.00
46.02	73.83	44.74	3.76	140.23	2.00	40.45	0.00	0.00
46.07	69.62	41.84	3.83	137.86	2.00	38.24	0.00	0.00
46.17	66.01	39.37	3.85	134.82	2.00	36.23	0.00	0.00
46.21	63.43	37.66	3.80	131.48	2.00	34.77	0.00	0.00
46.27	61.17	36.16	3.75	128.41	2.00	33.42	0.00	0.00
46.37	59.04	34.72	3.70	125.52	2.00	32.08	0.00	0.00
46.39	57.19	33.50	3.68	123.35	2.00	30.90	0.00	0.00
46.47	55.24	32.14	3.75	122.66	2.00	29.53	0.00	0.00
46.57	53.36	30.82	3.84	122.21	2.00	28.15	0.00	0.00
46.62	51.65	29.64	3.92	121.62	2.00	26.87	0.00	0.00
46.67	49.67	28.29	4.04	121.27	2.00	25.32	0.00	0.00
46.77	47.76	26.96	4.16	120.87	2.00	23.74	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
46.82	46.32	25.98	4.26	120.67	2.00	22.51	0.00	0.00
46.90	45.86	25.64	4.27	120.21	2.00	22.08	0.00	0.00
46.92	45.62	25.48	4.26	119.75	2.00	21.88	0.00	0.00
47.01	45.61	25.43	4.26	119.60	2.00	21.81	0.00	0.00
47.05	45.76	25.51	4.25	119.58	2.00	21.91	0.00	0.00
47.12	45.95	25.59	4.26	119.93	2.00	22.01	0.00	0.00
47.21	45.72	25.38	4.33	120.48	2.00	21.74	0.00	0.00
47.28	46.33	25.74	4.31	120.95	2.00	22.20	0.00	0.00
47.32	46.71	25.95	4.32	121.44	2.00	22.48	0.00	0.00
47.40	47.02	26.10	4.35	122.19	2.00	22.66	0.00	0.00
47.45	47.62	26.44	4.38	123.33	2.00	23.09	0.00	0.00
47.55	48.61	27.01	4.37	124.26	2.00	23.80	0.00	0.00
47.58	49.96	27.88	4.29	124.59	2.00	24.84	0.00	0.00
47.66	51.87	29.11	4.15	124.45	2.00	26.26	0.00	0.00
47.74	54.02	30.50	3.99	124.17	2.00	27.81	0.00	0.00
47.80	56.71	32.27	3.82	124.05	2.00	29.67	0.00	0.00
47.85	58.65	33.53	3.72	124.22	2.00	30.94	0.00	0.00
47.93	60.64	34.81	3.64	124.49	2.00	32.17	0.00	0.00
47.98	62.76	36.21	3.54	124.46	2.00	33.47	0.00	0.00
48.04	64.99	37.69	3.41	124.03	0.65	34.80	51.20	0.00
48.11	67.41	39.30	3.29	123.57	0.65	36.18	51.20	0.00
48.20	69.59	40.73	3.19	123.38	0.65	37.36	51.20	0.00
48.24	71.33	41.88	3.14	123.68	0.65	38.28	51.20	0.00
48.30	72.97	42.95	3.10	123.93	0.65	39.10	51.20	0.00
48.39	74.42	43.87	3.06	124.05	0.65	39.81	51.20	0.00
48.44	75.99	44.91	3.02	124.44	0.66	40.58	51.20	0.00
48.53	77.80	46.06	2.99	124.94	0.66	41.42	51.20	0.00
48.59	79.60	47.23	2.95	125.51	0.67	42.24	51.20	0.00
48.64	80.98	48.11	2.95	126.34	0.68	42.85	51.20	0.00
48.70	82.04	48.73	2.97	127.52	0.69	43.27	51.20	0.00
48.78	83.53	49.64	2.98	128.78	0.71	43.88	51.20	0.00
48.82	85.19	50.69	2.99	129.97	0.72	44.58	51.20	0.00
48.89	87.28	52.03	2.97	131.08	0.74	45.43	29.49	0.00
48.98	90.26	53.97	2.93	132.03	0.75	46.64	26.57	0.00
49.05	93.73	56.28	2.86	132.78	0.76	48.03	24.49	0.00
49.09	97.44	58.81	2.79	133.45	0.77	49.48	22.78	0.00
49.16	101.81	61.78	2.70	134.12	0.78	51.11	21.16	0.00
49.24	106.91	65.26	2.61	135.13	0.79	52.91	18.96	0.00
49.31	112.14	68.86	2.52	136.11	0.80	54.69	17.05	0.00
49.38	116.76	72.05	2.44	137.00	0.82	56.18	8.80	0.00
49.43	120.62	74.75	2.37	137.59	0.82	57.39	8.42	0.00
49.52	123.30	76.64	2.29	137.04	0.82	58.22	8.74	0.00
49.58	124.61	77.65	2.21	135.66	0.80	58.65	9.64	0.00
49.63	124.38	77.57	2.16	133.96	0.78	58.62	10.89	0.00
49.71	122.70	76.38	2.14	132.38	0.76	58.11	12.19	0.00
49.77	119.64	74.19	2.15	130.76	2.00	57.15	0.00	0.00
49.82	114.85	70.80	2.19	128.74	2.00	55.60	0.00	0.00
49.88	107.69	65.75	2.26	126.27	2.00	53.16	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
49.97	100.43	60.65	2.35	123.80	2.00	50.49	0.00	0.00
50.01	94.19	56.34	2.42	121.67	2.00	48.06	0.00	0.00
50.07	89.11	52.76	2.54	121.25	2.00	45.89	0.00	0.00
50.17	84.50	49.44	2.71	122.07	2.00	43.75	0.00	0.00
50.22	80.39	46.53	2.89	123.24	2.00	41.75	0.00	0.00
50.29	76.13	43.58	3.05	123.52	2.00	39.58	0.00	0.00
50.37	72.92	41.37	3.14	123.02	2.00	37.87	0.00	0.00
50.42	69.90	39.36	3.21	122.05	2.00	36.22	0.00	0.00
50.47	68.34	38.34	3.21	120.84	2.00	35.35	0.00	0.00
50.57	65.94	36.74	3.23	119.31	2.00	33.95	0.00	0.00
50.63	62.51	34.52	3.29	117.49	2.00	31.89	0.00	0.00
50.68	58.31	31.85	3.33	114.64	2.00	29.24	0.00	0.00
50.73	53.55	28.88	3.32	110.42	2.00	26.00	0.00	0.00
50.79	48.91	26.02	3.28	105.58	2.00	22.56	0.00	0.00
50.88	45.25	23.79	3.18	100.57	2.00	19.61	0.00	0.00
50.93	41.03	21.25	3.10	95.16	2.00	15.88	0.00	0.00
51.03	37.66	19.24	2.93	89.48	2.00	12.60	0.00	0.00
51.07	34.69	17.53	2.73	83.65	2.00	9.52	0.00	0.00
51.14	32.58	16.34	2.45	77.75	2.00	7.21	0.00	0.00
51.23	30.90	15.42	2.16	72.12	2.00	5.30	0.00	0.00
51.27	29.21	14.49	1.92	67.10	2.00	3.24	0.00	0.00
51.33	28.11	13.89	1.74	63.59	2.00	1.84	0.00	0.00
51.42	27.14	13.35	1.59	60.46	2.00	0.53	0.00	0.00
51.48	26.51	13.02	1.45	57.82	2.00	0.00	0.00	0.00
51.52	26.33	12.93	1.40	56.91	2.00	0.00	0.00	0.00
51.60	26.44	12.98	1.39	56.75	2.00	0.00	0.00	0.00
51.68	26.86	13.22	1.39	57.16	2.00	0.21	0.00	0.00
51.72	27.53	13.60	1.43	58.21	2.00	1.15	0.00	0.00
51.81	28.12	13.90	1.50	59.73	2.00	1.88	0.00	0.00
51.87	28.73	14.22	1.58	61.44	2.00	2.63	0.00	0.00
51.91	28.93	14.29	1.66	62.90	2.00	2.79	0.00	0.00
51.98	28.88	14.21	1.74	63.93	2.00	2.60	0.00	0.00
52.07	28.66	14.03	1.80	64.66	2.00	2.18	0.00	0.00
52.10	28.09	13.67	1.82	64.51	2.00	1.32	0.00	0.00
52.17	27.20	13.12	1.83	63.79	2.00	0.00	0.00	0.00
52.24	26.15	12.48	1.83	62.82	2.00	0.00	0.00	0.00
52.31	24.96	11.76	1.83	61.59	2.00	0.00	0.00	0.00
52.37	23.83	11.10	1.78	59.89	2.00	0.00	0.00	0.00
52.46	22.77	10.48	1.71	57.92	2.00	0.00	0.00	0.00
52.51	21.99	10.05	1.64	56.16	2.00	0.00	0.00	0.00
52.57	21.52	9.79	1.54	54.48	2.00	0.00	0.00	0.00
52.66	21.13	9.58	1.45	52.88	2.00	0.00	0.00	0.00
52.71	20.91	9.46	1.39	51.80	2.00	0.00	0.00	0.00
52.78	20.78	9.39	1.34	51.06	2.00	0.00	0.00	0.00
52.86	20.69	9.34	1.31	50.46	2.00	0.00	0.00	0.00
52.91	20.62	9.30	1.28	50.07	2.00	0.00	0.00	0.00
52.99	20.60	9.29	1.27	49.83	2.00	0.00	0.00	0.00
53.06	20.61	9.29	1.26	49.67	2.00	0.00	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
53.09	20.61	9.29	1.24	49.44	2.00	0.00	0.00	0.00
53.16	20.64	9.30	1.23	49.35	2.00	0.00	0.00	0.00
53.25	20.67	9.30	1.23	49.26	2.00	0.00	0.00	0.00
53.29	20.68	9.31	1.22	49.17	2.00	0.00	0.00	0.00
53.36	20.66	9.29	1.22	49.08	2.00	0.00	0.00	0.00
53.45	20.68	9.29	1.21	48.99	2.00	0.00	0.00	0.00
53.50	20.68	9.28	1.20	48.90	2.00	0.00	0.00	0.00
53.55	20.67	9.27	1.21	48.97	2.00	0.00	0.00	0.00
53.64	20.67	9.25	1.21	49.03	2.00	0.00	0.00	0.00
53.69	20.70	9.26	1.22	49.09	2.00	0.00	0.00	0.00
53.76	20.73	9.27	1.22	49.08	2.00	0.00	0.00	0.00
53.84	20.80	9.29	1.22	49.22	2.00	0.00	0.00	0.00
53.88	20.91	9.35	1.24	49.59	2.00	0.00	0.00	0.00
53.96	21.17	9.48	1.26	50.03	2.00	0.00	0.00	0.00
54.03	21.41	9.60	1.28	50.46	2.00	0.00	0.00	0.00
54.08	21.59	9.69	1.29	50.82	2.00	0.00	0.00	0.00
54.17	21.74	9.76	1.30	51.09	2.00	0.00	0.00	0.00
54.23	21.88	9.83	1.32	51.37	2.00	0.00	0.00	0.00
54.27	21.99	9.88	1.33	51.65	2.00	0.00	0.00	0.00
54.38	22.08	9.91	1.33	51.77	2.00	0.00	0.00	0.00
54.42	22.14	9.94	1.33	51.69	2.00	0.00	0.00	0.00
54.47	22.17	9.97	1.29	51.26	2.00	0.00	0.00	0.00
54.53	22.12	9.94	1.26	50.74	2.00	0.00	0.00	0.00
54.61	22.06	9.91	1.23	50.22	2.00	0.00	0.00	0.00
54.68	22.03	9.90	1.21	49.84	2.00	0.00	0.00	0.00
54.73	22.02	9.89	1.19	49.53	2.00	0.00	0.00	0.00
54.80	22.01	9.87	1.18	49.37	2.00	0.00	0.00	0.00
54.88	22.03	9.87	1.18	49.35	2.00	0.00	0.00	0.00
54.95	22.09	9.89	1.19	49.56	2.00	0.00	0.00	0.00
55.02	22.17	9.92	1.21	49.92	2.00	0.00	0.00	0.00
55.07	22.23	9.93	1.24	50.42	2.00	0.00	0.00	0.00
55.15	22.25	9.91	1.28	50.97	2.00	0.00	0.00	0.00
55.21	22.27	9.90	1.32	51.52	2.00	0.00	0.00	0.00
55.27	22.39	9.96	1.33	51.86	2.00	0.00	0.00	0.00
55.34	22.62	10.08	1.34	52.13	2.00	0.00	0.00	0.00
55.42	22.88	10.21	1.34	52.33	2.00	0.00	0.00	0.00
55.47	23.13	10.34	1.35	52.59	2.00	0.00	0.00	0.00
55.54	23.41	10.48	1.39	53.39	2.00	0.00	0.00	0.00
55.62	23.74	10.64	1.43	54.24	2.00	0.00	0.00	0.00
55.65	24.32	10.95	1.47	55.28	2.00	0.00	0.00	0.00
55.72	25.17	11.41	1.50	56.41	2.00	0.00	0.00	0.00
55.81	26.14	11.94	1.54	57.86	2.00	0.00	0.00	0.00
55.84	27.15	12.48	1.62	59.87	2.00	0.00	0.00	0.00
55.91	28.26	13.02	1.80	63.28	2.00	0.00	0.00	0.00
55.98	29.52	13.64	2.00	67.15	2.00	1.25	0.00	0.00
56.05	31.10	14.46	2.18	70.92	2.00	3.18	0.00	0.00
56.11	34.04	16.12	2.21	73.94	2.00	6.76	0.00	0.00
56.21	38.52	18.71	2.19	77.33	2.00	11.67	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
56.26	43.85	21.85	2.15	80.74	2.00	16.79	0.00	0.00
56.31	51.25	26.31	2.08	84.44	2.00	22.93	0.00	0.00
56.39	58.39	30.64	2.04	88.08	2.00	27.95	0.00	0.00
56.46	66.60	35.71	1.98	91.68	2.00	33.01	0.00	0.00
56.50	74.21	40.49	1.92	94.69	2.00	37.16	0.00	0.00
56.60	80.84	44.64	1.89	97.58	2.00	40.38	0.00	0.00
56.65	86.36	48.10	1.88	100.49	2.00	42.84	0.00	0.00
56.72	89.96	50.26	1.92	103.30	2.00	44.29	0.00	0.00
56.78	91.09	50.86	1.96	104.84	2.00	44.68	0.00	0.00
56.87	90.61	50.39	2.00	105.65	2.00	44.38	0.00	0.00
56.93	86.85	47.84	2.09	105.54	2.00	42.66	0.00	0.00
56.97	82.39	44.91	2.17	104.79	2.00	40.58	0.00	0.00
57.05	76.32	40.97	2.27	103.41	2.00	37.55	0.00	0.00
57.11	69.97	36.95	2.36	101.47	2.00	34.14	0.00	0.00
57.17	63.87	33.16	2.43	98.86	2.00	30.57	0.00	0.00
57.25	58.18	29.71	2.46	95.61	2.00	26.94	0.00	0.00
57.31	52.54	26.32	2.47	91.87	2.00	22.94	0.00	0.00
57.37	47.66	23.46	2.46	88.15	2.00	19.14	0.00	0.00
57.42	43.35	20.97	2.41	84.11	2.00	15.44	0.00	0.00
57.48	39.91	19.02	2.32	79.93	2.00	12.22	0.00	0.00
57.56	37.11	17.46	2.21	75.95	2.00	9.40	0.00	0.00
57.64	34.62	16.08	2.09	72.08	2.00	6.68	0.00	0.00
57.70	32.80	15.10	1.95	68.55	2.00	4.61	0.00	0.00
57.74	31.50	14.44	1.79	65.16	2.00	3.13	0.00	0.00
57.81	30.51	13.94	1.64	62.19	2.00	1.96	0.00	0.00
57.90	29.96	13.68	1.51	59.72	2.00	1.34	0.00	0.00
57.95	29.50	13.45	1.42	58.04	2.00	0.79	0.00	0.00
58.06	29.02	13.15	1.44	57.86	2.00	0.03	0.00	0.00
58.09	28.66	12.92	1.48	58.28	2.00	0.00	0.00	0.00
58.15	28.80	12.96	1.52	59.02	2.00	0.00	0.00	0.00
58.20	29.53	13.36	1.53	59.61	2.00	0.57	0.00	0.00
58.29	30.50	13.91	1.50	59.94	2.00	1.89	0.00	0.00
58.33	31.57	14.52	1.49	60.44	2.00	3.31	0.00	0.00
58.40	32.28	14.90	1.51	61.27	2.00	4.16	0.00	0.00
58.48	32.70	15.11	1.54	62.00	2.00	4.62	0.00	0.00
58.55	33.02	15.26	1.56	62.56	2.00	4.95	0.00	0.00
58.60	32.96	15.23	1.54	62.16	2.00	4.88	0.00	0.00
58.66	33.04	15.31	1.47	61.04	2.00	5.06	0.00	0.00
58.75	32.78	15.19	1.40	59.62	2.00	4.79	0.00	0.00
58.80	31.98	14.73	1.37	58.57	2.00	3.79	0.00	0.00
58.88	30.93	14.12	1.36	57.74	2.00	2.39	0.00	0.00
58.97	29.66	13.38	1.36	56.89	2.00	0.61	0.00	0.00
59.02	28.78	12.89	1.32	55.64	2.00	0.00	0.00	0.00
59.06	28.25	12.61	1.27	54.47	2.00	0.00	0.00	0.00
59.12	27.98	12.49	1.21	53.25	2.00	0.00	0.00	0.00
59.20	28.12	12.60	1.15	52.31	2.00	0.00	0.00	0.00
59.26	28.04	12.55	1.13	51.90	2.00	0.00	0.00	0.00
59.35	28.00	12.51	1.12	51.82	2.00	0.00	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
59.41	28.02	12.50	1.14	52.14	2.00	0.00	0.00	0.00
59.46	28.08	12.51	1.17	52.66	2.00	0.00	0.00	0.00
59.52	28.38	12.65	1.21	53.41	2.00	0.00	0.00	0.00
59.61	28.81	12.85	1.24	54.27	2.00	0.00	0.00	0.00
59.68	29.23	13.06	1.27	54.99	2.00	0.00	0.00	0.00
59.72	29.44	13.14	1.31	55.77	2.00	0.02	0.00	0.00
59.79	29.54	13.16	1.35	56.42	2.00	0.07	0.00	0.00
59.86	29.55	13.13	1.38	56.94	2.00	0.00	0.00	0.00
59.91	29.54	13.20	1.25	54.87	2.00	0.16	0.00	0.00
60.01	29.54	13.28	1.11	52.42	2.00	0.36	0.00	0.00
60.06	29.43	13.32	0.96	49.70	2.00	0.46	0.00	0.00
60.15	29.33	13.39	0.81	46.66	2.00	0.64	0.00	0.00
60.19	29.08	13.40	0.65	43.20	2.00	0.67	0.00	0.00
60.26	29.01	13.54	0.48	39.48	2.00	1.01	0.00	0.00
60.35	28.68	13.58	0.32	35.31	2.00	1.09	0.00	0.00
60.40	28.68	13.89	0.16	30.80	2.00	1.85	0.00	0.00
60.45	28.56	N/A	0.00	-1.00	2.00	0.00	0.00	0.00
60.51	29.38	N/A	0.00	-1.00	2.00	0.00	0.00	0.00

Total estimated displacement: 10.07

Abbreviations

q_t: Total cone resistance
Q_{tn}: Adjusted cone resistance to an effective overburden stress of 1 atm
R_f: Friction ration
$Q_{tn,cs}$: Adjusted and corrected cone resistance due to fines
FS: Calculated factor of safety against liquefaction
D_r: Calculated relative density
$Gamma_{max}$: Calculated maximum cyclic shear strain
Lat. disp.: Lateral displacement

:: Strength loss calculation (Robertson (2009) ::

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
0.09	83.15	133.58	1.00	133.58	1.64	N/A	N/A
0.15	124.45	199.93	1.00	199.93	1.44	N/A	N/A
0.21	164.56	264.38	1.00	264.38	1.32	N/A	N/A
0.29	173.53	278.77	1.00	278.77	1.35	N/A	N/A
0.34	170.25	273.50	1.00	273.50	1.40	N/A	N/A
0.40	184.41	296.24	1.00	296.24	1.41	N/A	N/A
0.49	188.56	302.90	1.00	302.90	1.45	N/A	N/A
0.55	179.22	287.88	1.00	287.88	1.52	N/A	N/A
0.59	162.51	261.04	1.00	261.04	1.62	N/A	N/A
0.69	150.33	241.46	1.04	250.82	1.70	N/A	N/A
0.74	137.32	220.54	1.10	241.72	1.79	N/A	N/A
0.81	123.76	198.76	1.16	231.55	1.87	N/A	N/A
0.89	110.59	177.58	1.26	222.96	1.96	N/A	N/A
0.94	98.81	158.66	1.36	215.26	2.04	N/A	N/A
0.99	93.80	150.60	1.41	212.11	2.07	N/A	N/A
1.09	92.09	147.85	1.43	211.59	2.09	N/A	N/A
1.14	92.39	148.32	1.44	213.14	2.09	N/A	N/A
1.19	97.81	157.02	1.39	218.13	2.06	N/A	N/A
1.26	98.76	158.55	1.39	219.88	2.06	N/A	N/A
1.34	98.49	158.11	1.39	220.12	2.06	N/A	N/A
1.38	98.38	157.93	1.39	220.09	2.06	N/A	N/A
1.50	97.02	155.72	1.40	218.45	2.07	N/A	N/A
1.53	94.55	151.75	1.42	215.48	2.08	N/A	N/A
1.59	90.36	145.01	1.46	212.18	2.10	N/A	N/A
1.68	85.92	137.87	1.51	208.71	2.13	N/A	N/A
1.72	81.17	130.24	1.57	205.01	2.16	N/A	N/A
1.78	75.44	121.02	1.67	202.37	2.20	N/A	N/A
1.87	69.69	111.77	1.80	200.88	2.25	N/A	N/A
1.93	67.42	108.12	1.86	200.61	2.27	N/A	N/A
1.98	64.42	103.29	1.92	198.19	2.29	N/A	N/A
2.06	62.68	100.50	1.94	194.72	2.30	N/A	N/A
2.13	63.84	102.35	1.90	194.57	2.28	N/A	N/A
2.17	67.39	108.06	1.80	194.87	2.25	N/A	N/A
2.28	70.26	112.65	1.73	195.27	2.23	N/A	N/A
2.32	72.12	115.64	1.69	195.38	2.21	N/A	N/A
2.39	71.08	113.95	1.68	191.64	2.21	N/A	N/A
2.43	72.10	115.59	1.62	187.09	2.18	N/A	N/A
2.52	70.92	113.69	1.59	180.76	2.17	N/A	N/A
2.57	69.46	111.34	1.58	176.14	2.16	N/A	N/A
2.66	68.27	109.41	1.58	173.38	2.16	N/A	N/A
2.69	64.80	103.84	1.64	170.20	2.19	N/A	N/A
2.77	59.92	95.98	1.74	166.69	2.23	N/A	N/A
2.86	55.44	88.78	1.84	163.61	2.27	N/A	N/A
2.92	51.45	82.36	1.96	161.82	2.30	N/A	N/A
2.96	48.19	77.12	2.08	160.64	2.34	N/A	N/A
3.06	46.08	73.72	2.15	158.82	2.36	N/A	N/A
3.11	46.45	74.31	2.10	156.09	2.34	N/A	N/A
3.15	48.40	77.45	1.96	152.07	2.30	N/A	N/A

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
3.26	54.10	86.58	1.72	148.68	2.22	N/A	N/A
3.30	60.61	97.05	1.52	147.19	2.13	N/A	N/A
3.37	68.26	109.33	1.36	148.15	2.04	N/A	N/A
3.46	73.99	118.52	1.27	150.56	1.98	N/A	N/A
3.51	77.79	124.63	1.22	152.41	1.93	N/A	N/A
3.56	80.79	129.44	1.20	155.05	1.91	N/A	N/A
3.64	81.12	129.96	1.20	156.20	1.91	N/A	N/A
3.71	79.43	127.24	1.23	156.34	1.94	N/A	N/A
3.76	75.75	121.33	1.28	155.78	1.99	N/A	N/A
3.81	67.08	107.39	1.41	151.01	2.07	N/A	N/A
3.90	57.38	91.80	1.61	147.39	2.17	N/A	N/A
3.94	47.30	75.59	1.94	146.95	2.30	N/A	N/A
4.01	40.10	64.02	2.29	146.35	2.39	N/A	N/A
4.09	35.01	55.83	2.58	144.12	2.46	N/A	N/A
4.15	30.51	48.60	2.89	140.47	2.52	N/A	N/A
4.20	27.97	44.51	3.04	135.41	2.55	N/A	N/A
4.30	25.89	41.16	3.15	129.86	2.57	N/A	N/A
4.35	24.02	38.16	3.25	124.00	2.59	N/A	N/A
4.41	23.02	36.55	3.28	119.96	2.59	N/A	N/A
4.50	22.67	35.97	3.24	116.38	2.58	N/A	N/A
4.55	22.29	35.36	3.20	113.01	2.58	N/A	N/A
4.60	21.44	33.98	3.30	112.03	2.60	N/A	N/A
4.68	20.60	32.64	3.43	112.02	2.62	N/A	N/A
4.75	19.97	31.62	3.56	112.48	2.64	N/A	N/A
4.79	19.55	30.93	3.67	113.38	2.65	N/A	N/A
4.88	19.20	30.36	3.77	114.53	2.67	N/A	N/A
4.95	18.93	29.93	3.87	115.81	2.68	N/A	N/A
4.99	18.80	29.71	3.94	117.17	2.69	N/A	N/A
5.06	18.75	29.62	4.01	118.85	2.70	N/A	N/A
5.14	18.72	29.57	4.08	120.60	2.71	N/A	N/A
5.21	18.75	29.61	4.13	122.18	2.72	N/A	N/A
5.26	18.80	29.69	4.16	123.37	2.72	N/A	N/A
5.33	18.79	29.66	4.20	124.49	2.73	N/A	N/A
5.40	18.78	29.64	4.23	125.33	2.73	N/A	N/A
5.45	18.77	29.62	4.26	126.17	2.74	N/A	N/A
5.51	18.82	29.70	4.28	126.96	2.74	N/A	N/A
5.60	18.84	29.73	4.30	127.68	2.74	N/A	N/A
5.66	18.86	29.74	4.31	128.22	2.74	N/A	N/A
5.71	18.80	29.64	4.34	128.62	2.75	N/A	N/A
5.78	18.67	29.43	4.38	128.99	2.75	N/A	N/A
5.86	18.48	29.12	4.44	129.14	2.76	N/A	N/A
5.93	18.26	28.76	4.48	128.94	2.76	N/A	N/A
6.01	18.01	28.35	4.53	128.49	2.77	N/A	N/A
6.05	17.70	27.84	4.58	127.63	2.78	N/A	N/A
6.11	17.27	27.15	4.66	126.38	2.78	N/A	N/A
6.21	16.76	26.33	4.75	124.99	2.80	N/A	N/A
6.25	16.19	25.40	4.86	123.43	2.81	N/A	N/A
6.31	15.61	24.47	4.98	121.84	2.82	N/A	N/A

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
6.39	15.07	23.59	5.09	120.11	2.84	N/A	N/A
6.45	14.58	22.80	5.20	118.49	2.85	N/A	N/A
6.51	14.21	22.19	5.27	116.87	2.85	N/A	N/A
6.58	13.86	21.62	5.34	115.50	2.86	N/A	N/A
6.66	13.60	21.20	5.39	114.37	2.87	N/A	N/A
6.70	13.50	21.04	5.39	113.43	2.87	N/A	N/A
6.78	13.46	20.96	5.37	112.65	2.87	N/A	N/A
6.85	13.51	21.03	5.32	111.91	2.86	N/A	N/A
6.89	13.63	21.23	5.23	111.13	2.85	N/A	N/A
7.00	13.83	21.54	5.13	110.50	2.84	N/A	N/A
7.03	14.14	22.03	4.99	109.89	2.82	N/A	N/A
7.10	14.46	22.55	4.85	109.37	2.81	N/A	N/A
7.19	14.88	23.20	4.69	108.77	2.79	N/A	N/A
7.25	15.30	23.88	4.54	108.37	2.77	N/A	N/A
7.30	15.72	24.55	4.42	108.39	2.76	N/A	N/A
7.37	16.17	25.27	4.30	108.69	2.74	N/A	N/A
7.44	16.57	25.90	4.22	109.23	2.73	N/A	N/A
7.49	16.84	26.33	4.18	109.96	2.72	N/A	N/A
7.56	17.03	26.64	4.14	110.23	2.72	N/A	N/A
7.64	17.06	26.68	4.12	110.01	2.72	N/A	N/A
7.68	16.96	26.52	4.17	110.59	2.72	N/A	N/A
7.79	16.74	26.14	4.25	111.18	2.73	N/A	N/A
7.83	16.45	25.67	4.34	111.39	2.75	N/A	N/A
7.90	16.04	25.01	4.45	111.18	2.76	N/A	N/A
7.98	15.56	24.23	4.56	110.40	2.77	N/A	N/A
8.02	15.03	23.37	4.68	109.33	2.79	N/A	N/A
8.09	14.64	22.74	4.75	108.03	2.80	N/A	N/A
8.15	14.30	22.19	4.83	107.10	2.80	N/A	N/A
8.23	14.13	21.91	4.87	106.69	2.81	N/A	N/A
8.29	14.15	21.94	4.81	105.61	2.80	N/A	N/A
8.34	14.26	22.11	4.72	104.46	2.79	N/A	N/A
8.41	14.46	22.43	4.62	103.67	2.78	N/A	N/A
8.48	14.80	22.96	4.49	103.11	2.76	N/A	N/A
8.55	15.24	23.66	4.35	102.91	2.75	N/A	N/A
8.60	15.79	24.55	4.19	102.94	2.73	N/A	N/A
8.66	16.33	25.40	4.06	103.10	2.71	N/A	N/A
8.74	16.89	26.31	3.94	103.55	2.69	N/A	N/A
8.83	17.43	27.16	3.85	104.55	2.68	N/A	N/A
8.90	17.91	27.92	3.79	105.79	2.67	N/A	N/A
8.94	18.32	28.58	3.75	107.17	2.67	N/A	N/A
9.01	18.66	29.11	3.74	108.78	2.66	2.42	2.42
9.09	18.90	29.50	3.74	110.44	2.66	2.43	2.43
9.15	19.06	29.75	3.77	112.13	2.67	2.43	2.43
9.20	19.18	29.93	3.81	113.94	2.67	2.43	2.43
9.29	19.30	30.11	3.85	115.92	2.68	2.43	2.43
9.35	19.43	30.33	3.89	117.85	2.68	2.43	2.43
9.39	19.54	30.50	3.91	119.21	2.69	2.43	2.43
9.45	19.66	30.68	3.92	120.17	2.69	2.43	2.43

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
9.55	19.97	31.17	3.88	120.89	2.68	2.44	2.44
9.64	20.38	31.83	3.81	121.43	2.67	2.47	2.47
9.65	20.91	32.67	3.73	121.97	2.66	2.54	2.54
9.73	21.47	33.57	3.65	122.48	2.65	2.59	2.59
9.79	21.98	34.31	3.59	123.03	2.64	2.63	2.63
9.84	22.46	34.86	3.53	122.99	2.63	2.68	2.68
9.91	22.88	35.24	3.48	122.67	2.62	2.71	2.71
9.99	23.25	35.53	3.44	122.26	2.62	2.73	2.73
10.08	23.63	35.78	3.40	121.63	2.61	2.75	2.75
10.14	23.82	35.88	3.38	121.31	2.61	2.76	2.76
10.19	23.87	35.79	3.38	120.88	2.61	2.75	2.75
10.25	23.88	35.62	3.38	120.28	2.61	2.74	2.74
10.34	23.79	35.24	3.40	119.75	2.61	2.70	2.70
10.38	23.82	35.15	3.39	119.11	2.61	2.69	2.69
10.44	23.92	35.10	3.37	118.25	2.61	2.69	2.69
10.52	23.94	34.89	3.36	117.11	2.60	2.67	2.67
10.59	23.96	34.70	3.35	116.11	2.60	2.66	2.66
10.63	23.88	34.48	3.35	115.67	2.60	2.64	2.64
10.70	23.75	34.11	3.37	115.08	2.61	2.61	2.61
10.78	23.71	33.84	3.38	114.48	2.61	2.58	2.58
10.87	24.05	34.05	3.35	114.07	2.60	2.60	2.60
10.93	24.68	34.72	3.27	113.43	2.59	0.69	0.69
10.97	25.09	35.14	3.22	113.33	2.58	0.69	0.69
11.03	25.34	35.34	3.23	114.00	2.58	0.69	0.69
11.12	25.57	35.43	3.25	115.11	2.59	0.69	0.69
11.16	26.10	36.05	3.22	116.20	2.58	0.69	0.69
11.23	26.69	36.65	3.20	117.14	2.58	0.70	0.70
11.31	27.32	37.28	3.17	118.24	2.57	0.70	0.70
11.37	28.14	38.20	3.13	119.49	2.57	0.70	0.70
11.44	28.65	38.70	3.12	120.91	2.57	0.70	0.70
11.51	28.96	38.94	3.14	122.45	2.57	0.70	0.70
11.56	29.46	39.47	3.13	123.56	2.57	0.70	0.70
11.63	29.97	39.93	3.11	124.20	2.56	0.71	0.71
11.71	30.37	40.22	3.10	124.71	2.56	0.71	0.71
11.76	30.29	39.99	3.13	125.36	2.57	0.71	0.71
11.83	30.13	39.61	3.17	125.68	2.57	0.70	0.70
11.91	29.90	39.12	3.22	125.79	2.58	0.70	0.70
11.94	29.36	38.36	3.28	125.85	2.59	0.70	0.70
12.05	28.72	37.35	3.35	125.25	2.60	2.81	2.81
12.10	28.18	36.60	3.41	124.65	2.61	2.75	2.75
12.14	27.59	35.82	3.46	124.10	2.62	2.69	2.69
12.25	27.11	35.08	3.52	123.36	2.63	2.63	2.63
12.29	26.81	34.65	3.54	122.58	2.63	2.59	2.59
12.35	26.66	34.38	3.55	122.06	2.64	2.57	2.57
12.44	26.59	34.17	3.55	121.34	2.64	2.56	2.56
12.49	26.67	34.20	3.52	120.41	2.63	2.56	2.56
12.55	26.82	34.29	3.48	119.34	2.62	2.57	2.57
12.61	26.84	34.21	3.45	118.04	2.62	2.56	2.56

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
12.70	26.47	33.64	3.47	116.91	2.62	2.52	2.52
12.75	25.93	32.91	3.51	115.62	2.63	2.46	2.46
12.81	25.23	31.96	3.56	113.61	2.64	2.39	2.39
12.89	24.43	30.85	3.60	110.95	2.64	2.30	2.30
12.94	23.55	29.68	3.63	107.89	2.65	2.21	2.21
12.99	22.55	28.37	3.70	105.01	2.66	2.11	2.11
13.08	21.42	26.86	3.81	102.27	2.67	1.99	1.99
13.15	20.17	25.24	3.94	99.55	2.69	1.87	1.87
13.20	18.94	23.67	4.09	96.93	2.71	1.75	1.75
13.27	17.94	22.36	4.20	94.01	2.73	1.65	1.65
13.32	17.08	21.23	4.29	91.09	2.74	1.56	1.56
13.39	16.29	20.19	4.39	88.71	2.75	1.48	1.48
13.48	15.57	19.24	4.52	87.03	2.77	1.41	1.41
13.54	14.85	18.31	4.68	85.67	2.79	1.34	1.34
13.59	14.26	17.54	4.81	84.40	2.80	1.28	1.28
13.65	13.72	16.84	4.94	83.16	2.82	1.22	1.22
13.74	13.35	16.32	5.02	81.98	2.83	1.18	1.18
13.80	13.07	15.93	5.06	80.63	2.83	1.16	1.16
13.89	12.89	15.65	5.06	79.16	2.83	1.14	1.14
13.93	12.67	15.36	5.11	78.57	2.84	1.11	1.11
13.99	12.47	15.09	5.24	79.11	2.85	1.09	1.09
14.07	12.36	14.93	5.35	79.81	2.86	1.08	1.08
14.12	12.41	14.97	5.38	80.54	2.87	1.08	1.08
14.18	12.84	15.48	5.25	81.24	2.85	1.12	1.12
14.26	13.66	16.43	5.00	82.12	2.82	1.19	1.19
14.34	14.47	17.37	4.79	83.28	2.80	1.26	1.26
14.38	15.06	18.09	4.73	85.64	2.79	1.32	1.32
14.47	15.53	18.63	4.75	88.46	2.80	1.36	1.36
14.53	16.03	19.23	4.72	90.78	2.79	1.40	1.40
14.57	16.61	19.90	4.64	92.32	2.78	1.45	1.45
14.64	17.04	20.39	4.59	93.50	2.78	1.49	1.49
14.72	17.40	20.77	4.55	94.50	2.77	1.52	1.52
14.80	17.27	20.58	4.63	95.26	2.78	1.50	1.50
14.83	16.85	20.07	4.78	95.90	2.80	1.46	1.46
14.92	16.39	19.48	4.95	96.48	2.82	1.41	1.41
14.97	16.24	19.28	5.02	96.80	2.83	1.40	1.40
15.06	16.27	19.26	5.06	97.42	2.83	1.39	1.39
15.10	16.43	19.44	5.08	98.73	2.83	1.41	1.41
15.17	16.88	19.94	5.05	100.69	2.83	1.44	1.44
15.25	17.82	21.02	4.91	103.31	2.82	1.52	1.52
15.31	19.04	22.44	4.73	106.25	2.79	1.63	1.63
15.37	20.79	24.48	4.48	109.75	2.76	1.78	1.78
15.44	22.91	26.92	4.22	113.74	2.73	1.97	1.97
15.51	25.24	29.60	3.98	117.67	2.70	2.17	2.17
15.56	27.89	32.64	3.73	121.72	2.66	2.40	2.40
15.63	30.62	35.75	3.53	126.33	2.63	2.64	2.64
15.71	33.36	38.84	3.36	130.50	2.61	2.88	2.88
15.76	35.88	41.68	3.22	134.26	2.58	0.71	0.71

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
15.82	38.00	44.04	3.12	137.37	2.56	0.72	0.72
15.90	39.72	45.92	3.05	140.10	2.55	0.72	0.72
15.95	40.95	47.26	3.01	142.38	2.55	0.73	0.73
16.01	42.08	48.46	2.97	143.78	2.54	0.73	0.73
16.10	43.69	50.12	2.88	144.51	2.52	0.73	0.73
16.16	45.39	51.93	2.79	144.76	2.50	0.74	0.74
16.21	47.82	54.52	2.64	144.17	2.47	0.75	0.75
16.29	50.73	57.59	2.49	143.67	2.44	0.75	0.75
16.36	53.65	60.67	2.37	143.61	2.41	0.76	0.76
16.41	55.97	63.12	2.29	144.46	2.39	0.76	0.76
16.49	57.93	65.13	2.24	145.59	2.38	0.77	0.77
16.55	58.97	66.18	2.22	147.05	2.38	0.77	0.77
16.60	58.73	65.85	2.26	148.63	2.39	0.77	0.77
16.70	57.58	64.45	2.33	150.28	2.40	0.77	0.77
16.74	55.54	62.18	2.43	150.89	2.43	0.76	0.76
16.80	52.24	58.44	2.54	148.41	2.45	0.75	0.75
16.89	48.21	53.86	2.71	145.75	2.49	0.74	0.74
16.93	43.70	48.84	2.93	142.95	2.53	0.73	0.73
17.00	39.30	43.87	3.17	139.12	2.57	0.72	0.72
17.09	35.13	39.12	3.43	134.22	2.62	2.87	2.87
17.14	31.91	35.46	3.61	128.18	2.65	2.60	2.60
17.20	29.62	32.81	3.70	121.48	2.66	2.40	2.40
17.28	27.32	30.13	3.80	114.37	2.67	2.20	2.20
17.34	25.35	27.85	3.90	108.56	2.69	2.03	2.03
17.41	23.75	26.02	4.11	106.90	2.72	1.89	1.89
17.48	22.28	24.34	4.33	105.33	2.74	1.77	1.77
17.56	21.40	23.31	4.46	103.98	2.76	1.69	1.69
17.62	21.30	23.15	4.46	103.34	2.76	1.68	1.68
17.67	21.90	23.78	4.41	104.80	2.75	1.72	1.72
17.72	23.43	25.45	4.23	107.56	2.73	1.85	1.85
17.78	25.81	28.02	3.95	110.64	2.69	2.04	2.04
17.87	29.76	32.25	3.52	113.53	2.63	2.36	2.36
17.94	34.49	37.30	3.14	117.09	2.57	0.70	0.70
18.01	39.36	42.48	2.84	120.59	2.51	0.71	0.71
18.06	44.61	48.05	2.58	124.00	2.46	0.73	0.73
18.12	49.40	53.08	2.40	127.40	2.42	0.74	0.74
18.21	53.23	57.04	2.29	130.57	2.39	0.75	0.75
18.25	55.37	59.24	2.23	131.91	2.38	0.76	0.76
18.31	55.54	59.32	2.22	131.93	2.38	0.76	0.76
18.40	54.39	57.96	2.26	130.84	2.39	0.75	0.75
18.44	51.05	54.37	2.37	129.13	2.42	0.75	0.75
18.51	46.53	49.50	2.55	126.35	2.46	0.73	0.73
18.58	42.29	44.90	2.75	123.40	2.50	0.72	0.72
18.64	37.54	39.79	3.03	120.70	2.55	0.71	0.71
18.71	33.19	35.09	3.35	117.60	2.60	2.56	2.56
18.80	29.50	31.08	3.69	114.60	2.66	2.26	2.26
18.86	27.07	28.44	3.99	113.53	2.70	2.06	2.06
18.91	26.18	27.47	4.17	114.45	2.72	1.99	1.99

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
18.98	26.23	27.48	4.23	116.18	2.73	1.99	1.99
19.05	28.55	29.89	3.96	118.43	2.70	2.17	2.17
19.10	32.75	34.30	3.56	122.20	2.64	2.50	2.50
19.20	36.95	38.62	3.27	126.30	2.59	0.70	0.70
19.23	41.98	43.88	2.98	130.67	2.54	0.72	0.72
19.30	47.70	49.78	2.72	135.29	2.49	0.73	0.73
19.39	53.84	56.05	2.49	139.78	2.44	0.75	0.75
19.43	60.95	63.36	2.27	144.00	2.39	0.77	0.77
19.50	67.80	70.30	2.10	147.71	2.34	0.78	0.78
19.57	74.91	77.48	1.96	151.93	2.30	0.79	0.79
19.63	80.68	83.29	1.88	156.25	2.28	0.80	0.80
19.70	84.48	87.05	1.84	160.14	2.26	0.81	0.81
19.77	87.46	89.97	1.82	163.96	2.26	0.81	0.81
19.84	88.72	91.06	1.79	162.94	2.25	0.81	0.81
19.90	88.05	90.24	1.81	162.93	2.25	0.81	0.81
19.99	86.33	88.30	1.84	162.87	2.27	0.81	0.81
20.02	82.81	84.69	1.93	163.44	2.29	0.80	0.80
20.09	77.91	79.61	2.06	163.98	2.33	0.80	0.80
20.19	72.20	73.64	2.23	164.40	2.38	0.79	0.79
20.21	66.31	67.65	2.44	164.76	2.43	0.77	0.77
20.29	60.80	61.90	2.66	164.43	2.48	0.76	0.76
20.38	55.60	56.47	2.90	163.92	2.53	0.75	0.75
20.42	51.83	52.62	3.19	167.91	2.58	0.74	0.74
20.52	49.59	50.20	3.37	169.09	2.61	3.64	3.64
20.55	48.85	49.41	3.44	169.77	2.62	3.58	3.58
20.62	50.23	50.69	3.32	168.19	2.60	0.74	0.74
20.68	54.00	54.40	3.05	165.95	2.55	0.75	0.75
20.75	58.46	58.77	2.79	164.25	2.51	0.76	0.76
20.81	64.06	64.27	2.54	163.09	2.45	0.77	0.77
20.90	70.17	70.22	2.31	162.34	2.40	0.78	0.78
20.96	76.88	76.78	2.11	162.12	2.35	0.79	0.79
21.01	83.50	83.25	1.95	162.71	2.30	0.80	0.80
21.09	89.88	89.40	1.83	163.78	2.26	0.81	0.81
21.15	95.34	94.66	1.74	164.75	2.23	0.82	0.82
21.21	99.28	98.41	1.69	165.97	2.21	0.83	0.83
21.30	101.54	100.41	1.66	166.66	2.20	0.83	0.83
21.36	102.98	101.69	1.64	166.99	2.19	0.83	0.83
21.40	103.15	101.76	1.64	167.23	2.19	0.83	0.83
21.49	102.24	100.65	1.67	167.75	2.20	0.83	0.83
21.56	100.58	98.87	1.71	168.66	2.22	0.83	0.83
21.60	98.24	96.51	1.76	170.27	2.24	0.82	0.82
21.66	95.65	93.85	1.84	173.11	2.27	0.82	0.82
21.75	92.97	91.05	1.94	176.31	2.30	0.81	0.81
21.80	90.34	88.38	2.03	179.61	2.33	0.81	0.81
21.85	86.54	84.57	2.15	181.57	2.36	0.80	0.80
21.95	82.45	80.35	2.27	182.77	2.39	0.80	0.80
21.99	77.84	75.75	2.41	182.63	2.42	0.79	0.79
22.05	73.33	71.22	2.53	179.99	2.45	0.78	0.78

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
22.14	68.64	66.45	2.63	175.01	2.47	0.77	0.77
22.19	64.12	61.92	2.73	169.22	2.49	0.76	0.76
22.26	59.36	57.14	2.83	161.62	2.51	0.75	0.75
22.35	54.56	52.30	2.93	153.37	2.53	0.74	0.74
22.44	49.73	47.45	3.05	144.80	2.55	0.73	0.73
22.45	46.31	44.10	3.12	137.69	2.57	0.72	0.72
22.54	43.33	41.08	3.20	131.39	2.58	0.71	0.71
22.58	41.17	38.93	3.26	126.75	2.59	0.70	0.70
22.65	39.90	37.63	3.31	124.71	2.60	0.70	0.70
22.73	39.60	37.26	3.36	125.06	2.60	2.67	2.67
22.79	39.96	37.55	3.36	126.08	2.61	2.69	2.69
22.85	41.77	39.25	3.31	129.80	2.60	0.70	0.70
22.93	44.52	41.82	3.27	136.54	2.59	0.71	0.71
22.99	48.25	45.36	3.19	144.50	2.58	0.72	0.72
23.04	53.17	50.03	3.03	151.83	2.55	0.73	0.73
23.12	57.97	54.54	2.90	158.22	2.53	0.75	0.75
23.19	61.76	58.07	2.81	162.95	2.51	0.75	0.75
23.27	64.98	61.03	2.73	166.65	2.49	0.76	0.76
23.30	67.76	63.65	2.66	169.44	2.48	0.77	0.77
23.38	70.90	66.51	2.58	171.29	2.46	0.77	0.77
23.47	73.27	68.60	2.50	171.31	2.44	0.78	0.78
23.50	74.99	70.18	2.41	168.91	2.42	0.78	0.78
23.58	75.51	70.53	2.34	165.30	2.41	0.78	0.78
23.66	74.38	69.31	2.34	161.96	2.41	0.78	0.78
23.69	73.15	68.09	2.34	159.30	2.41	0.77	0.77
23.77	72.69	67.52	2.34	158.28	2.41	0.77	0.77
23.84	72.77	67.48	2.34	157.74	2.41	0.77	0.77
23.92	72.82	67.39	2.34	157.99	2.41	0.77	0.77
23.97	71.99	66.52	2.38	158.38	2.42	0.77	0.77
24.06	70.72	65.17	2.44	158.89	2.43	0.77	0.77
24.12	69.26	63.69	2.51	159.96	2.45	0.77	0.77
24.17	67.92	62.35	2.58	160.90	2.46	0.76	0.76
24.23	66.21	60.65	2.65	160.73	2.48	0.76	0.76
24.31	64.27	58.71	2.73	160.00	2.49	0.76	0.76
24.36	61.66	56.19	2.82	158.28	2.51	0.75	0.75
24.42	58.14	52.82	2.95	155.55	2.53	0.74	0.74
24.51	54.24	49.05	3.10	152.30	2.56	0.73	0.73
24.54	50.19	45.25	3.27	148.14	2.59	0.72	0.72
24.62	45.92	41.19	3.46	142.60	2.62	2.93	2.93
24.71	41.38	36.87	3.69	136.14	2.66	2.63	2.63
24.74	37.02	32.81	3.94	129.34	2.69	2.34	2.34
24.81	33.35	29.36	4.18	122.62	2.72	2.09	2.09
24.89	30.15	26.35	4.39	115.71	2.75	1.88	1.88
24.96	27.79	24.12	4.52	109.01	2.77	1.72	1.72
25.01	26.12	22.57	4.58	103.36	2.78	1.61	1.61
25.10	24.74	21.25	4.62	98.16	2.78	1.51	1.51
25.14	23.57	20.15	4.68	94.33	2.79	1.44	1.44
25.21	22.70	19.32	4.76	92.00	2.80	1.38	1.38

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
25.30	22.17	18.80	4.80	90.31	2.80	1.34	1.34
25.34	21.82	18.46	4.81	88.71	2.80	1.32	1.32
25.41	21.76	18.37	4.76	87.53	2.80	1.31	1.31
25.50	21.77	18.34	4.72	86.53	2.79	1.31	1.31
25.55	21.93	18.47	4.65	85.93	2.78	1.32	1.32
25.60	22.09	18.59	4.59	85.40	2.78	1.32	1.32
25.70	22.29	18.73	4.52	84.60	2.77	1.33	1.33
25.75	22.50	18.90	4.43	83.67	2.76	1.35	1.35
25.80	22.79	19.15	4.28	82.04	2.74	1.36	1.36
25.89	23.08	19.37	4.15	80.44	2.72	1.38	1.38
25.95	23.34	19.59	4.04	79.07	2.71	1.39	1.39
25.99	23.77	19.96	3.90	77.81	2.69	1.42	1.42
26.06	24.08	20.21	3.80	76.79	2.67	1.44	1.44
26.15	24.25	20.33	3.73	75.89	2.66	1.44	1.44
26.19	24.34	20.39	3.69	75.28	2.66	1.45	1.45
26.25	24.39	20.41	3.69	75.23	2.66	1.45	1.45
26.34	24.31	20.30	3.73	75.77	2.66	1.44	1.44
26.38	24.05	20.04	3.85	77.18	2.68	1.42	1.42
26.45	23.79	19.77	3.97	78.40	2.70	1.40	1.40
26.52	23.52	19.49	4.07	79.37	2.71	1.38	1.38
26.61	23.07	19.04	4.21	80.09	2.73	1.35	1.35
26.67	22.67	18.66	4.30	80.27	2.74	1.32	1.32
26.72	22.32	18.31	4.38	80.21	2.75	1.30	1.30
26.82	21.99	17.98	4.43	79.73	2.76	1.28	1.28
26.86	21.65	17.67	4.46	78.75	2.76	1.25	1.25
26.94	21.41	17.42	4.43	77.07	2.76	1.24	1.24
26.98	21.28	17.29	4.35	75.19	2.75	1.23	1.23
27.06	21.19	17.19	4.27	73.31	2.74	1.22	1.22
27.10	21.17	17.16	4.16	71.47	2.72	1.22	1.22
27.17	21.23	17.20	4.05	69.64	2.71	0.31	1.22
27.26	21.42	17.34	3.94	68.32	2.69	0.30	1.23
27.31	21.67	17.54	3.84	67.44	2.68	0.30	1.24
27.39	21.94	17.76	3.77	67.05	2.67	0.29	1.26
27.44	22.25	18.02	3.71	66.93	2.66	0.29	1.27
27.51	22.57	18.27	3.68	67.24	2.65	0.32	1.29
27.58	22.83	18.47	3.67	67.74	2.65	0.35	1.31
27.63	23.05	18.64	3.66	68.26	2.65	0.36	1.32
27.71	23.11	18.67	3.69	68.80	2.66	0.36	1.32
27.79	23.06	18.58	3.74	69.46	2.66	0.35	1.31
27.86	22.89	18.40	3.80	69.90	2.67	0.35	1.30
27.89	22.61	18.14	3.88	70.31	2.68	1.28	1.28
27.96	22.26	17.80	3.97	70.72	2.70	1.26	1.26
28.05	21.90	17.44	4.10	71.46	2.71	1.23	1.23
28.09	21.54	17.11	4.25	72.69	2.73	1.21	1.21
28.16	21.20	16.78	4.41	74.05	2.75	1.19	1.19
28.23	20.88	16.46	4.58	75.37	2.78	1.17	1.17
28.29	20.64	16.22	4.73	76.64	2.79	1.15	1.15
28.35	20.47	16.04	4.85	77.72	2.81	1.14	1.14

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
28.44	20.36	15.91	4.94	78.67	2.82	1.13	1.13
28.50	20.26	15.79	5.04	79.55	2.83	1.12	1.12
28.55	20.24	15.75	5.10	80.26	2.84	1.12	1.12
28.64	20.28	15.76	5.12	80.62	2.84	1.12	1.12
28.69	20.47	15.90	5.08	80.83	2.83	1.13	1.13
28.75	20.92	16.26	4.96	80.68	2.82	1.15	1.15
28.82	21.52	16.76	4.80	80.40	2.80	1.19	1.19
28.89	22.35	17.44	4.66	81.27	2.79	1.24	1.24
28.98	23.25	18.18	4.55	82.71	2.77	1.29	1.29
29.04	24.09	18.87	4.46	84.22	2.76	1.34	1.34
29.08	24.99	19.62	4.37	85.67	2.75	1.39	1.39
29.15	25.81	20.29	4.30	87.23	2.74	1.44	1.44
29.24	26.55	20.88	4.26	88.89	2.73	1.48	1.48
29.29	27.47	21.64	4.18	90.48	2.72	1.53	1.53
29.34	28.09	22.14	4.16	92.19	2.72	1.56	1.56
29.43	28.47	22.41	4.19	93.91	2.73	1.58	1.58
29.47	28.34	22.27	4.25	94.60	2.73	1.57	1.57
29.53	28.01	21.95	4.32	94.84	2.74	1.55	1.55
29.62	27.58	21.54	4.41	94.97	2.75	1.52	1.52
29.66	26.96	20.98	4.54	95.20	2.77	1.48	1.48
29.77	26.26	20.33	4.68	95.20	2.79	1.44	1.44
29.81	25.53	19.68	4.86	95.62	2.81	1.40	1.40
29.86	25.39	19.54	4.93	96.27	2.82	1.39	1.39
29.92	25.75	19.81	4.90	97.12	2.81	1.40	1.40
30.01	26.64	20.51	4.78	98.08	2.80	1.45	1.45
30.09	27.72	21.39	4.63	99.03	2.78	1.51	1.51
30.17	28.41	21.93	4.56	100.07	2.77	1.55	1.55
30.20	28.59	22.05	4.60	101.40	2.78	1.56	1.56
30.27	28.79	22.17	4.65	103.06	2.78	1.57	1.57
30.32	29.48	22.72	4.61	104.73	2.78	1.61	1.61
30.39	30.45	23.50	4.51	105.88	2.77	1.66	1.66
30.47	30.78	23.72	4.49	106.51	2.76	1.68	1.68
30.55	30.79	23.68	4.51	106.70	2.77	1.67	1.67
30.62	30.35	23.27	4.59	106.77	2.78	1.64	1.64
30.66	29.89	22.86	4.67	106.87	2.79	1.62	1.62
30.72	29.64	22.63	4.67	105.71	2.79	1.60	1.60
30.81	29.90	22.81	4.56	103.99	2.77	1.61	1.61
30.85	30.12	22.99	4.41	101.48	2.75	1.62	1.62
30.91	29.75	22.67	4.34	98.41	2.75	1.60	1.60
31.01	29.16	22.15	4.28	94.88	2.74	1.56	1.56
31.05	28.11	21.28	4.30	91.42	2.74	1.50	1.50
31.11	26.82	20.20	4.35	87.95	2.75	1.42	1.42
31.20	25.44	19.03	4.43	84.32	2.76	1.34	1.34
31.26	24.18	17.98	4.48	80.64	2.76	1.27	1.27
31.31	23.24	17.20	4.56	78.37	2.77	1.21	1.21
31.38	22.45	16.53	4.63	76.56	2.78	1.17	1.17
31.46	21.95	16.09	4.66	75.05	2.79	1.14	1.14
31.51	21.63	15.82	4.68	74.00	2.79	1.12	1.12

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
31.60	21.33	15.54	4.71	73.14	2.79	1.10	1.10
31.65	21.21	15.44	4.68	72.24	2.79	1.09	1.09
31.74	21.14	15.36	4.64	71.22	2.78	1.08	1.08
31.80	21.15	15.35	4.57	70.19	2.77	1.08	1.08
31.85	21.16	15.35	4.49	68.91	2.76	0.34	1.08
31.89	21.17	15.37	4.36	67.05	2.75	0.31	1.08
32.00	21.16	15.34	4.24	65.11	2.73	0.27	1.08
32.04	21.11	15.30	4.14	63.32	2.72	0.27	1.08
32.09	21.14	15.33	4.04	61.91	2.71	0.24	1.08
32.19	21.23	15.39	3.96	60.88	2.69	0.20	1.08
32.23	21.15	15.31	3.94	60.35	2.69	0.21	1.07
32.29	21.63	15.69	3.86	60.57	2.68	0.22	1.10
32.37	22.15	16.09	3.79	60.95	2.67	0.23	1.13
32.44	22.73	16.54	3.73	61.75	2.66	0.25	1.16
32.49	23.42	17.08	3.71	63.28	2.66	0.26	1.19
32.58	24.18	17.66	3.67	64.80	2.65	0.30	1.23
32.62	24.92	18.23	3.64	66.38	2.65	0.31	1.27
32.69	25.54	18.71	3.63	67.92	2.65	0.33	1.31
32.78	26.07	19.09	3.64	69.43	2.65	0.36	1.33
32.82	26.80	19.66	3.61	70.95	2.64	1.37	1.37
32.89	27.02	19.79	3.66	72.39	2.65	1.38	1.38
32.97	27.26	19.94	3.70	73.87	2.66	1.39	1.39
33.02	27.46	20.06	3.76	75.41	2.67	1.40	1.40
33.09	27.56	20.09	3.84	77.21	2.68	1.40	1.40
33.15	27.58	20.06	3.94	79.12	2.69	1.40	1.40
33.20	27.62	20.05	4.05	81.12	2.71	1.40	1.40
33.28	27.94	20.26	4.11	83.29	2.72	1.42	1.42
33.38	28.41	20.57	4.15	85.36	2.72	1.44	1.44
33.43	29.00	21.01	4.16	87.41	2.72	1.47	1.47
33.47	29.66	21.50	4.16	89.41	2.72	1.51	1.51
33.57	30.25	21.91	4.18	91.56	2.72	1.54	1.54
33.63	30.80	22.30	4.20	93.64	2.73	1.56	1.56
33.70	31.35	22.69	4.20	95.39	2.73	1.59	1.59
33.74	31.93	23.12	4.20	97.06	2.73	1.62	1.62
33.82	32.49	23.51	4.19	98.51	2.73	1.65	1.65
33.86	32.78	23.71	4.21	99.73	2.73	1.66	1.66
33.93	32.90	23.76	4.25	100.95	2.73	1.67	1.67
34.02	32.86	23.67	4.31	102.03	2.74	1.66	1.66
34.06	32.78	23.57	4.37	102.94	2.75	1.65	1.65
34.13	32.65	23.42	4.42	103.48	2.76	1.64	1.64
34.21	32.51	23.26	4.46	103.80	2.76	1.63	1.63
34.28	32.29	23.05	4.51	103.90	2.77	1.62	1.62
34.32	31.94	22.75	4.56	103.65	2.77	1.60	1.60
34.41	31.53	22.38	4.61	103.23	2.78	1.57	1.57
34.46	31.08	22.00	4.67	102.68	2.79	1.55	1.55
34.52	30.55	21.56	4.72	101.80	2.79	1.52	1.52
34.61	29.93	21.04	4.78	100.63	2.80	1.48	1.48
34.65	29.34	20.56	4.83	99.34	2.81	1.45	1.45

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
34.71	28.73	20.07	4.87	97.80	2.81	1.41	1.41
34.79	28.12	19.57	4.90	95.91	2.81	1.38	1.38
34.86	27.56	19.11	4.91	93.87	2.81	1.35	1.35
34.93	27.06	18.72	4.90	91.78	2.81	1.32	1.32
35.01	26.62	18.35	4.89	89.74	2.81	1.29	1.29
35.06	26.18	18.01	4.88	87.84	2.81	1.27	1.27
35.11	25.82	17.73	4.87	86.31	2.81	1.25	1.25
35.18	25.57	17.51	4.85	85.02	2.81	1.23	1.23
35.26	25.31	17.29	4.86	84.06	2.81	1.22	1.22
35.34	25.02	17.04	4.90	83.47	2.81	1.20	1.20
35.40	24.80	16.85	4.94	83.29	2.82	1.19	1.19
35.44	24.58	16.65	5.01	83.43	2.83	1.17	1.17
35.51	24.35	16.44	5.10	83.91	2.84	1.16	1.16
35.58	24.06	16.19	5.21	84.27	2.85	1.14	1.14
35.66	23.76	15.93	5.29	84.26	2.86	1.13	1.13
35.71	23.50	15.70	5.34	83.91	2.86	1.11	1.11
35.77	23.24	15.49	5.37	83.26	2.87	1.10	1.10
35.85	22.95	15.25	5.40	82.35	2.87	1.08	1.08
35.92	22.74	15.07	5.40	81.42	2.87	1.07	1.07
35.97	22.64	14.99	5.39	80.74	2.87	1.06	1.06
36.03	22.63	14.97	5.35	80.03	2.86	1.06	1.06
36.11	22.66	14.98	5.28	79.05	2.86	1.06	1.06
36.16	22.78	15.07	5.17	77.87	2.84	1.06	1.06
36.26	22.82	15.08	5.08	76.66	2.83	1.06	1.06
36.31	22.88	15.12	5.00	75.65	2.83	1.07	1.07
36.36	22.63	14.93	4.98	74.35	2.82	1.05	1.05
36.43	22.40	14.74	4.96	73.14	2.82	1.04	1.04
36.51	22.21	14.58	4.93	71.91	2.82	1.03	1.03
36.55	22.01	14.43	4.92	71.02	2.82	1.02	1.02
36.65	21.75	14.21	4.95	70.32	2.82	1.00	1.00
36.71	21.76	14.20	4.95	70.29	2.82	1.00	1.00
36.76	22.11	14.45	4.88	70.57	2.81	1.02	1.02
36.85	22.79	14.94	4.79	71.52	2.80	1.05	1.05
36.89	23.63	15.55	4.68	72.78	2.79	1.09	1.09
36.96	24.91	16.49	4.55	74.96	2.77	1.15	1.15
37.02	26.31	17.51	4.42	77.41	2.76	1.22	1.22
37.11	27.68	18.50	4.32	79.93	2.74	1.29	1.29
37.15	28.95	19.42	4.25	82.45	2.73	1.35	1.35
37.24	30.33	20.41	4.18	85.40	2.73	1.42	1.42
37.31	31.54	21.27	4.15	88.27	2.72	1.48	1.48
37.35	32.61	22.02	4.16	91.57	2.72	1.53	1.53
37.43	34.54	23.43	4.04	94.72	2.71	1.63	1.63
37.51	37.23	25.41	3.83	97.40	2.68	1.76	1.76
37.55	40.42	27.84	3.55	98.85	2.64	1.92	1.92
37.60	43.41	30.14	3.26	98.34	2.59	0.67	0.67
37.67	46.12	32.25	3.01	97.10	2.55	0.68	0.68
37.75	47.68	33.45	2.86	95.62	2.52	0.68	0.68
37.81	48.21	33.86	2.79	94.32	2.50	0.69	0.69

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
37.88	48.12	33.76	2.77	93.42	2.50	0.69	0.69
37.93	48.13	33.75	2.76	93.00	2.50	0.68	0.68
38.00	49.14	34.47	2.72	93.80	2.49	0.69	0.69
38.08	52.10	36.67	2.64	96.77	2.47	0.70	0.70
38.14	55.93	39.49	2.60	102.67	2.47	0.70	0.70
38.20	60.41	42.75	2.58	110.38	2.46	0.71	0.71
38.26	65.84	46.71	2.57	119.90	2.46	0.73	0.73
38.34	74.63	53.26	2.44	130.07	2.43	0.74	0.74
38.43	85.00	61.06	2.29	139.63	2.39	0.76	0.76
38.45	97.14	70.35	2.13	149.58	2.35	0.78	0.78
38.53	109.74	79.94	1.99	159.28	2.31	0.80	0.80
38.62	121.23	88.66	1.90	168.28	2.28	0.81	0.81
38.65	130.51	95.75	1.84	176.10	2.26	0.82	0.82
38.72	139.21	102.35	1.79	182.90	2.25	0.83	0.83
38.80	148.05	109.03	1.74	189.51	2.23	0.84	0.84
38.88	156.31	115.30	1.69	195.08	2.21	0.85	0.85
38.93	162.35	119.87	1.67	199.70	2.20	0.85	0.85
39.01	167.70	123.81	1.65	204.11	2.19	0.86	0.86
39.07	171.82	126.83	1.64	207.67	2.19	0.86	0.86
39.12	176.04	129.96	1.62	211.17	2.18	0.86	0.86
39.20	180.10	132.88	1.62	214.63	2.18	0.87	0.87
39.27	184.00	135.69	1.61	217.99	2.17	0.87	0.87
39.31	187.49	138.26	1.60	221.07	2.17	0.87	0.87
39.38	190.29	140.19	1.60	223.77	2.17	0.88	0.88
39.45	193.31	142.31	1.59	226.42	2.17	0.88	0.88
39.51	197.03	145.04	1.58	229.13	2.16	0.88	0.88
39.57	201.45	148.33	1.56	231.77	2.15	0.88	0.88
39.64	206.43	152.05	1.54	234.36	2.14	0.89	0.89
39.72	209.97	154.62	1.53	235.92	2.14	0.89	0.89
39.79	210.90	155.19	1.52	235.81	2.13	0.89	0.89
39.84	209.11	153.65	1.53	234.48	2.14	0.89	0.89
39.90	206.02	151.08	1.54	232.41	2.14	0.89	0.89
39.96	202.96	148.57	1.55	229.77	2.15	0.88	0.88
40.06	199.55	145.71	1.56	226.70	2.15	0.88	0.88
40.13	195.43	142.38	1.57	223.26	2.16	0.88	0.88
40.17	191.56	139.34	1.58	219.92	2.16	0.87	0.87
40.26	187.07	135.71	1.59	216.05	2.17	0.87	0.87
40.31	182.02	131.75	1.61	211.86	2.18	0.87	0.87
40.36	176.42	127.42	1.62	206.86	2.18	0.86	0.86
40.43	171.16	123.34	1.63	201.52	2.19	0.86	0.86
40.51	164.14	117.86	1.66	195.74	2.20	0.85	0.85
40.56	159.97	114.70	1.66	190.93	2.20	0.85	0.85
40.64	152.18	108.61	1.71	185.56	2.22	0.84	0.84
40.70	148.35	105.73	1.71	180.74	2.22	0.84	0.84
40.75	146.10	104.13	1.69	175.76	2.21	0.83	0.83
40.83	144.83	103.24	1.66	171.24	2.20	0.83	0.83
40.88	146.29	104.60	1.60	167.25	2.17	0.83	0.83
40.95	151.45	108.92	1.50	163.89	2.13	0.84	0.84

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
41.03	159.00	115.12	1.41	162.69	2.08	0.85	0.85
41.08	169.86	124.05	1.32	164.27	2.02	0.86	0.86
41.15	178.00	130.77	1.27	165.80	1.97	0.87	0.87
41.24	189.19	140.00	1.21	169.37	1.92	0.88	0.88
41.28	194.60	144.65	1.18	170.54	1.89	0.88	0.88
41.35	196.88	146.68	1.16	170.24	1.87	0.88	0.88
41.41	197.86	147.66	1.15	169.29	1.85	0.88	0.88
41.48	196.40	146.49	1.14	167.63	1.85	0.88	0.88
41.55	192.75	143.17	1.16	166.29	1.87	0.88	0.88
41.63	188.20	139.10	1.18	164.51	1.89	0.87	0.87
41.68	181.44	133.30	1.21	161.92	1.93	0.87	0.87
41.74	174.04	127.00	1.25	159.25	1.96	0.86	0.86
41.83	166.17	120.27	1.30	156.93	2.00	0.85	0.85
41.87	159.62	114.71	1.36	156.04	2.04	0.85	0.85
41.98	152.99	108.97	1.43	155.95	2.09	0.84	0.84
42.02	146.03	103.14	1.52	156.49	2.13	0.83	0.83
42.10	139.05	97.32	1.62	157.32	2.18	0.82	0.82
42.14	132.52	92.01	1.72	158.36	2.22	0.82	0.82
42.22	126.16	86.83	1.84	159.59	2.26	0.81	0.81
42.29	120.67	82.42	1.95	160.51	2.30	0.80	0.80
42.38	115.55	78.32	2.06	161.46	2.33	0.79	0.79
42.41	111.25	74.95	2.17	162.34	2.36	0.79	0.79
42.46	107.34	71.90	2.27	163.00	2.39	0.78	0.78
42.57	103.94	69.19	2.36	163.11	2.41	0.78	0.78
42.61	100.91	66.88	2.44	163.01	2.43	0.77	0.77
42.68	98.50	65.01	2.50	162.77	2.44	0.77	0.77
42.76	96.24	63.25	2.57	162.34	2.46	0.76	0.76
42.80	94.09	61.63	2.63	161.80	2.47	0.76	0.76
42.87	92.43	60.35	2.67	161.02	2.48	0.76	0.76
42.92	90.98	59.26	2.70	160.04	2.49	0.76	0.76
42.98	89.10	57.87	2.74	158.36	2.49	0.75	0.75
43.06	86.12	55.71	2.79	155.17	2.50	0.75	0.75
43.11	82.66	53.25	2.85	151.63	2.52	0.74	0.74
43.18	78.34	50.16	2.95	147.91	2.53	0.73	0.73
43.26	73.08	46.41	3.10	143.94	2.56	0.72	0.72
43.32	67.13	42.20	3.31	139.61	2.60	0.71	0.71
43.39	61.24	38.07	3.54	134.85	2.63	2.58	2.58
43.46	55.24	33.90	3.81	129.27	2.67	2.31	2.31
43.52	48.95	29.60	4.15	122.72	2.72	2.04	2.04
43.61	43.21	25.69	4.52	116.06	2.77	1.78	1.78
43.64	38.48	22.50	4.92	110.79	2.82	1.57	1.57
43.70	34.37	19.75	5.34	105.47	2.86	1.39	1.39
43.79	31.53	17.87	5.61	100.21	2.89	1.26	1.26
43.84	29.85	16.79	5.68	95.39	2.90	1.19	1.19
43.90	29.16	16.37	5.61	91.83	2.89	1.16	1.16
43.97	28.62	16.03	5.57	89.31	2.89	1.13	1.13
44.05	28.46	15.91	5.55	88.25	2.88	1.12	1.12
44.10	28.90	16.18	5.48	88.67	2.88	1.14	1.14

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
44.18	29.73	16.69	5.41	90.36	2.87	1.18	1.18
44.24	30.91	17.43	5.32	92.72	2.86	1.23	1.23
44.30	32.38	18.35	5.22	95.76	2.85	1.29	1.29
44.38	34.27	19.53	5.09	99.36	2.83	1.37	1.37
44.45	36.52	20.96	4.92	103.06	2.82	1.46	1.46
44.49	39.14	22.67	4.68	106.18	2.79	1.57	1.57
44.57	41.80	24.41	4.46	108.75	2.76	1.69	1.69
44.64	44.11	25.89	4.31	111.67	2.74	1.78	1.78
44.72	45.81	26.96	4.24	114.40	2.73	1.85	1.85
44.79	47.04	27.72	4.21	116.56	2.73	1.91	1.91
44.84	48.33	28.53	4.15	118.40	2.72	1.96	1.96
44.92	51.62	30.75	3.87	118.97	2.68	2.10	2.10
44.96	56.00	33.79	3.51	118.61	2.63	2.28	2.28
45.03	61.93	37.94	3.09	117.38	2.56	0.70	0.70
45.09	70.39	43.99	2.63	115.79	2.47	0.72	0.72
45.19	78.97	50.19	2.29	114.70	2.39	0.73	0.73
45.23	87.67	56.61	2.01	113.97	2.32	0.75	0.75
45.28	95.84	62.61	1.84	115.12	2.26	0.76	0.76
45.38	103.70	68.35	1.71	117.08	2.22	0.78	0.78
45.43	110.94	73.64	1.63	119.99	2.18	0.79	0.79
45.48	114.55	76.05	1.63	123.69	2.18	0.79	0.79
45.58	115.95	76.70	1.66	127.38	2.20	0.79	0.79
45.62	113.89	74.81	1.75	130.77	2.23	0.79	0.79
45.67	107.49	69.71	1.92	133.73	2.29	0.78	0.78
45.78	100.41	64.15	2.13	136.92	2.35	0.77	0.77
45.82	92.83	58.44	2.39	139.92	2.42	0.75	0.75
45.88	86.04	53.46	2.63	140.77	2.47	0.74	0.74
45.98	79.71	48.88	2.88	140.84	2.52	0.73	0.73
46.02	73.83	44.74	3.13	140.23	2.57	0.72	0.72
46.07	69.62	41.84	3.29	137.86	2.59	0.71	0.71
46.17	66.01	39.37	3.42	134.82	2.62	2.65	2.65
46.21	63.43	37.66	3.49	131.48	2.63	2.53	2.53
46.27	61.17	36.16	3.55	128.41	2.64	2.44	2.44
46.37	59.04	34.72	3.62	125.52	2.65	2.34	2.34
46.39	57.19	33.50	3.68	123.35	2.66	2.27	2.27
46.47	55.24	32.14	3.82	122.66	2.67	2.18	2.18
46.57	53.36	30.82	3.97	122.21	2.70	2.10	2.10
46.62	51.65	29.64	4.10	121.62	2.71	2.03	2.03
46.67	49.67	28.29	4.29	121.27	2.74	1.94	1.94
46.77	47.76	26.96	4.48	120.87	2.76	1.86	1.86
46.82	46.32	25.98	4.64	120.67	2.78	1.80	1.80
46.90	45.86	25.64	4.69	120.21	2.79	1.78	1.78
46.92	45.62	25.48	4.70	119.75	2.79	1.77	1.77
47.01	45.61	25.43	4.70	119.60	2.79	1.76	1.76
47.05	45.76	25.51	4.69	119.58	2.79	1.77	1.77
47.12	45.95	25.59	4.69	119.93	2.79	1.77	1.77
47.21	45.72	25.38	4.75	120.48	2.80	1.76	1.76
47.28	46.33	25.74	4.70	120.95	2.79	1.78	1.78

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
47.32	46.71	25.95	4.68	121.44	2.79	1.80	1.80
47.40	47.02	26.10	4.68	122.19	2.79	1.81	1.81
47.45	47.62	26.44	4.66	123.33	2.79	1.83	1.83
47.55	48.61	27.01	4.60	124.26	2.78	1.87	1.87
47.58	49.96	27.88	4.47	124.59	2.76	1.92	1.92
47.66	51.87	29.11	4.28	124.45	2.74	1.99	1.99
47.74	54.02	30.50	4.07	124.17	2.71	2.08	2.08
47.80	56.71	32.27	3.84	124.05	2.68	2.19	2.19
47.85	58.65	33.53	3.70	124.22	2.66	2.26	2.26
47.93	60.64	34.81	3.58	124.49	2.64	2.34	2.34
47.98	62.76	36.21	3.44	124.46	2.62	2.42	2.42
48.04	64.99	37.69	3.29	124.03	2.59	0.70	0.70
48.11	67.41	39.30	3.14	123.57	2.57	0.70	0.70
48.20	69.59	40.73	3.03	123.38	2.55	0.71	0.71
48.24	71.33	41.88	2.95	123.68	2.54	0.71	0.71
48.30	72.97	42.95	2.89	123.93	2.52	0.71	0.71
48.39	74.42	43.87	2.83	124.05	2.51	0.72	0.72
48.44	75.99	44.91	2.77	124.44	2.50	0.72	0.72
48.53	77.80	46.06	2.71	124.94	2.49	0.72	0.72
48.59	79.60	47.23	2.66	125.51	2.48	0.73	0.73
48.64	80.98	48.11	2.63	126.34	2.47	0.73	0.73
48.70	82.04	48.73	2.62	127.52	2.47	0.73	0.73
48.78	83.53	49.64	2.59	128.78	2.46	0.73	0.73
48.82	85.19	50.69	2.56	129.97	2.46	0.74	0.74
48.89	87.28	52.03	2.52	131.08	2.45	0.74	0.74
48.98	90.26	53.97	2.45	132.03	2.43	0.74	0.74
49.05	93.73	56.28	2.36	132.78	2.41	0.75	0.75
49.09	97.44	58.81	2.27	133.45	2.39	0.76	0.76
49.16	101.81	61.78	2.17	134.12	2.36	0.76	0.76
49.24	106.91	65.26	2.07	135.13	2.34	0.77	0.77
49.31	112.14	68.86	1.98	136.11	2.31	0.78	0.78
49.38	116.76	72.05	1.90	137.00	2.29	0.78	0.78
49.43	120.62	74.75	1.84	137.59	2.26	0.79	0.79
49.52	123.30	76.64	1.79	137.04	2.25	0.79	0.79
49.58	124.61	77.65	1.75	135.66	2.23	0.79	0.79
49.63	124.38	77.57	1.73	133.96	2.22	0.79	0.79
49.71	122.70	76.38	1.73	132.38	2.23	0.79	0.79
49.77	119.64	74.19	1.76	130.76	2.24	0.79	0.79
49.82	114.85	70.80	1.82	128.74	2.26	0.78	0.78
49.88	107.69	65.75	1.92	126.27	2.29	0.77	0.77
49.97	100.43	60.65	2.04	123.80	2.33	0.76	0.76
50.01	94.19	56.34	2.16	121.67	2.36	0.75	0.75
50.07	89.11	52.76	2.30	121.25	2.40	0.74	0.74
50.17	84.50	49.44	2.47	122.07	2.44	0.73	0.73
50.22	80.39	46.53	2.65	123.24	2.48	0.73	0.73
50.29	76.13	43.58	2.83	123.52	2.51	0.72	0.72
50.37	72.92	41.37	2.97	123.02	2.54	0.71	0.71
50.42	69.90	39.36	3.10	122.05	2.56	0.70	0.70

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
50.47	68.34	38.34	3.15	120.84	2.57	0.70	0.70
50.57	65.94	36.74	3.25	119.31	2.59	0.70	0.70
50.63	62.51	34.52	3.40	117.49	2.61	2.29	2.29
50.68	58.31	31.85	3.60	114.64	2.64	2.13	2.13
50.73	53.55	28.88	3.82	110.42	2.68	1.94	1.94
50.79	48.91	26.02	4.06	105.58	2.71	1.76	1.76
50.88	45.25	23.79	4.23	100.57	2.73	1.62	1.62
50.93	41.03	21.25	4.48	95.16	2.76	1.46	1.46
51.03	37.66	19.24	4.65	89.48	2.78	1.33	1.33
51.07	34.69	17.53	4.77	83.65	2.80	1.21	1.21
51.14	32.58	16.34	4.76	77.75	2.80	1.13	1.13
51.23	30.90	15.42	4.68	72.12	2.79	1.06	1.06
51.27	29.21	14.49	4.63	67.10	2.78	0.27	1.00
51.33	28.11	13.89	4.58	63.59	2.78	0.24	0.95
51.42	27.14	13.35	4.53	60.46	2.77	0.19	0.92
51.48	26.51	13.02	4.44	57.82	2.76	0.17	0.89
51.52	26.33	12.93	4.40	56.91	2.75	0.15	0.88
51.60	26.44	12.98	4.37	56.75	2.75	0.15	0.89
51.68	26.86	13.22	4.32	57.16	2.74	0.18	0.90
51.72	27.53	13.60	4.28	58.21	2.74	0.19	0.93
51.81	28.12	13.90	4.30	59.73	2.74	0.23	0.95
51.87	28.73	14.22	4.32	61.44	2.74	0.26	0.97
51.91	28.93	14.29	4.40	62.90	2.75	0.27	0.98
51.98	28.88	14.21	4.50	63.93	2.77	0.28	0.97
52.07	28.66	14.03	4.61	64.66	2.78	0.30	0.96
52.10	28.09	13.67	4.72	64.51	2.79	0.31	0.94
52.17	27.20	13.12	4.86	63.79	2.81	0.29	0.91
52.24	26.15	12.48	5.03	62.82	2.83	0.27	0.87
52.31	24.96	11.76	5.24	61.59	2.85	0.26	0.82
52.37	23.83	11.10	5.40	59.89	2.87	0.22	0.78
52.46	22.77	10.48	5.52	57.92	2.88	0.19	0.74
52.51	21.99	10.05	5.59	56.16	2.89	0.18	0.71
52.57	21.52	9.79	5.56	54.48	2.89	0.16	0.69
52.66	21.13	9.58	5.52	52.88	2.88	0.15	0.67
52.71	20.91	9.46	5.47	51.80	2.88	0.14	0.66
52.78	20.78	9.39	5.44	51.06	2.87	0.14	0.66
52.86	20.69	9.34	5.40	50.46	2.87	0.14	0.66
52.91	20.62	9.30	5.38	50.07	2.87	0.14	0.65
52.99	20.60	9.29	5.37	49.83	2.87	0.14	0.65
53.06	20.61	9.29	5.35	49.67	2.86	0.14	0.65
53.09	20.61	9.29	5.32	49.44	2.86	0.14	0.65
53.16	20.64	9.30	5.31	49.35	2.86	0.14	0.65
53.25	20.67	9.30	5.29	49.26	2.86	0.13	0.65
53.29	20.68	9.31	5.28	49.17	2.86	0.13	0.65
53.36	20.66	9.29	5.28	49.08	2.86	0.13	0.65
53.45	20.68	9.29	5.27	48.99	2.86	0.13	0.65
53.50	20.68	9.28	5.27	48.90	2.85	0.13	0.65
53.55	20.67	9.27	5.28	48.97	2.86	0.13	0.65

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
53.64	20.67	9.25	5.30	49.03	2.86	0.13	0.65
53.69	20.70	9.26	5.30	49.09	2.86	0.13	0.65
53.76	20.73	9.27	5.30	49.08	2.86	0.13	0.65
53.84	20.80	9.29	5.30	49.22	2.86	0.13	0.65
53.88	20.91	9.35	5.30	49.59	2.86	0.13	0.65
53.96	21.17	9.48	5.28	50.03	2.86	0.13	0.66
54.03	21.41	9.60	5.26	50.46	2.85	0.13	0.67
54.08	21.59	9.69	5.24	50.82	2.85	0.14	0.68
54.17	21.74	9.76	5.23	51.09	2.85	0.15	0.68
54.23	21.88	9.83	5.23	51.37	2.85	0.16	0.69
54.27	21.99	9.88	5.23	51.65	2.85	0.16	0.69
54.38	22.08	9.91	5.22	51.77	2.85	0.15	0.69
54.42	22.14	9.94	5.20	51.69	2.85	0.15	0.69
54.47	22.17	9.97	5.14	51.26	2.84	0.15	0.69
54.53	22.12	9.94	5.10	50.74	2.84	0.15	0.69
54.61	22.06	9.91	5.07	50.22	2.83	0.14	0.69
54.68	22.03	9.90	5.04	49.84	2.83	0.13	0.69
54.73	22.02	9.89	5.01	49.53	2.83	0.12	0.69
54.80	22.01	9.87	5.00	49.37	2.82	0.12	0.68
54.88	22.03	9.87	5.00	49.35	2.82	0.12	0.68
54.95	22.09	9.89	5.01	49.56	2.83	0.13	0.69
55.02	22.17	9.92	5.03	49.92	2.83	0.13	0.69
55.07	22.23	9.93	5.08	50.42	2.83	0.14	0.69
55.15	22.25	9.91	5.14	50.97	2.84	0.15	0.69
55.21	22.27	9.90	5.20	51.52	2.85	0.15	0.69
55.27	22.39	9.96	5.21	51.86	2.85	0.16	0.69
55.34	22.62	10.08	5.17	52.13	2.84	0.16	0.70
55.42	22.88	10.21	5.12	52.33	2.84	0.16	0.71
55.47	23.13	10.34	5.08	52.59	2.83	0.16	0.72
55.54	23.41	10.48	5.09	53.39	2.84	0.15	0.73
55.62	23.74	10.64	5.10	54.24	2.84	0.15	0.74
55.65	24.32	10.95	5.05	55.28	2.83	0.16	0.76
55.72	25.17	11.41	4.94	56.41	2.82	0.17	0.79
55.81	26.14	11.94	4.85	57.86	2.81	0.21	0.82
55.84	27.15	12.48	4.80	59.87	2.80	0.22	0.86
55.91	28.26	13.02	4.86	63.28	2.81	0.24	0.90
55.98	29.52	13.64	4.92	67.15	2.82	0.25	0.94
56.05	31.10	14.46	4.90	70.92	2.81	1.00	1.00
56.11	34.04	16.12	4.59	73.94	2.78	1.10	1.10
56.21	38.52	18.71	4.13	77.33	2.72	1.26	1.26
56.26	43.85	21.85	3.70	80.74	2.66	1.45	1.45
56.31	51.25	26.31	3.21	84.44	2.58	0.65	0.65
56.39	58.39	30.64	2.88	88.08	2.52	0.67	0.67
56.46	66.60	35.71	2.57	91.68	2.46	0.69	0.69
56.50	74.21	40.49	2.34	94.69	2.41	0.71	0.71
56.60	80.84	44.64	2.19	97.58	2.37	0.72	0.72
56.65	86.36	48.10	2.09	100.49	2.34	0.73	0.73
56.72	89.96	50.26	2.06	103.30	2.33	0.73	0.73

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
56.78	91.09	50.86	2.06	104.84	2.33	0.74	0.74
56.87	90.61	50.39	2.10	105.65	2.34	0.74	0.74
56.93	86.85	47.84	2.21	105.54	2.37	0.73	0.73
56.97	82.39	44.91	2.33	104.79	2.41	0.72	0.72
57.05	76.32	40.97	2.52	103.41	2.45	0.71	0.71
57.11	69.97	36.95	2.75	101.47	2.50	0.70	0.70
57.17	63.87	33.16	2.98	98.86	2.54	0.68	0.68
57.25	58.18	29.71	3.22	95.61	2.58	0.67	0.67
57.31	52.54	26.32	3.49	91.87	2.63	1.74	1.74
57.37	47.66	23.46	3.76	88.15	2.67	1.56	1.56
57.42	43.35	20.97	4.01	84.11	2.70	1.41	1.41
57.48	39.91	19.02	4.20	79.93	2.73	1.29	1.29
57.56	37.11	17.46	4.35	75.95	2.75	1.19	1.19
57.64	34.62	16.08	4.48	72.08	2.76	1.10	1.10
57.70	32.80	15.10	4.54	68.55	2.77	0.27	1.03
57.74	31.50	14.44	4.51	65.16	2.77	0.25	0.99
57.81	30.51	13.94	4.46	62.19	2.76	0.23	0.95
57.90	29.96	13.68	4.37	59.72	2.75	0.20	0.93
57.95	29.50	13.45	4.31	58.04	2.74	0.20	0.91
58.06	29.02	13.15	4.40	57.86	2.75	0.17	0.89
58.09	28.66	12.92	4.51	58.28	2.77	0.17	0.88
58.15	28.80	12.96	4.55	59.02	2.77	0.18	0.89
58.20	29.53	13.36	4.46	59.61	2.76	0.19	0.91
58.29	30.50	13.91	4.31	59.94	2.74	0.25	0.94
58.33	31.57	14.52	4.16	60.44	2.72	0.28	0.98
58.40	32.28	14.90	4.11	61.27	2.72	0.29	1.00
58.48	32.70	15.11	4.10	62.00	2.71	0.25	1.02
58.55	33.02	15.26	4.10	62.56	2.71	0.23	1.03
58.60	32.96	15.23	4.08	62.16	2.71	0.22	1.02
58.66	33.04	15.31	3.99	61.04	2.70	0.25	1.03
58.75	32.78	15.19	3.93	59.62	2.69	0.24	1.02
58.80	31.98	14.73	3.98	58.57	2.70	0.24	0.99
58.88	30.93	14.12	4.09	57.74	2.71	0.22	0.95
58.97	29.66	13.38	4.25	56.89	2.73	0.18	0.90
59.02	28.78	12.89	4.32	55.64	2.74	0.17	0.87
59.06	28.25	12.61	4.32	54.47	2.74	0.16	0.85
59.12	27.98	12.49	4.26	53.25	2.74	0.15	0.84
59.20	28.12	12.60	4.15	52.31	2.72	0.14	0.85
59.26	28.04	12.55	4.14	51.90	2.72	0.14	0.84
59.35	28.00	12.51	4.14	51.82	2.72	0.15	0.84
59.41	28.02	12.50	4.17	52.14	2.72	0.14	0.84
59.46	28.08	12.51	4.21	52.66	2.73	0.15	0.84
59.52	28.38	12.65	4.22	53.41	2.73	0.15	0.85
59.61	28.81	12.85	4.22	54.27	2.73	0.16	0.87
59.68	29.23	13.06	4.21	54.99	2.73	0.18	0.88
59.72	29.44	13.14	4.24	55.77	2.73	0.19	0.89
59.79	29.54	13.16	4.29	56.42	2.74	0.20	0.89
59.86	29.55	13.13	4.34	56.94	2.75	0.21	0.89

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
59.91	29.54	13.20	4.16	54.87	2.72	0.21	0.89
60.01	29.54	13.28	3.95	52.42	2.69	0.21	0.89
60.06	29.43	13.32	3.73	49.70	2.66	0.20	0.88
60.15	29.33	13.39	3.48	46.66	2.63	0.20	0.88
60.19	29.08	13.40	3.22	43.20	2.58	0.05	0.58
60.26	29.01	13.54	2.91	39.48	2.53	0.04	0.58
60.35	28.68	13.58	2.60	35.31	2.47	0.04	0.58
60.40	28.68	13.89	2.22	30.80	2.38	0.04	0.58
60.45	28.56	-1.00	1.00	-1.00	-1.00	N/A	N/A
60.51	29.38	-1.00	1.00	-1.00	-1.00	N/A	N/A

Abbreviations

q_t: Total cone resistance
K_c: Cone resistance correction factor due to fines
$Q_{tn,cs}$: Adjusted and corrected cone resistance due to fines
I_c: Soil behavior type index
$S_{u(liq)}/\sigma'_v$: Calculated liquefied undrained strength ratio
$S_{u(peak)}/\sigma'_v$: Calculated peak undrained strength ratio

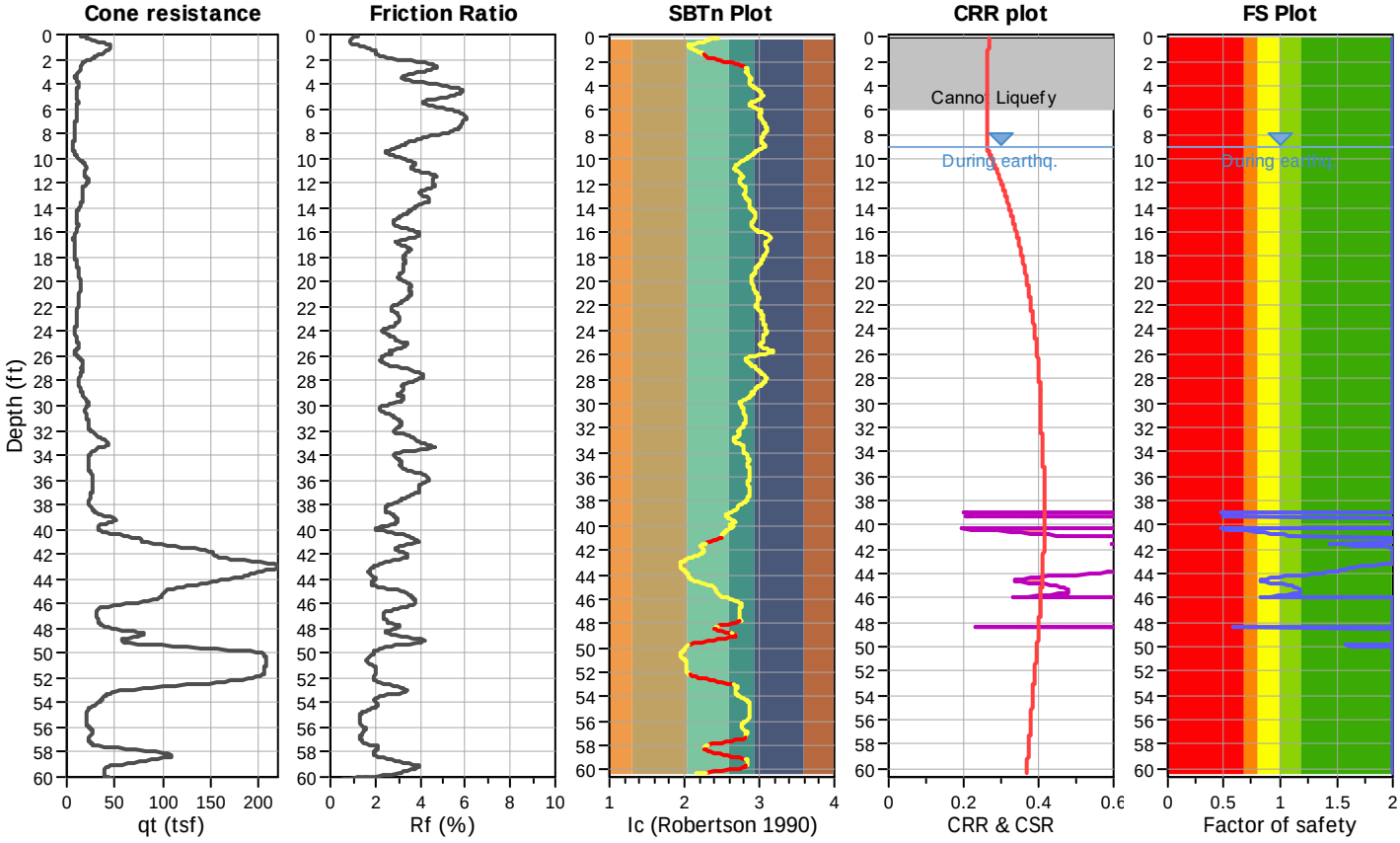
LIQUEFACTION ANALYSIS REPORT

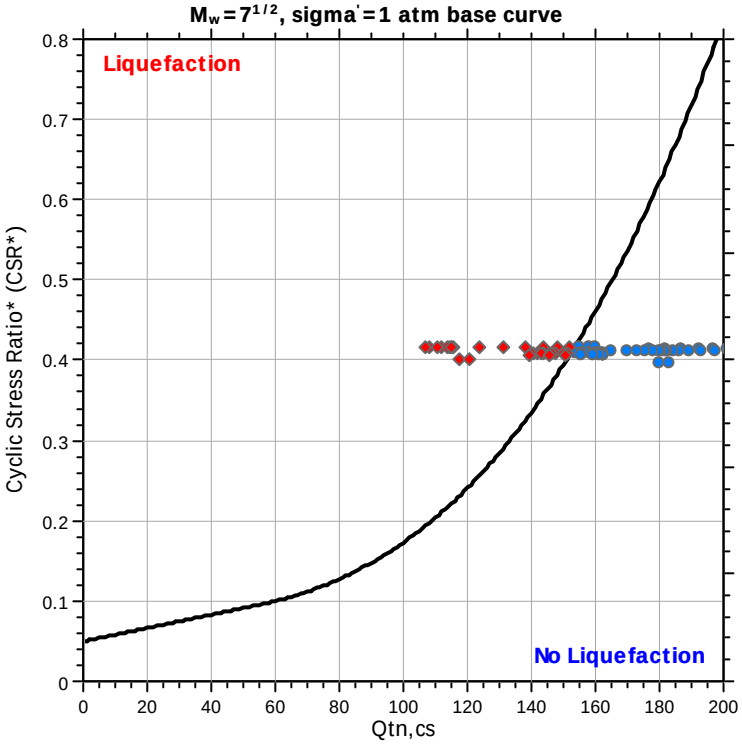
Project title : W1301-06-01 **Location : Perry Street**

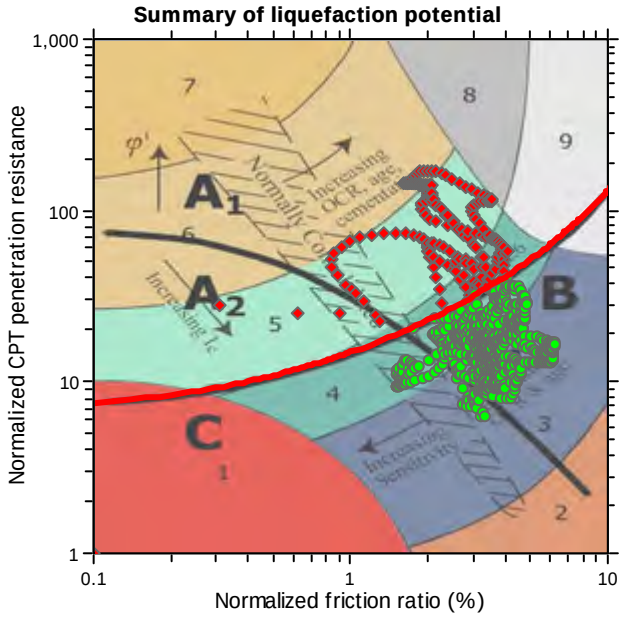
CPT file : CPT-2

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	12.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	9.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	.	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	6.68	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

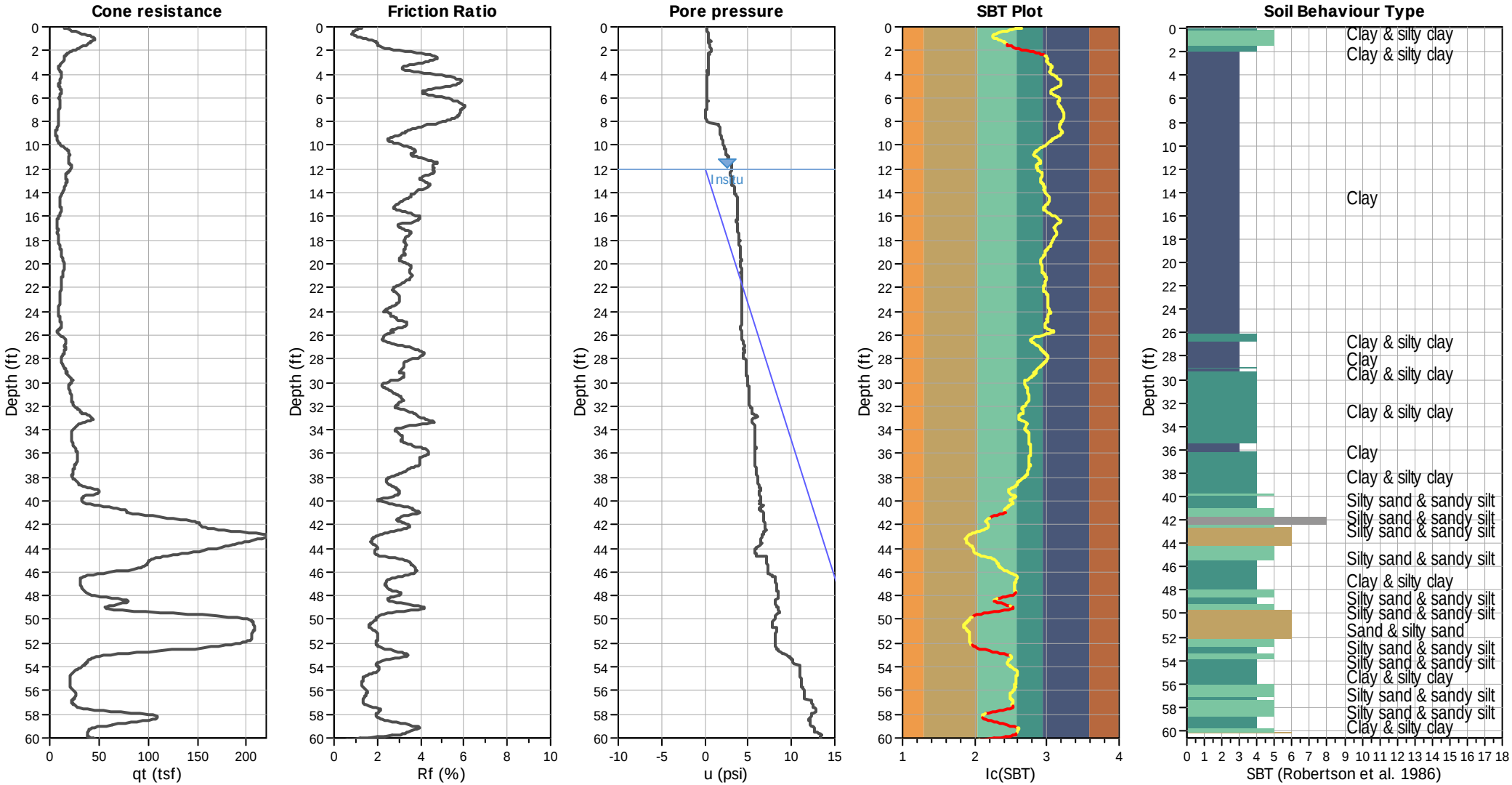






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



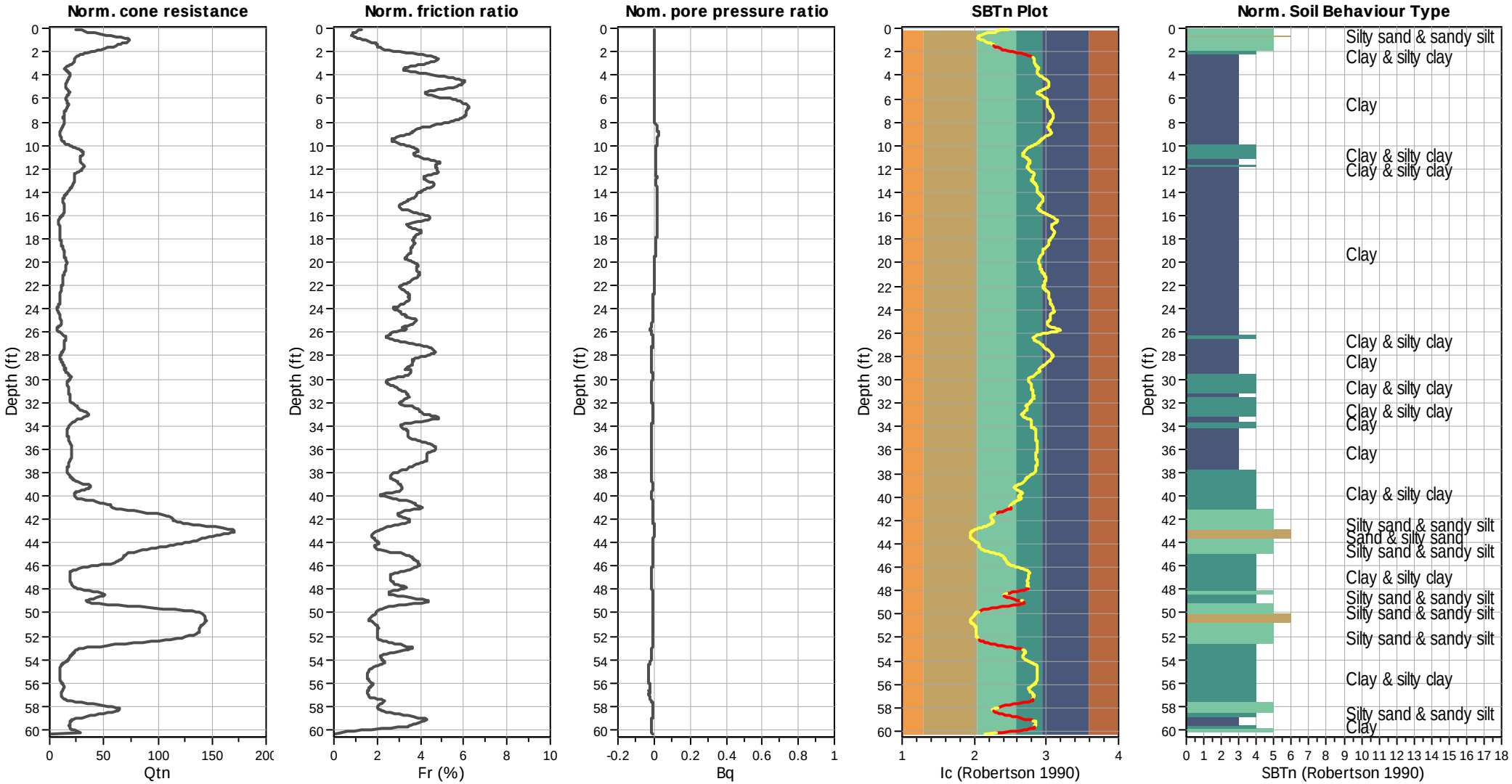
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	9.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	.	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.68	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	12.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

CPT basic interpretation plots (normalized)



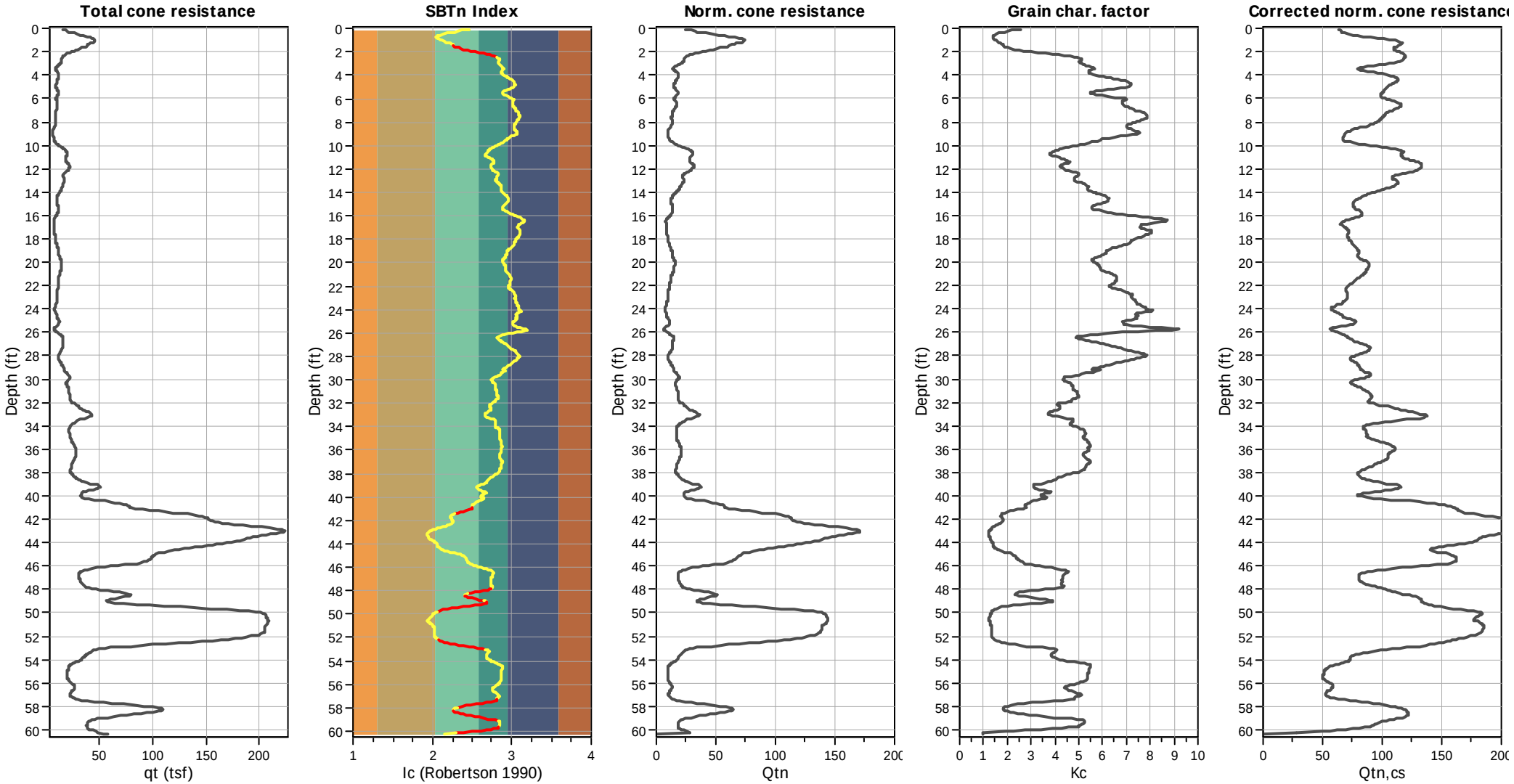
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	9.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	.	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.68	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	12.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

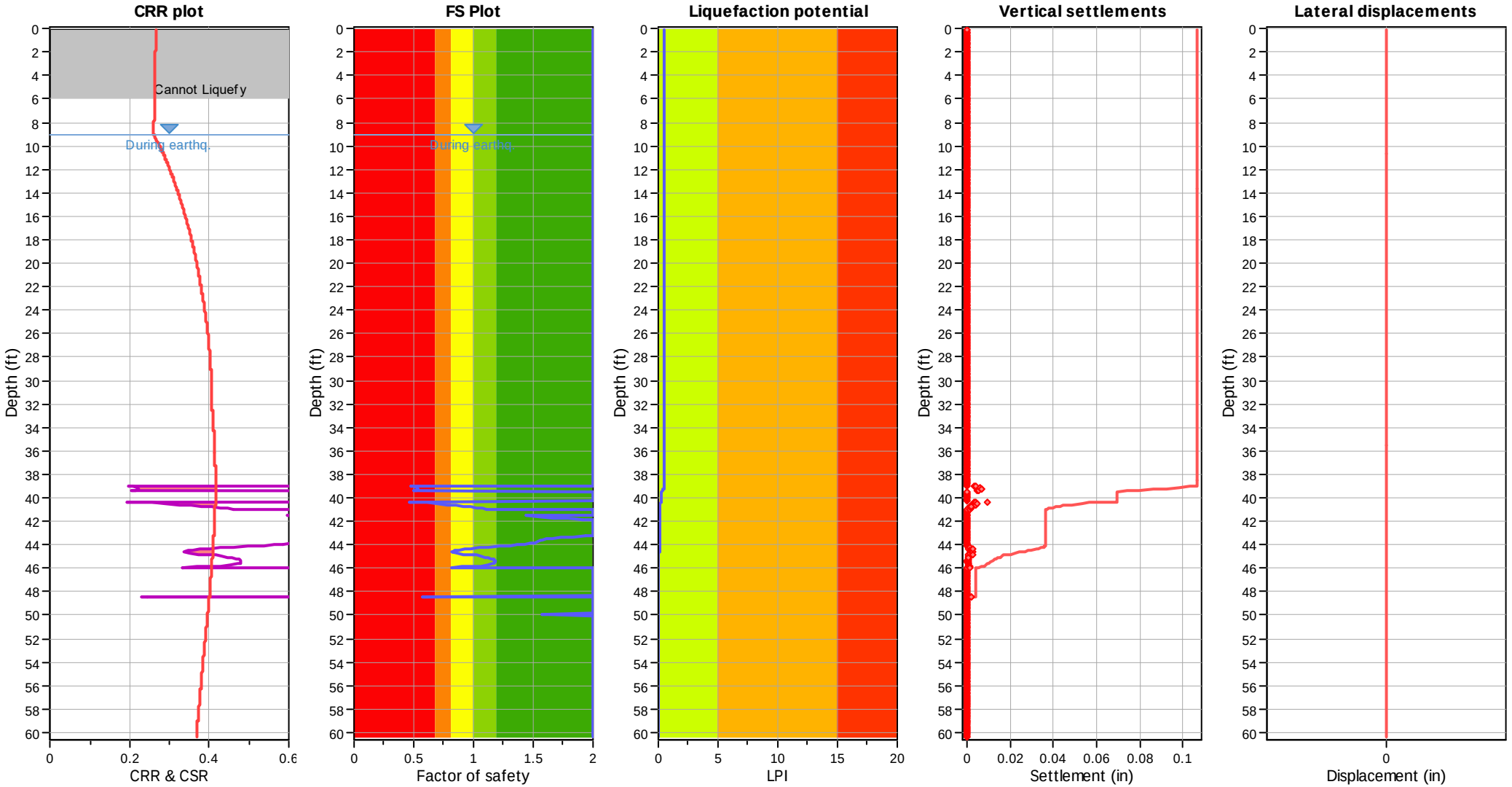
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	9.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	.	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.68	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	12.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	9.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	.	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.68	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	12.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

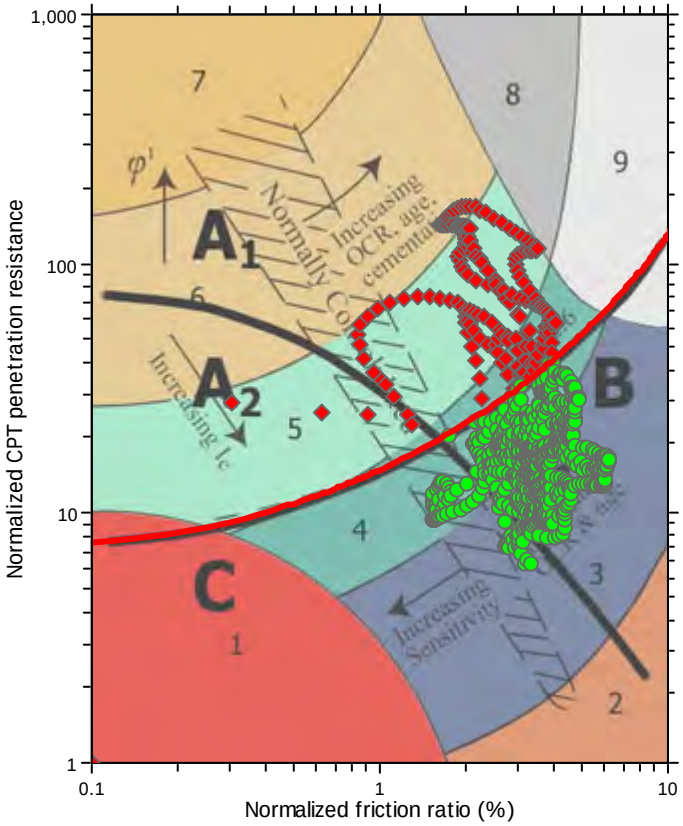
F.S. color scheme

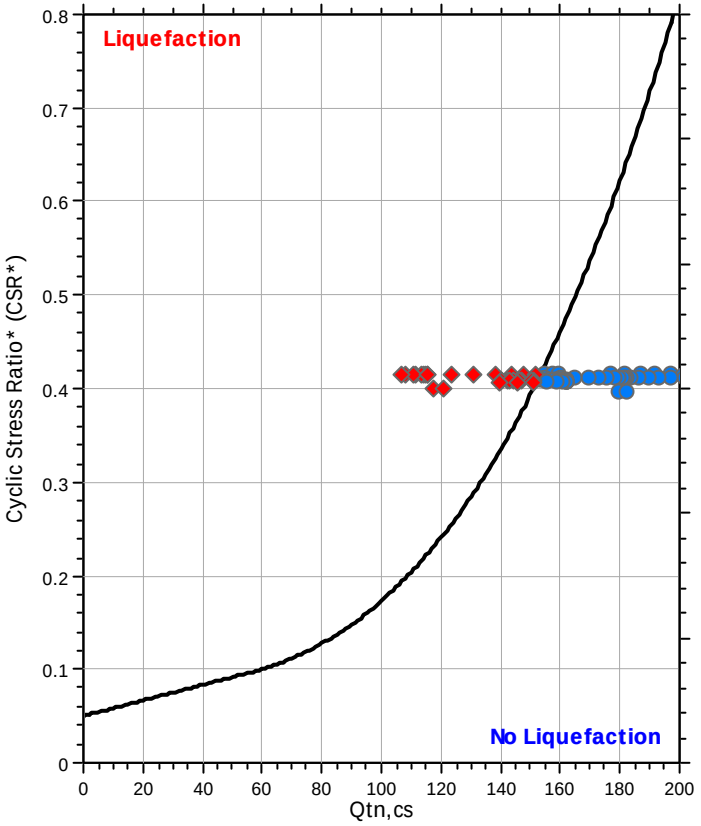
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

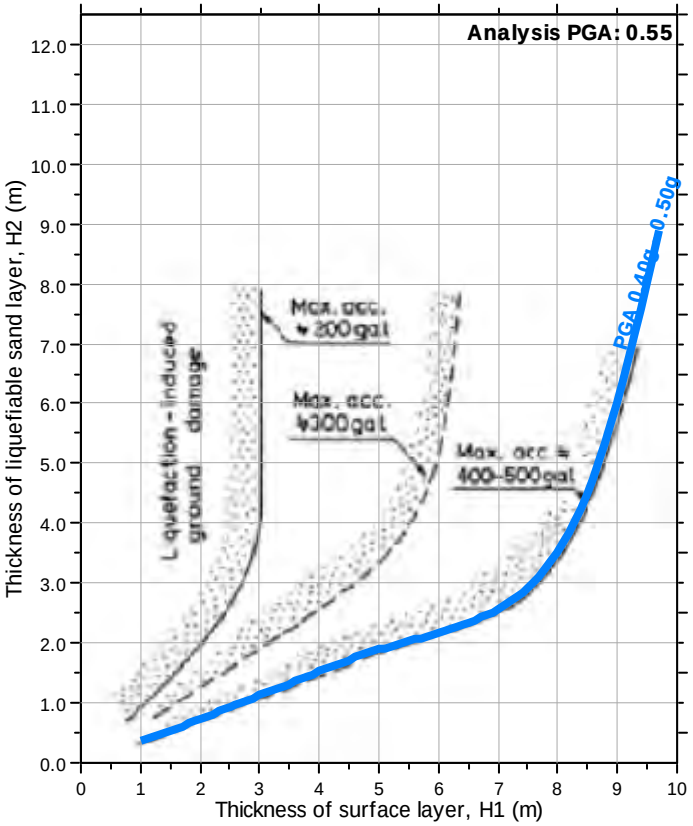
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



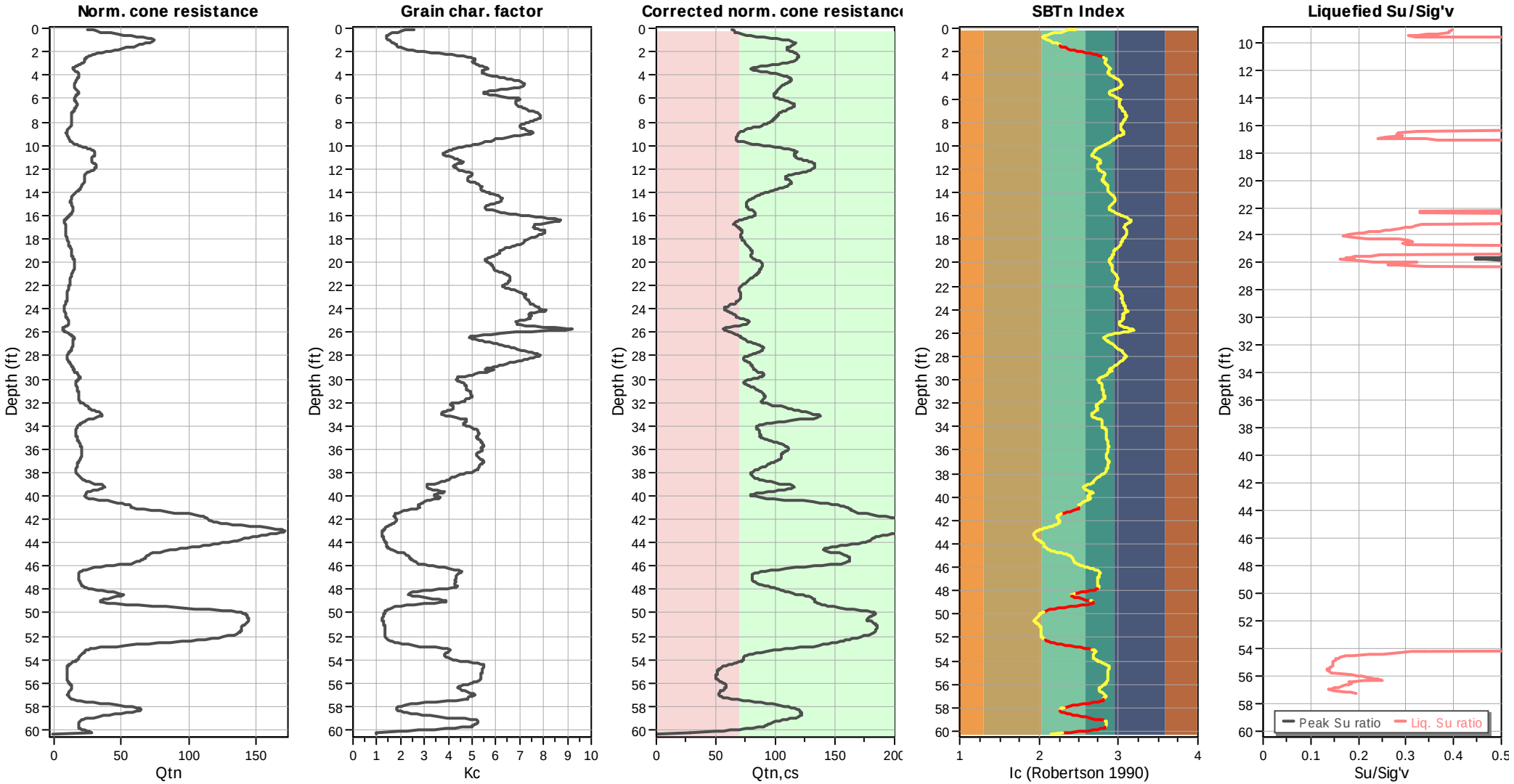




Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	9.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	.	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.68	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	12.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

Check for strength loss plots (Robertson (2010))



Input parameters and analysis data

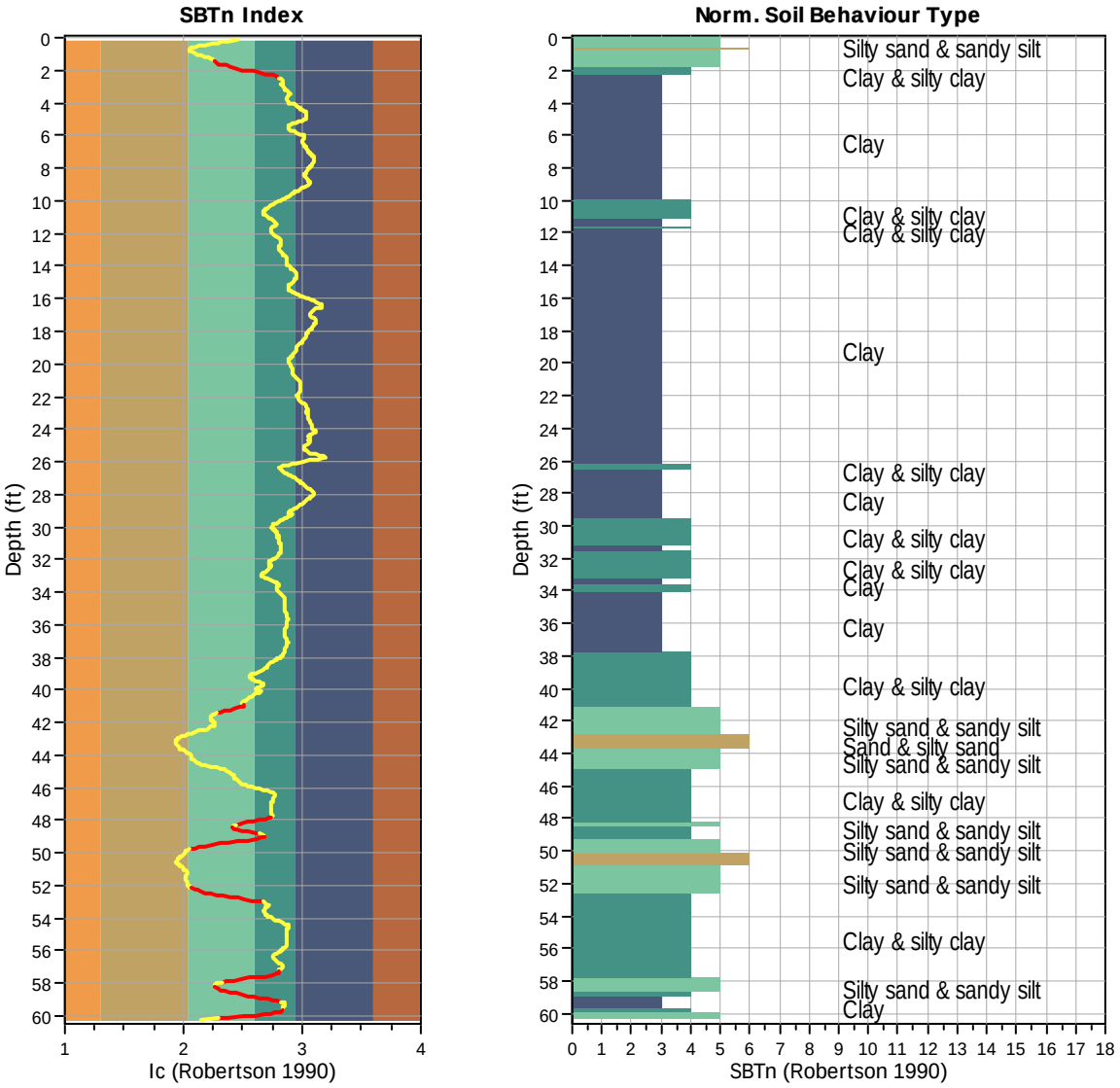
Analysis method:	NCEER (1998)	Depth to water table (erthq.):	9.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	.	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.68	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	12.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

TRANSITION LAYER DETECTION ALGORITHM REPORT
Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between 1.80 < I_c < 3.0) and a rate of change of I_c. Transitions typically occur when the rate of change of I_c is fast (i.e. delta I_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



Transition layer algorithm properties

I_c minimum check value:	1.70
I_c maximum check value:	3.00
I_c change ratio value:	0.0250
Minimum number of points in layer:	4

General statistics

Total points in CPT file:	920
Total points excluded:	100
Exclusion percentage:	10.87%
Number of layers detected:	9

Transition layer No	Number of points	Depth	SBT_n number	SBT_n description
Transition layer 1	16	Start depth: 1.55 (ft)	5	Silty sand & sandy silt
		End depth: 2.50 (ft)	3	Clay
Transition layer 2	8	Start depth: 41.03 (ft)	4	Clay & silty clay
		End depth: 41.48 (ft)	5	Silty sand & sandy silt
Transition layer 3	8	Start depth: 47.86 (ft)	4	Clay & silty clay
		End depth: 48.34 (ft)	5	Silty sand & sandy silt
Transition layer 4	7	Start depth: 48.51 (ft)	5	Silty sand & sandy silt
		End depth: 48.90 (ft)	4	Clay & silty clay
Transition layer 5	13	Start depth: 49.03 (ft)	4	Clay & silty clay
		End depth: 49.83 (ft)	5	Silty sand & sandy silt
Transition layer 6	14	Start depth: 52.26 (ft)	5	Silty sand & sandy silt
		End depth: 53.10 (ft)	4	Clay & silty clay
Transition layer 7	11	Start depth: 57.38 (ft)	4	Clay & silty clay
		End depth: 58.02 (ft)	5	Silty sand & sandy silt
Transition layer 8	14	Start depth: 58.37 (ft)	5	Silty sand & sandy silt
		End depth: 59.19 (ft)	3	Clay
Transition layer 9	9	Start depth: 59.74 (ft)	3	Clay
		End depth: 60.25 (ft)	5	Silty sand & sandy silt

Start depth: Depth where the transition layer begins
End depth: Depth where the transition layer ends

:: Field input data ::

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
1	0.10	11.46	0.17	0.19	28.94	104.87
2	0.16	15.94	0.19	0.19	25.35	105.73
3	0.21	21.31	0.22	0.29	23.07	106.28
4	0.29	21.76	0.24	0.29	22.11	106.51
5	0.36	21.94	0.23	0.29	20.78	106.71
6	0.40	23.37	0.22	0.29	18.55	107.47
7	0.51	24.80	0.20	0.38	16.79	108.34
8	0.57	30.08	0.23	0.38	15.63	109.20
9	0.61	34.47	0.25	0.38	14.78	110.22
10	0.70	40.38	0.29	0.38	14.48	111.48
11	0.76	46.29	0.36	0.38	14.37	112.72
12	0.81	48.26	0.42	0.38	14.46	113.95
13	0.87	49.51	0.52	0.48	14.96	115.09
14	0.96	47.54	0.66	0.38	15.64	116.10
15	1.00	47.45	0.72	0.38	16.49	116.88
16	1.05	46.92	0.78	0.38	17.42	117.37
17	1.16	44.32	0.89	0.57	18.33	117.72
18	1.20	43.25	0.93	0.67	19.21	117.90
19	1.26	41.72	0.91	0.48	19.90	117.84
20	1.35	40.38	0.82	0.48	20.53	117.71
21	1.40	40.11	0.79	0.48	21.05	117.51
22	1.45	38.77	0.76	0.57	21.37	117.22
23	1.55	35.37	0.68	0.57	21.82	116.90
24	1.60	35.37	0.67	0.57	22.49	116.58
25	1.64	35.46	0.66	0.57	23.54	116.34
26	1.71	34.29	0.68	0.57	24.88	116.12
27	1.79	31.25	0.71	0.67	26.37	115.93
28	1.87	27.58	0.72	0.67	27.98	115.87
29	1.95	24.00	0.72	0.67	30.04	115.79
30	2.00	22.38	0.73	0.67	32.45	115.68
31	2.04	21.49	0.73	0.67	35.06	115.52
32	2.11	20.32	0.75	0.67	37.58	115.32
33	2.19	18.00	0.75	0.48	39.79	115.14
34	2.24	17.28	0.74	0.48	41.60	114.98
35	2.30	16.39	0.72	0.57	43.26	114.80
36	2.38	15.58	0.71	0.48	44.87	114.64
37	2.45	15.22	0.71	0.38	46.25	114.45
38	2.50	14.68	0.70	0.48	47.13	114.31
39	2.58	14.24	0.69	0.48	47.86	114.19
40	2.64	14.15	0.69	0.48	48.30	114.08
41	2.69	14.06	0.68	0.48	48.25	113.90
42	2.79	14.06	0.69	0.48	48.00	113.65
43	2.85	14.06	0.68	0.48	47.59	113.36
44	2.90	14.24	0.66	0.48	47.74	112.89
45	2.98	14.50	0.58	0.38	48.23	112.24
46	3.05	14.24	0.52	0.38	48.67	111.47
47	3.09	13.88	0.48	0.38	48.95	110.56
48	3.17	10.57	0.39	0.38	49.56	109.55

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
49	3.24	8.51	0.31	0.38	50.23	108.46
50	3.29	8.15	0.26	0.38	50.84	107.52
51	3.36	8.06	0.23	0.38	51.38	106.86
52	3.44	7.16	0.23	0.38	51.87	106.35
53	3.48	7.34	0.23	0.38	51.28	106.38
54	3.56	8.95	0.25	0.38	50.61	106.91
55	3.64	10.39	0.31	0.38	50.26	107.62
56	3.69	10.92	0.33	0.29	50.31	108.48
57	3.76	11.82	0.39	0.38	50.11	109.35
58	3.84	12.00	0.46	0.29	50.06	110.20
59	3.88	12.00	0.49	0.38	50.59	110.92
60	3.98	12.00	0.55	0.38	51.44	111.45
61	4.03	11.91	0.58	0.38	52.81	111.87
62	4.08	11.91	0.61	0.29	53.99	112.20
63	4.14	11.64	0.62	0.29	54.94	112.41
64	4.23	11.37	0.62	0.29	55.91	112.56
65	4.27	10.12	0.62	0.19	56.89	112.59
66	4.36	11.01	0.63	0.19	57.82	112.56
67	4.41	11.10	0.63	0.19	58.78	112.45
68	4.46	10.74	0.62	0.19	59.63	112.31
69	4.55	10.12	0.61	0.19	60.33	112.15
70	4.61	9.85	0.59	0.19	60.36	111.99
71	4.66	9.49	0.58	0.19	60.71	111.75
72	4.75	9.31	0.56	0.19	61.03	111.50
73	4.80	9.31	0.54	0.19	61.24	111.28
74	4.86	9.31	0.52	0.19	61.04	111.10
75	4.96	9.22	0.49	0.19	60.69	110.96
76	5.01	9.40	0.49	0.19	59.87	110.86
77	5.06	9.40	0.50	0.19	58.49	110.82
78	5.16	9.67	0.50	0.29	56.83	110.82
79	5.21	9.85	0.50	0.19	55.13	110.85
80	5.26	10.48	0.50	0.19	53.60	110.92
81	5.32	11.55	0.49	0.19	52.28	110.94
82	5.41	12.45	0.49	0.19	51.32	110.91
83	5.46	12.80	0.48	0.19	50.83	110.84
84	5.52	12.80	0.48	0.19	50.77	110.75
85	5.60	12.45	0.46	0.19	51.33	110.64
86	5.66	11.46	0.45	0.19	52.37	110.51
87	5.71	10.48	0.45	0.19	53.80	110.38
88	5.81	9.49	0.45	0.29	55.38	110.31
89	5.89	8.60	0.46	0.29	57.00	110.28
90	5.91	8.60	0.46	0.29	58.53	110.37
91	6.00	8.77	0.47	0.29	59.56	110.54
92	6.06	9.31	0.49	0.29	60.00	110.82
93	6.11	9.58	0.51	0.29	59.94	111.18
94	6.20	10.12	0.55	0.29	59.53	111.60
95	6.24	10.48	0.57	0.38	59.15	112.02
96	6.30	11.01	0.61	0.29	58.91	112.36

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
97	6.38	11.28	0.65	0.19	58.89	112.64
98	6.46	11.37	0.69	0.19	58.91	112.85
99	6.50	11.37	0.70	0.19	59.04	112.94
100	6.60	11.01	0.68	0.19	59.32	112.97
101	6.63	10.83	0.67	0.19	59.75	112.90
102	6.72	10.65	0.65	0.19	60.28	112.71
103	6.80	10.39	0.62	0.19	60.79	112.45
104	6.84	10.12	0.60	0.19	61.22	112.15
105	6.90	9.85	0.58	0.19	61.75	111.85
106	7.00	9.31	0.54	0.19	62.26	111.56
107	7.04	9.13	0.53	0.10	62.85	111.29
108	7.09	9.13	0.52	0.10	63.45	111.04
109	7.20	8.68	0.51	0.10	64.02	110.81
110	7.24	8.68	0.51	0.10	64.48	110.61
111	7.30	8.51	0.51	0.10	64.77	110.47
112	7.39	8.33	0.49	0.10	64.96	110.33
113	7.43	8.33	0.49	0.10	65.18	110.20
114	7.50	8.33	0.48	0.10	65.18	110.11
115	7.59	8.33	0.47	0.10	65.19	110.01
116	7.64	8.33	0.46	0.10	64.97	109.92
117	7.70	8.33	0.46	0.10	64.68	109.86
118	7.79	8.33	0.46	0.10	64.21	109.77
119	7.83	8.33	0.46	0.19	63.76	109.65
120	7.90	8.51	0.46	0.19	63.32	109.53
121	7.94	8.51	0.45	0.19	62.76	109.43
122	8.03	8.68	0.43	0.19	62.22	109.27
123	8.11	8.51	0.41	0.57	61.67	109.03
124	8.17	8.51	0.40	1.44	61.05	108.75
125	8.21	8.77	0.40	1.44	60.55	108.39
126	8.28	8.51	0.37	1.53	60.19	107.96
127	8.37	8.24	0.34	1.63	60.00	107.50
128	8.41	8.15	0.32	1.73	59.93	107.00
129	8.48	7.88	0.30	1.82	60.12	106.42
130	8.57	7.43	0.27	1.82	60.57	105.76
131	8.61	7.25	0.25	1.82	61.03	105.15
132	8.67	6.80	0.23	1.82	61.59	104.56
133	8.77	6.27	0.21	1.82	62.21	104.02
134	8.81	6.00	0.20	1.82	62.88	103.57
135	8.87	6.00	0.20	1.82	63.19	103.25
136	8.96	5.82	0.19	1.82	63.26	103.03
137	8.99	5.91	0.19	1.82	62.68	102.92
138	9.07	5.91	0.20	1.82	61.50	102.89
139	9.16	6.27	0.20	1.92	60.08	102.88
140	9.21	6.63	0.20	1.92	58.54	102.82
141	9.27	7.16	0.20	1.92	57.01	102.76
142	9.36	7.52	0.19	1.92	55.81	102.73
143	9.40	7.61	0.18	1.92	54.70	102.70
144	9.48	7.70	0.17	1.92	53.93	102.75

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
145	9.52	7.61	0.16	2.01	53.37	103.03
146	9.61	7.43	0.17	2.01	52.59	103.41
147	9.65	7.34	0.18	2.01	51.93	103.94
148	9.72	7.52	0.20	2.01	51.10	104.83
149	9.81	8.33	0.25	2.11	50.15	105.79
150	9.86	9.58	0.27	2.11	49.11	107.06
151	9.91	10.39	0.30	2.11	47.99	108.23
152	10.00	12.18	0.38	2.20	46.99	109.32
153	10.05	13.16	0.41	2.20	45.83	110.44
154	10.16	15.04	0.52	2.30	44.69	111.45
155	10.20	15.40	0.55	2.30	43.64	112.32
156	10.25	15.40	0.58	2.30	42.61	113.13
157	10.31	17.01	0.66	2.40	41.93	113.78
158	10.40	18.00	0.71	2.40	41.34	114.36
159	10.44	18.98	0.71	2.40	40.62	114.79
160	10.51	19.97	0.74	2.40	40.18	115.04
161	10.59	19.97	0.77	2.40	39.63	115.17
162	10.65	20.41	0.78	2.40	39.25	115.18
163	10.71	21.94	0.80	2.40	38.89	115.10
164	10.80	19.61	0.71	2.49	38.90	115.12
165	10.85	19.16	0.65	2.59	39.00	115.13
166	10.90	19.43	0.64	2.59	39.65	115.10
167	10.96	19.43	0.62	2.68	40.86	115.07
168	11.04	19.79	0.72	2.68	41.80	115.10
169	11.10	19.97	0.75	2.68	42.47	115.30
170	11.18	16.74	0.78	2.59	43.17	115.59
171	11.24	14.77	0.83	2.97	43.67	115.89
172	11.30	18.44	0.87	2.97	44.14	116.22
173	11.35	18.80	0.90	3.07	44.49	116.52
174	11.42	19.25	0.92	3.07	44.80	116.82
175	11.51	20.41	0.92	3.07	44.38	117.13
176	11.55	20.86	0.94	3.07	43.27	117.40
177	11.62	21.40	1.01	3.07	42.74	117.59
178	11.71	21.94	1.05	3.16	42.31	117.74
179	11.75	22.29	1.05	3.16	42.06	117.85
180	11.85	23.10	1.02	3.16	42.33	117.91
181	11.90	23.46	1.01	3.16	42.58	117.91
182	11.94	23.37	1.02	3.16	42.85	117.79
183	12.02	22.03	1.01	3.16	43.34	117.57
184	12.10	20.41	0.99	3.07	43.89	117.29
185	12.15	19.97	0.96	3.07	44.73	116.94
186	12.24	18.98	0.90	2.97	45.78	116.53
187	12.30	17.64	0.85	2.97	46.63	116.07
188	12.35	16.83	0.79	2.97	47.40	115.55
189	12.44	15.85	0.73	2.97	47.60	115.06
190	12.50	15.22	0.69	2.97	47.60	114.60
191	12.55	15.85	0.65	2.97	47.36	114.27
192	12.63	14.68	0.60	3.07	46.97	114.04

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
193	12.70	15.85	0.59	3.26	46.68	113.96
194	12.74	16.47	0.60	3.26	46.38	114.01
195	12.84	17.37	0.64	3.26	46.14	114.15
196	12.86	17.46	0.66	3.16	46.09	114.32
197	12.94	17.46	0.72	3.16	46.02	114.53
198	13.01	17.46	0.75	3.16	46.40	114.70
199	13.09	17.46	0.77	3.16	46.96	114.82
200	13.14	17.46	0.77	3.16	47.54	114.83
201	13.20	16.92	0.75	3.16	48.12	114.79
202	13.29	15.94	0.73	3.16	48.58	114.66
203	13.33	15.58	0.72	3.16	48.98	114.49
204	13.39	15.49	0.68	3.26	49.36	114.28
205	13.49	15.13	0.65	3.45	49.77	114.06
206	13.53	15.04	0.64	3.45	50.10	113.86
207	13.59	14.86	0.64	3.45	49.96	113.53
208	13.69	14.77	0.63	3.45	49.69	113.11
209	13.73	14.77	0.63	3.45	49.74	112.77
210	13.79	14.50	0.62	3.45	49.98	112.44
211	13.89	14.15	0.49	3.45	50.34	112.10
212	13.94	13.79	0.43	3.45	50.60	111.71
213	13.99	13.07	0.46	3.45	51.51	111.23
214	14.08	12.36	0.46	3.45	52.11	110.70
215	14.13	12.00	0.45	3.54	52.37	110.17
216	14.18	11.82	0.43	3.54	53.09	109.80
217	14.27	9.49	0.40	3.54	54.07	109.52
218	14.32	10.39	0.38	3.74	54.65	109.16
219	14.37	11.01	0.37	3.74	55.04	108.74
220	14.48	10.57	0.34	3.74	55.39	108.35
221	14.52	10.30	0.33	3.74	55.76	107.98
222	14.58	10.12	0.32	3.74	55.23	107.71
223	14.68	9.67	0.30	3.74	55.33	107.48
224	14.72	9.67	0.30	3.74	55.37	107.27
225	14.77	9.58	0.30	3.74	55.18	107.17
226	14.83	9.40	0.29	3.74	54.68	107.14
227	14.92	9.40	0.30	3.74	54.04	107.12
228	14.98	10.12	0.30	3.74	53.31	107.17
229	15.07	10.57	0.30	3.74	52.63	107.22
230	15.11	11.28	0.31	3.74	51.95	107.29
231	15.17	11.46	0.30	3.74	51.44	107.45
232	15.27	11.46	0.30	3.83	51.00	107.60
233	15.31	11.46	0.30	3.83	50.86	107.76
234	15.38	11.46	0.31	3.83	51.10	107.97
235	15.47	11.37	0.33	3.83	51.48	108.18
236	15.52	11.28	0.34	3.83	52.17	108.41
237	15.56	11.28	0.35	3.74	53.08	108.62
238	15.64	11.19	0.38	3.74	54.10	108.82
239	15.71	11.55	0.39	3.74	55.13	108.96
240	15.75	11.10	0.40	3.74	56.21	109.04

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
241	15.87	10.48	0.40	3.74	57.53	109.02
242	15.91	10.30	0.40	3.74	59.02	108.94
243	15.96	10.03	0.39	3.74	60.52	108.72
244	16.01	9.67	0.39	3.74	62.40	108.38
245	16.11	8.86	0.36	3.74	64.16	107.96
246	16.15	8.24	0.35	3.74	65.59	107.49
247	16.22	7.70	0.32	3.74	67.02	106.92
248	16.31	7.16	0.29	3.64	68.51	106.34
249	16.36	6.98	0.27	3.74	69.64	105.75
250	16.41	6.80	0.25	3.64	70.03	105.26
251	16.51	6.54	0.22	3.74	69.73	104.82
252	16.54	6.45	0.22	3.74	68.62	104.53
253	16.61	6.63	0.22	3.74	66.89	104.27
254	16.70	7.07	0.22	3.83	65.16	104.03
255	16.75	7.43	0.22	3.83	64.26	104.16
256	16.81	8.15	0.23	3.83	63.84	104.47
257	16.91	8.42	0.20	3.83	63.55	104.80
258	16.95	8.42	0.19	3.83	63.39	105.11
259	17.01	8.33	0.27	3.83	63.54	105.40
260	17.11	8.06	0.29	3.83	63.87	105.63
261	17.13	7.97	0.30	3.83	64.27	105.78
262	17.21	7.88	0.30	3.83	65.12	106.01
263	17.29	7.88	0.30	3.83	66.04	106.26
264	17.34	7.88	0.29	3.83	66.17	106.29
265	17.43	8.15	0.28	3.93	66.19	106.26
266	17.48	8.15	0.28	3.93	66.09	106.20
267	17.54	8.15	0.28	3.93	65.76	106.16
268	17.63	8.33	0.28	3.93	65.34	106.12
269	17.68	8.06	0.28	3.93	64.78	106.12
270	17.73	7.97	0.28	3.93	64.37	106.14
271	17.83	8.24	0.28	3.93	63.84	106.20
272	17.85	8.42	0.28	3.93	63.27	106.30
273	17.93	8.68	0.28	3.93	62.84	106.42
274	17.98	8.86	0.28	3.93	62.23	106.55
275	18.07	9.22	0.29	4.02	61.69	106.71
276	18.12	9.31	0.30	3.93	61.39	106.85
277	18.18	9.49	0.31	3.93	61.26	107.01
278	18.24	9.49	0.31	3.93	61.14	107.17
279	18.33	9.49	0.32	3.93	60.99	107.32
280	18.38	9.31	0.32	3.93	60.70	107.49
281	18.47	9.31	0.33	4.02	60.14	107.66
282	18.53	9.58	0.33	4.02	59.50	107.81
283	18.57	9.85	0.33	4.02	58.79	107.99
284	18.67	10.39	0.34	4.02	58.23	108.21
285	18.72	11.10	0.35	4.02	57.50	108.46
286	18.78	11.28	0.35	4.02	56.59	108.69
287	18.85	11.55	0.36	4.02	55.84	108.91
288	18.93	11.64	0.39	4.02	55.33	109.12

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
289	18.97	11.91	0.40	4.12	55.04	109.28
290	19.08	12.27	0.40	4.02	55.00	109.39
291	19.12	12.27	0.40	4.02	54.97	109.46
292	19.22	12.09	0.40	4.02	54.92	109.49
293	19.27	11.91	0.40	4.02	54.37	109.46
294	19.32	11.91	0.39	4.12	53.99	109.38
295	19.37	11.82	0.38	4.12	53.68	109.38
296	19.43	12.00	0.37	4.12	53.38	109.43
297	19.52	12.80	0.36	4.12	52.97	109.53
298	19.57	12.53	0.36	4.12	52.35	109.68
299	19.67	13.07	0.39	4.22	51.75	109.86
300	19.72	13.34	0.41	4.22	51.24	110.12
301	19.77	13.79	0.43	4.12	51.05	110.49
302	19.82	14.41	0.45	4.12	51.19	110.86
303	19.92	14.68	0.45	4.12	51.32	111.24
304	19.97	14.77	0.48	4.12	51.47	111.50
305	20.04	14.77	0.53	4.12	51.79	111.69
306	20.08	14.77	0.54	4.12	52.07	111.80
307	20.16	14.68	0.55	4.12	52.42	111.88
308	20.24	14.41	0.53	4.12	52.75	111.92
309	20.28	13.79	0.52	4.12	52.98	111.90
310	20.37	13.79	0.50	4.22	53.06	111.81
311	20.41	14.06	0.50	4.22	53.13	111.72
312	20.50	14.15	0.48	4.22	53.23	111.59
313	20.57	14.15	0.48	4.22	53.38	111.49
314	20.61	14.15	0.48	4.22	53.53	111.41
315	20.70	14.06	0.49	4.22	53.82	111.36
316	20.76	13.79	0.48	4.12	54.26	111.27
317	20.81	13.52	0.48	4.31	54.83	111.20
318	20.89	12.98	0.48	4.31	55.51	111.11
319	20.95	12.89	0.48	4.31	56.11	110.98
320	21.00	12.53	0.47	4.31	56.52	110.78
321	21.10	12.36	0.46	4.31	56.95	110.58
322	21.14	12.09	0.45	4.31	57.22	110.36
323	21.21	12.09	0.43	4.31	57.45	110.16
324	21.30	12.09	0.40	4.31	57.65	109.94
325	21.34	11.91	0.39	4.31	57.67	109.74
326	21.40	11.82	0.38	4.31	57.70	109.53
327	21.48	11.55	0.39	4.31	57.55	109.33
328	21.54	11.46	0.38	4.31	57.38	109.13
329	21.60	11.55	0.38	4.31	57.30	108.96
330	21.68	11.37	0.37	4.22	57.21	108.82
331	21.75	11.55	0.36	4.22	57.10	108.65
332	21.80	11.55	0.34	4.22	56.73	108.44
333	21.88	11.55	0.33	4.22	56.34	108.22
334	21.92	11.55	0.33	4.22	55.95	107.99
335	21.99	11.37	0.31	4.31	55.72	107.81
336	22.08	11.37	0.30	4.31	55.79	107.64

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
337	22.15	11.37	0.29	4.31	55.96	107.51
338	22.19	11.37	0.29	4.31	56.46	107.42
339	22.28	11.10	0.30	4.31	57.14	107.33
340	22.34	10.74	0.30	4.22	57.91	107.32
341	22.39	10.74	0.30	4.31	58.69	107.31
342	22.47	10.21	0.31	4.22	59.43	107.31
343	22.54	9.94	0.31	4.31	60.24	107.33
344	22.58	9.94	0.32	4.31	60.61	107.34
345	22.68	9.94	0.31	4.31	60.98	107.36
346	22.74	10.12	0.30	4.31	61.38	107.40
347	22.79	10.12	0.31	4.31	61.39	107.43
348	22.84	10.57	0.31	4.31	61.31	107.46
349	22.94	10.30	0.31	4.31	61.21	107.47
350	22.99	10.30	0.32	4.31	61.16	107.48
351	23.04	10.39	0.32	4.31	61.43	107.47
352	23.11	10.30	0.32	4.31	61.60	107.40
353	23.18	10.30	0.32	4.31	61.97	107.30
354	23.23	10.12	0.31	4.31	62.14	107.17
355	23.34	9.67	0.30	4.31	62.27	106.96
356	23.37	9.67	0.29	4.31	62.40	106.70
357	23.44	9.63	0.28	4.31	62.50	106.41
358	23.54	9.58	0.27	4.31	62.77	106.03
359	23.60	9.40	0.25	4.31	63.05	105.63
360	23.64	9.22	0.24	4.22	63.47	105.21
361	23.71	9.13	0.23	4.22	63.80	104.73
362	23.79	8.60	0.21	4.22	64.37	104.21
363	23.84	8.33	0.20	4.22	64.67	103.72
364	23.89	7.61	0.19	4.22	64.66	103.40
365	23.99	7.66	0.17	4.22	64.77	103.26
366	24.03	7.25	0.16	4.31	65.69	103.41
367	24.10	7.70	0.16	4.31	66.47	103.74
368	24.18	8.51	0.18	4.31	66.14	104.19
369	24.23	8.77	0.21	4.31	64.92	104.70
370	24.31	8.42	0.27	4.22	63.67	105.19
371	24.36	8.68	0.29	4.22	62.52	105.69
372	24.45	10.21	0.30	4.22	62.43	106.15
373	24.49	10.92	0.30	4.22	62.59	106.51
374	24.57	11.19	0.28	4.22	62.87	106.70
375	24.61	10.83	0.28	4.22	62.50	106.78
376	24.69	9.67	0.29	4.22	62.27	106.95
377	24.74	9.67	0.29	4.22	62.47	107.31
378	24.82	9.13	0.27	4.31	62.55	107.96
379	24.89	9.40	0.29	4.31	62.18	108.72
380	24.94	9.85	0.34	4.31	61.29	109.37
381	25.01	11.37	0.42	4.31	60.13	109.78
382	25.09	13.61	0.53	4.22	59.20	109.99
383	25.13	15.22	0.56	4.22	59.09	109.93
384	25.22	15.58	0.53	4.02	59.31	109.76

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
385	25.28	14.06	0.44	4.12	59.50	109.41
386	25.34	12.80	0.36	4.12	60.17	108.79
387	25.44	9.13	0.24	4.12	61.44	107.77
388	25.48	8.24	0.22	4.12	63.53	106.54
389	25.53	7.79	0.19	4.12	65.99	105.13
390	25.59	7.16	0.18	4.22	68.60	104.05
391	25.68	6.80	0.17	4.22	71.70	103.35
392	25.73	6.80	0.19	4.31	72.62	103.67
393	25.79	6.98	0.16	4.22	70.95	103.92
394	25.88	7.34	0.20	4.31	67.35	104.37
395	25.93	7.34	0.23	4.22	63.11	104.98
396	25.99	9.04	0.32	4.31	59.09	105.82
397	26.08	10.83	0.26	4.31	55.23	106.70
398	26.14	13.61	0.26	4.31	52.62	107.65
399	26.19	15.13	0.28	4.31	50.58	108.39
400	26.28	16.65	0.34	4.31	48.56	108.93
401	26.34	18.18	0.38	4.31	46.95	109.19
402	26.39	17.64	0.41	4.31	46.50	109.54
403	26.45	16.65	0.41	4.41	46.85	109.82
404	26.53	16.47	0.38	4.41	47.53	110.04
405	26.58	15.85	0.38	4.41	48.34	110.25
406	26.68	14.68	0.38	4.50	49.47	110.42
407	26.73	14.41	0.38	4.50	50.36	110.57
408	26.78	14.50	0.39	4.50	51.12	110.83
409	26.88	15.49	0.45	4.60	52.31	111.23
410	26.93	15.85	0.48	4.60	53.43	111.64
411	26.98	15.94	0.50	4.60	54.17	112.04
412	27.04	16.12	0.55	4.60	54.80	112.45
413	27.13	15.76	0.61	4.50	55.45	112.81
414	27.22	15.31	0.62	4.60	56.32	113.06
415	27.24	15.31	0.62	4.50	57.10	113.20
416	27.33	15.40	0.63	4.60	57.87	113.29
417	27.37	15.31	0.63	4.60	58.72	113.27
418	27.43	14.86	0.63	4.60	59.55	113.15
419	27.52	14.68	0.60	4.50	60.39	113.02
420	27.57	14.59	0.58	4.50	61.26	112.82
421	27.63	13.88	0.57	4.50	62.13	112.51
422	27.72	12.98	0.56	4.50	63.06	112.14
423	27.76	12.53	0.56	4.50	63.68	111.71
424	27.84	12.09	0.52	4.50	64.27	111.27
425	27.93	11.64	0.46	4.50	64.88	110.85
426	27.97	11.28	0.43	4.60	65.17	110.44
427	28.02	11.28	0.40	4.60	64.86	110.06
428	28.12	11.28	0.37	4.69	64.17	109.68
429	28.17	11.37	0.37	4.69	63.45	109.39
430	28.23	11.37	0.37	4.69	62.70	109.32
431	28.32	11.82	0.37	4.69	61.88	109.38
432	28.37	12.18	0.37	4.69	61.14	109.54

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
433	28.42	12.18	0.38	4.69	60.44	109.81
434	28.48	12.80	0.41	4.69	59.74	110.14
435	28.57	13.34	0.44	4.69	58.51	110.50
436	28.61	13.61	0.45	4.69	57.53	110.87
437	28.69	14.15	0.47	4.69	56.72	111.21
438	28.77	14.68	0.50	4.79	55.82	111.52
439	28.83	16.30	0.51	4.79	54.93	111.72
440	28.88	16.30	0.52	4.79	54.18	111.86
441	28.97	16.39	0.52	4.79	53.42	112.00
442	29.02	16.56	0.51	4.79	52.46	112.16
443	29.08	16.65	0.49	4.79	51.49	112.33
444	29.17	16.47	0.49	4.79	50.96	112.49
445	29.21	16.92	0.50	4.79	53.21	112.57
446	29.28	18.35	0.53	4.79	52.21	112.93
447	29.37	19.07	0.56	4.69	51.27	113.36
448	29.41	19.43	0.58	4.79	50.43	113.83
449	29.47	9.67	0.64	4.89	49.47	114.26
450	29.56	22.38	0.70	4.89	48.35	114.53
451	29.62	23.19	0.74	4.89	47.37	114.69
452	29.68	23.46	0.76	4.89	46.50	114.72
453	29.76	23.82	0.74	4.89	45.58	114.67
454	29.83	24.00	0.64	4.89	43.17	114.56
455	29.87	24.08	0.60	4.89	43.08	114.11
456	29.96	23.28	0.54	4.89	43.14	113.53
457	30.01	23.28	0.50	4.89	42.92	112.88
458	30.07	20.32	0.45	4.98	43.06	112.20
459	30.16	18.44	0.40	4.98	43.45	111.74
460	30.20	17.55	0.38	4.98	43.91	111.38
461	30.27	18.49	0.37	4.98	44.46	111.20
462	30.34	17.19	0.38	5.08	45.12	111.16
463	30.42	18.53	0.42	5.08	45.45	111.31
464	30.46	19.16	0.44	5.17	45.58	111.61
465	30.52	19.70	0.47	5.17	45.58	111.99
466	30.58	20.41	0.50	5.17	45.79	112.40
467	30.66	20.41	0.53	5.13	45.70	112.83
468	30.71	20.41	0.55	5.17	45.72	113.19
469	30.81	20.77	0.57	5.17	45.83	113.52
470	30.87	21.13	0.59	5.17	45.95	113.80
471	30.91	21.31	0.61	5.17	46.23	114.05
472	31.01	21.76	0.63	5.17	46.56	114.29
473	31.06	21.85	0.64	5.17	46.84	114.52
474	31.11	21.85	0.65	5.17	47.09	114.72
475	31.19	21.58	0.67	5.17	47.15	114.90
476	31.26	21.40	0.70	5.17	47.15	115.03
477	31.35	21.49	0.72	5.17	47.16	115.14
478	31.37	21.67	0.72	5.17	47.30	115.23
479	31.46	22.74	0.72	5.17	47.28	115.31
480	31.55	22.83	0.71	5.17	47.34	115.36

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
481	31.59	23.01	0.71	5.17	47.07	115.38
482	31.66	22.12	0.71	5.17	46.58	115.34
483	31.70	22.97	0.71	5.17	45.91	115.27
484	31.79	22.03	0.71	5.17	45.54	115.19
485	31.86	22.92	0.70	5.17	45.20	115.11
486	31.91	23.46	0.66	5.17	44.72	115.14
487	31.99	24.26	0.64	5.27	43.83	115.41
488	32.06	23.91	0.64	5.27	42.93	115.81
489	32.10	23.82	0.63	5.27	41.75	116.33
490	32.20	25.79	0.71	5.36	41.18	116.95
491	32.26	29.64	0.86	5.36	41.62	117.54
492	32.30	32.41	0.97	5.46	41.77	118.18
493	32.35	35.01	1.07	5.36	42.04	118.76
494	32.46	34.38	1.19	5.36	42.03	119.31
495	32.49	28.56	1.23	5.36	42.14	119.80
496	32.58	31.96	1.28	5.36	42.01	120.20
497	32.62	30.26	1.27	5.36	41.21	120.70
498	32.69	32.19	1.25	5.56	40.38	121.30
499	32.78	32.41	1.31	5.84	39.57	121.87
500	32.82	37.07	1.36	5.94	38.65	122.47
501	32.89	46.47	1.56	6.04	38.48	122.98
502	32.98	52.02	1.83	5.84	38.34	123.44
503	33.02	51.93	1.96	5.65	38.62	123.78
504	33.08	48.53	2.08	5.46	38.94	123.93
505	33.18	44.23	2.12	5.36	39.64	123.96
506	33.21	41.81	2.07	5.46	40.97	123.77
507	33.29	36.80	1.92	5.36	42.69	123.33
508	33.37	32.77	1.64	5.46	44.21	122.69
509	33.42	31.16	1.51	5.46	45.24	121.91
510	33.47	29.99	1.37	5.56	45.70	121.02
511	33.53	28.56	1.21	5.65	45.94	120.01
512	33.62	28.29	0.97	5.84	45.72	119.00
513	33.67	27.93	0.87	5.84	45.46	118.10
514	33.73	27.31	0.79	5.84	45.27	117.19
515	33.82	25.61	0.69	5.84	45.15	116.32
516	33.87	24.62	0.66	5.84	45.08	115.57
517	33.93	22.74	0.63	5.84	45.43	115.09
518	34.02	21.31	0.60	5.84	45.99	114.73
519	34.06	20.77	0.59	5.84	46.70	114.52
520	34.13	20.77	0.60	5.84	47.41	114.48
521	34.22	21.58	0.62	5.84	48.04	114.50
522	34.26	21.85	0.64	5.84	48.50	114.60
523	34.32	22.03	0.67	5.84	48.79	114.74
524	34.42	22.20	0.69	5.75	49.01	114.87
525	34.46	22.29	0.70	5.75	49.09	114.96
526	34.52	21.85	0.72	5.75	49.21	115.01
527	34.61	21.49	0.71	5.75	49.27	115.04
528	34.70	21.31	0.69	5.75	49.31	115.05

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
529	34.76	21.40	0.67	5.75	49.25	115.10
530	34.82	21.67	0.66	5.84	49.19	115.13
531	34.86	22.03	0.66	5.84	48.94	115.12
532	34.92	22.20	0.68	5.84	48.83	115.22
533	35.02	23.01	0.72	5.84	48.85	115.42
534	35.06	23.01	0.72	5.84	48.85	115.68
535	35.11	22.92	0.70	5.84	48.92	116.01
536	35.19	23.10	0.78	5.84	49.57	116.33
537	35.25	23.37	0.84	5.84	50.03	116.65
538	35.31	24.17	0.88	5.84	49.99	117.00
539	35.40	24.80	0.93	5.84	50.04	117.40
540	35.45	22.56	0.96	5.84	50.21	117.86
541	35.50	23.64	0.99	5.94	50.35	118.28
542	35.56	26.95	1.03	5.94	50.40	118.64
543	35.64	27.40	1.11	5.84	50.58	118.97
544	35.72	27.31	1.17	5.84	50.72	119.25
545	35.81	27.40	1.24	5.84	50.35	119.50
546	35.85	27.58	1.25	5.84	50.05	119.66
547	35.90	27.40	1.27	5.84	50.17	119.74
548	35.96	27.76	1.28	5.84	50.30	119.73
549	36.04	27.67	1.23	5.75	50.32	119.68
550	36.11	27.49	1.18	5.84	50.21	119.57
551	36.16	27.40	1.13	5.75	49.91	119.44
552	36.25	26.77	1.11	5.84	49.42	119.29
553	36.31	26.77	1.10	5.84	48.99	119.13
554	36.36	26.77	1.09	5.84	48.78	119.04
555	36.44	27.67	1.06	5.84	48.68	119.01
556	36.50	28.38	1.05	5.84	48.75	119.00
557	36.56	28.11	1.05	5.84	48.80	118.98
558	36.65	27.85	1.11	5.84	48.87	118.95
559	36.68	27.85	1.13	5.84	49.00	118.90
560	36.76	27.04	1.12	5.84	49.40	118.81
561	36.84	26.41	1.09	5.84	49.85	118.68
562	36.91	26.32	1.07	5.84	50.27	118.51
563	36.96	25.52	1.04	5.84	50.49	118.27
564	37.04	24.71	0.98	5.84	50.62	117.99
565	37.10	24.71	0.93	5.84	50.54	117.71
566	37.15	24.08	0.88	5.94	50.34	117.43
567	37.23	24.08	0.86	5.94	50.17	117.15
568	37.30	24.17	0.83	5.94	49.92	116.88
569	37.35	24.35	0.82	5.94	49.63	116.65
570	37.45	24.44	0.80	5.94	49.48	116.41
571	37.51	24.26	0.79	5.94	49.35	116.19
572	37.55	23.91	0.77	5.94	49.26	115.94
573	37.62	23.64	0.75	5.94	49.20	115.66
574	37.70	23.10	0.71	5.94	49.08	115.37
575	37.75	22.47	0.68	5.94	48.84	115.08
576	37.80	22.03	0.65	5.94	48.53	114.79

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
577	37.90	21.76	0.60	6.04	48.04	114.50
578	37.95	22.20	0.59	6.04	47.39	114.25
579	38.05	22.74	0.57	6.04	46.69	114.15
580	38.06	22.83	0.56	6.04	45.71	114.18
581	38.15	23.55	0.55	6.04	44.78	114.32
582	38.19	24.17	0.55	6.04	44.02	114.55
583	38.27	25.61	0.62	6.13	43.21	114.83
584	38.34	27.40	0.66	6.13	42.41	115.14
585	38.39	28.20	0.70	6.13	41.68	115.44
586	38.46	28.11	0.72	6.13	41.20	115.77
587	38.55	29.73	0.74	6.13	40.92	116.16
588	38.59	30.89	0.75	6.23	40.58	116.64
589	38.68	30.71	0.74	6.23	40.03	117.29
590	38.75	30.71	0.77	6.23	39.41	118.01
591	38.80	30.98	0.83	6.32	38.58	118.84
592	38.87	34.20	0.99	6.32	37.33	119.73
593	38.95	40.38	1.19	6.42	35.96	120.68
594	38.99	43.25	1.32	6.42	34.70	121.55
595	39.04	47.63	1.50	6.42	33.73	122.26
596	39.11	55.78	1.63	6.42	33.47	122.73
597	39.19	61.78	1.78	6.32	33.39	122.94
598	39.27	62.23	1.79	6.23	33.71	122.83
599	39.33	58.02	1.69	6.23	34.17	122.55
600	39.39	45.66	1.53	6.23	34.70	122.06
601	39.45	40.65	1.31	6.23	35.62	121.35
602	39.53	33.75	1.04	6.32	36.92	120.46
603	39.57	31.43	0.94	6.32	38.31	119.47
604	39.64	30.26	0.80	6.42	39.25	118.45
605	39.72	30.80	0.72	6.51	38.74	117.50
606	39.79	31.16	0.72	6.42	37.70	116.68
607	39.84	32.14	0.73	6.42	36.52	116.11
608	39.93	33.93	0.66	6.42	36.01	115.74
609	39.98	35.37	0.59	6.42	36.09	115.65
610	40.05	36.71	0.54	6.32	37.17	116.36
611	40.09	34.92	0.53	6.42	37.81	117.34
612	40.19	30.35	0.64	6.32	37.49	118.51
613	40.23	28.56	0.74	6.42	36.08	119.99
614	40.34	32.59	1.30	6.61	34.75	121.57
615	40.38	40.83	1.57	6.71	33.86	123.02
616	40.43	53.36	1.80	6.61	33.39	124.34
617	40.50	72.97	2.17	6.42	32.74	125.48
618	40.58	81.57	2.49	6.23	32.19	126.48
619	40.63	80.85	2.64	6.42	31.50	127.20
620	40.70	75.57	2.80	6.32	30.77	127.84
621	40.75	72.88	2.86	6.42	30.28	128.36
622	40.84	69.12	2.92	6.51	30.33	128.71
623	40.88	69.39	2.99	6.61	30.68	128.97
624	40.95	77.81	3.11	6.71	30.93	129.18

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
625	41.03	83.89	3.19	6.71	30.70	129.35
626	41.08	86.58	3.24	6.71	29.71	129.61
627	41.15	84.97	3.36	6.71	27.82	129.91
628	41.23	84.70	3.38	6.71	25.89	130.25
629	41.28	88.37	3.32	6.80	24.34	130.58
630	41.35	105.92	3.44	6.80	22.97	130.92
631	41.43	128.84	3.38	6.71	21.88	131.28
632	41.48	138.60	3.53	6.71	21.07	131.66
633	41.54	143.43	3.75	6.71	20.44	132.08
634	41.62	151.13	3.94	6.71	19.98	132.55
635	41.68	150.06	4.13	6.71	19.79	133.01
636	41.77	143.70	4.49	6.80	19.97	133.45
637	41.82	142.81	4.79	6.90	20.19	133.84
638	41.88	145.49	5.03	6.99	20.42	134.16
639	41.97	152.39	5.37	6.90	20.74	134.42
640	42.01	155.97	5.44	6.90	21.04	134.64
641	42.10	160.62	5.52	6.90	21.07	134.81
642	42.17	159.55	5.50	6.90	20.99	134.92
643	42.22	158.21	5.48	6.90	20.65	135.00
644	42.28	154.00	5.46	6.90	20.19	135.01
645	42.33	157.67	5.43	6.99	19.48	135.02
646	42.41	157.13	5.34	7.09	18.71	134.99
647	42.48	171.19	5.25	6.99	17.82	134.96
648	42.52	179.34	5.18	6.99	16.82	134.93
649	42.60	197.07	5.01	6.80	15.74	134.93
650	42.66	204.41	4.86	6.80	14.77	134.93
651	42.72	213.63	4.77	6.71	13.88	134.91
652	42.81	224.37	4.71	6.71	13.20	134.87
653	42.87	232.88	4.73	6.61	12.64	134.78
654	42.92	235.30	4.74	6.61	12.21	134.57
655	43.00	233.15	4.67	6.61	11.83	134.31
656	43.06	229.39	4.56	6.61	11.55	134.00
657	43.11	221.96	4.31	6.61	11.41	133.66
658	43.18	214.88	3.71	6.51	11.35	133.29
659	43.25	211.12	3.38	6.51	11.35	132.93
660	43.31	203.69	3.17	6.51	11.39	132.62
661	43.39	197.07	3.17	6.51	11.46	132.34
662	43.45	194.56	3.16	6.51	11.60	132.11
663	43.51	194.38	3.32	6.51	11.88	132.03
664	43.61	193.48	3.51	6.61	12.25	132.04
665	43.65	192.05	3.55	6.51	12.65	132.10
666	43.72	184.26	3.55	6.51	13.02	132.13
667	43.81	180.95	3.57	6.32	13.39	132.14
668	43.85	180.68	3.59	6.23	13.75	132.10
669	43.92	176.02	3.59	5.94	14.15	131.96
670	44.01	170.92	3.47	5.94	14.56	131.81
671	44.05	167.43	3.38	5.94	14.76	131.55
672	44.10	161.70	3.33	5.84	14.75	131.09

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
673	44.20	151.58	3.19	5.84	14.78	130.59
674	44.25	149.43	3.20	5.84	14.83	130.11
675	44.30	147.37	2.72	5.84	15.06	129.70
676	44.40	141.37	1.99	5.84	15.54	129.35
677	44.45	137.79	1.99	5.94	16.07	129.04
678	44.50	133.85	2.14	5.94	16.69	128.88
679	44.57	125.53	2.37	5.94	17.42	128.74
680	44.63	113.71	2.55	5.94	18.48	128.78
681	44.69	111.92	2.68	7.19	20.00	129.12
682	44.79	109.32	2.96	7.19	21.58	129.47
683	44.84	105.65	3.06	7.19	23.08	129.79
684	44.89	102.79	3.14	7.19	24.29	130.05
685	44.96	100.10	3.38	7.19	25.09	130.25
686	45.04	99.83	3.52	7.19	25.83	130.40
687	45.09	100.19	3.59	7.19	26.40	130.50
688	45.17	100.55	3.58	7.19	26.83	130.59
689	45.24	100.28	3.48	7.19	27.18	130.68
690	45.28	98.49	3.45	7.19	27.33	130.71
691	45.38	98.49	3.50	7.28	27.50	130.72
692	45.42	98.76	3.53	7.28	27.81	130.69
693	45.49	98.04	3.56	7.28	28.22	130.65
694	45.57	97.86	3.56	7.28	28.67	130.58
695	45.63	96.07	3.58	7.28	29.22	130.42
696	45.69	90.43	3.59	7.28	29.74	130.14
697	45.78	87.74	3.54	7.28	30.49	129.67
698	45.84	85.51	3.36	7.28	31.54	129.05
699	45.89	77.45	3.06	7.28	32.79	128.32
700	45.93	72.34	2.62	7.28	34.27	127.40
701	46.02	60.35	2.10	7.28	35.80	126.34
702	46.08	49.51	1.81	7.28	37.40	125.13
703	46.13	44.77	1.61	7.38	39.14	123.77
704	46.22	37.43	1.29	7.57	40.74	122.36
705	46.28	33.13	1.15	7.86	42.47	121.00
706	46.33	32.14	1.06	7.86	43.82	119.87
707	46.43	31.25	0.89	8.05	44.33	118.91
708	46.47	30.71	0.81	8.14	44.50	118.06
709	46.53	31.25	0.77	8.14	44.28	117.47
710	46.63	30.98	0.75	8.14	43.77	117.02
711	46.67	31.25	0.74	8.14	43.29	116.67
712	46.73	31.34	0.73	8.14	43.13	116.52
713	46.83	30.89	0.72	8.14	43.01	116.47
714	46.87	30.53	0.72	8.14	42.99	116.46
715	46.93	30.53	0.73	8.14	42.90	116.49
716	47.02	30.53	0.76	8.24	42.80	116.51
717	47.08	30.98	0.76	8.24	42.67	116.53
718	47.12	31.34	0.76	8.24	42.63	116.65
719	47.18	32.14	0.77	8.24	42.62	116.79
720	47.27	32.41	0.75	8.33	42.65	116.94

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
721	47.31	32.59	0.74	8.33	42.88	117.12
722	47.39	32.77	0.81	8.33	42.75	117.36
723	47.48	32.77	0.84	8.33	42.48	117.67
724	47.52	32.50	0.85	8.33	42.30	118.02
725	47.59	31.61	0.93	8.33	42.51	118.52
726	47.66	35.37	0.96	8.53	43.01	119.14
727	47.74	37.96	1.03	8.53	43.27	119.70
728	47.79	38.59	1.09	8.53	42.94	120.22
729	47.86	38.68	1.26	8.53	41.89	120.75
730	47.94	38.77	1.43	8.53	40.18	121.27
731	47.99	39.93	1.46	8.53	37.69	121.87
732	48.05	44.14	1.45	8.53	34.89	122.53
733	48.13	50.41	1.45	8.53	32.35	123.21
734	48.19	56.50	1.48	8.53	30.05	123.86
735	48.26	71.99	1.56	8.53	28.27	124.52
736	48.34	85.06	1.72	8.14	27.19	125.16
737	48.39	90.34	1.87	8.05	26.64	125.75
738	48.43	92.94	2.03	8.05	26.70	126.23
739	48.51	91.77	2.33	8.05	27.25	126.58
740	48.58	84.25	2.50	8.05	28.52	126.79
741	48.63	78.25	2.53	8.05	30.57	126.87
742	48.72	67.96	2.48	8.05	32.91	126.85
743	48.78	58.47	2.36	8.24	35.36	126.77
744	48.83	53.27	2.31	8.24	37.45	126.61
745	48.90	46.92	2.31	8.33	38.86	126.50
746	48.99	47.81	2.28	8.43	39.77	126.43
747	49.03	51.03	2.28	8.53	39.58	126.52
748	49.08	56.85	2.31	8.53	38.46	126.74
749	49.17	62.76	2.48	8.43	36.17	127.19
750	49.23	65.18	2.51	8.43	32.73	127.77
751	49.32	72.70	2.65	8.62	28.94	128.46
752	49.35	79.69	2.73	8.62	25.71	129.12
753	49.43	99.92	3.05	8.62	22.94	129.80
754	49.50	124.54	3.20	8.43	20.51	130.40
755	49.58	153.10	3.34	8.33	18.51	130.97
756	49.63	164.47	3.42	8.24	16.87	131.52
757	49.72	180.59	3.57	8.14	15.55	132.03
758	49.78	193.39	3.64	8.14	14.55	132.42
759	49.83	197.78	3.70	8.05	13.89	132.74
760	49.90	203.69	3.88	8.05	13.57	132.98
761	49.98	206.91	4.00	8.05	13.35	133.17
762	50.02	207.90	4.06	7.95	13.24	133.30
763	50.08	207.72	4.10	7.95	12.96	133.19
764	50.18	205.39	4.12	7.86	12.67	133.02
765	50.23	204.32	4.08	7.86	12.40	132.84
766	50.27	204.76	4.01	7.86	12.15	132.65
767	50.36	205.66	3.03	7.86	11.95	132.49
768	50.40	206.38	2.86	7.86	11.75	132.33

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
769	50.47	207.72	3.00	7.86	11.57	132.20
770	50.55	209.15	3.16	7.86	11.42	132.11
771	50.63	209.24	3.34	7.86	11.32	132.06
772	50.67	208.93	3.43	7.76	11.55	132.27
773	50.72	208.93	3.55	8.24	11.90	132.57
774	50.83	208.62	3.68	8.24	12.26	132.83
775	50.88	208.88	3.76	8.24	12.59	133.06
776	50.93	208.35	3.91	8.24	12.89	133.25
777	51.02	207.18	4.12	8.24	13.16	133.40
778	51.08	206.02	4.19	8.24	13.39	133.53
779	51.12	205.12	4.23	8.14	13.55	133.61
780	51.21	203.69	4.25	8.14	13.66	133.65
781	51.27	203.78	4.23	8.14	13.69	133.65
782	51.32	203.96	4.21	8.05	13.65	133.62
783	51.39	204.32	4.13	8.05	13.61	133.58
784	51.47	204.94	3.99	8.05	13.57	133.55
785	51.55	206.38	3.92	8.05	13.55	133.54
786	51.60	206.65	3.93	8.05	13.57	133.53
787	51.67	206.38	4.00	8.05	13.62	133.52
788	51.72	206.02	4.08	8.05	13.66	133.47
789	51.79	204.32	4.19	8.05	13.66	133.29
790	51.87	201.72	4.20	8.05	13.73	133.13
791	51.91	200.02	4.20	8.05	13.86	133.01
792	51.98	194.74	3.91	8.05	14.03	132.83
793	52.06	186.41	3.25	8.05	14.30	132.64
794	52.12	183.81	3.31	8.05	14.51	132.39
795	52.17	183.10	3.50	8.05	14.93	132.16
796	52.26	174.06	3.36	8.05	15.60	131.93
797	52.31	165.82	3.46	8.05	16.35	131.78
798	52.38	164.21	3.33	8.33	17.40	131.68
799	52.47	149.79	3.55	8.33	18.61	131.48
800	52.51	132.51	3.64	8.43	20.11	131.12
801	52.56	134.30	3.69	8.43	21.88	130.67
802	52.66	116.48	3.34	8.43	23.82	130.13
803	52.70	102.96	3.07	8.72	26.33	129.51
804	52.77	83.63	2.77	8.81	28.86	128.76
805	52.87	68.94	2.44	9.00	31.13	127.85
806	52.92	62.14	2.27	9.10	33.94	126.77
807	52.97	52.47	2.08	9.39	36.53	125.73
808	53.02	47.90	1.91	9.48	38.82	124.63
809	53.10	44.95	1.58	9.58	40.24	123.61
810	53.16	43.25	1.44	9.77	40.99	122.68
811	53.22	44.05	1.33	9.87	41.28	121.68
812	53.31	42.98	1.07	9.96	40.84	120.71
813	53.36	42.62	1.00	9.96	40.23	119.77
814	53.42	40.47	0.93	10.06	39.83	118.95
815	53.51	38.59	0.75	10.15	39.41	118.18
816	53.56	37.78	0.72	10.15	39.23	117.47

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
817	53.62	35.81	0.71	10.15	39.25	116.97
818	53.71	34.02	0.66	10.25	39.46	116.57
819	53.75	33.98	0.65	10.35	39.64	116.26
820	53.83	33.93	0.67	11.02	40.33	116.16
821	53.91	35.10	0.65	11.02	41.15	116.04
822	53.98	35.10	0.69	11.02	42.08	115.86
823	54.01	34.56	0.70	11.02	42.96	115.69
824	54.11	32.23	0.71	10.92	44.08	115.44
825	54.15	30.35	0.67	10.92	45.12	115.07
826	54.21	27.13	0.62	10.92	46.42	114.64
827	54.27	25.88	0.57	10.92	47.77	114.03
828	54.35	24.00	0.52	10.92	49.06	113.31
829	54.42	23.37	0.46	10.92	49.94	112.51
830	54.46	22.92	0.41	10.92	50.58	111.71
831	54.55	21.49	0.35	10.92	50.75	110.95
832	54.60	21.22	0.32	10.92	50.77	110.25
833	54.67	20.77	0.30	11.02	50.47	109.61
834	54.74	20.59	0.29	11.02	50.26	109.08
835	54.79	20.23	0.28	11.02	50.17	108.67
836	54.86	20.23	0.28	11.02	50.09	108.42
837	54.96	20.32	0.27	11.11	50.12	108.27
838	55.03	20.32	0.27	11.11	50.13	108.17
839	55.06	20.32	0.27	11.11	50.14	108.10
840	55.14	20.15	0.27	11.11	50.10	108.04
841	55.21	20.15	0.27	11.11	50.05	107.98
842	55.25	20.15	0.27	11.11	50.04	107.91
843	55.32	20.15	0.27	11.21	50.02	107.85
844	55.41	20.06	0.26	11.21	50.02	107.78
845	55.45	20.06	0.26	11.21	50.00	107.75
846	55.52	19.97	0.25	11.21	50.03	107.75
847	55.61	20.06	0.25	11.21	50.02	107.79
848	55.65	19.97	0.25	11.21	49.96	108.06
849	55.71	20.06	0.26	11.30	49.75	108.43
850	55.80	20.15	0.27	11.30	49.33	108.86
851	55.86	20.59	0.28	11.30	48.59	109.37
852	55.95	22.29	0.35	11.40	47.99	109.93
853	56.00	23.55	0.37	11.40	47.42	110.48
854	56.05	24.89	0.39	11.40	46.94	111.02
855	56.11	26.86	0.41	11.40	46.06	111.37
856	56.20	27.13	0.44	11.40	45.09	111.59
857	56.24	27.13	0.45	11.49	44.18	111.62
858	56.31	27.04	0.47	11.49	43.58	111.61
859	56.39	27.58	0.40	11.49	43.34	111.52
860	56.43	27.58	0.35	11.49	43.42	111.33
861	56.50	27.31	0.34	11.49	44.00	110.98
862	56.60	26.77	0.35	11.49	44.54	110.58
863	56.66	25.34	0.34	11.49	44.87	110.07
864	56.70	24.62	0.33	11.49	45.53	109.67

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
865	56.79	20.86	0.31	12.17	46.32	109.37
866	56.84	20.86	0.30	12.26	47.17	109.15
867	56.92	20.86	0.28	12.26	47.98	109.04
868	56.99	21.13	0.27	12.36	48.35	109.06
869	57.03	21.67	0.26	12.36	48.23	109.18
870	57.09	21.94	0.28	12.36	47.24	109.55
871	57.18	22.74	0.33	12.45	46.58	110.01
872	57.23	24.00	0.35	12.55	46.33	110.77
873	57.31	26.14	0.37	12.55	46.35	111.91
874	57.38	28.02	0.42	12.55	46.30	113.17
875	57.43	27.67	0.45	12.65	45.29	114.60
876	57.50	28.74	0.57	12.74	42.99	116.26
877	57.58	31.87	0.77	12.84	40.03	117.84
878	57.62	34.74	0.89	12.84	36.29	119.42
879	57.68	43.42	1.09	12.74	33.01	120.96
880	57.78	58.38	1.40	12.74	30.13	122.36
881	57.82	69.84	1.51	12.74	27.45	123.64
882	57.89	89.18	1.67	12.55	25.13	124.69
883	57.97	99.92	1.91	12.26	23.27	125.58
884	58.02	106.28	2.01	12.36	21.94	126.30
885	58.09	116.39	2.17	12.26	21.20	126.80
886	58.17	120.24	2.20	12.26	20.90	127.18
887	58.23	119.89	2.22	12.17	21.05	127.45
888	58.28	116.22	2.27	12.07	21.42	127.65
889	58.37	107.44	2.29	11.97	22.04	127.81
890	58.43	100.46	2.28	12.07	22.92	127.88
891	58.48	99.03	2.32	11.97	24.25	127.82
892	58.57	97.86	2.46	12.07	25.87	127.73
893	58.62	94.55	2.55	12.07	27.88	127.57
894	58.67	91.68	2.55	12.07	30.00	127.33
895	58.78	76.46	2.36	12.17	32.21	127.05
896	58.82	70.19	2.35	12.17	34.75	126.68
897	58.88	58.82	2.31	12.17	37.58	126.23
898	58.97	49.78	2.11	12.36	40.34	125.62
899	59.01	46.47	2.01	12.45	43.15	124.98
900	59.07	41.99	1.88	12.55	45.18	124.48
901	59.12	40.74	1.85	12.65	47.24	123.90
902	59.19	41.19	1.55	12.65	48.60	123.28
903	59.27	43.69	1.55	12.65	48.89	122.73
904	59.32	44.50	1.56	12.65	49.24	122.18
905	59.42	39.22	1.43	12.65	48.90	121.78
906	59.47	35.46	1.30	12.65	48.51	121.37
907	59.52	37.25	1.16	13.03	48.35	121.11
908	59.58	33.93	1.13	13.12	47.90	120.83
909	59.68	37.60	1.22	13.32	47.63	120.55
910	59.74	36.44	1.20	13.41	47.29	120.44
911	59.78	37.96	1.16	13.41	44.73	119.52
912	59.88	42.17	1.12	13.32	42.58	118.56

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
913	59.93	42.08	1.17	13.32	39.80	117.52
914	60.00	39.93	1.26	13.32	35.84	116.24
915	60.05	38.77	0.00	13.32	30.73	114.75
916	60.13	38.05	0.00	13.41	25.69	112.85
917	60.18	39.22	0.00	13.41	22.61	110.06
918	60.25	51.03	0.00	13.51	5.00	105.37
919	60.33	62.94	0.00	13.41	N/A	87.36
920	60.38	66.70	0.00	13.32	N/A	87.36

Abbreviations

Depth: Depth from free surface, at which CPT was performed (ft)
q_c: Measured cone resistance (tsf)
f_s: Sleeve friction resistance (tsf)
u: Pore pressure (tsf)
Fines content: Percentage of fines in soil (%)
Unit weight: Bulk soil unit weight (pcf)

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data ::

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
1	0.10	0.01	0.00	0.01	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
2	0.16	0.01	0.00	0.01	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
3	0.21	0.01	0.00	0.01	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
4	0.29	0.02	0.00	0.02	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
5	0.36	0.02	0.00	0.02	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
6	0.40	0.02	0.00	0.02	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
7	0.51	0.03	0.00	0.03	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
8	0.57	0.03	0.00	0.03	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
9	0.61	0.03	0.00	0.03	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
10	0.70	0.04	0.00	0.04	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
11	0.76	0.04	0.00	0.04	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
12	0.81	0.04	0.00	0.04	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
13	0.87	0.05	0.00	0.05	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
14	0.96	0.05	0.00	0.05	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
15	1.00	0.05	0.00	0.05	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
16	1.05	0.06	0.00	0.06	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
17	1.16	0.06	0.00	0.06	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
18	1.20	0.07	0.00	0.07	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
19	1.26	0.07	0.00	0.07	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
20	1.35	0.08	0.00	0.08	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
21	1.40	0.08	0.00	0.08	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
22	1.45	0.08	0.00	0.08	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
23	1.55	0.09	0.00	0.09	1.00	0.357	1.34	0.265	1.00	1.00	2.000	Yes
24	1.60	0.09	0.00	0.09	1.00	0.357	1.34	0.265	1.00	1.00	2.000	Yes
25	1.64	0.09	0.00	0.09	1.00	0.357	1.34	0.265	1.00	1.00	2.000	Yes
26	1.71	0.10	0.00	0.10	1.00	0.357	1.34	0.265	1.00	1.00	2.000	Yes
27	1.79	0.10	0.00	0.10	1.00	0.357	1.34	0.265	1.00	1.00	2.000	Yes
28	1.87	0.11	0.00	0.11	1.00	0.357	1.34	0.265	1.00	1.00	2.000	Yes
29	1.95	0.11	0.00	0.11	1.00	0.357	1.34	0.265	1.00	1.00	2.000	Yes
30	2.00	0.11	0.00	0.11	1.00	0.357	1.34	0.265	1.00	1.00	2.000	Yes
31	2.04	0.12	0.00	0.12	1.00	0.357	1.34	0.265	1.00	1.00	2.000	Yes
32	2.11	0.12	0.00	0.12	1.00	0.356	1.34	0.265	1.00	1.00	2.000	Yes
33	2.19	0.12	0.00	0.12	1.00	0.356	1.34	0.265	1.00	1.00	2.000	Yes
34	2.24	0.13	0.00	0.13	1.00	0.356	1.34	0.265	1.00	1.00	2.000	Yes
35	2.30	0.13	0.00	0.13	1.00	0.356	1.34	0.265	1.00	1.00	2.000	Yes
36	2.38	0.14	0.00	0.14	1.00	0.356	1.34	0.265	1.00	1.00	2.000	Yes
37	2.45	0.14	0.00	0.14	1.00	0.356	1.34	0.265	1.00	1.00	2.000	Yes
38	2.50	0.14	0.00	0.14	1.00	0.356	1.34	0.265	1.00	1.00	2.000	Yes
39	2.58	0.15	0.00	0.15	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
40	2.64	0.15	0.00	0.15	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
41	2.69	0.15	0.00	0.15	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
42	2.79	0.16	0.00	0.16	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
43	2.85	0.16	0.00	0.16	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
44	2.90	0.16	0.00	0.16	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
45	2.98	0.17	0.00	0.17	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
46	3.05	0.17	0.00	0.17	0.99	0.356	1.34	0.265	1.00	1.00	2.000	No
47	3.09	0.18	0.00	0.18	0.99	0.356	1.34	0.264	1.00	1.00	2.000	No
48	3.17	0.18	0.00	0.18	0.99	0.356	1.34	0.264	1.00	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
49	3.24	0.18	0.00	0.18	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
50	3.29	0.19	0.00	0.19	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
51	3.36	0.19	0.00	0.19	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
52	3.44	0.19	0.00	0.19	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
53	3.48	0.20	0.00	0.20	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
54	3.56	0.20	0.00	0.20	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
55	3.64	0.20	0.00	0.20	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
56	3.69	0.21	0.00	0.21	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
57	3.76	0.21	0.00	0.21	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
58	3.84	0.22	0.00	0.22	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
59	3.88	0.22	0.00	0.22	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
60	3.98	0.22	0.00	0.22	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
61	4.03	0.23	0.00	0.23	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
62	4.08	0.23	0.00	0.23	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
63	4.14	0.23	0.00	0.23	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
64	4.23	0.24	0.00	0.24	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
65	4.27	0.24	0.00	0.24	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
66	4.36	0.25	0.00	0.25	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
67	4.41	0.25	0.00	0.25	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
68	4.46	0.25	0.00	0.25	0.99	0.354	1.34	0.264	1.00	1.00	2.000	No
69	4.55	0.26	0.00	0.26	0.99	0.354	1.34	0.264	1.00	1.00	2.000	No
70	4.61	0.26	0.00	0.26	0.99	0.354	1.34	0.264	1.00	1.00	2.000	No
71	4.66	0.26	0.00	0.26	0.99	0.354	1.34	0.264	1.00	1.00	2.000	No
72	4.75	0.27	0.00	0.27	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
73	4.80	0.27	0.00	0.27	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
74	4.86	0.27	0.00	0.27	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
75	4.96	0.28	0.00	0.28	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
76	5.01	0.28	0.00	0.28	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
77	5.06	0.28	0.00	0.28	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
78	5.16	0.29	0.00	0.29	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
79	5.21	0.29	0.00	0.29	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
80	5.26	0.30	0.00	0.30	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
81	5.32	0.30	0.00	0.30	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
82	5.41	0.30	0.00	0.30	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
83	5.46	0.31	0.00	0.31	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
84	5.52	0.31	0.00	0.31	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
85	5.60	0.31	0.00	0.31	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
86	5.66	0.32	0.00	0.32	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
87	5.71	0.32	0.00	0.32	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
88	5.81	0.33	0.00	0.33	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
89	5.89	0.33	0.00	0.33	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
90	5.91	0.33	0.00	0.33	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
91	6.00	0.34	0.00	0.34	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
92	6.06	0.34	0.00	0.34	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
93	6.11	0.34	0.00	0.34	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
94	6.20	0.35	0.00	0.35	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
95	6.24	0.35	0.00	0.35	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
96	6.30	0.35	0.00	0.35	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
97	6.38	0.36	0.00	0.36	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
98	6.46	0.36	0.00	0.36	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
99	6.50	0.36	0.00	0.36	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
100	6.60	0.37	0.00	0.37	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
101	6.63	0.37	0.00	0.37	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
102	6.72	0.38	0.00	0.38	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
103	6.80	0.38	0.00	0.38	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
104	6.84	0.38	0.00	0.38	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
105	6.90	0.39	0.00	0.39	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
106	7.00	0.39	0.00	0.39	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
107	7.04	0.39	0.00	0.39	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
108	7.09	0.40	0.00	0.40	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
109	7.20	0.40	0.00	0.40	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
110	7.24	0.41	0.00	0.41	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
111	7.30	0.41	0.00	0.41	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
112	7.39	0.41	0.00	0.41	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
113	7.43	0.42	0.00	0.42	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
114	7.50	0.42	0.00	0.42	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
115	7.59	0.42	0.00	0.42	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
116	7.64	0.43	0.00	0.43	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
117	7.70	0.43	0.00	0.43	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
118	7.79	0.44	0.00	0.44	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
119	7.83	0.44	0.00	0.44	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
120	7.90	0.44	0.00	0.44	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
121	7.94	0.44	0.00	0.44	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
122	8.03	0.45	0.00	0.45	0.98	0.352	1.34	0.261	1.00	1.00	2.000	No
123	8.11	0.45	0.00	0.45	0.98	0.352	1.34	0.261	1.00	1.00	2.000	No
124	8.17	0.46	0.00	0.46	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
125	8.21	0.46	0.00	0.46	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
126	8.28	0.46	0.00	0.46	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
127	8.37	0.47	0.00	0.47	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
128	8.41	0.47	0.00	0.47	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
129	8.48	0.47	0.00	0.47	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
130	8.57	0.48	0.00	0.48	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
131	8.61	0.48	0.00	0.48	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
132	8.67	0.48	0.00	0.48	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
133	8.77	0.49	0.00	0.49	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
134	8.81	0.49	0.00	0.49	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
135	8.87	0.49	0.00	0.49	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
136	8.96	0.50	0.00	0.50	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
137	8.99	0.50	0.00	0.50	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
138	9.07	0.50	0.00	0.50	0.98	0.352	1.34	0.262	1.00	1.00	0.262	No
139	9.16	0.51	0.00	0.50	0.98	0.354	1.34	0.263	1.00	1.00	0.263	No
140	9.21	0.51	0.01	0.50	0.98	0.355	1.34	0.264	1.00	1.00	0.264	No
141	9.27	0.51	0.01	0.51	0.98	0.356	1.34	0.265	1.00	1.00	0.265	No
142	9.36	0.52	0.01	0.51	0.98	0.358	1.34	0.266	1.00	1.00	0.266	No
143	9.40	0.52	0.01	0.51	0.98	0.359	1.34	0.267	1.00	1.00	0.267	No
144	9.48	0.52	0.01	0.51	0.98	0.361	1.34	0.268	1.00	1.00	0.268	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
145	9.52	0.53	0.02	0.51	0.98	0.362	1.34	0.269	1.00	1.00	0.269	No
146	9.61	0.53	0.02	0.51	0.98	0.363	1.34	0.270	1.00	1.00	0.270	No
147	9.65	0.53	0.02	0.51	0.98	0.364	1.34	0.271	1.00	1.00	0.271	No
148	9.72	0.54	0.02	0.51	0.98	0.366	1.34	0.272	1.00	1.00	0.272	No
149	9.81	0.54	0.03	0.52	0.98	0.367	1.34	0.273	1.00	1.00	0.273	No
150	9.86	0.54	0.03	0.52	0.98	0.368	1.34	0.274	1.00	1.00	0.274	No
151	9.91	0.55	0.03	0.52	0.98	0.369	1.34	0.275	1.00	1.00	0.275	No
152	10.00	0.55	0.03	0.52	0.98	0.371	1.34	0.276	1.00	1.00	0.276	No
153	10.05	0.56	0.03	0.52	0.98	0.372	1.34	0.277	1.00	1.00	0.277	No
154	10.16	0.56	0.04	0.53	0.98	0.374	1.34	0.278	1.00	1.00	0.278	No
155	10.20	0.56	0.04	0.53	0.98	0.375	1.34	0.279	1.00	1.00	0.279	No
156	10.25	0.57	0.04	0.53	0.98	0.376	1.34	0.279	1.00	1.00	0.279	No
157	10.31	0.57	0.04	0.53	0.98	0.377	1.34	0.280	1.00	1.00	0.280	No
158	10.40	0.57	0.04	0.53	0.98	0.378	1.34	0.282	1.00	1.00	0.282	No
159	10.44	0.58	0.04	0.53	0.98	0.379	1.34	0.282	1.00	1.00	0.282	No
160	10.51	0.58	0.05	0.53	0.98	0.380	1.34	0.283	1.00	1.00	0.283	No
161	10.59	0.59	0.05	0.54	0.98	0.382	1.34	0.284	1.00	1.00	0.284	No
162	10.65	0.59	0.05	0.54	0.98	0.383	1.34	0.285	1.00	1.00	0.285	No
163	10.71	0.59	0.05	0.54	0.98	0.384	1.34	0.286	1.00	1.00	0.286	No
164	10.80	0.60	0.06	0.54	0.98	0.386	1.34	0.287	1.00	1.00	0.287	No
165	10.85	0.60	0.06	0.54	0.98	0.387	1.34	0.287	1.00	1.00	0.287	No
166	10.90	0.60	0.06	0.54	0.98	0.387	1.34	0.288	1.00	1.00	0.288	No
167	10.96	0.61	0.06	0.55	0.98	0.388	1.34	0.289	1.00	1.00	0.289	No
168	11.04	0.61	0.06	0.55	0.98	0.390	1.34	0.290	1.00	1.00	0.290	No
169	11.10	0.62	0.07	0.55	0.98	0.391	1.34	0.291	1.00	1.00	0.291	No
170	11.18	0.62	0.07	0.55	0.98	0.392	1.34	0.292	1.00	1.00	0.292	No
171	11.24	0.62	0.07	0.55	0.98	0.393	1.34	0.292	1.00	1.00	0.292	No
172	11.30	0.63	0.07	0.56	0.98	0.394	1.34	0.293	1.00	1.00	0.293	No
173	11.35	0.63	0.07	0.56	0.98	0.395	1.34	0.294	1.00	1.00	0.294	No
174	11.42	0.63	0.08	0.56	0.98	0.396	1.34	0.295	1.00	1.00	0.295	No
175	11.51	0.64	0.08	0.56	0.98	0.398	1.34	0.296	1.00	1.00	0.296	No
176	11.55	0.64	0.08	0.56	0.98	0.398	1.34	0.296	1.00	1.00	0.296	No
177	11.62	0.65	0.08	0.56	0.98	0.399	1.34	0.297	1.00	1.00	0.297	No
178	11.71	0.65	0.08	0.57	0.98	0.401	1.34	0.298	1.00	1.00	0.298	No
179	11.75	0.65	0.09	0.57	0.98	0.401	1.34	0.299	1.00	1.00	0.299	No
180	11.85	0.66	0.09	0.57	0.98	0.403	1.34	0.300	1.00	1.00	0.300	No
181	11.90	0.66	0.09	0.57	0.98	0.404	1.34	0.300	1.00	1.00	0.300	No
182	11.94	0.66	0.09	0.57	0.98	0.404	1.34	0.301	1.00	1.00	0.301	No
183	12.02	0.67	0.09	0.57	0.97	0.406	1.34	0.302	1.00	1.00	0.302	No
184	12.10	0.67	0.10	0.58	0.97	0.407	1.34	0.303	1.00	1.00	0.303	No
185	12.15	0.68	0.10	0.58	0.97	0.408	1.34	0.303	1.00	1.00	0.303	No
186	12.24	0.68	0.10	0.58	0.97	0.409	1.34	0.304	1.00	1.00	0.304	No
187	12.30	0.69	0.10	0.58	0.97	0.410	1.34	0.305	1.00	1.00	0.305	No
188	12.35	0.69	0.10	0.58	0.97	0.411	1.34	0.305	1.00	1.00	0.305	No
189	12.44	0.69	0.11	0.59	0.97	0.412	1.34	0.306	1.00	1.00	0.306	No
190	12.50	0.70	0.11	0.59	0.97	0.413	1.34	0.307	1.00	1.00	0.307	No
191	12.55	0.70	0.11	0.59	0.97	0.414	1.34	0.308	1.00	1.00	0.308	No
192	12.63	0.70	0.11	0.59	0.97	0.415	1.34	0.308	1.00	1.00	0.308	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
193	12.70	0.71	0.12	0.59	0.97	0.416	1.34	0.309	1.00	1.00	0.309	No
194	12.74	0.71	0.12	0.59	0.97	0.416	1.34	0.310	1.00	1.00	0.310	No
195	12.84	0.72	0.12	0.60	0.97	0.418	1.34	0.311	1.00	1.00	0.311	No
196	12.86	0.72	0.12	0.60	0.97	0.418	1.34	0.311	1.00	1.00	0.311	No
197	12.94	0.72	0.12	0.60	0.97	0.419	1.34	0.312	1.00	1.00	0.312	No
198	13.01	0.73	0.13	0.60	0.97	0.420	1.34	0.313	1.00	1.00	0.313	No
199	13.09	0.73	0.13	0.60	0.97	0.421	1.34	0.313	1.00	1.00	0.313	No
200	13.14	0.73	0.13	0.60	0.97	0.422	1.34	0.314	1.00	1.00	0.314	No
201	13.20	0.74	0.13	0.61	0.97	0.423	1.34	0.314	1.00	1.00	0.314	No
202	13.29	0.74	0.13	0.61	0.97	0.424	1.34	0.315	1.00	1.00	0.315	No
203	13.33	0.74	0.14	0.61	0.97	0.425	1.34	0.316	1.00	1.00	0.316	No
204	13.39	0.75	0.14	0.61	0.97	0.425	1.34	0.316	1.00	1.00	0.316	No
205	13.49	0.75	0.14	0.61	0.97	0.427	1.34	0.317	1.00	1.00	0.317	No
206	13.53	0.76	0.14	0.61	0.97	0.427	1.34	0.318	1.00	1.00	0.318	No
207	13.59	0.76	0.14	0.62	0.97	0.428	1.34	0.318	1.00	1.00	0.318	No
208	13.69	0.76	0.15	0.62	0.97	0.429	1.34	0.319	1.00	1.00	0.319	No
209	13.73	0.77	0.15	0.62	0.97	0.430	1.34	0.320	1.00	1.00	0.320	No
210	13.79	0.77	0.15	0.62	0.97	0.431	1.34	0.320	1.00	1.00	0.320	No
211	13.89	0.78	0.15	0.62	0.97	0.432	1.34	0.321	1.00	1.00	0.321	No
212	13.94	0.78	0.15	0.62	0.97	0.433	1.34	0.322	1.00	1.00	0.322	No
213	13.99	0.78	0.16	0.63	0.97	0.433	1.34	0.322	1.00	1.00	0.322	No
214	14.08	0.79	0.16	0.63	0.97	0.434	1.34	0.323	1.00	1.00	0.323	No
215	14.13	0.79	0.16	0.63	0.97	0.435	1.34	0.324	1.00	1.00	0.324	No
216	14.18	0.79	0.16	0.63	0.97	0.436	1.34	0.324	1.00	1.00	0.324	No
217	14.27	0.80	0.16	0.63	0.97	0.437	1.34	0.325	1.00	1.00	0.325	No
218	14.32	0.80	0.17	0.63	0.97	0.438	1.34	0.325	1.00	1.00	0.325	No
219	14.37	0.80	0.17	0.64	0.97	0.438	1.34	0.326	1.00	1.00	0.326	No
220	14.48	0.81	0.17	0.64	0.97	0.440	1.34	0.327	1.00	1.00	0.327	No
221	14.52	0.81	0.17	0.64	0.97	0.440	1.34	0.327	1.00	1.00	0.327	No
222	14.58	0.81	0.17	0.64	0.97	0.441	1.34	0.328	1.00	1.00	0.328	No
223	14.68	0.82	0.18	0.64	0.97	0.442	1.34	0.329	1.00	1.00	0.329	No
224	14.72	0.82	0.18	0.64	0.97	0.443	1.34	0.329	1.00	1.00	0.329	No
225	14.77	0.82	0.18	0.64	0.97	0.443	1.34	0.330	1.00	1.00	0.330	No
226	14.83	0.83	0.18	0.65	0.97	0.444	1.34	0.330	1.00	1.00	0.330	No
227	14.92	0.83	0.18	0.65	0.97	0.445	1.34	0.331	1.00	1.00	0.331	No
228	14.98	0.84	0.19	0.65	0.97	0.446	1.34	0.332	1.00	1.00	0.332	No
229	15.07	0.84	0.19	0.65	0.97	0.447	1.34	0.332	1.00	1.00	0.332	No
230	15.11	0.84	0.19	0.65	0.97	0.447	1.34	0.333	1.00	1.00	0.333	No
231	15.17	0.85	0.19	0.65	0.97	0.448	1.34	0.333	1.00	1.00	0.333	No
232	15.27	0.85	0.20	0.66	0.97	0.449	1.34	0.334	1.00	1.00	0.334	No
233	15.31	0.85	0.20	0.66	0.97	0.450	1.34	0.335	1.00	1.00	0.335	No
234	15.38	0.86	0.20	0.66	0.97	0.451	1.34	0.335	1.00	1.00	0.335	No
235	15.47	0.86	0.20	0.66	0.97	0.452	1.34	0.336	1.00	1.00	0.336	No
236	15.52	0.86	0.20	0.66	0.97	0.452	1.34	0.336	1.00	1.00	0.336	No
237	15.56	0.87	0.20	0.66	0.97	0.453	1.34	0.337	1.00	1.00	0.337	No
238	15.64	0.87	0.21	0.66	0.97	0.454	1.34	0.337	1.00	1.00	0.337	No
239	15.71	0.87	0.21	0.67	0.97	0.454	1.34	0.338	1.00	1.00	0.338	No
240	15.75	0.88	0.21	0.67	0.97	0.455	1.34	0.338	1.00	1.00	0.338	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
241	15.87	0.88	0.21	0.67	0.97	0.456	1.34	0.339	1.00	1.00	0.339	No
242	15.91	0.89	0.22	0.67	0.97	0.457	1.34	0.340	1.00	1.00	0.340	No
243	15.96	0.89	0.22	0.67	0.97	0.457	1.34	0.340	1.00	1.00	0.340	No
244	16.01	0.89	0.22	0.67	0.97	0.458	1.34	0.341	1.00	1.00	0.341	No
245	16.11	0.90	0.22	0.67	0.97	0.459	1.34	0.341	1.00	1.00	0.341	No
246	16.15	0.90	0.22	0.68	0.97	0.459	1.34	0.342	1.00	1.00	0.342	No
247	16.22	0.90	0.23	0.68	0.97	0.460	1.34	0.342	1.00	1.00	0.342	No
248	16.31	0.91	0.23	0.68	0.97	0.461	1.34	0.343	1.00	1.00	0.343	No
249	16.36	0.91	0.23	0.68	0.97	0.462	1.34	0.343	1.00	1.00	0.343	No
250	16.41	0.91	0.23	0.68	0.97	0.462	1.34	0.344	1.00	1.00	0.344	No
251	16.51	0.92	0.23	0.68	0.97	0.463	1.34	0.345	1.00	1.00	0.345	No
252	16.54	0.92	0.24	0.68	0.97	0.464	1.34	0.345	1.00	1.00	0.345	No
253	16.61	0.92	0.24	0.69	0.97	0.464	1.34	0.345	1.00	1.00	0.345	No
254	16.70	0.93	0.24	0.69	0.96	0.465	1.34	0.346	1.00	1.00	0.346	No
255	16.75	0.93	0.24	0.69	0.96	0.466	1.34	0.347	1.00	1.00	0.347	No
256	16.81	0.93	0.24	0.69	0.96	0.467	1.34	0.347	1.00	1.00	0.347	No
257	16.91	0.94	0.25	0.69	0.96	0.468	1.34	0.348	1.00	1.00	0.348	No
258	16.95	0.94	0.25	0.69	0.96	0.468	1.34	0.348	1.00	1.00	0.348	No
259	17.01	0.94	0.25	0.69	0.96	0.469	1.34	0.349	1.00	1.00	0.349	No
260	17.11	0.95	0.25	0.70	0.96	0.470	1.34	0.349	1.00	1.00	0.349	No
261	17.13	0.95	0.25	0.70	0.96	0.470	1.34	0.350	1.00	1.00	0.350	No
262	17.21	0.95	0.26	0.70	0.96	0.471	1.34	0.350	1.00	1.00	0.350	No
263	17.29	0.96	0.26	0.70	0.96	0.472	1.34	0.351	1.00	1.00	0.351	No
264	17.34	0.96	0.26	0.70	0.96	0.472	1.34	0.351	1.00	1.00	0.351	No
265	17.43	0.97	0.26	0.70	0.96	0.473	1.34	0.352	1.00	1.00	0.352	No
266	17.48	0.97	0.26	0.70	0.96	0.474	1.34	0.352	1.00	1.00	0.352	No
267	17.54	0.97	0.27	0.71	0.96	0.474	1.34	0.353	1.00	1.00	0.353	No
268	17.63	0.98	0.27	0.71	0.96	0.475	1.34	0.353	1.00	1.00	0.353	No
269	17.68	0.98	0.27	0.71	0.96	0.476	1.34	0.354	1.00	1.00	0.354	No
270	17.73	0.98	0.27	0.71	0.96	0.476	1.34	0.354	1.00	1.00	0.354	No
271	17.83	0.99	0.28	0.71	0.96	0.477	1.34	0.355	1.00	1.00	0.355	No
272	17.85	0.99	0.28	0.71	0.96	0.477	1.34	0.355	1.00	1.00	0.355	No
273	17.93	0.99	0.28	0.71	0.96	0.478	1.34	0.356	1.00	1.00	0.356	No
274	17.98	1.00	0.28	0.72	0.96	0.479	1.34	0.356	1.00	1.00	0.356	No
275	18.07	1.00	0.28	0.72	0.96	0.479	1.34	0.357	1.00	1.00	0.357	No
276	18.12	1.00	0.28	0.72	0.96	0.480	1.34	0.357	1.00	1.00	0.357	No
277	18.18	1.01	0.29	0.72	0.96	0.480	1.34	0.357	1.00	1.00	0.357	No
278	18.24	1.01	0.29	0.72	0.96	0.481	1.34	0.358	1.00	1.00	0.358	No
279	18.33	1.01	0.29	0.72	0.96	0.482	1.34	0.358	1.00	1.00	0.358	No
280	18.38	1.02	0.29	0.72	0.96	0.482	1.34	0.359	1.00	1.00	0.359	No
281	18.47	1.02	0.30	0.73	0.96	0.483	1.34	0.359	1.00	1.00	0.359	No
282	18.53	1.02	0.30	0.73	0.96	0.484	1.34	0.360	1.00	1.00	0.360	No
283	18.57	1.03	0.30	0.73	0.96	0.484	1.34	0.360	1.00	1.00	0.360	No
284	18.67	1.03	0.30	0.73	0.96	0.485	1.34	0.361	1.00	1.00	0.361	No
285	18.72	1.04	0.30	0.73	0.96	0.485	1.34	0.361	1.00	1.00	0.361	No
286	18.78	1.04	0.31	0.73	0.96	0.486	1.34	0.361	1.00	1.00	0.361	No
287	18.85	1.04	0.31	0.73	0.96	0.487	1.34	0.362	1.00	1.00	0.362	No
288	18.93	1.05	0.31	0.74	0.96	0.487	1.34	0.362	1.00	1.00	0.362	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
289	18.97	1.05	0.31	0.74	0.96	0.488	1.34	0.363	1.00	1.00	0.363	No
290	19.08	1.05	0.31	0.74	0.96	0.489	1.34	0.363	1.00	1.00	0.363	No
291	19.12	1.06	0.32	0.74	0.96	0.489	1.34	0.364	1.00	1.00	0.364	No
292	19.22	1.06	0.32	0.74	0.96	0.490	1.34	0.364	1.00	1.00	0.364	No
293	19.27	1.07	0.32	0.74	0.96	0.490	1.34	0.365	1.00	1.00	0.365	No
294	19.32	1.07	0.32	0.75	0.96	0.491	1.34	0.365	1.00	1.00	0.365	No
295	19.37	1.07	0.32	0.75	0.96	0.491	1.34	0.365	1.00	1.00	0.365	No
296	19.43	1.07	0.33	0.75	0.96	0.492	1.34	0.366	1.00	1.00	0.366	No
297	19.52	1.08	0.33	0.75	0.96	0.492	1.34	0.366	1.00	1.00	0.366	No
298	19.57	1.08	0.33	0.75	0.96	0.493	1.34	0.366	1.00	1.00	0.366	No
299	19.67	1.09	0.33	0.75	0.96	0.494	1.34	0.367	1.00	1.00	0.367	No
300	19.72	1.09	0.33	0.76	0.96	0.494	1.34	0.367	1.00	1.00	0.367	No
301	19.77	1.09	0.34	0.76	0.96	0.494	1.34	0.368	1.00	1.00	0.368	No
302	19.82	1.10	0.34	0.76	0.96	0.495	1.34	0.368	1.00	1.00	0.368	No
303	19.92	1.10	0.34	0.76	0.96	0.496	1.34	0.369	1.00	1.00	0.369	No
304	19.97	1.10	0.34	0.76	0.96	0.496	1.34	0.369	1.00	1.00	0.369	No
305	20.04	1.11	0.34	0.76	0.96	0.496	1.34	0.369	1.00	1.00	0.369	No
306	20.08	1.11	0.35	0.76	0.96	0.497	1.34	0.369	1.00	1.00	0.369	No
307	20.16	1.11	0.35	0.77	0.96	0.497	1.34	0.370	1.00	1.00	0.370	No
308	20.24	1.12	0.35	0.77	0.96	0.498	1.34	0.370	1.00	1.00	0.370	No
309	20.28	1.12	0.35	0.77	0.96	0.498	1.34	0.371	1.00	1.00	0.371	No
310	20.37	1.13	0.35	0.77	0.96	0.499	1.34	0.371	1.00	1.00	0.371	No
311	20.41	1.13	0.36	0.77	0.96	0.499	1.34	0.371	1.00	1.00	0.371	No
312	20.50	1.13	0.36	0.77	0.96	0.500	1.34	0.372	1.00	1.00	0.372	No
313	20.57	1.14	0.36	0.78	0.96	0.500	1.34	0.372	1.00	1.00	0.372	No
314	20.61	1.14	0.36	0.78	0.96	0.501	1.34	0.372	1.00	1.00	0.372	No
315	20.70	1.14	0.37	0.78	0.96	0.501	1.34	0.373	1.00	1.00	0.373	No
316	20.76	1.15	0.37	0.78	0.95	0.502	1.34	0.373	1.00	1.00	0.373	No
317	20.81	1.15	0.37	0.78	0.95	0.502	1.34	0.373	1.00	1.00	0.373	No
318	20.89	1.16	0.37	0.78	0.95	0.503	1.34	0.374	1.00	1.00	0.374	No
319	20.95	1.16	0.37	0.79	0.95	0.503	1.34	0.374	1.00	1.00	0.374	No
320	21.00	1.16	0.37	0.79	0.95	0.503	1.34	0.374	1.00	1.00	0.374	No
321	21.10	1.17	0.38	0.79	0.95	0.504	1.34	0.375	1.00	1.00	0.375	No
322	21.14	1.17	0.38	0.79	0.95	0.504	1.34	0.375	1.00	1.00	0.375	No
323	21.21	1.17	0.38	0.79	0.95	0.505	1.34	0.376	1.00	1.00	0.376	No
324	21.30	1.18	0.38	0.79	0.95	0.506	1.34	0.376	1.00	1.00	0.376	No
325	21.34	1.18	0.39	0.79	0.95	0.506	1.34	0.376	1.00	1.00	0.376	No
326	21.40	1.18	0.39	0.80	0.95	0.506	1.34	0.377	1.00	1.00	0.377	No
327	21.48	1.19	0.39	0.80	0.95	0.507	1.34	0.377	1.00	1.00	0.377	No
328	21.54	1.19	0.39	0.80	0.95	0.507	1.34	0.377	1.00	1.00	0.377	No
329	21.60	1.19	0.39	0.80	0.95	0.508	1.34	0.378	1.00	1.00	0.378	No
330	21.68	1.20	0.40	0.80	0.95	0.508	1.34	0.378	1.00	1.00	0.378	No
331	21.75	1.20	0.40	0.80	0.95	0.509	1.34	0.378	1.00	1.00	0.378	No
332	21.80	1.20	0.40	0.81	0.95	0.509	1.34	0.379	1.00	1.00	0.379	No
333	21.88	1.21	0.40	0.81	0.95	0.510	1.34	0.379	1.00	1.00	0.379	No
334	21.92	1.21	0.40	0.81	0.95	0.510	1.34	0.379	1.00	1.00	0.379	No
335	21.99	1.22	0.41	0.81	0.95	0.510	1.34	0.380	1.00	1.00	0.380	No
336	22.08	1.22	0.41	0.81	0.95	0.511	1.34	0.380	1.00	1.00	0.380	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
337	22.15	1.22	0.41	0.81	0.95	0.511	1.34	0.380	1.00	1.00	0.380	No
338	22.19	1.23	0.41	0.81	0.95	0.512	1.34	0.381	1.00	1.00	0.381	No
339	22.28	1.23	0.41	0.82	0.95	0.512	1.34	0.381	1.00	1.00	0.381	No
340	22.34	1.23	0.42	0.82	0.95	0.513	1.34	0.381	1.00	1.00	0.381	No
341	22.39	1.24	0.42	0.82	0.95	0.513	1.34	0.382	1.00	1.00	0.382	No
342	22.47	1.24	0.42	0.82	0.95	0.514	1.34	0.382	1.00	1.00	0.382	No
343	22.54	1.24	0.42	0.82	0.95	0.514	1.34	0.382	1.00	1.00	0.382	No
344	22.58	1.25	0.42	0.82	0.95	0.514	1.34	0.382	1.00	1.00	0.382	No
345	22.68	1.25	0.43	0.83	0.95	0.515	1.34	0.383	1.00	1.00	0.383	No
346	22.74	1.26	0.43	0.83	0.95	0.515	1.34	0.383	1.00	1.00	0.383	No
347	22.79	1.26	0.43	0.83	0.95	0.516	1.34	0.383	1.00	1.00	0.383	No
348	22.84	1.26	0.43	0.83	0.95	0.516	1.34	0.384	1.00	1.00	0.384	No
349	22.94	1.27	0.43	0.83	0.95	0.517	1.34	0.384	1.00	1.00	0.384	No
350	22.99	1.27	0.44	0.83	0.95	0.517	1.34	0.384	1.00	1.00	0.384	No
351	23.04	1.27	0.44	0.83	0.95	0.517	1.34	0.385	1.00	1.00	0.385	No
352	23.11	1.28	0.44	0.84	0.95	0.518	1.34	0.385	1.00	1.00	0.385	No
353	23.18	1.28	0.44	0.84	0.95	0.518	1.34	0.385	1.00	1.00	0.385	No
354	23.23	1.28	0.44	0.84	0.95	0.518	1.34	0.386	1.00	1.00	0.386	No
355	23.34	1.29	0.45	0.84	0.95	0.519	1.34	0.386	1.00	1.00	0.386	No
356	23.37	1.29	0.45	0.84	0.95	0.519	1.34	0.386	1.00	1.00	0.386	No
357	23.44	1.29	0.45	0.84	0.95	0.520	1.34	0.386	1.00	1.00	0.386	No
358	23.54	1.30	0.45	0.84	0.95	0.520	1.34	0.387	1.00	1.00	0.387	No
359	23.60	1.30	0.46	0.85	0.95	0.521	1.34	0.387	1.00	1.00	0.387	No
360	23.64	1.30	0.46	0.85	0.95	0.521	1.34	0.387	1.00	1.00	0.387	No
361	23.71	1.31	0.46	0.85	0.95	0.521	1.34	0.388	1.00	1.00	0.388	No
362	23.79	1.31	0.46	0.85	0.95	0.522	1.34	0.388	1.00	1.00	0.388	No
363	23.84	1.31	0.46	0.85	0.95	0.522	1.34	0.388	1.00	1.00	0.388	No
364	23.89	1.32	0.46	0.85	0.95	0.522	1.34	0.389	1.00	1.00	0.389	No
365	23.99	1.32	0.47	0.85	0.95	0.523	1.34	0.389	1.00	1.00	0.389	No
366	24.03	1.32	0.47	0.85	0.95	0.523	1.34	0.389	1.00	1.00	0.389	No
367	24.10	1.33	0.47	0.86	0.94	0.524	1.34	0.389	1.00	1.00	0.389	No
368	24.18	1.33	0.47	0.86	0.94	0.524	1.34	0.390	1.00	1.00	0.390	No
369	24.23	1.33	0.48	0.86	0.94	0.524	1.34	0.390	1.00	1.00	0.390	No
370	24.31	1.34	0.48	0.86	0.94	0.525	1.34	0.390	1.00	1.00	0.390	No
371	24.36	1.34	0.48	0.86	0.94	0.525	1.34	0.391	1.00	1.00	0.391	No
372	24.45	1.35	0.48	0.86	0.94	0.526	1.34	0.391	1.00	1.00	0.391	No
373	24.49	1.35	0.48	0.86	0.94	0.526	1.34	0.391	1.00	1.00	0.391	No
374	24.57	1.35	0.49	0.87	0.94	0.526	1.34	0.391	1.00	1.00	0.391	No
375	24.61	1.35	0.49	0.87	0.94	0.527	1.34	0.392	1.00	1.00	0.392	No
376	24.69	1.36	0.49	0.87	0.94	0.527	1.34	0.392	1.00	1.00	0.392	No
377	24.74	1.36	0.49	0.87	0.94	0.527	1.34	0.392	1.00	1.00	0.392	No
378	24.82	1.37	0.49	0.87	0.94	0.528	1.34	0.392	1.00	1.00	0.392	No
379	24.89	1.37	0.50	0.87	0.94	0.528	1.34	0.393	1.00	1.00	0.393	No
380	24.94	1.37	0.50	0.87	0.94	0.528	1.34	0.393	1.00	1.00	0.393	No
381	25.01	1.38	0.50	0.88	0.94	0.529	1.34	0.393	1.00	1.00	0.393	No
382	25.09	1.38	0.50	0.88	0.94	0.529	1.34	0.393	1.00	1.00	0.393	No
383	25.13	1.38	0.50	0.88	0.94	0.529	1.34	0.394	1.00	1.00	0.394	No
384	25.22	1.39	0.51	0.88	0.94	0.530	1.34	0.394	1.00	1.00	0.394	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
385	25.28	1.39	0.51	0.88	0.94	0.530	1.34	0.394	1.00	1.00	0.394	No
386	25.34	1.39	0.51	0.88	0.94	0.530	1.34	0.394	1.00	1.00	0.394	No
387	25.44	1.40	0.51	0.89	0.94	0.531	1.34	0.395	1.00	1.00	0.395	No
388	25.48	1.40	0.51	0.89	0.94	0.531	1.34	0.395	1.00	1.00	0.395	No
389	25.53	1.40	0.52	0.89	0.94	0.531	1.34	0.395	1.00	1.00	0.395	No
390	25.59	1.41	0.52	0.89	0.94	0.531	1.34	0.395	1.00	1.00	0.395	No
391	25.68	1.41	0.52	0.89	0.94	0.532	1.34	0.396	1.00	1.00	0.396	No
392	25.73	1.41	0.52	0.89	0.94	0.532	1.34	0.396	1.00	1.00	0.396	No
393	25.79	1.42	0.52	0.89	0.94	0.532	1.34	0.396	1.00	1.00	0.396	No
394	25.88	1.42	0.53	0.90	0.94	0.533	1.34	0.396	1.00	1.00	0.396	No
395	25.93	1.43	0.53	0.90	0.94	0.533	1.34	0.396	1.00	1.00	0.396	No
396	25.99	1.43	0.53	0.90	0.94	0.533	1.34	0.397	1.00	1.00	0.397	No
397	26.08	1.43	0.53	0.90	0.94	0.534	1.34	0.397	1.00	1.00	0.397	No
398	26.14	1.44	0.53	0.90	0.94	0.534	1.34	0.397	1.00	1.00	0.397	No
399	26.19	1.44	0.54	0.90	0.94	0.534	1.34	0.397	1.00	1.00	0.397	No
400	26.28	1.44	0.54	0.90	0.94	0.535	1.34	0.398	1.00	1.00	0.398	No
401	26.34	1.45	0.54	0.91	0.94	0.535	1.34	0.398	1.00	1.00	0.398	No
402	26.39	1.45	0.54	0.91	0.94	0.535	1.34	0.398	1.00	1.00	0.398	No
403	26.45	1.45	0.54	0.91	0.94	0.535	1.34	0.398	1.00	1.00	0.398	No
404	26.53	1.46	0.55	0.91	0.94	0.536	1.34	0.398	1.00	1.00	0.398	No
405	26.58	1.46	0.55	0.91	0.94	0.536	1.34	0.399	1.00	1.00	0.399	No
406	26.68	1.47	0.55	0.91	0.94	0.536	1.34	0.399	1.00	1.00	0.399	No
407	26.73	1.47	0.55	0.92	0.94	0.536	1.34	0.399	1.00	1.00	0.399	No
408	26.78	1.47	0.55	0.92	0.94	0.537	1.34	0.399	1.00	1.00	0.399	No
409	26.88	1.48	0.56	0.92	0.93	0.537	1.34	0.399	1.00	1.00	0.399	No
410	26.93	1.48	0.56	0.92	0.93	0.537	1.34	0.400	1.00	1.00	0.400	No
411	26.98	1.48	0.56	0.92	0.93	0.537	1.34	0.400	1.00	1.00	0.400	No
412	27.04	1.49	0.56	0.92	0.93	0.538	1.34	0.400	1.00	1.00	0.400	No
413	27.13	1.49	0.57	0.93	0.93	0.538	1.34	0.400	1.00	1.00	0.400	No
414	27.22	1.50	0.57	0.93	0.93	0.538	1.34	0.400	1.00	1.00	0.400	No
415	27.24	1.50	0.57	0.93	0.93	0.538	1.34	0.400	1.00	1.00	0.400	No
416	27.33	1.50	0.57	0.93	0.93	0.538	1.34	0.400	1.00	1.00	0.400	No
417	27.37	1.50	0.57	0.93	0.93	0.539	1.34	0.401	1.00	1.00	0.401	No
418	27.43	1.51	0.58	0.93	0.93	0.539	1.34	0.401	1.00	1.00	0.401	No
419	27.52	1.51	0.58	0.94	0.93	0.539	1.34	0.401	1.00	1.00	0.401	No
420	27.57	1.52	0.58	0.94	0.93	0.539	1.34	0.401	1.00	1.00	0.401	No
421	27.63	1.52	0.58	0.94	0.93	0.539	1.34	0.401	1.00	1.00	0.401	No
422	27.72	1.52	0.58	0.94	0.93	0.540	1.34	0.401	1.00	1.00	0.401	No
423	27.76	1.53	0.59	0.94	0.93	0.540	1.34	0.401	1.00	1.00	0.401	No
424	27.84	1.53	0.59	0.94	0.93	0.540	1.34	0.402	1.00	1.00	0.402	No
425	27.93	1.54	0.59	0.95	0.93	0.540	1.34	0.402	1.00	1.00	0.402	No
426	27.97	1.54	0.59	0.95	0.93	0.540	1.34	0.402	1.00	1.00	0.402	No
427	28.02	1.54	0.59	0.95	0.93	0.541	1.34	0.402	1.00	1.00	0.402	No
428	28.12	1.55	0.60	0.95	0.93	0.541	1.34	0.402	1.00	1.00	0.402	No
429	28.17	1.55	0.60	0.95	0.93	0.541	1.34	0.402	1.00	1.00	0.402	No
430	28.23	1.55	0.60	0.95	0.93	0.541	1.34	0.403	1.00	1.00	0.403	No
431	28.32	1.56	0.60	0.95	0.93	0.542	1.34	0.403	1.00	1.00	0.403	No
432	28.37	1.56	0.60	0.96	0.93	0.542	1.34	0.403	1.00	1.00	0.403	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
433	28.42	1.56	0.61	0.96	0.93	0.542	1.34	0.403	1.00	1.00	0.403	No
434	28.48	1.57	0.61	0.96	0.93	0.542	1.34	0.403	1.00	1.00	0.403	No
435	28.57	1.57	0.61	0.96	0.93	0.542	1.34	0.403	1.00	1.00	0.403	No
436	28.61	1.57	0.61	0.96	0.93	0.542	1.34	0.403	1.00	1.00	0.403	No
437	28.69	1.58	0.61	0.96	0.93	0.543	1.34	0.404	1.00	1.00	0.404	No
438	28.77	1.58	0.62	0.97	0.93	0.543	1.34	0.404	1.00	1.00	0.404	No
439	28.83	1.59	0.62	0.97	0.93	0.543	1.34	0.404	1.00	1.00	0.404	No
440	28.88	1.59	0.62	0.97	0.93	0.543	1.34	0.404	1.00	1.00	0.404	No
441	28.97	1.59	0.62	0.97	0.93	0.543	1.34	0.404	1.00	1.00	0.404	No
442	29.02	1.60	0.62	0.97	0.93	0.543	1.34	0.404	1.00	1.00	0.404	No
443	29.08	1.60	0.63	0.97	0.93	0.544	1.34	0.404	1.00	1.00	0.404	No
444	29.17	1.60	0.63	0.98	0.92	0.544	1.34	0.404	1.00	1.00	0.404	No
445	29.21	1.61	0.63	0.98	0.92	0.544	1.34	0.405	1.00	1.00	0.405	No
446	29.28	1.61	0.63	0.98	0.92	0.544	1.34	0.405	1.00	1.00	0.405	No
447	29.37	1.62	0.64	0.98	0.92	0.544	1.34	0.405	1.00	1.00	0.405	No
448	29.41	1.62	0.64	0.98	0.92	0.544	1.34	0.405	1.00	1.00	0.405	No
449	29.47	1.62	0.64	0.98	0.92	0.544	1.34	0.405	1.00	1.00	0.405	No
450	29.56	1.63	0.64	0.99	0.92	0.545	1.34	0.405	1.00	1.00	0.405	No
451	29.62	1.63	0.64	0.99	0.92	0.545	1.34	0.405	1.00	1.00	0.405	No
452	29.68	1.63	0.65	0.99	0.92	0.545	1.34	0.405	1.00	1.00	0.405	No
453	29.76	1.64	0.65	0.99	0.92	0.545	1.34	0.405	1.00	1.00	0.405	No
454	29.83	1.64	0.65	0.99	0.92	0.545	1.34	0.405	1.00	1.00	0.405	No
455	29.87	1.64	0.65	0.99	0.92	0.545	1.34	0.405	1.00	1.00	0.405	No
456	29.96	1.65	0.65	1.00	0.92	0.545	1.34	0.406	1.00	1.00	0.406	No
457	30.01	1.65	0.66	1.00	0.92	0.545	1.34	0.406	1.00	1.00	0.406	No
458	30.07	1.66	0.66	1.00	0.92	0.546	1.34	0.406	1.00	1.00	0.406	No
459	30.16	1.66	0.66	1.00	0.92	0.546	1.34	0.406	1.00	1.00	0.406	No
460	30.20	1.66	0.66	1.00	0.92	0.546	1.34	0.406	1.00	1.00	0.406	No
461	30.27	1.67	0.66	1.00	0.92	0.546	1.34	0.406	1.00	1.00	0.406	No
462	30.34	1.67	0.67	1.01	0.92	0.546	1.34	0.406	1.00	1.00	0.406	No
463	30.42	1.68	0.67	1.01	0.92	0.546	1.34	0.406	1.00	1.00	0.406	No
464	30.46	1.68	0.67	1.01	0.92	0.546	1.34	0.406	1.00	1.00	0.406	No
465	30.52	1.68	0.67	1.01	0.92	0.546	1.34	0.406	1.00	1.00	0.406	No
466	30.58	1.68	0.67	1.01	0.92	0.546	1.34	0.406	1.00	1.00	0.406	No
467	30.66	1.69	0.68	1.01	0.92	0.547	1.34	0.407	1.00	1.00	0.407	No
468	30.71	1.69	0.68	1.01	0.92	0.547	1.34	0.407	1.00	1.00	0.407	No
469	30.81	1.70	0.68	1.02	0.92	0.547	1.34	0.407	1.00	1.00	0.407	No
470	30.87	1.70	0.68	1.02	0.92	0.547	1.34	0.407	1.00	1.00	0.407	No
471	30.91	1.70	0.68	1.02	0.92	0.547	1.34	0.407	1.00	1.00	0.407	No
472	31.01	1.71	0.69	1.02	0.92	0.547	1.34	0.407	1.00	1.00	0.407	No
473	31.06	1.71	0.69	1.02	0.92	0.547	1.34	0.407	1.00	1.00	0.407	No
474	31.11	1.71	0.69	1.02	0.91	0.547	1.34	0.407	1.00	1.00	0.407	No
475	31.19	1.72	0.69	1.03	0.91	0.547	1.34	0.407	1.00	1.00	0.407	No
476	31.26	1.72	0.69	1.03	0.91	0.547	1.34	0.407	1.00	1.00	0.407	No
477	31.35	1.73	0.70	1.03	0.91	0.547	1.34	0.407	1.00	1.00	0.407	No
478	31.37	1.73	0.70	1.03	0.91	0.547	1.34	0.407	1.00	1.00	0.407	No
479	31.46	1.73	0.70	1.03	0.91	0.547	1.34	0.407	1.00	1.00	0.407	No
480	31.55	1.74	0.70	1.04	0.91	0.548	1.34	0.407	1.00	1.00	0.407	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
481	31.59	1.74	0.70	1.04	0.91	0.548	1.34	0.407	1.00	1.00	0.407	No
482	31.66	1.75	0.71	1.04	0.91	0.548	1.34	0.407	1.00	1.00	0.407	No
483	31.70	1.75	0.71	1.04	0.91	0.548	1.34	0.407	1.00	1.00	0.407	No
484	31.79	1.75	0.71	1.04	0.91	0.548	1.34	0.407	1.00	1.00	0.407	No
485	31.86	1.76	0.71	1.04	0.91	0.548	1.34	0.407	1.00	1.00	0.407	No
486	31.91	1.76	0.71	1.05	0.91	0.548	1.34	0.407	1.00	1.00	0.407	No
487	31.99	1.77	0.72	1.05	0.91	0.548	1.34	0.407	1.00	1.00	0.407	No
488	32.06	1.77	0.72	1.05	0.91	0.548	1.34	0.408	1.00	1.00	0.408	No
489	32.10	1.77	0.72	1.05	0.91	0.548	1.34	0.408	1.00	1.00	0.408	No
490	32.20	1.78	0.72	1.05	0.91	0.548	1.34	0.408	1.00	1.00	0.408	No
491	32.26	1.78	0.73	1.06	0.91	0.548	1.34	0.408	1.00	1.00	0.408	No
492	32.30	1.78	0.73	1.06	0.91	0.548	1.34	0.408	1.00	1.00	0.408	No
493	32.35	1.79	0.73	1.06	0.91	0.548	1.34	0.408	1.00	1.00	0.408	No
494	32.46	1.79	0.73	1.06	0.91	0.548	1.34	0.408	1.00	1.00	0.408	No
495	32.49	1.79	0.73	1.06	0.91	0.548	1.34	0.408	1.00	1.00	0.408	No
496	32.58	1.80	0.74	1.06	0.91	0.548	1.34	0.408	1.00	1.00	0.408	No
497	32.62	1.80	0.74	1.07	0.91	0.548	1.34	0.408	1.00	1.00	0.408	No
498	32.69	1.81	0.74	1.07	0.91	0.548	1.34	0.408	1.00	1.00	0.408	No
499	32.78	1.81	0.74	1.07	0.91	0.548	1.34	0.407	1.00	1.00	0.409	No
500	32.82	1.81	0.74	1.07	0.90	0.548	1.34	0.407	1.00	1.00	0.409	No
501	32.89	1.82	0.75	1.07	0.90	0.548	1.34	0.407	1.00	1.00	0.409	No
502	32.98	1.82	0.75	1.08	0.90	0.548	1.34	0.407	1.00	1.00	0.409	No
503	33.02	1.83	0.75	1.08	0.90	0.548	1.34	0.407	1.00	1.00	0.409	No
504	33.08	1.83	0.75	1.08	0.90	0.548	1.34	0.407	1.00	1.00	0.409	No
505	33.18	1.84	0.75	1.08	0.90	0.548	1.34	0.407	0.99	1.00	0.409	No
506	33.21	1.84	0.76	1.08	0.90	0.548	1.34	0.407	0.99	1.00	0.409	No
507	33.29	1.84	0.76	1.09	0.90	0.547	1.34	0.407	0.99	1.00	0.410	No
508	33.37	1.85	0.76	1.09	0.90	0.547	1.34	0.407	0.99	1.00	0.410	No
509	33.42	1.85	0.76	1.09	0.90	0.547	1.34	0.407	0.99	1.00	0.410	No
510	33.47	1.85	0.76	1.09	0.90	0.547	1.34	0.407	0.99	1.00	0.410	No
511	33.53	1.86	0.77	1.09	0.90	0.547	1.34	0.407	0.99	1.00	0.410	No
512	33.62	1.86	0.77	1.10	0.90	0.547	1.34	0.407	0.99	1.00	0.410	No
513	33.67	1.87	0.77	1.10	0.90	0.547	1.34	0.407	0.99	1.00	0.410	No
514	33.73	1.87	0.77	1.10	0.90	0.547	1.34	0.407	0.99	1.00	0.411	No
515	33.82	1.88	0.77	1.10	0.90	0.547	1.34	0.407	0.99	1.00	0.411	No
516	33.87	1.88	0.78	1.10	0.90	0.547	1.34	0.407	0.99	1.00	0.411	No
517	33.93	1.88	0.78	1.10	0.90	0.547	1.34	0.407	0.99	1.00	0.411	No
518	34.02	1.89	0.78	1.11	0.90	0.547	1.34	0.407	0.99	1.00	0.411	No
519	34.06	1.89	0.78	1.11	0.90	0.547	1.34	0.407	0.99	1.00	0.411	No
520	34.13	1.89	0.78	1.11	0.90	0.547	1.34	0.407	0.99	1.00	0.411	No
521	34.22	1.90	0.79	1.11	0.90	0.547	1.34	0.407	0.99	1.00	0.411	No
522	34.26	1.90	0.79	1.11	0.90	0.547	1.34	0.407	0.99	1.00	0.412	No
523	34.32	1.90	0.79	1.11	0.90	0.547	1.34	0.407	0.99	1.00	0.412	No
524	34.42	1.91	0.79	1.12	0.89	0.547	1.34	0.407	0.99	1.00	0.412	No
525	34.46	1.91	0.79	1.12	0.89	0.547	1.34	0.407	0.99	1.00	0.412	No
526	34.52	1.92	0.80	1.12	0.89	0.547	1.34	0.407	0.99	1.00	0.412	No
527	34.61	1.92	0.80	1.12	0.89	0.547	1.34	0.407	0.99	1.00	0.412	No
528	34.70	1.93	0.80	1.12	0.89	0.547	1.34	0.407	0.99	1.00	0.412	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
529	34.76	1.93	0.80	1.13	0.89	0.547	1.34	0.407	0.99	1.00	0.412	No
530	34.82	1.93	0.81	1.13	0.89	0.547	1.34	0.407	0.99	1.00	0.413	No
531	34.86	1.94	0.81	1.13	0.89	0.547	1.34	0.407	0.99	1.00	0.413	No
532	34.92	1.94	0.81	1.13	0.89	0.547	1.34	0.407	0.99	1.00	0.413	No
533	35.02	1.94	0.81	1.13	0.89	0.547	1.34	0.406	0.98	1.00	0.413	No
534	35.06	1.95	0.81	1.13	0.89	0.547	1.34	0.406	0.98	1.00	0.413	No
535	35.11	1.95	0.81	1.13	0.89	0.546	1.34	0.406	0.98	1.00	0.413	No
536	35.19	1.95	0.82	1.14	0.89	0.546	1.34	0.406	0.98	1.00	0.413	No
537	35.25	1.96	0.82	1.14	0.89	0.546	1.34	0.406	0.98	1.00	0.413	No
538	35.31	1.96	0.82	1.14	0.89	0.546	1.34	0.406	0.98	1.00	0.413	No
539	35.40	1.97	0.82	1.14	0.89	0.546	1.34	0.406	0.98	1.00	0.413	No
540	35.45	1.97	0.83	1.14	0.89	0.546	1.34	0.406	0.98	1.00	0.414	No
541	35.50	1.97	0.83	1.15	0.89	0.546	1.34	0.406	0.98	1.00	0.414	No
542	35.56	1.98	0.83	1.15	0.89	0.546	1.34	0.406	0.98	1.00	0.414	No
543	35.64	1.98	0.83	1.15	0.89	0.546	1.34	0.406	0.98	1.00	0.414	No
544	35.72	1.99	0.83	1.15	0.89	0.546	1.34	0.406	0.98	1.00	0.414	No
545	35.81	1.99	0.84	1.15	0.88	0.546	1.34	0.406	0.98	1.00	0.414	No
546	35.85	1.99	0.84	1.16	0.88	0.545	1.34	0.406	0.98	1.00	0.414	No
547	35.90	2.00	0.84	1.16	0.88	0.545	1.34	0.406	0.98	1.00	0.414	No
548	35.96	2.00	0.84	1.16	0.88	0.545	1.34	0.406	0.98	1.00	0.414	No
549	36.04	2.00	0.84	1.16	0.88	0.545	1.34	0.405	0.98	1.00	0.414	No
550	36.11	2.01	0.85	1.16	0.88	0.545	1.34	0.405	0.98	1.00	0.414	No
551	36.16	2.01	0.85	1.16	0.88	0.545	1.34	0.405	0.98	1.00	0.414	No
552	36.25	2.02	0.85	1.17	0.88	0.545	1.34	0.405	0.98	1.00	0.414	No
553	36.31	2.02	0.85	1.17	0.88	0.545	1.34	0.405	0.98	1.00	0.414	No
554	36.36	2.02	0.85	1.17	0.88	0.545	1.34	0.405	0.98	1.00	0.415	No
555	36.44	2.03	0.86	1.17	0.88	0.544	1.34	0.405	0.98	1.00	0.415	No
556	36.50	2.03	0.86	1.17	0.88	0.544	1.34	0.405	0.98	1.00	0.415	No
557	36.56	2.04	0.86	1.18	0.88	0.544	1.34	0.405	0.98	1.00	0.415	No
558	36.65	2.04	0.86	1.18	0.88	0.544	1.34	0.405	0.98	1.00	0.415	No
559	36.68	2.04	0.86	1.18	0.88	0.544	1.34	0.405	0.98	1.00	0.415	No
560	36.76	2.05	0.87	1.18	0.88	0.544	1.34	0.404	0.97	1.00	0.415	No
561	36.84	2.05	0.87	1.18	0.88	0.544	1.34	0.404	0.97	1.00	0.415	No
562	36.91	2.06	0.87	1.19	0.88	0.544	1.34	0.404	0.97	1.00	0.415	No
563	36.96	2.06	0.87	1.19	0.88	0.543	1.34	0.404	0.97	1.00	0.415	No
564	37.04	2.06	0.87	1.19	0.88	0.543	1.34	0.404	0.97	1.00	0.415	No
565	37.10	2.07	0.88	1.19	0.88	0.543	1.34	0.404	0.97	1.00	0.415	No
566	37.15	2.07	0.88	1.19	0.87	0.543	1.34	0.404	0.97	1.00	0.415	No
567	37.23	2.08	0.88	1.19	0.87	0.543	1.34	0.404	0.97	1.00	0.415	No
568	37.30	2.08	0.88	1.20	0.87	0.543	1.34	0.404	0.97	1.00	0.415	No
569	37.35	2.08	0.88	1.20	0.87	0.543	1.34	0.404	0.97	1.00	0.415	No
570	37.45	2.09	0.89	1.20	0.87	0.542	1.34	0.403	0.97	1.00	0.415	No
571	37.51	2.09	0.89	1.20	0.87	0.542	1.34	0.403	0.97	1.00	0.415	No
572	37.55	2.09	0.89	1.20	0.87	0.542	1.34	0.403	0.97	1.00	0.415	No
573	37.62	2.10	0.89	1.20	0.87	0.542	1.34	0.403	0.97	1.00	0.415	No
574	37.70	2.10	0.90	1.21	0.87	0.542	1.34	0.403	0.97	1.00	0.416	No
575	37.75	2.11	0.90	1.21	0.87	0.542	1.34	0.403	0.97	1.00	0.416	No
576	37.80	2.11	0.90	1.21	0.87	0.542	1.34	0.403	0.97	1.00	0.416	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
577	37.90	2.11	0.90	1.21	0.87	0.542	1.34	0.403	0.97	1.00	0.416	No
578	37.95	2.12	0.90	1.21	0.87	0.541	1.34	0.403	0.97	1.00	0.416	No
579	38.05	2.12	0.91	1.22	0.87	0.541	1.34	0.403	0.97	1.00	0.416	No
580	38.06	2.12	0.91	1.22	0.87	0.541	1.34	0.403	0.97	1.00	0.416	No
581	38.15	2.13	0.91	1.22	0.87	0.541	1.34	0.402	0.97	1.00	0.416	No
582	38.19	2.13	0.91	1.22	0.87	0.541	1.34	0.402	0.97	1.00	0.416	No
583	38.27	2.14	0.91	1.22	0.87	0.541	1.34	0.402	0.97	1.00	0.416	No
584	38.34	2.14	0.92	1.22	0.87	0.541	1.34	0.402	0.97	1.00	0.416	No
585	38.39	2.14	0.92	1.23	0.86	0.541	1.34	0.402	0.97	1.00	0.416	No
586	38.46	2.15	0.92	1.23	0.86	0.540	1.34	0.402	0.97	1.00	0.416	No
587	38.55	2.15	0.92	1.23	0.86	0.540	1.34	0.402	0.97	1.00	0.416	No
588	38.59	2.15	0.92	1.23	0.86	0.540	1.34	0.402	0.97	1.00	0.416	No
589	38.68	2.16	0.93	1.23	0.86	0.540	1.34	0.402	0.97	1.00	0.416	No
590	38.75	2.16	0.93	1.23	0.86	0.540	1.34	0.401	0.97	1.00	0.416	No
591	38.80	2.17	0.93	1.24	0.86	0.540	1.34	0.401	0.96	1.00	0.416	No
592	38.87	2.17	0.93	1.24	0.86	0.539	1.34	0.401	0.96	1.00	0.416	No
593	38.95	2.18	0.93	1.24	0.86	0.539	1.34	0.401	0.96	1.00	0.416	No
594	38.99	2.18	0.94	1.24	0.86	0.539	1.34	0.401	0.96	1.00	0.416	No
595	39.04	2.18	0.94	1.24	0.86	0.539	1.34	0.401	0.96	1.00	0.416	No
596	39.11	2.18	0.94	1.25	0.86	0.539	1.34	0.401	0.96	1.00	0.416	No
597	39.19	2.19	0.94	1.25	0.86	0.538	1.34	0.400	0.96	1.00	0.416	No
598	39.27	2.19	0.94	1.25	0.86	0.538	1.34	0.400	0.96	1.00	0.416	No
599	39.33	2.20	0.95	1.25	0.86	0.538	1.34	0.400	0.96	1.00	0.416	No
600	39.39	2.20	0.95	1.25	0.86	0.538	1.34	0.400	0.96	1.00	0.416	No
601	39.45	2.21	0.95	1.26	0.86	0.537	1.34	0.400	0.96	1.00	0.416	No
602	39.53	2.21	0.95	1.26	0.86	0.537	1.34	0.400	0.96	1.00	0.416	No
603	39.57	2.21	0.95	1.26	0.85	0.537	1.34	0.399	0.96	1.00	0.416	No
604	39.64	2.22	0.96	1.26	0.85	0.537	1.34	0.399	0.96	1.00	0.416	No
605	39.72	2.22	0.96	1.26	0.85	0.537	1.34	0.399	0.96	1.00	0.416	No
606	39.79	2.23	0.96	1.27	0.85	0.536	1.34	0.399	0.96	1.00	0.416	No
607	39.84	2.23	0.96	1.27	0.85	0.536	1.34	0.399	0.96	1.00	0.416	No
608	39.93	2.23	0.97	1.27	0.85	0.536	1.34	0.399	0.96	1.00	0.416	No
609	39.98	2.24	0.97	1.27	0.85	0.536	1.34	0.399	0.96	1.00	0.416	No
610	40.05	2.24	0.97	1.27	0.85	0.536	1.34	0.398	0.96	1.00	0.416	No
611	40.09	2.24	0.97	1.27	0.85	0.536	1.34	0.398	0.96	1.00	0.416	No
612	40.19	2.25	0.97	1.28	0.85	0.535	1.34	0.398	0.96	1.00	0.416	No
613	40.23	2.25	0.97	1.28	0.85	0.535	1.34	0.398	0.96	1.00	0.416	No
614	40.34	2.26	0.98	1.28	0.85	0.535	1.34	0.398	0.96	1.00	0.416	No
615	40.38	2.26	0.98	1.28	0.85	0.535	1.34	0.398	0.96	1.00	0.415	No
616	40.43	2.26	0.98	1.28	0.85	0.534	1.34	0.397	0.96	1.00	0.415	No
617	40.50	2.27	0.98	1.29	0.85	0.534	1.34	0.397	0.96	1.00	0.415	No
618	40.58	2.27	0.99	1.29	0.85	0.534	1.34	0.397	0.96	1.00	0.415	No
619	40.63	2.28	0.99	1.29	0.85	0.534	1.34	0.397	0.96	1.00	0.415	No
620	40.70	2.28	0.99	1.29	0.84	0.533	1.34	0.397	0.96	1.00	0.415	No
621	40.75	2.28	0.99	1.29	0.84	0.533	1.34	0.396	0.95	1.00	0.415	No
622	40.84	2.29	0.99	1.30	0.84	0.533	1.34	0.396	0.95	1.00	0.415	No
623	40.88	2.29	0.99	1.30	0.84	0.532	1.34	0.396	0.95	1.00	0.415	No
624	40.95	2.30	1.00	1.30	0.84	0.532	1.34	0.396	0.95	1.00	0.415	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
625	41.03	2.30	1.00	1.30	0.84	0.532	1.34	0.396	0.95	1.00	2.000	Yes
626	41.08	2.31	1.00	1.30	0.84	0.532	1.34	0.395	0.95	1.00	2.000	Yes
627	41.15	2.31	1.00	1.31	0.84	0.531	1.34	0.395	0.95	1.00	2.000	Yes
628	41.23	2.32	1.01	1.31	0.84	0.531	1.34	0.395	0.95	1.00	2.000	Yes
629	41.28	2.32	1.01	1.31	0.84	0.531	1.34	0.395	0.95	1.00	2.000	Yes
630	41.35	2.32	1.01	1.31	0.84	0.530	1.34	0.394	0.95	1.00	2.000	Yes
631	41.43	2.33	1.01	1.32	0.84	0.530	1.34	0.394	0.95	1.00	2.000	Yes
632	41.48	2.33	1.01	1.32	0.84	0.530	1.34	0.394	0.95	1.00	2.000	Yes
633	41.54	2.34	1.02	1.32	0.84	0.529	1.34	0.394	0.95	1.00	0.414	No
634	41.62	2.34	1.02	1.32	0.84	0.529	1.34	0.393	0.95	1.00	0.414	No
635	41.68	2.34	1.02	1.33	0.84	0.529	1.34	0.393	0.95	1.00	0.414	No
636	41.77	2.35	1.02	1.33	0.83	0.528	1.34	0.393	0.95	1.00	0.414	No
637	41.82	2.35	1.02	1.33	0.83	0.528	1.34	0.393	0.95	1.00	0.414	No
638	41.88	2.36	1.03	1.33	0.83	0.528	1.34	0.392	0.95	1.00	0.414	No
639	41.97	2.36	1.03	1.34	0.83	0.527	1.34	0.392	0.95	1.00	0.414	No
640	42.01	2.37	1.03	1.34	0.83	0.527	1.34	0.392	0.95	1.00	0.414	No
641	42.10	2.37	1.03	1.34	0.83	0.527	1.34	0.392	0.95	1.00	0.413	No
642	42.17	2.38	1.03	1.34	0.83	0.526	1.34	0.391	0.95	1.00	0.413	No
643	42.22	2.38	1.04	1.34	0.83	0.526	1.34	0.391	0.95	1.00	0.413	No
644	42.28	2.39	1.04	1.35	0.83	0.526	1.34	0.391	0.95	1.00	0.413	No
645	42.33	2.39	1.04	1.35	0.83	0.525	1.34	0.391	0.95	1.00	0.413	No
646	42.41	2.39	1.04	1.35	0.83	0.525	1.34	0.390	0.95	1.00	0.413	No
647	42.48	2.40	1.04	1.35	0.83	0.525	1.34	0.390	0.94	1.00	0.413	No
648	42.52	2.40	1.05	1.36	0.83	0.524	1.34	0.390	0.94	1.00	0.413	No
649	42.60	2.41	1.05	1.36	0.83	0.524	1.34	0.390	0.94	1.00	0.413	No
650	42.66	2.41	1.05	1.36	0.83	0.524	1.34	0.389	0.94	1.00	0.413	No
651	42.72	2.41	1.05	1.36	0.83	0.523	1.34	0.389	0.94	1.00	0.412	No
652	42.81	2.42	1.05	1.37	0.83	0.523	1.34	0.389	0.94	1.00	0.412	No
653	42.87	2.43	1.06	1.37	0.82	0.522	1.34	0.389	0.94	1.00	0.412	No
654	42.92	2.43	1.06	1.37	0.82	0.522	1.34	0.388	0.94	1.00	0.412	No
655	43.00	2.43	1.06	1.37	0.82	0.522	1.34	0.388	0.94	1.00	0.412	No
656	43.06	2.44	1.06	1.38	0.82	0.521	1.34	0.388	0.94	1.00	0.412	No
657	43.11	2.44	1.06	1.38	0.82	0.521	1.34	0.388	0.94	1.00	0.412	No
658	43.18	2.45	1.07	1.38	0.82	0.521	1.34	0.387	0.94	1.00	0.412	No
659	43.25	2.45	1.07	1.38	0.82	0.520	1.34	0.387	0.94	1.00	0.412	No
660	43.31	2.45	1.07	1.38	0.82	0.520	1.34	0.387	0.94	1.00	0.411	No
661	43.39	2.46	1.07	1.39	0.82	0.520	1.34	0.387	0.94	1.00	0.411	No
662	43.45	2.46	1.07	1.39	0.82	0.519	1.34	0.386	0.94	1.00	0.411	No
663	43.51	2.47	1.08	1.39	0.82	0.519	1.34	0.386	0.94	1.00	0.411	No
664	43.61	2.47	1.08	1.39	0.82	0.519	1.34	0.386	0.94	1.00	0.411	No
665	43.65	2.48	1.08	1.40	0.82	0.518	1.34	0.385	0.94	1.00	0.411	No
666	43.72	2.48	1.08	1.40	0.82	0.518	1.34	0.385	0.94	1.00	0.411	No
667	43.81	2.49	1.09	1.40	0.82	0.517	1.34	0.385	0.94	1.00	0.411	No
668	43.85	2.49	1.09	1.40	0.82	0.517	1.34	0.385	0.94	1.00	0.410	No
669	43.92	2.49	1.09	1.41	0.81	0.517	1.34	0.384	0.94	1.00	0.410	No
670	44.01	2.50	1.09	1.41	0.81	0.516	1.34	0.384	0.94	1.00	0.410	No
671	44.05	2.50	1.09	1.41	0.81	0.516	1.34	0.384	0.94	1.00	0.410	No
672	44.10	2.51	1.10	1.41	0.81	0.516	1.34	0.384	0.94	1.00	0.410	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
673	44.20	2.51	1.10	1.41	0.81	0.515	1.34	0.383	0.94	1.00	0.410	No
674	44.25	2.52	1.10	1.42	0.81	0.515	1.34	0.383	0.94	1.00	0.410	No
675	44.30	2.52	1.10	1.42	0.81	0.515	1.34	0.383	0.93	1.00	0.410	No
676	44.40	2.53	1.10	1.42	0.81	0.514	1.34	0.383	0.93	1.00	0.409	No
677	44.45	2.53	1.11	1.42	0.81	0.514	1.34	0.382	0.93	1.00	0.409	No
678	44.50	2.53	1.11	1.42	0.81	0.514	1.34	0.382	0.93	1.00	0.409	No
679	44.57	2.54	1.11	1.43	0.81	0.513	1.34	0.382	0.93	1.00	0.409	No
680	44.63	2.54	1.11	1.43	0.81	0.513	1.34	0.382	0.93	1.00	0.409	No
681	44.69	2.54	1.11	1.43	0.81	0.513	1.34	0.381	0.93	1.00	0.409	No
682	44.79	2.55	1.12	1.43	0.81	0.512	1.34	0.381	0.93	1.00	0.409	No
683	44.84	2.55	1.12	1.44	0.81	0.512	1.34	0.381	0.93	1.00	0.409	No
684	44.89	2.56	1.12	1.44	0.80	0.512	1.34	0.381	0.93	1.00	0.408	No
685	44.96	2.56	1.12	1.44	0.80	0.511	1.34	0.380	0.93	1.00	0.408	No
686	45.04	2.57	1.12	1.44	0.80	0.511	1.34	0.380	0.93	1.00	0.408	No
687	45.09	2.57	1.13	1.44	0.80	0.511	1.34	0.380	0.93	1.00	0.408	No
688	45.17	2.58	1.13	1.45	0.80	0.510	1.34	0.379	0.93	1.00	0.408	No
689	45.24	2.58	1.13	1.45	0.80	0.510	1.34	0.379	0.93	1.00	0.408	No
690	45.28	2.58	1.13	1.45	0.80	0.510	1.34	0.379	0.93	1.00	0.408	No
691	45.38	2.59	1.14	1.45	0.80	0.509	1.34	0.379	0.93	1.00	0.407	No
692	45.42	2.59	1.14	1.46	0.80	0.509	1.34	0.378	0.93	1.00	0.407	No
693	45.49	2.60	1.14	1.46	0.80	0.508	1.34	0.378	0.93	1.00	0.407	No
694	45.57	2.60	1.14	1.46	0.80	0.508	1.34	0.378	0.93	1.00	0.407	No
695	45.63	2.61	1.14	1.46	0.80	0.508	1.34	0.378	0.93	1.00	0.407	No
696	45.69	2.61	1.14	1.47	0.80	0.507	1.34	0.377	0.93	1.00	0.407	No
697	45.78	2.62	1.15	1.47	0.80	0.507	1.34	0.377	0.93	1.00	0.406	No
698	45.84	2.62	1.15	1.47	0.80	0.507	1.34	0.377	0.93	1.00	0.406	No
699	45.89	2.62	1.15	1.47	0.79	0.506	1.34	0.377	0.93	1.00	0.406	No
700	45.93	2.63	1.15	1.47	0.79	0.506	1.34	0.376	0.93	1.00	0.406	No
701	46.02	2.63	1.16	1.48	0.79	0.506	1.34	0.376	0.93	1.00	0.406	No
702	46.08	2.63	1.16	1.48	0.79	0.505	1.34	0.376	0.93	1.00	0.406	No
703	46.13	2.64	1.16	1.48	0.79	0.505	1.34	0.376	0.93	1.00	0.406	No
704	46.22	2.64	1.16	1.48	0.79	0.505	1.34	0.375	0.93	1.00	0.406	No
705	46.28	2.65	1.16	1.48	0.79	0.504	1.34	0.375	0.93	1.00	0.405	No
706	46.33	2.65	1.16	1.49	0.79	0.504	1.34	0.375	0.92	1.00	0.405	No
707	46.43	2.66	1.17	1.49	0.79	0.504	1.34	0.375	0.92	1.00	0.405	No
708	46.47	2.66	1.17	1.49	0.79	0.503	1.34	0.374	0.92	1.00	0.405	No
709	46.53	2.66	1.17	1.49	0.79	0.503	1.34	0.374	0.92	1.00	0.405	No
710	46.63	2.67	1.17	1.49	0.79	0.503	1.34	0.374	0.92	1.00	0.405	No
711	46.67	2.67	1.18	1.49	0.79	0.502	1.34	0.374	0.92	1.00	0.405	No
712	46.73	2.67	1.18	1.50	0.79	0.502	1.34	0.373	0.92	1.00	0.404	No
713	46.83	2.68	1.18	1.50	0.79	0.502	1.34	0.373	0.92	1.00	0.404	No
714	46.87	2.68	1.18	1.50	0.78	0.501	1.34	0.373	0.92	1.00	0.404	No
715	46.93	2.69	1.18	1.50	0.78	0.501	1.34	0.373	0.92	1.00	0.404	No
716	47.02	2.69	1.19	1.50	0.78	0.501	1.34	0.372	0.92	1.00	0.404	No
717	47.08	2.69	1.19	1.51	0.78	0.501	1.34	0.372	0.92	1.00	0.404	No
718	47.12	2.70	1.19	1.51	0.78	0.500	1.34	0.372	0.92	1.00	0.404	No
719	47.18	2.70	1.19	1.51	0.78	0.500	1.34	0.372	0.92	1.00	0.404	No
720	47.27	2.71	1.19	1.51	0.78	0.500	1.34	0.372	0.92	1.00	0.403	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
721	47.31	2.71	1.20	1.51	0.78	0.499	1.34	0.371	0.92	1.00	0.403	No
722	47.39	2.71	1.20	1.51	0.78	0.499	1.34	0.371	0.92	1.00	0.403	No
723	47.48	2.72	1.20	1.52	0.78	0.499	1.34	0.371	0.92	1.00	0.403	No
724	47.52	2.72	1.20	1.52	0.78	0.498	1.34	0.371	0.92	1.00	0.403	No
725	47.59	2.72	1.20	1.52	0.78	0.498	1.34	0.370	0.92	1.00	0.403	No
726	47.66	2.73	1.21	1.52	0.78	0.498	1.34	0.370	0.92	1.00	0.402	No
727	47.74	2.73	1.21	1.52	0.78	0.497	1.34	0.370	0.92	1.00	0.402	No
728	47.79	2.74	1.21	1.53	0.78	0.497	1.34	0.370	0.92	1.00	0.402	No
729	47.86	2.74	1.21	1.53	0.77	0.497	1.34	0.369	0.92	1.00	2.000	Yes
730	47.94	2.74	1.21	1.53	0.77	0.496	1.34	0.369	0.92	1.00	2.000	Yes
731	47.99	2.75	1.22	1.53	0.77	0.496	1.34	0.369	0.92	1.00	2.000	Yes
732	48.05	2.75	1.22	1.53	0.77	0.496	1.34	0.369	0.92	1.00	2.000	Yes
733	48.13	2.76	1.22	1.54	0.77	0.495	1.34	0.368	0.92	1.00	2.000	Yes
734	48.19	2.76	1.22	1.54	0.77	0.495	1.34	0.368	0.92	1.00	2.000	Yes
735	48.26	2.76	1.22	1.54	0.77	0.495	1.34	0.368	0.92	1.00	2.000	Yes
736	48.34	2.77	1.23	1.54	0.77	0.494	1.34	0.368	0.92	1.00	2.000	Yes
737	48.39	2.77	1.23	1.54	0.77	0.494	1.34	0.367	0.92	1.00	0.401	No
738	48.43	2.78	1.23	1.55	0.77	0.494	1.34	0.367	0.92	1.00	0.401	No
739	48.51	2.78	1.23	1.55	0.77	0.493	1.34	0.367	0.92	1.00	2.000	Yes
740	48.58	2.78	1.23	1.55	0.77	0.493	1.34	0.367	0.92	1.00	2.000	Yes
741	48.63	2.79	1.24	1.55	0.77	0.493	1.34	0.366	0.92	1.00	2.000	Yes
742	48.72	2.79	1.24	1.55	0.77	0.492	1.34	0.366	0.92	1.00	2.000	Yes
743	48.78	2.80	1.24	1.56	0.77	0.492	1.34	0.366	0.92	1.00	2.000	Yes
744	48.83	2.80	1.24	1.56	0.76	0.491	1.34	0.365	0.91	1.00	2.000	Yes
745	48.90	2.81	1.24	1.56	0.76	0.491	1.34	0.365	0.91	1.00	2.000	Yes
746	48.99	2.81	1.25	1.56	0.76	0.491	1.34	0.365	0.91	1.00	0.399	No
747	49.03	2.81	1.25	1.56	0.76	0.490	1.34	0.365	0.91	1.00	2.000	Yes
748	49.08	2.82	1.25	1.57	0.76	0.490	1.34	0.364	0.91	1.00	2.000	Yes
749	49.17	2.82	1.25	1.57	0.76	0.490	1.34	0.364	0.91	1.00	2.000	Yes
750	49.23	2.83	1.26	1.57	0.76	0.489	1.34	0.364	0.91	1.00	2.000	Yes
751	49.32	2.83	1.26	1.57	0.76	0.489	1.34	0.363	0.91	1.00	2.000	Yes
752	49.35	2.83	1.26	1.57	0.76	0.488	1.34	0.363	0.91	1.00	2.000	Yes
753	49.43	2.84	1.26	1.58	0.76	0.488	1.34	0.363	0.91	1.00	2.000	Yes
754	49.50	2.84	1.26	1.58	0.76	0.488	1.34	0.363	0.91	1.00	2.000	Yes
755	49.58	2.85	1.27	1.58	0.76	0.487	1.34	0.362	0.91	1.00	2.000	Yes
756	49.63	2.85	1.27	1.58	0.76	0.487	1.34	0.362	0.91	1.00	2.000	Yes
757	49.72	2.86	1.27	1.59	0.76	0.486	1.34	0.362	0.91	1.00	2.000	Yes
758	49.78	2.86	1.27	1.59	0.75	0.486	1.34	0.361	0.91	1.00	2.000	Yes
759	49.83	2.87	1.27	1.59	0.75	0.486	1.34	0.361	0.91	1.00	2.000	Yes
760	49.90	2.87	1.28	1.59	0.75	0.485	1.34	0.361	0.91	1.00	0.397	No
761	49.98	2.88	1.28	1.60	0.75	0.485	1.34	0.361	0.91	1.00	0.396	No
762	50.02	2.88	1.28	1.60	0.75	0.484	1.34	0.360	0.91	1.00	2.000	No
763	50.08	2.88	1.28	1.60	0.75	0.484	1.34	0.360	0.91	1.00	2.000	No
764	50.18	2.89	1.28	1.60	0.75	0.483	1.34	0.360	0.91	1.00	2.000	No
765	50.23	2.89	1.29	1.61	0.75	0.483	1.34	0.359	0.91	1.00	2.000	No
766	50.27	2.89	1.29	1.61	0.75	0.483	1.34	0.359	0.91	1.00	2.000	No
767	50.36	2.90	1.29	1.61	0.75	0.482	1.34	0.359	0.91	1.00	2.000	No
768	50.40	2.90	1.29	1.61	0.75	0.482	1.34	0.359	0.91	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
769	50.47	2.91	1.29	1.61	0.75	0.482	1.34	0.358	0.91	1.00	2.000	No
770	50.55	2.91	1.30	1.62	0.75	0.481	1.34	0.358	0.91	1.00	2.000	No
771	50.63	2.92	1.30	1.62	0.75	0.481	1.34	0.358	0.91	1.00	2.000	No
772	50.67	2.92	1.30	1.62	0.75	0.481	1.34	0.357	0.91	1.00	2.000	No
773	50.72	2.92	1.30	1.62	0.75	0.480	1.34	0.357	0.91	1.00	2.000	No
774	50.83	2.93	1.31	1.63	0.74	0.480	1.34	0.357	0.91	1.00	2.000	No
775	50.88	2.93	1.31	1.63	0.74	0.479	1.34	0.356	0.91	1.00	2.000	No
776	50.93	2.94	1.31	1.63	0.74	0.479	1.34	0.356	0.91	1.00	2.000	No
777	51.02	2.94	1.31	1.63	0.74	0.478	1.34	0.356	0.90	1.00	2.000	No
778	51.08	2.95	1.31	1.64	0.74	0.478	1.34	0.356	0.90	1.00	2.000	No
779	51.12	2.95	1.31	1.64	0.74	0.478	1.34	0.355	0.90	1.00	2.000	No
780	51.21	2.96	1.32	1.64	0.74	0.477	1.34	0.355	0.90	1.00	2.000	No
781	51.27	2.96	1.32	1.64	0.74	0.477	1.34	0.355	0.90	1.00	2.000	No
782	51.32	2.96	1.32	1.64	0.74	0.477	1.34	0.354	0.90	1.00	2.000	No
783	51.39	2.97	1.32	1.65	0.74	0.476	1.34	0.354	0.90	1.00	2.000	No
784	51.47	2.97	1.33	1.65	0.74	0.476	1.34	0.354	0.90	1.00	2.000	No
785	51.55	2.98	1.33	1.65	0.74	0.475	1.34	0.353	0.90	1.00	2.000	No
786	51.60	2.98	1.33	1.65	0.74	0.475	1.34	0.353	0.90	1.00	2.000	No
787	51.67	2.99	1.33	1.66	0.74	0.474	1.34	0.353	0.90	1.00	2.000	No
788	51.72	2.99	1.33	1.66	0.74	0.474	1.34	0.353	0.90	1.00	2.000	No
789	51.79	3.00	1.34	1.66	0.73	0.474	1.34	0.352	0.90	1.00	2.000	No
790	51.87	3.00	1.34	1.66	0.73	0.473	1.34	0.352	0.90	1.00	2.000	No
791	51.91	3.00	1.34	1.66	0.73	0.473	1.34	0.352	0.90	1.00	2.000	No
792	51.98	3.01	1.34	1.67	0.73	0.473	1.34	0.352	0.90	1.00	2.000	No
793	52.06	3.01	1.34	1.67	0.73	0.472	1.34	0.351	0.90	1.00	2.000	No
794	52.12	3.02	1.35	1.67	0.73	0.472	1.34	0.351	0.90	1.00	2.000	No
795	52.17	3.02	1.35	1.67	0.73	0.471	1.34	0.351	0.90	1.00	2.000	No
796	52.26	3.03	1.35	1.68	0.73	0.471	1.34	0.350	0.90	1.00	2.000	Yes
797	52.31	3.03	1.35	1.68	0.73	0.471	1.34	0.350	0.90	1.00	2.000	Yes
798	52.38	3.03	1.35	1.68	0.73	0.470	1.34	0.350	0.90	1.00	2.000	Yes
799	52.47	3.04	1.36	1.68	0.73	0.470	1.34	0.349	0.90	1.00	2.000	Yes
800	52.51	3.04	1.36	1.69	0.73	0.469	1.34	0.349	0.90	1.00	2.000	Yes
801	52.56	3.05	1.36	1.69	0.73	0.469	1.34	0.349	0.90	1.00	2.000	Yes
802	52.66	3.05	1.36	1.69	0.73	0.469	1.34	0.349	0.90	1.00	2.000	Yes
803	52.70	3.06	1.36	1.69	0.73	0.468	1.34	0.348	0.90	1.00	2.000	Yes
804	52.77	3.06	1.37	1.69	0.72	0.468	1.34	0.348	0.90	1.00	2.000	Yes
805	52.87	3.07	1.37	1.70	0.72	0.467	1.34	0.348	0.90	1.00	2.000	Yes
806	52.92	3.07	1.37	1.70	0.72	0.467	1.34	0.347	0.90	1.00	2.000	Yes
807	52.97	3.07	1.37	1.70	0.72	0.467	1.34	0.347	0.90	1.00	2.000	Yes
808	53.02	3.08	1.37	1.70	0.72	0.467	1.34	0.347	0.90	1.00	2.000	Yes
809	53.10	3.08	1.38	1.70	0.72	0.466	1.34	0.347	0.90	1.00	2.000	Yes
810	53.16	3.08	1.38	1.71	0.72	0.466	1.34	0.346	0.90	1.00	2.000	No
811	53.22	3.09	1.38	1.71	0.72	0.466	1.34	0.346	0.90	1.00	2.000	No
812	53.31	3.09	1.38	1.71	0.72	0.465	1.34	0.346	0.90	1.00	2.000	No
813	53.36	3.10	1.38	1.71	0.72	0.465	1.34	0.346	0.90	1.00	2.000	No
814	53.42	3.10	1.39	1.71	0.72	0.465	1.34	0.345	0.89	1.00	2.000	No
815	53.51	3.11	1.39	1.72	0.72	0.464	1.34	0.345	0.89	1.00	2.000	No
816	53.56	3.11	1.39	1.72	0.72	0.464	1.34	0.345	0.89	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
817	53.62	3.11	1.39	1.72	0.72	0.464	1.34	0.345	0.89	1.00	2.000	No
818	53.71	3.12	1.39	1.72	0.72	0.463	1.34	0.344	0.89	1.00	2.000	No
819	53.75	3.12	1.40	1.72	0.72	0.463	1.34	0.344	0.89	1.00	2.000	No
820	53.83	3.12	1.40	1.73	0.71	0.462	1.34	0.344	0.89	1.00	2.000	No
821	53.91	3.13	1.40	1.73	0.71	0.462	1.34	0.344	0.89	1.00	2.000	No
822	53.98	3.13	1.40	1.73	0.71	0.462	1.34	0.343	0.89	1.00	2.000	No
823	54.01	3.13	1.40	1.73	0.71	0.462	1.34	0.343	0.89	1.00	2.000	No
824	54.11	3.14	1.41	1.73	0.71	0.461	1.34	0.343	0.89	1.00	2.000	No
825	54.15	3.14	1.41	1.73	0.71	0.461	1.34	0.343	0.89	1.00	2.000	No
826	54.21	3.15	1.41	1.74	0.71	0.461	1.34	0.343	0.89	1.00	2.000	No
827	54.27	3.15	1.41	1.74	0.71	0.460	1.34	0.342	0.89	1.00	2.000	No
828	54.35	3.15	1.41	1.74	0.71	0.460	1.34	0.342	0.89	1.00	2.000	No
829	54.42	3.16	1.42	1.74	0.71	0.460	1.34	0.342	0.89	1.00	2.000	No
830	54.46	3.16	1.42	1.74	0.71	0.459	1.34	0.342	0.89	1.00	2.000	No
831	54.55	3.17	1.42	1.74	0.71	0.459	1.34	0.341	0.89	1.00	2.000	No
832	54.60	3.17	1.42	1.75	0.71	0.459	1.34	0.341	0.89	1.00	2.000	No
833	54.67	3.17	1.42	1.75	0.71	0.459	1.34	0.341	0.89	1.00	2.000	No
834	54.74	3.18	1.43	1.75	0.71	0.458	1.34	0.341	0.89	1.00	2.000	No
835	54.79	3.18	1.43	1.75	0.71	0.458	1.34	0.341	0.89	1.00	2.000	No
836	54.86	3.18	1.43	1.75	0.70	0.458	1.34	0.340	0.89	1.00	2.000	No
837	54.96	3.19	1.43	1.75	0.70	0.457	1.34	0.340	0.89	1.00	2.000	No
838	55.03	3.19	1.44	1.76	0.70	0.457	1.34	0.340	0.89	1.00	2.000	No
839	55.06	3.19	1.44	1.76	0.70	0.457	1.34	0.340	0.89	1.00	2.000	No
840	55.14	3.20	1.44	1.76	0.70	0.457	1.34	0.340	0.89	1.00	2.000	No
841	55.21	3.20	1.44	1.76	0.70	0.456	1.34	0.339	0.89	1.00	2.000	No
842	55.25	3.20	1.44	1.76	0.70	0.456	1.34	0.339	0.89	1.00	2.000	No
843	55.32	3.21	1.45	1.76	0.70	0.456	1.34	0.339	0.89	1.00	2.000	No
844	55.41	3.21	1.45	1.76	0.70	0.455	1.34	0.339	0.89	1.00	2.000	No
845	55.45	3.21	1.45	1.76	0.70	0.455	1.34	0.339	0.89	1.00	2.000	No
846	55.52	3.22	1.45	1.77	0.70	0.455	1.34	0.338	0.89	1.00	2.000	No
847	55.61	3.22	1.45	1.77	0.70	0.454	1.34	0.338	0.89	1.00	2.000	No
848	55.65	3.22	1.46	1.77	0.70	0.454	1.34	0.338	0.89	1.00	2.000	No
849	55.71	3.23	1.46	1.77	0.70	0.454	1.34	0.338	0.89	1.00	2.000	No
850	55.80	3.23	1.46	1.77	0.70	0.454	1.34	0.337	0.89	1.00	2.000	No
851	55.86	3.24	1.46	1.77	0.70	0.453	1.34	0.337	0.89	1.00	2.000	No
852	55.95	3.24	1.46	1.78	0.69	0.453	1.34	0.337	0.89	1.00	2.000	No
853	56.00	3.24	1.47	1.78	0.69	0.453	1.34	0.337	0.89	1.00	2.000	No
854	56.05	3.25	1.47	1.78	0.69	0.453	1.34	0.337	0.89	1.00	2.000	No
855	56.11	3.25	1.47	1.78	0.69	0.452	1.34	0.336	0.89	1.00	2.000	No
856	56.20	3.26	1.47	1.78	0.69	0.452	1.34	0.336	0.89	1.00	2.000	No
857	56.24	3.26	1.47	1.78	0.69	0.452	1.34	0.336	0.89	1.00	2.000	No
858	56.31	3.26	1.48	1.79	0.69	0.451	1.34	0.336	0.89	1.00	2.000	No
859	56.39	3.27	1.48	1.79	0.69	0.451	1.34	0.335	0.89	1.00	2.000	No
860	56.43	3.27	1.48	1.79	0.69	0.451	1.34	0.335	0.89	1.00	2.000	No
861	56.50	3.27	1.48	1.79	0.69	0.451	1.34	0.335	0.89	1.00	2.000	No
862	56.60	3.28	1.49	1.79	0.69	0.450	1.34	0.335	0.89	1.00	2.000	No
863	56.66	3.28	1.49	1.79	0.69	0.450	1.34	0.335	0.89	1.00	2.000	No
864	56.70	3.28	1.49	1.79	0.69	0.450	1.34	0.334	0.89	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
865	56.79	3.29	1.49	1.80	0.69	0.449	1.34	0.334	0.89	1.00	2.000	No
866	56.84	3.29	1.49	1.80	0.69	0.449	1.34	0.334	0.89	1.00	2.000	No
867	56.92	3.29	1.50	1.80	0.69	0.449	1.34	0.334	0.89	1.00	2.000	No
868	56.99	3.30	1.50	1.80	0.69	0.448	1.34	0.334	0.88	1.00	2.000	No
869	57.03	3.30	1.50	1.80	0.68	0.448	1.34	0.333	0.88	1.00	2.000	No
870	57.09	3.30	1.50	1.80	0.68	0.448	1.34	0.333	0.88	1.00	2.000	No
871	57.18	3.31	1.50	1.81	0.68	0.448	1.34	0.333	0.88	1.00	2.000	No
872	57.23	3.31	1.50	1.81	0.68	0.447	1.34	0.333	0.88	1.00	2.000	No
873	57.31	3.32	1.51	1.81	0.68	0.447	1.34	0.332	0.88	1.00	2.000	No
874	57.38	3.32	1.51	1.81	0.68	0.447	1.34	0.332	0.88	1.00	2.000	Yes
875	57.43	3.32	1.51	1.81	0.68	0.447	1.34	0.332	0.88	1.00	2.000	Yes
876	57.50	3.33	1.51	1.81	0.68	0.446	1.34	0.332	0.88	1.00	2.000	Yes
877	57.58	3.33	1.52	1.82	0.68	0.446	1.34	0.332	0.88	1.00	2.000	Yes
878	57.62	3.33	1.52	1.82	0.68	0.446	1.34	0.331	0.88	1.00	2.000	Yes
879	57.68	3.34	1.52	1.82	0.68	0.445	1.34	0.331	0.88	1.00	2.000	Yes
880	57.78	3.34	1.52	1.82	0.68	0.445	1.34	0.331	0.88	1.00	2.000	Yes
881	57.82	3.35	1.52	1.82	0.68	0.445	1.34	0.331	0.88	1.00	2.000	Yes
882	57.89	3.35	1.53	1.83	0.68	0.444	1.34	0.330	0.88	1.00	2.000	Yes
883	57.97	3.36	1.53	1.83	0.68	0.444	1.34	0.330	0.88	1.00	2.000	Yes
884	58.02	3.36	1.53	1.83	0.68	0.444	1.34	0.330	0.88	1.00	2.000	Yes
885	58.09	3.36	1.53	1.83	0.68	0.443	1.34	0.330	0.88	1.00	2.000	No
886	58.17	3.37	1.53	1.83	0.67	0.443	1.34	0.329	0.88	1.00	2.000	No
887	58.23	3.37	1.54	1.84	0.67	0.443	1.34	0.329	0.88	1.00	2.000	No
888	58.28	3.38	1.54	1.84	0.67	0.442	1.34	0.329	0.88	1.00	2.000	No
889	58.37	3.38	1.54	1.84	0.67	0.442	1.34	0.329	0.88	1.00	2.000	Yes
890	58.43	3.39	1.54	1.84	0.67	0.442	1.34	0.328	0.88	1.00	2.000	Yes
891	58.48	3.39	1.54	1.84	0.67	0.441	1.34	0.328	0.88	1.00	2.000	Yes
892	58.57	3.39	1.55	1.85	0.67	0.441	1.34	0.328	0.88	1.00	2.000	Yes
893	58.62	3.40	1.55	1.85	0.67	0.441	1.34	0.328	0.88	1.00	2.000	Yes
894	58.67	3.40	1.55	1.85	0.67	0.440	1.34	0.327	0.88	1.00	2.000	Yes
895	58.78	3.41	1.55	1.85	0.67	0.440	1.34	0.327	0.88	1.00	2.000	Yes
896	58.82	3.41	1.55	1.86	0.67	0.440	1.34	0.327	0.88	1.00	2.000	Yes
897	58.88	3.41	1.56	1.86	0.67	0.439	1.34	0.327	0.88	1.00	2.000	Yes
898	58.97	3.42	1.56	1.86	0.67	0.439	1.34	0.326	0.88	1.00	2.000	Yes
899	59.01	3.42	1.56	1.86	0.67	0.439	1.34	0.326	0.88	1.00	2.000	Yes
900	59.07	3.43	1.56	1.86	0.67	0.438	1.34	0.326	0.88	1.00	2.000	Yes
901	59.12	3.43	1.56	1.87	0.67	0.438	1.34	0.326	0.88	1.00	2.000	Yes
902	59.19	3.43	1.57	1.87	0.67	0.438	1.34	0.326	0.88	1.00	2.000	Yes
903	59.27	3.44	1.57	1.87	0.67	0.437	1.34	0.325	0.88	1.00	2.000	No
904	59.32	3.44	1.57	1.87	0.66	0.437	1.34	0.325	0.88	1.00	2.000	No
905	59.42	3.45	1.57	1.87	0.66	0.437	1.34	0.325	0.88	1.00	2.000	No
906	59.47	3.45	1.57	1.88	0.66	0.436	1.34	0.325	0.88	1.00	2.000	No
907	59.52	3.45	1.58	1.88	0.66	0.436	1.34	0.324	0.88	1.00	2.000	No
908	59.58	3.46	1.58	1.88	0.66	0.436	1.34	0.324	0.88	1.00	2.000	No
909	59.68	3.46	1.58	1.88	0.66	0.435	1.34	0.324	0.88	1.00	2.000	No
910	59.74	3.47	1.58	1.88	0.66	0.435	1.34	0.324	0.88	1.00	2.000	Yes
911	59.78	3.47	1.58	1.88	0.66	0.435	1.34	0.324	0.88	1.00	2.000	Yes
912	59.88	3.47	1.59	1.89	0.66	0.435	1.34	0.323	0.88	1.00	2.000	Yes

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
913	59.93	3.48	1.59	1.89	0.66	0.434	1.34	0.323	0.88	1.00	2.000	Yes
914	60.00	3.48	1.59	1.89	0.66	0.434	1.34	0.323	0.88	1.00	2.000	Yes
915	60.05	3.48	1.59	1.89	0.66	0.434	1.34	0.323	0.87	1.00	2.000	Yes
916	60.13	3.49	1.60	1.89	0.66	0.433	1.34	0.322	0.87	1.00	2.000	Yes
917	60.18	3.49	1.60	1.90	0.66	0.433	1.34	0.322	0.87	1.00	2.000	Yes
918	60.25	3.50	1.60	1.90	0.66	0.433	1.34	0.322	0.87	1.00	2.000	Yes
919	60.33	3.50	1.60	1.90	0.66	0.433	1.34	0.322	0.87	1.00	2.000	No
920	60.38	3.50	1.60	1.90	0.66	0.433	1.34	0.322	0.87	1.00	2.000	No

Abbreviations

Depth: Depth from free surface, at which CPT was performed (ft)
σ_v: Total overburden pressure at test point (tsf)
u_0: Water pressure at test point (tsf)
σ_v': Effective overburden pressure based on GWT during earthquake (tsf)
r_d: Nonlinear shear mass factor
CSR: Cyclic Stress Ratio
MSF: Magnitude Scaling Factor
CSR_{eq}: CSR adjusted for M=7.5
K_σ: Effective overburden stress factor
CSR^*: CSR fully adjusted

:: Cyclic Resistance Ratio (CRR) calculation data ::

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
1	0.10	15.36	2.46	1.25	0.81	24.68	2.58	63.55	4.000	No	No	2.00
2	0.16	18.18	2.37	1.13	0.78	29.20	2.21	64.47	4.000	No	No	2.00
3	0.21	20.36	2.31	1.04	0.76	32.69	2.00	65.27	4.000	No	No	2.00
4	0.29	21.38	2.29	1.01	0.75	34.33	1.91	65.70	4.000	No	No	2.00
5	0.36	22.80	2.25	0.95	0.73	36.60	1.80	66.00	4.000	No	No	2.00
6	0.40	26.01	2.19	0.88	0.71	41.75	1.63	68.26	4.000	No	No	2.00
7	0.51	29.38	2.13	0.85	0.69	47.16	1.52	71.49	4.000	No	No	2.00
8	0.57	32.38	2.09	0.84	0.67	51.97	1.44	75.04	4.000	No	No	2.00
9	0.61	35.46	2.07	0.85	0.66	56.92	1.40	79.41	4.000	No	No	2.00
10	0.70	38.31	2.05	0.91	0.66	61.48	1.38	84.75	4.000	No	No	2.00
11	0.76	40.98	2.05	0.99	0.66	65.78	1.37	90.30	4.000	No	No	2.00
12	0.81	43.44	2.05	1.08	0.66	69.72	1.38	96.06	4.000	No	No	2.00
13	0.87	45.02	2.07	1.21	0.66	72.26	1.41	101.55	4.000	No	No	2.00
14	0.96	46.00	2.09	1.35	0.67	73.82	1.44	106.65	4.000	No	No	2.00
15	1.00	46.15	2.12	1.49	0.68	74.05	1.50	110.83	4.000	No	No	2.00
16	1.05	45.49	2.15	1.63	0.69	72.99	1.56	113.61	4.000	No	No	2.00
17	1.16	44.58	2.18	1.75	0.71	71.53	1.62	115.80	4.000	No	No	2.00
18	1.20	43.39	2.21	1.86	0.72	69.61	1.68	117.12	4.000	No	No	2.00
19	1.26	42.04	2.23	1.93	0.72	67.43	1.73	116.97	4.000	No	No	2.00
20	1.35	40.70	2.24	1.98	0.73	65.27	1.78	116.40	4.000	No	No	2.00
21	1.40	39.42	2.26	2.01	0.74	63.22	1.83	115.37	4.000	No	No	2.00
22	1.45	38.31	2.27	2.01	0.74	61.42	1.85	113.69	4.000	No	No	2.00
23	1.55	36.98	2.28	2.01	0.74	59.27	1.89	111.93	4.000	Yes	No	2.00
24	1.60	35.41	2.30	2.04	0.75	56.74	1.95	110.41	4.000	Yes	No	2.00
25	1.64	33.59	2.33	2.12	0.76	53.81	2.04	109.72	4.000	Yes	No	2.00
26	1.71	31.62	2.36	2.23	0.77	50.64	2.16	109.52	4.000	Yes	No	2.00
27	1.79	29.70	2.40	2.37	0.79	47.55	2.31	109.74	4.000	Yes	No	2.00
28	1.87	28.02	2.44	2.54	0.80	44.86	2.47	110.96	4.000	Yes	No	2.00
29	1.95	26.09	2.49	2.76	0.82	41.75	2.70	112.56	4.000	Yes	No	2.00
30	2.00	24.07	2.54	3.03	0.84	38.50	2.97	114.43	4.000	Yes	No	2.00
31	2.04	22.09	2.59	3.32	0.86	35.30	3.29	116.10	4.000	Yes	No	2.00
32	2.11	20.34	2.64	3.61	0.88	32.49	3.61	117.33	4.000	Yes	Yes	2.00
33	2.19	18.97	2.69	3.87	0.90	30.28	3.91	118.26	4.000	Yes	Yes	2.00
34	2.24	17.93	2.72	4.08	0.91	28.61	4.15	118.85	4.000	Yes	Yes	2.00
35	2.30	17.03	2.75	4.27	0.92	27.15	4.39	119.14	4.000	Yes	Yes	2.00
36	2.38	16.21	2.78	4.46	0.93	25.83	4.62	119.35	4.000	Yes	Yes	2.00
37	2.45	15.52	2.80	4.62	0.94	24.71	4.82	119.16	4.000	Yes	Yes	2.00
38	2.50	15.08	2.82	4.71	0.95	24.00	4.95	118.88	4.000	Yes	Yes	2.00
39	2.58	14.72	2.83	4.78	0.95	23.42	5.06	118.54	4.000	No	Yes	2.00
40	2.64	14.48	2.84	4.81	0.96	23.03	5.13	118.11	4.000	No	Yes	2.00
41	2.69	14.36	2.84	4.75	0.96	22.83	5.12	116.92	4.000	No	Yes	2.00
42	2.79	14.25	2.83	4.64	0.96	22.65	5.08	115.12	4.000	No	Yes	2.00
43	2.85	14.17	2.83	4.50	0.95	22.50	5.02	112.97	4.000	No	Yes	2.00
44	2.90	13.76	2.83	4.39	0.95	21.84	5.04	110.17	4.000	No	Yes	2.00
45	2.98	13.13	2.84	4.28	0.96	20.82	5.12	106.59	4.000	No	Yes	2.00
46	3.05	12.47	2.85	4.13	0.96	19.76	5.18	102.45	4.000	No	Yes	2.00
47	3.09	11.81	2.85	3.93	0.96	18.69	5.23	97.68	4.000	No	Yes	2.00
48	3.17	11.04	2.86	3.74	0.96	17.45	5.32	92.83	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
49	3.24	10.27	2.87	3.56	0.97	16.21	5.42	87.93	4.000	No	Yes	2.00
50	3.29	9.66	2.88	3.40	0.97	15.22	5.52	83.96	4.000	No	Yes	2.00
51	3.36	9.23	2.89	3.31	0.98	14.52	5.60	81.34	4.000	No	Yes	2.00
52	3.44	8.90	2.90	3.24	0.98	13.99	5.68	79.42	4.000	No	Yes	2.00
53	3.48	9.04	2.89	3.19	0.98	14.21	5.59	79.36	4.000	No	Yes	2.00
54	3.56	9.43	2.88	3.24	0.97	14.82	5.48	81.26	4.000	No	Yes	2.00
55	3.64	9.85	2.87	3.36	0.97	15.50	5.43	84.14	4.000	No	Yes	2.00
56	3.69	10.29	2.87	3.57	0.97	16.20	5.44	88.06	4.000	No	Yes	2.00
57	3.76	10.82	2.87	3.76	0.97	17.04	5.40	92.12	4.000	No	Yes	2.00
58	3.84	11.33	2.87	3.97	0.97	17.85	5.40	96.35	4.000	No	Yes	2.00
59	3.88	11.63	2.88	4.23	0.97	18.33	5.48	100.41	4.000	No	Yes	2.00
60	3.98	11.73	2.89	4.49	0.98	18.49	5.61	103.76	4.000	No	Yes	2.00
61	4.03	11.65	2.91	4.81	0.99	18.35	5.83	106.89	4.000	No	Yes	2.00
62	4.08	11.56	2.93	5.08	0.99	18.20	6.01	109.42	4.000	No	Yes	2.00
63	4.14	11.46	2.95	5.30	1.00	18.03	6.17	111.18	4.000	No	Yes	2.00
64	4.23	11.31	2.96	5.50	1.00	17.80	6.32	112.52	4.000	No	Yes	2.00
65	4.27	11.11	2.98	5.67	1.00	17.46	6.48	113.17	4.000	No	Yes	2.00
66	4.36	10.88	2.99	5.80	1.00	17.08	6.63	113.32	4.000	No	Yes	2.00
67	4.41	10.61	3.00	5.92	1.00	16.64	6.79	113.06	4.000	No	Yes	2.00
68	4.46	10.35	3.02	6.01	1.00	16.22	6.93	112.50	4.000	No	Yes	2.00
69	4.55	10.12	3.03	6.06	1.00	15.85	7.05	111.73	4.000	No	Yes	2.00
70	4.61	10.03	3.03	6.00	1.00	15.70	7.06	110.75	4.000	No	Yes	2.00
71	4.66	9.83	3.03	5.97	1.00	15.37	7.11	109.37	4.000	No	Yes	2.00
72	4.75	9.64	3.04	5.93	1.00	15.06	7.17	107.97	4.000	No	Yes	2.00
73	4.80	9.49	3.04	5.88	1.00	14.82	7.20	106.75	4.000	No	Yes	2.00
74	4.86	9.44	3.04	5.78	1.00	14.73	7.17	105.64	4.000	No	Yes	2.00
75	4.96	9.44	3.03	5.67	1.00	14.72	7.11	104.71	4.000	No	Yes	2.00
76	5.01	9.55	3.02	5.51	1.00	14.90	6.97	103.88	4.000	No	Yes	2.00
77	5.06	9.80	3.00	5.29	1.00	15.29	6.74	103.13	4.000	No	Yes	2.00
78	5.16	10.15	2.98	5.05	1.00	15.84	6.47	102.54	4.000	No	Yes	2.00
79	5.21	10.54	2.95	4.81	1.00	16.46	6.20	102.01	4.000	No	Yes	2.00
80	5.26	10.94	2.93	4.63	0.99	17.10	5.95	101.76	4.000	No	Yes	2.00
81	5.32	11.28	2.90	4.45	0.98	17.64	5.74	101.29	4.000	No	Yes	2.00
82	5.41	11.50	2.89	4.32	0.98	18.00	5.59	100.63	4.000	No	Yes	2.00
83	5.46	11.59	2.88	4.23	0.97	18.14	5.52	100.02	4.000	No	Yes	2.00
84	5.52	11.55	2.88	4.20	0.97	18.07	5.51	99.48	4.000	No	Yes	2.00
85	5.60	11.35	2.89	4.24	0.98	17.72	5.59	99.14	4.000	No	Yes	2.00
86	5.66	11.02	2.91	4.34	0.98	17.19	5.76	98.96	4.000	No	Yes	2.00
87	5.71	10.61	2.93	4.49	0.99	16.53	5.98	98.90	4.000	No	Yes	2.00
88	5.81	10.22	2.95	4.68	1.00	15.90	6.24	99.15	4.000	No	Yes	2.00
89	5.89	9.86	2.98	4.89	1.00	15.32	6.50	99.57	4.000	No	Yes	2.00
90	5.91	9.60	3.00	5.14	1.00	14.90	6.75	100.59	4.000	No	Yes	2.00
91	6.00	9.50	3.02	5.35	1.00	14.72	6.92	101.89	4.000	No	Yes	2.00
92	6.06	9.56	3.02	5.51	1.00	14.81	6.99	103.57	4.000	No	Yes	2.00
93	6.11	9.75	3.02	5.63	1.00	15.12	6.99	105.64	4.000	No	Yes	2.00
94	6.20	10.06	3.02	5.72	1.00	15.61	6.92	107.97	4.000	No	Yes	2.00
95	6.24	10.37	3.01	5.81	1.00	16.10	6.85	110.35	4.000	No	Yes	2.00
96	6.30	10.62	3.01	5.90	1.00	16.49	6.81	112.39	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
97	6.38	10.79	3.01	6.00	1.00	16.76	6.81	114.12	4.000	No	Yes	2.00
98	6.46	10.91	3.01	6.08	1.00	16.94	6.82	115.45	4.000	No	Yes	2.00
99	6.50	10.94	3.01	6.14	1.00	16.98	6.84	116.11	4.000	No	Yes	2.00
100	6.60	10.90	3.01	6.20	1.00	16.91	6.88	116.40	4.000	No	Yes	2.00
101	6.63	10.77	3.02	6.24	1.00	16.70	6.95	116.12	4.000	No	Yes	2.00
102	6.72	10.55	3.03	6.26	1.00	16.34	7.04	115.09	4.000	No	Yes	2.00
103	6.80	10.30	3.03	6.24	1.00	15.93	7.13	113.56	4.000	No	Yes	2.00
104	6.84	10.05	3.04	6.20	1.00	15.53	7.20	111.82	4.000	No	Yes	2.00
105	6.90	9.79	3.05	6.17	1.00	15.11	7.29	110.15	4.000	No	Yes	2.00
106	7.00	9.55	3.05	6.14	1.00	14.71	7.38	108.54	4.000	No	Yes	2.00
107	7.04	9.31	3.06	6.13	1.00	14.33	7.48	107.12	4.000	No	Yes	2.00
108	7.09	9.08	3.07	6.13	1.00	13.96	7.58	105.77	4.000	No	Yes	2.00
109	7.20	8.89	3.08	6.13	1.00	13.63	7.68	104.61	4.000	No	Yes	2.00
110	7.24	8.72	3.09	6.12	1.00	13.35	7.75	103.54	4.000	No	Yes	2.00
111	7.30	8.61	3.09	6.11	1.00	13.17	7.80	102.79	4.000	No	Yes	2.00
112	7.39	8.52	3.09	6.09	1.00	13.02	7.84	102.04	4.000	No	Yes	2.00
113	7.43	8.43	3.10	6.07	1.00	12.87	7.88	101.39	4.000	No	Yes	2.00
114	7.50	8.39	3.10	6.04	1.00	12.81	7.88	100.85	4.000	No	Yes	2.00
115	7.59	8.35	3.10	6.00	1.00	12.74	7.88	100.32	4.000	No	Yes	2.00
116	7.64	8.35	3.09	5.93	1.00	12.73	7.84	99.80	4.000	No	Yes	2.00
117	7.70	8.37	3.09	5.86	1.00	12.76	7.79	99.38	4.000	No	Yes	2.00
118	7.79	8.41	3.08	5.75	1.00	12.81	7.71	98.76	4.000	No	Yes	2.00
119	7.83	8.43	3.08	5.64	1.00	12.84	7.63	98.02	4.000	No	Yes	2.00
120	7.90	8.45	3.07	5.53	1.00	12.87	7.56	97.27	4.000	No	Yes	2.00
121	7.94	8.50	3.06	5.42	1.00	12.95	7.46	96.63	4.000	No	Yes	2.00
122	8.03	8.53	3.05	5.28	1.00	12.98	7.37	95.64	4.000	No	Yes	2.00
123	8.11	8.52	3.05	5.12	1.00	12.96	7.28	94.29	4.000	No	Yes	2.00
124	8.17	8.50	3.04	4.94	1.00	12.93	7.17	92.70	4.000	No	Yes	2.00
125	8.21	8.43	3.03	4.76	1.00	12.81	7.09	90.83	4.000	No	Yes	2.00
126	8.28	8.32	3.03	4.58	1.00	12.62	7.03	88.68	4.000	No	Yes	2.00
127	8.37	8.16	3.02	4.42	1.00	12.36	7.00	86.47	4.000	No	Yes	2.00
128	8.41	7.97	3.02	4.26	1.00	12.06	6.98	84.20	4.000	No	Yes	2.00
129	8.48	7.72	3.02	4.12	1.00	11.65	7.02	81.74	4.000	No	Yes	2.00
130	8.57	7.42	3.03	3.99	1.00	11.15	7.09	79.06	4.000	No	Yes	2.00
131	8.61	7.14	3.04	3.87	1.00	10.70	7.17	76.70	4.000	No	Yes	2.00
132	8.67	6.87	3.05	3.77	1.00	10.26	7.26	74.54	4.000	No	Yes	2.00
133	8.77	6.62	3.05	3.70	1.00	9.85	7.37	72.60	4.000	No	Yes	2.00
134	8.81	6.40	3.06	3.65	1.00	9.50	7.48	71.07	4.000	No	Yes	2.00
135	8.87	6.27	3.07	3.59	1.00	9.29	7.53	69.97	4.000	No	Yes	2.00
136	8.96	6.21	3.07	3.54	1.00	9.17	7.55	69.19	4.000	No	Yes	2.00
137	8.99	6.25	3.06	3.46	1.00	9.23	7.45	68.74	4.000	No	Yes	2.00
138	9.07	6.38	3.04	3.34	1.00	9.45	7.25	68.47	4.000	No	Yes	2.00
139	9.16	6.56	3.02	3.21	1.00	9.73	7.01	68.19	4.000	No	Yes	2.00
140	9.21	6.75	3.00	3.06	1.00	10.03	6.75	67.73	4.000	No	Yes	2.00
141	9.27	6.95	2.98	2.92	1.00	10.34	6.50	67.24	4.000	No	Yes	2.00
142	9.36	7.12	2.96	2.81	1.00	10.61	6.31	66.90	4.000	No	Yes	2.00
143	9.40	7.28	2.94	2.71	1.00	10.86	6.13	66.54	4.000	No	Yes	2.00
144	9.48	7.42	2.93	2.66	0.99	11.08	6.00	66.51	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
145	9.52	7.61	2.92	2.67	0.99	11.38	5.91	67.29	4.000	No	Yes	2.00
146	9.61	7.88	2.91	2.68	0.98	11.80	5.79	68.36	4.000	No	Yes	2.00
147	9.65	8.20	2.90	2.73	0.98	12.31	5.69	70.02	4.000	No	Yes	2.00
148	9.72	8.71	2.89	2.83	0.97	13.12	5.56	72.94	4.000	No	Yes	2.00
149	9.81	9.31	2.87	2.94	0.97	14.09	5.41	76.25	4.000	No	Yes	2.00
150	9.86	10.14	2.85	3.10	0.96	15.41	5.25	80.94	4.000	No	Yes	2.00
151	9.91	11.02	2.83	3.25	0.95	16.83	5.08	85.53	4.000	No	Yes	2.00
152	10.00	11.92	2.82	3.38	0.95	18.26	4.93	90.08	4.000	No	Yes	2.00
153	10.05	12.98	2.80	3.51	0.94	19.95	4.76	94.97	4.000	No	Yes	2.00
154	10.16	14.05	2.78	3.61	0.93	21.67	4.59	99.56	4.000	No	Yes	2.00
155	10.20	15.10	2.76	3.69	0.93	23.35	4.44	103.70	4.000	No	Yes	2.00
156	10.25	16.16	2.74	3.75	0.92	25.05	4.30	107.64	4.000	No	Yes	2.00
157	10.31	17.03	2.73	3.81	0.91	26.44	4.20	111.04	4.000	No	Yes	2.00
158	10.40	17.83	2.72	3.88	0.91	27.73	4.12	114.17	4.000	No	Yes	2.00
159	10.44	18.60	2.70	3.88	0.91	28.95	4.02	116.36	4.000	No	Yes	2.00
160	10.51	19.07	2.69	3.88	0.90	29.70	3.96	117.57	4.000	No	Yes	2.00
161	10.59	19.49	2.68	3.84	0.90	30.36	3.88	117.93	4.000	No	Yes	2.00
162	10.65	19.75	2.68	3.77	0.90	30.58	3.83	117.21	4.000	No	Yes	2.00
163	10.71	19.91	2.67	3.69	0.89	30.63	3.78	115.91	4.000	No	Yes	2.00
164	10.80	20.00	2.67	3.68	0.89	30.53	3.79	115.58	4.000	No	Yes	2.00
165	10.85	20.00	2.67	3.69	0.89	30.40	3.80	115.50	4.000	No	Yes	2.00
166	10.90	19.65	2.68	3.76	0.90	29.79	3.89	115.78	4.000	No	Yes	2.00
167	10.96	19.02	2.71	3.92	0.91	28.80	4.05	116.70	4.000	No	Yes	2.00
168	11.04	18.63	2.73	4.05	0.91	28.09	4.18	117.49	4.000	No	Yes	2.00
169	11.10	18.54	2.74	4.19	0.92	27.88	4.28	119.21	4.000	No	Yes	2.00
170	11.18	18.55	2.75	4.36	0.92	27.77	4.37	121.48	4.000	No	Yes	2.00
171	11.24	18.66	2.76	4.50	0.93	27.84	4.45	123.77	4.000	No	Yes	2.00
172	11.30	18.82	2.77	4.66	0.93	27.98	4.51	126.31	4.000	No	Yes	2.00
173	11.35	19.00	2.77	4.79	0.93	28.17	4.56	128.55	4.000	No	Yes	2.00
174	11.42	19.22	2.78	4.91	0.93	28.35	4.61	130.69	4.000	No	Yes	2.00
175	11.51	19.84	2.77	4.91	0.93	29.02	4.55	132.02	4.000	No	Yes	2.00
176	11.55	20.77	2.75	4.79	0.92	30.20	4.39	132.54	4.000	No	Yes	2.00
177	11.62	21.32	2.74	4.74	0.92	30.79	4.31	132.86	4.000	No	Yes	2.00
178	11.71	21.83	2.73	4.69	0.92	31.26	4.25	132.97	4.000	No	Yes	2.00
179	11.75	22.14	2.73	4.67	0.92	31.58	4.22	133.24	4.000	No	Yes	2.00
180	11.85	22.14	2.73	4.71	0.92	31.34	4.26	133.38	4.000	No	Yes	2.00
181	11.90	22.04	2.74	4.74	0.92	31.09	4.29	133.42	4.000	No	Yes	2.00
182	11.94	21.77	2.74	4.74	0.92	30.62	4.33	132.59	4.000	No	Yes	2.00
183	12.02	21.29	2.75	4.75	0.92	29.80	4.40	131.08	4.000	No	Yes	2.00
184	12.10	20.69	2.76	4.75	0.93	28.88	4.48	129.32	4.000	No	Yes	2.00
185	12.15	19.88	2.78	4.78	0.93	27.73	4.60	127.53	4.000	No	Yes	2.00
186	12.24	18.97	2.80	4.83	0.94	26.39	4.75	125.46	4.000	No	Yes	2.00
187	12.30	18.13	2.81	4.82	0.95	25.19	4.88	122.90	4.000	No	Yes	2.00
188	12.35	17.31	2.82	4.79	0.95	24.01	4.99	119.91	4.000	No	Yes	2.00
189	12.44	16.81	2.83	4.66	0.95	23.21	5.02	116.58	4.000	No	Yes	2.00
190	12.50	16.42	2.83	4.52	0.95	22.60	5.02	113.49	4.000	No	Yes	2.00
191	12.55	16.24	2.82	4.39	0.95	22.28	4.99	111.12	4.000	No	Yes	2.00
192	12.63	16.22	2.82	4.26	0.95	22.16	4.93	109.20	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
193	12.70	16.29	2.81	4.19	0.95	22.18	4.89	108.36	4.000	No	Yes	2.00
194	12.74	16.47	2.81	4.16	0.94	22.38	4.84	108.34	4.000	No	Yes	2.00
195	12.84	16.72	2.80	4.15	0.94	22.63	4.81	108.74	4.000	No	Yes	2.00
196	12.86	16.90	2.80	4.19	0.94	22.86	4.80	109.69	4.000	No	Yes	2.00
197	12.94	17.15	2.80	4.23	0.94	23.14	4.79	110.77	4.000	No	Yes	2.00
198	13.01	17.16	2.81	4.32	0.94	23.11	4.84	111.95	4.000	No	Yes	2.00
199	13.09	17.06	2.82	4.43	0.95	22.94	4.93	113.02	4.000	No	Yes	2.00
200	13.14	16.85	2.83	4.52	0.95	22.63	5.01	113.48	4.000	No	Yes	2.00
201	13.20	16.59	2.84	4.58	0.96	22.25	5.10	113.51	4.000	No	Yes	2.00
202	13.29	16.32	2.84	4.61	0.96	21.82	5.17	112.86	4.000	No	Yes	2.00
203	13.33	16.03	2.85	4.61	0.96	21.41	5.23	112.02	4.000	No	Yes	2.00
204	13.39	15.74	2.86	4.60	0.96	20.96	5.29	110.88	4.000	No	Yes	2.00
205	13.49	15.44	2.86	4.59	0.97	20.49	5.35	109.66	4.000	No	Yes	2.00
206	13.53	15.17	2.87	4.58	0.97	20.10	5.40	108.60	4.000	No	Yes	2.00
207	13.59	14.97	2.87	4.46	0.97	19.77	5.38	106.39	4.000	No	Yes	2.00
208	13.69	14.77	2.86	4.29	0.97	19.40	5.34	103.62	4.000	No	Yes	2.00
209	13.73	14.50	2.86	4.20	0.97	19.00	5.35	101.62	4.000	No	Yes	2.00
210	13.79	14.20	2.87	4.14	0.97	18.55	5.39	99.88	4.000	No	Yes	2.00
211	13.89	13.86	2.87	4.09	0.97	18.03	5.44	98.09	4.000	No	Yes	2.00
212	13.94	13.52	2.88	4.01	0.97	17.54	5.48	96.12	4.000	No	Yes	2.00
213	13.99	12.93	2.89	4.00	0.98	16.74	5.62	94.08	4.000	No	Yes	2.00
214	14.08	12.45	2.90	3.93	0.98	16.04	5.72	91.65	4.000	No	Yes	2.00
215	14.13	12.06	2.91	3.82	0.98	15.48	5.76	89.13	4.000	No	Yes	2.00
216	14.18	11.66	2.92	3.80	0.99	14.93	5.87	87.67	4.000	No	Yes	2.00
217	14.27	11.28	2.93	3.84	0.99	14.38	6.03	86.68	4.000	No	Yes	2.00
218	14.32	10.95	2.94	3.81	1.00	13.93	6.12	85.22	4.000	No	Yes	2.00
219	14.37	10.65	2.95	3.75	1.00	13.50	6.18	83.50	4.000	No	Yes	2.00
220	14.48	10.39	2.95	3.68	1.00	13.11	6.24	81.76	4.000	No	Yes	2.00
221	14.52	10.14	2.96	3.62	1.00	12.75	6.30	80.28	4.000	No	Yes	2.00
222	14.58	10.13	2.95	3.49	1.00	12.71	6.21	78.93	4.000	No	Yes	2.00
223	14.68	10.02	2.95	3.44	1.00	12.51	6.23	77.91	4.000	No	Yes	2.00
224	14.72	9.92	2.95	3.39	1.00	12.36	6.24	77.05	4.000	No	Yes	2.00
225	14.77	9.92	2.95	3.35	1.00	12.33	6.21	76.51	4.000	No	Yes	2.00
226	14.83	10.03	2.94	3.28	1.00	12.44	6.12	76.16	4.000	No	Yes	2.00
227	14.92	10.18	2.93	3.21	0.99	12.58	6.02	75.75	4.000	No	Yes	2.00
228	14.98	10.38	2.92	3.14	0.99	12.80	5.91	75.61	4.000	No	Yes	2.00
229	15.07	10.58	2.91	3.08	0.98	13.01	5.80	75.43	4.000	No	Yes	2.00
230	15.11	10.79	2.90	3.03	0.98	13.25	5.69	75.41	4.000	No	Yes	2.00
231	15.17	11.01	2.89	3.01	0.98	13.50	5.61	75.74	4.000	No	Yes	2.00
232	15.27	11.22	2.88	2.99	0.97	13.72	5.54	76.03	4.000	No	Yes	2.00
233	15.31	11.35	2.88	3.01	0.97	13.86	5.52	76.54	4.000	No	Yes	2.00
234	15.38	11.41	2.89	3.07	0.97	13.93	5.56	77.42	4.000	No	Yes	2.00
235	15.47	11.44	2.89	3.15	0.98	13.94	5.62	78.29	4.000	No	Yes	2.00
236	15.52	11.40	2.90	3.27	0.98	13.88	5.73	79.45	4.000	No	Yes	2.00
237	15.56	11.30	2.92	3.41	0.99	13.74	5.87	80.64	4.000	No	Yes	2.00
238	15.64	11.17	2.93	3.56	0.99	13.56	6.03	81.77	4.000	No	Yes	2.00
239	15.71	11.01	2.95	3.71	1.00	13.34	6.20	82.68	4.000	No	Yes	2.00
240	15.75	10.82	2.97	3.84	1.00	13.08	6.37	83.34	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
241	15.87	10.55	2.99	3.98	1.00	12.67	6.59	83.46	4.000	No	Yes	2.00
242	15.91	10.21	3.01	4.12	1.00	12.21	6.83	83.43	4.000	No	Yes	2.00
243	15.96	9.82	3.03	4.23	1.00	11.68	7.08	82.74	4.000	No	Yes	2.00
244	16.01	9.34	3.06	4.34	1.00	11.02	7.40	81.57	4.000	No	Yes	2.00
245	16.11	8.88	3.08	4.41	1.00	10.39	7.70	79.98	4.000	No	Yes	2.00
246	16.15	8.47	3.10	4.43	1.00	9.84	7.95	78.20	4.000	No	Yes	2.00
247	16.22	8.05	3.12	4.41	1.00	9.27	8.19	75.99	4.000	No	Yes	2.00
248	16.31	7.65	3.14	4.40	1.00	8.73	8.45	73.81	4.000	No	Yes	2.00
249	16.36	7.32	3.16	4.34	1.00	8.28	8.65	71.63	4.000	No	Yes	2.00
250	16.41	7.12	3.16	4.23	1.00	8.01	8.72	69.84	4.000	No	Yes	2.00
251	16.51	7.03	3.16	4.06	1.00	7.86	8.67	68.16	4.000	No	Yes	2.00
252	16.54	7.08	3.14	3.86	1.00	7.92	8.47	67.09	4.000	No	Yes	2.00
253	16.61	7.22	3.12	3.62	1.00	8.08	8.17	66.02	4.000	No	Yes	2.00
254	16.70	7.38	3.10	3.39	1.00	8.26	7.87	65.01	4.000	No	Yes	2.00
255	16.75	7.55	3.08	3.34	1.00	8.46	7.72	65.30	4.000	No	Yes	2.00
256	16.81	7.72	3.08	3.37	1.00	8.66	7.65	66.21	4.000	No	Yes	2.00
257	16.91	7.89	3.07	3.42	1.00	8.85	7.60	67.19	4.000	No	Yes	2.00
258	16.95	8.03	3.07	3.48	1.00	9.01	7.57	68.19	4.000	No	Yes	2.00
259	17.01	8.12	3.07	3.56	1.00	9.11	7.59	69.14	4.000	No	Yes	2.00
260	17.11	8.17	3.08	3.65	1.00	9.14	7.65	69.91	4.000	No	Yes	2.00
261	17.13	8.17	3.08	3.73	1.00	9.13	7.72	70.48	4.000	No	Yes	2.00
262	17.21	8.14	3.10	3.87	1.00	9.07	7.87	71.32	4.000	No	Yes	2.00
263	17.29	8.11	3.11	4.03	1.00	9.00	8.02	72.26	4.000	No	Yes	2.00
264	17.34	8.11	3.11	4.04	1.00	8.99	8.05	72.32	4.000	No	Yes	2.00
265	17.43	8.11	3.11	4.03	1.00	8.96	8.05	72.13	4.000	No	Yes	2.00
266	17.48	8.11	3.11	4.00	1.00	8.95	8.03	71.86	4.000	No	Yes	2.00
267	17.54	8.15	3.10	3.95	1.00	8.98	7.98	71.60	4.000	No	Yes	2.00
268	17.63	8.21	3.10	3.89	1.00	9.02	7.90	71.32	4.000	No	Yes	2.00
269	17.68	8.30	3.09	3.83	1.00	9.12	7.81	71.20	4.000	No	Yes	2.00
270	17.73	8.37	3.08	3.79	1.00	9.20	7.74	71.18	4.000	No	Yes	2.00
271	17.83	8.49	3.08	3.75	1.00	9.32	7.65	71.25	4.000	No	Yes	2.00
272	17.85	8.62	3.07	3.71	1.00	9.47	7.55	71.50	4.000	No	Yes	2.00
273	17.93	8.75	3.06	3.69	1.00	9.61	7.47	71.80	4.000	No	Yes	2.00
274	17.98	8.91	3.05	3.66	1.00	9.79	7.37	72.13	4.000	No	Yes	2.00
275	18.07	9.08	3.05	3.64	1.00	9.96	7.28	72.54	4.000	No	Yes	2.00
276	18.12	9.20	3.04	3.65	1.00	10.09	7.23	72.96	4.000	No	Yes	2.00
277	18.18	9.30	3.04	3.67	1.00	10.19	7.21	73.48	4.000	No	Yes	2.00
278	18.24	9.40	3.04	3.70	1.00	10.30	7.19	73.99	4.000	No	Yes	2.00
279	18.33	9.51	3.04	3.72	1.00	10.40	7.16	74.48	4.000	No	Yes	2.00
280	18.38	9.64	3.03	3.73	1.00	10.54	7.11	74.99	4.000	No	Yes	2.00
281	18.47	9.84	3.02	3.71	1.00	10.75	7.02	75.47	4.000	No	Yes	2.00
282	18.53	10.04	3.02	3.67	1.00	10.97	6.91	75.85	4.000	No	Yes	2.00
283	18.57	10.26	3.00	3.64	1.00	11.24	6.80	76.36	4.000	No	Yes	2.00
284	18.67	10.50	3.00	3.64	1.00	11.49	6.70	77.01	4.000	No	Yes	2.00
285	18.72	10.79	2.99	3.62	1.00	11.82	6.58	77.79	4.000	No	Yes	2.00
286	18.78	11.12	2.97	3.58	1.00	12.19	6.43	78.44	4.000	No	Yes	2.00
287	18.85	11.42	2.96	3.55	1.00	12.53	6.31	79.06	4.000	No	Yes	2.00
288	18.93	11.67	2.95	3.55	1.00	12.79	6.23	79.67	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
289	18.97	11.84	2.95	3.55	1.00	12.97	6.18	80.21	4.000	No	Yes	2.00
290	19.08	11.93	2.95	3.57	1.00	13.03	6.18	80.49	4.000	No	Yes	2.00
291	19.12	11.99	2.95	3.58	1.00	13.09	6.17	80.75	4.000	No	Yes	2.00
292	19.22	12.04	2.95	3.57	1.00	13.10	6.16	80.74	4.000	No	Yes	2.00
293	19.27	12.17	2.94	3.50	0.99	13.22	6.08	80.34	4.000	No	Yes	2.00
294	19.32	12.24	2.93	3.44	0.99	13.28	6.01	79.86	4.000	No	Yes	2.00
295	19.37	12.33	2.93	3.41	0.99	13.36	5.97	79.68	4.000	No	Yes	2.00
296	19.43	12.44	2.92	3.38	0.99	13.47	5.92	79.68	4.000	No	Yes	2.00
297	19.52	12.63	2.92	3.36	0.99	13.64	5.85	79.84	4.000	No	Yes	2.00
298	19.57	12.91	2.91	3.32	0.98	13.94	5.75	80.20	4.000	No	Yes	2.00
299	19.67	13.22	2.90	3.30	0.98	14.24	5.66	80.60	4.000	No	Yes	2.00
300	19.72	13.55	2.89	3.30	0.98	14.59	5.58	81.43	4.000	No	Yes	2.00
301	19.77	13.86	2.88	3.36	0.97	14.93	5.55	82.85	4.000	No	Yes	2.00
302	19.82	14.07	2.89	3.46	0.98	15.16	5.57	84.47	4.000	No	Yes	2.00
303	19.92	14.31	2.89	3.56	0.98	15.39	5.59	86.10	4.000	No	Yes	2.00
304	19.97	14.46	2.89	3.63	0.98	15.55	5.62	87.31	4.000	No	Yes	2.00
305	20.04	14.51	2.90	3.71	0.98	15.57	5.67	88.24	4.000	No	Yes	2.00
306	20.08	14.51	2.90	3.77	0.98	15.56	5.71	88.85	4.000	No	Yes	2.00
307	20.16	14.47	2.91	3.83	0.98	15.48	5.76	89.24	4.000	No	Yes	2.00
308	20.24	14.41	2.91	3.87	0.98	15.38	5.82	89.46	4.000	No	Yes	2.00
309	20.28	14.35	2.92	3.89	0.99	15.28	5.85	89.45	4.000	No	Yes	2.00
310	20.37	14.28	2.92	3.87	0.99	15.16	5.87	88.94	4.000	No	Yes	2.00
311	20.41	14.20	2.92	3.85	0.99	15.05	5.88	88.47	4.000	No	Yes	2.00
312	20.50	14.10	2.92	3.82	0.99	14.90	5.89	87.78	4.000	No	Yes	2.00
313	20.57	14.00	2.92	3.81	0.99	14.75	5.92	87.30	4.000	No	Yes	2.00
314	20.61	13.91	2.92	3.80	0.99	14.63	5.94	86.92	4.000	No	Yes	2.00
315	20.70	13.81	2.93	3.82	0.99	14.48	5.99	86.69	4.000	No	Yes	2.00
316	20.76	13.64	2.94	3.84	0.99	14.27	6.06	86.42	4.000	No	Yes	2.00
317	20.81	13.44	2.94	3.89	1.00	14.03	6.15	86.25	4.000	No	Yes	2.00
318	20.89	13.21	2.96	3.93	1.00	13.74	6.26	85.97	4.000	No	Yes	2.00
319	20.95	12.98	2.96	3.96	1.00	13.45	6.36	85.49	4.000	No	Yes	2.00
320	21.00	12.77	2.97	3.95	1.00	13.18	6.42	84.66	4.000	No	Yes	2.00
321	21.10	12.56	2.98	3.94	1.00	12.90	6.49	83.76	4.000	No	Yes	2.00
322	21.14	12.37	2.98	3.91	1.00	12.67	6.54	82.83	4.000	No	Yes	2.00
323	21.21	12.21	2.98	3.88	1.00	12.47	6.57	81.94	4.000	No	Yes	2.00
324	21.30	12.05	2.99	3.83	1.00	12.25	6.61	80.94	4.000	No	Yes	2.00
325	21.34	11.94	2.99	3.78	1.00	12.11	6.61	80.06	4.000	No	Yes	2.00
326	21.40	11.83	2.99	3.73	1.00	11.97	6.61	79.15	4.000	No	Yes	2.00
327	21.48	11.77	2.99	3.65	1.00	11.87	6.59	78.22	4.000	No	Yes	2.00
328	21.54	11.71	2.98	3.58	1.00	11.78	6.56	77.30	4.000	No	Yes	2.00
329	21.60	11.65	2.98	3.53	1.00	11.69	6.55	76.56	4.000	No	Yes	2.00
330	21.68	11.61	2.98	3.48	1.00	11.62	6.53	75.91	4.000	No	Yes	2.00
331	21.75	11.56	2.98	3.42	1.00	11.53	6.52	75.16	4.000	No	Yes	2.00
332	21.80	11.54	2.97	3.33	1.00	11.49	6.46	74.21	4.000	No	Yes	2.00
333	21.88	11.53	2.97	3.24	1.00	11.46	6.39	73.23	4.000	No	Yes	2.00
334	21.92	11.51	2.96	3.15	1.00	11.42	6.33	72.27	4.000	No	Yes	2.00
335	21.99	11.48	2.96	3.08	1.00	11.36	6.29	71.48	4.000	No	Yes	2.00
336	22.08	11.39	2.96	3.05	1.00	11.23	6.30	70.79	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
337	22.15	11.30	2.96	3.03	1.00	11.11	6.33	70.32	4.000	No	Yes	2.00
338	22.19	11.15	2.97	3.06	1.00	10.93	6.41	70.10	4.000	No	Yes	2.00
339	22.28	10.97	2.98	3.09	1.00	10.71	6.52	69.83	4.000	No	Yes	2.00
340	22.34	10.82	2.99	3.15	1.00	10.51	6.65	69.90	4.000	No	Yes	2.00
341	22.39	10.66	3.00	3.22	1.00	10.32	6.78	69.97	4.000	No	Yes	2.00
342	22.47	10.52	3.01	3.28	1.00	10.15	6.90	70.01	4.000	No	Yes	2.00
343	22.54	10.38	3.03	3.36	1.00	9.97	7.04	70.16	4.000	No	Yes	2.00
344	22.58	10.32	3.03	3.39	1.00	9.90	7.10	70.23	4.000	No	Yes	2.00
345	22.68	10.27	3.04	3.43	1.00	9.81	7.16	70.25	4.000	No	Yes	2.00
346	22.74	10.22	3.04	3.47	1.00	9.74	7.23	70.41	4.000	No	Yes	2.00
347	22.79	10.24	3.04	3.48	1.00	9.75	7.23	70.48	4.000	No	Yes	2.00
348	22.84	10.28	3.04	3.47	1.00	9.78	7.22	70.55	4.000	No	Yes	2.00
349	22.94	10.32	3.04	3.46	1.00	9.79	7.20	70.48	4.000	No	Yes	2.00
350	22.99	10.34	3.04	3.45	1.00	9.80	7.19	70.45	4.000	No	Yes	2.00
351	23.04	10.29	3.04	3.47	1.00	9.73	7.24	70.40	4.000	No	Yes	2.00
352	23.11	10.24	3.05	3.47	1.00	9.65	7.26	70.14	4.000	No	Yes	2.00
353	23.18	10.14	3.05	3.47	1.00	9.52	7.33	69.77	4.000	No	Yes	2.00
354	23.23	10.06	3.05	3.46	1.00	9.42	7.36	69.31	4.000	No	Yes	2.00
355	23.34	9.96	3.06	3.41	1.00	9.28	7.38	68.49	4.000	No	Yes	2.00
356	23.37	9.83	3.06	3.36	1.00	9.14	7.40	67.61	4.000	No	Yes	2.00
357	23.44	9.70	3.06	3.29	1.00	8.98	7.42	66.58	4.000	No	Yes	2.00
358	23.54	9.51	3.06	3.22	1.00	8.75	7.46	65.30	4.000	No	Yes	2.00
359	23.60	9.31	3.07	3.15	1.00	8.52	7.51	64.01	4.000	No	Yes	2.00
360	23.64	9.08	3.07	3.09	1.00	8.27	7.58	62.70	4.000	No	Yes	2.00
361	23.71	8.86	3.08	3.00	1.00	8.01	7.64	61.22	4.000	No	Yes	2.00
362	23.79	8.59	3.08	2.93	1.00	7.72	7.74	59.70	4.000	No	Yes	2.00
363	23.84	8.38	3.09	2.84	1.00	7.48	7.79	58.28	4.000	No	Yes	2.00
364	23.89	8.28	3.09	2.77	1.00	7.37	7.79	57.37	4.000	No	Yes	2.00
365	23.99	8.23	3.09	2.75	1.00	7.29	7.80	56.92	4.000	No	Yes	2.00
366	24.03	8.16	3.10	2.85	1.00	7.20	7.96	57.36	4.000	No	Yes	2.00
367	24.10	8.16	3.11	2.97	1.00	7.20	8.10	58.28	4.000	No	Yes	2.00
368	24.18	8.37	3.11	3.05	1.00	7.40	8.04	59.50	4.000	No	Yes	2.00
369	24.23	8.74	3.09	3.06	1.00	7.77	7.83	60.88	4.000	No	Yes	2.00
370	24.31	9.13	3.07	3.06	1.00	8.17	7.62	62.20	4.000	No	Yes	2.00
371	24.36	9.53	3.06	3.08	1.00	8.57	7.42	63.60	4.000	No	Yes	2.00
372	24.45	9.75	3.06	3.17	1.00	8.78	7.41	65.00	4.000	No	Yes	2.00
373	24.49	9.88	3.06	3.27	1.00	8.90	7.43	66.16	4.000	No	Yes	2.00
374	24.57	9.92	3.06	3.33	1.00	8.92	7.48	66.74	4.000	No	Yes	2.00
375	24.61	10.03	3.06	3.32	1.00	9.03	7.42	66.94	4.000	No	Yes	2.00
376	24.69	10.16	3.06	3.33	1.00	9.14	7.38	67.43	4.000	No	Yes	2.00
377	24.74	10.29	3.06	3.44	1.00	9.26	7.41	68.63	4.000	No	Yes	2.00
378	24.82	10.59	3.06	3.60	1.00	9.55	7.42	70.88	4.000	No	Yes	2.00
379	24.89	11.03	3.05	3.76	1.00	9.99	7.36	73.55	4.000	No	Yes	2.00
380	24.94	11.56	3.04	3.84	1.00	10.52	7.21	75.87	4.000	No	Yes	2.00
381	25.01	12.05	3.02	3.82	1.00	11.00	7.02	77.20	4.000	No	Yes	2.00
382	25.09	12.40	3.01	3.77	1.00	11.33	6.86	77.76	4.000	No	Yes	2.00
383	25.13	12.40	3.01	3.74	1.00	11.32	6.84	77.46	4.000	No	Yes	2.00
384	25.22	12.27	3.01	3.72	1.00	11.16	6.88	76.77	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
385	25.28	12.04	3.02	3.64	1.00	10.90	6.91	75.36	4.000	No	Yes	2.00
386	25.34	11.57	3.02	3.55	1.00	10.40	7.02	73.08	4.000	No	Yes	2.00
387	25.44	10.81	3.04	3.41	1.00	9.60	7.24	69.50	4.000	No	Yes	2.00
388	25.48	9.88	3.07	3.30	1.00	8.64	7.59	65.59	4.000	No	Yes	2.00
389	25.53	8.92	3.11	3.18	1.00	7.65	8.01	61.35	4.000	No	Yes	2.00
390	25.59	8.18	3.14	3.14	1.00	6.88	8.47	58.29	4.000	No	Yes	2.00
391	25.68	7.57	3.18	3.21	1.00	6.25	9.02	56.35	4.000	No	Yes	2.00
392	25.73	7.56	3.20	3.36	1.00	6.23	9.18	57.21	4.000	No	Yes	2.00
393	25.79	7.85	3.17	3.28	1.00	6.51	8.88	57.85	4.000	No	Yes	2.00
394	25.88	8.49	3.13	3.10	1.00	7.15	8.25	58.97	4.000	No	Yes	2.00
395	25.93	9.38	3.07	2.89	1.00	8.03	7.52	60.40	4.000	No	Yes	2.00
396	25.99	10.48	3.01	2.75	1.00	9.12	6.84	62.43	4.000	No	Yes	2.00
397	26.08	11.74	2.95	2.62	1.00	10.37	6.21	64.43	4.000	No	Yes	2.00
398	26.14	12.92	2.91	2.59	0.98	11.53	5.80	66.84	4.000	No	Yes	2.00
399	26.19	13.96	2.88	2.56	0.97	12.54	5.48	68.72	4.000	No	Yes	2.00
400	26.28	14.97	2.84	2.50	0.96	13.52	5.17	69.87	4.000	No	Yes	2.00
401	26.34	15.73	2.82	2.41	0.95	14.24	4.93	70.17	4.000	No	Yes	2.00
402	26.39	16.16	2.81	2.43	0.95	14.65	4.86	71.17	4.000	No	Yes	2.00
403	26.45	16.25	2.81	2.51	0.95	14.72	4.91	72.27	4.000	No	Yes	2.00
404	26.53	16.18	2.83	2.60	0.95	14.62	5.01	73.29	4.000	No	Yes	2.00
405	26.58	16.05	2.84	2.71	0.96	14.48	5.13	74.34	4.000	No	Yes	2.00
406	26.68	15.79	2.86	2.84	0.96	14.19	5.31	75.29	4.000	No	Yes	2.00
407	26.73	15.60	2.87	2.95	0.97	13.99	5.44	76.13	4.000	No	Yes	2.00
408	26.78	15.54	2.89	3.07	0.97	13.91	5.56	77.37	4.000	No	Yes	2.00
409	26.88	15.47	2.91	3.27	0.98	13.80	5.75	79.32	4.000	No	Yes	2.00
410	26.93	15.41	2.92	3.48	0.99	13.73	5.93	81.33	4.000	No	Yes	2.00
411	26.98	15.48	2.93	3.65	0.99	13.78	6.04	83.25	4.000	No	Yes	2.00
412	27.04	15.59	2.94	3.82	1.00	13.87	6.14	85.19	4.000	No	Yes	2.00
413	27.13	15.68	2.95	3.99	1.00	13.92	6.25	86.96	4.000	No	Yes	2.00
414	27.22	15.61	2.97	4.15	1.00	13.82	6.39	88.26	4.000	No	Yes	2.00
415	27.24	15.48	2.98	4.28	1.00	13.68	6.52	89.16	4.000	No	Yes	2.00
416	27.33	15.33	2.99	4.40	1.00	13.50	6.64	89.67	4.000	No	Yes	2.00
417	27.37	15.08	3.00	4.49	1.00	13.24	6.78	89.80	4.000	No	Yes	2.00
418	27.43	14.77	3.02	4.56	1.00	12.92	6.92	89.38	4.000	No	Yes	2.00
419	27.52	14.46	3.03	4.62	1.00	12.58	7.06	88.85	4.000	No	Yes	2.00
420	27.57	14.10	3.04	4.66	1.00	12.22	7.21	88.05	4.000	No	Yes	2.00
421	27.63	13.68	3.05	4.67	1.00	11.79	7.35	86.71	4.000	No	Yes	2.00
422	27.72	13.24	3.07	4.66	1.00	11.33	7.51	85.09	4.000	No	Yes	2.00
423	27.76	12.84	3.07	4.60	1.00	10.93	7.62	83.26	4.000	No	Yes	2.00
424	27.84	12.46	3.08	4.52	1.00	10.54	7.72	81.35	4.000	No	Yes	2.00
425	27.93	12.10	3.09	4.46	1.00	10.17	7.82	79.56	4.000	No	Yes	2.00
426	27.97	11.82	3.10	4.36	1.00	9.89	7.87	77.87	4.000	No	Yes	2.00
427	28.02	11.70	3.09	4.21	1.00	9.75	7.82	76.27	4.000	No	Yes	2.00
428	28.12	11.66	3.08	4.02	1.00	9.69	7.70	74.61	4.000	No	Yes	2.00
429	28.17	11.67	3.07	3.87	1.00	9.68	7.58	73.40	4.000	No	Yes	2.00
430	28.23	11.80	3.06	3.76	1.00	9.79	7.45	72.95	4.000	No	Yes	2.00
431	28.32	12.03	3.05	3.69	1.00	9.99	7.31	73.01	4.000	No	Yes	2.00
432	28.37	12.28	3.04	3.66	1.00	10.22	7.19	73.44	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
433	28.42	12.60	3.03	3.65	1.00	10.51	7.07	74.28	4.000	No	Yes	2.00
434	28.48	12.97	3.02	3.66	1.00	10.84	6.95	75.36	4.000	No	Yes	2.00
435	28.57	13.52	3.00	3.63	1.00	11.33	6.75	76.48	4.000	No	Yes	2.00
436	28.61	14.02	2.99	3.62	1.00	11.79	6.59	77.67	4.000	No	Yes	2.00
437	28.69	14.48	2.97	3.62	1.00	12.21	6.45	78.81	4.000	No	Yes	2.00
438	28.77	14.97	2.96	3.59	1.00	12.64	6.31	79.74	4.000	No	Yes	2.00
439	28.83	15.40	2.95	3.55	1.00	13.03	6.16	80.28	4.000	No	Yes	2.00
440	28.88	15.75	2.93	3.50	0.99	13.34	6.04	80.59	4.000	No	Yes	2.00
441	28.97	16.12	2.92	3.45	0.99	13.65	5.92	80.85	4.000	No	Yes	2.00
442	29.02	16.58	2.91	3.39	0.98	14.07	5.77	81.19	4.000	No	Yes	2.00
443	29.08	17.07	2.89	3.33	0.98	14.50	5.62	81.51	4.000	No	Yes	2.00
444	29.17	17.42	2.88	3.30	0.97	14.80	5.54	81.91	4.000	No	Yes	2.00
445	29.21	16.68	2.92	3.55	0.99	14.09	5.89	82.99	4.000	No	Yes	2.00
446	29.28	17.35	2.90	3.53	0.98	14.69	5.73	84.17	4.000	No	Yes	2.00
447	29.37	18.08	2.89	3.53	0.98	15.34	5.58	85.65	4.000	No	Yes	2.00
448	29.41	18.84	2.87	3.55	0.97	16.03	5.45	87.42	4.000	No	Yes	2.00
449	29.47	19.66	2.86	3.54	0.96	16.76	5.31	88.96	4.000	No	Yes	2.00
450	29.56	20.44	2.84	3.48	0.96	17.45	5.14	89.65	4.000	No	Yes	2.00
451	29.62	21.08	2.82	3.40	0.95	18.02	4.99	89.89	4.000	No	Yes	2.00
452	29.68	21.55	2.81	3.31	0.95	18.43	4.86	89.53	4.000	No	Yes	2.00
453	29.76	21.98	2.79	3.20	0.94	18.79	4.72	88.74	4.000	No	Yes	2.00
454	29.83	23.16	2.75	2.93	0.92	19.85	4.38	86.86	4.000	No	Yes	2.00
455	29.87	22.72	2.75	2.83	0.92	19.43	4.36	84.78	4.000	No	Yes	2.00
456	29.96	22.10	2.75	2.72	0.92	18.81	4.37	82.22	4.000	No	Yes	2.00
457	30.01	21.54	2.75	2.58	0.92	18.28	4.34	79.33	4.000	No	Yes	2.00
458	30.07	20.81	2.75	2.47	0.92	17.58	4.36	76.65	4.000	No	Yes	2.00
459	30.16	20.20	2.76	2.42	0.92	16.98	4.41	74.98	4.000	No	Yes	2.00
460	30.20	19.65	2.76	2.40	0.93	16.47	4.48	73.79	4.000	No	Yes	2.00
461	30.27	19.26	2.77	2.41	0.93	16.07	4.56	73.29	4.000	No	Yes	2.00
462	30.34	18.94	2.78	2.45	0.94	15.75	4.66	73.36	4.000	No	Yes	2.00
463	30.42	18.95	2.79	2.50	0.94	15.73	4.70	73.99	4.000	No	Yes	2.00
464	30.46	19.17	2.79	2.57	0.94	15.91	4.72	75.17	4.000	No	Yes	2.00
465	30.52	19.53	2.79	2.63	0.94	16.22	4.72	76.59	4.000	No	Yes	2.00
466	30.58	19.82	2.80	2.73	0.94	16.46	4.75	78.24	4.000	No	Yes	2.00
467	30.66	20.28	2.79	2.80	0.94	16.84	4.74	79.86	4.000	No	Yes	2.00
468	30.71	20.64	2.80	2.87	0.94	17.15	4.74	81.34	4.000	No	Yes	2.00
469	30.81	20.94	2.80	2.94	0.94	17.37	4.76	82.69	4.000	No	Yes	2.00
470	30.87	21.17	2.80	3.01	0.94	17.56	4.78	83.92	4.000	No	Yes	2.00
471	30.91	21.30	2.80	3.08	0.94	17.66	4.82	85.10	4.000	No	Yes	2.00
472	31.01	21.41	2.81	3.16	0.95	17.71	4.87	86.23	4.000	No	Yes	2.00
473	31.06	21.53	2.81	3.24	0.95	17.80	4.91	87.37	4.000	No	Yes	2.00
474	31.11	21.63	2.82	3.31	0.95	17.86	4.95	88.36	4.000	No	Yes	2.00
475	31.19	21.81	2.82	3.35	0.95	17.99	4.96	89.14	4.000	No	Yes	2.00
476	31.26	21.98	2.82	3.38	0.95	18.11	4.96	89.73	4.000	No	Yes	2.00
477	31.35	22.12	2.82	3.40	0.95	18.19	4.96	90.16	4.000	No	Yes	2.00
478	31.37	22.15	2.82	3.43	0.95	18.20	4.98	90.62	4.000	No	Yes	2.00
479	31.46	22.28	2.82	3.45	0.95	18.27	4.97	90.91	4.000	No	Yes	2.00
480	31.55	22.33	2.82	3.46	0.95	18.28	4.98	91.09	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
481	31.59	22.49	2.82	3.43	0.95	18.41	4.94	91.01	4.000	No	Yes	2.00
482	31.66	22.71	2.81	3.37	0.95	18.58	4.87	90.48	4.000	No	Yes	2.00
483	31.70	23.00	2.80	3.28	0.94	18.82	4.77	89.81	4.000	No	Yes	2.00
484	31.79	23.13	2.79	3.22	0.94	18.90	4.72	89.15	4.000	No	Yes	2.00
485	31.86	23.24	2.79	3.16	0.94	18.96	4.67	88.51	4.000	No	Yes	2.00
486	31.91	23.55	2.78	3.12	0.93	19.22	4.60	88.37	4.000	No	Yes	2.00
487	31.99	24.39	2.76	3.07	0.93	19.93	4.47	89.06	4.000	No	Yes	2.00
488	32.06	25.44	2.75	3.06	0.92	20.82	4.34	90.39	4.000	No	Yes	2.00
489	32.10	26.88	2.72	3.04	0.91	22.09	4.18	92.23	4.000	No	Yes	2.00
490	32.20	28.15	2.71	3.10	0.91	23.16	4.10	94.85	4.000	No	Yes	2.00
491	32.26	28.72	2.72	3.27	0.91	23.62	4.16	98.16	4.000	No	Yes	2.00
492	32.30	29.57	2.72	3.43	0.91	24.34	4.18	101.69	4.000	No	Yes	2.00
493	32.35	30.28	2.73	3.59	0.92	24.92	4.22	105.09	4.000	No	Yes	2.00
494	32.46	31.21	2.73	3.71	0.92	25.67	4.21	108.18	4.000	No	Yes	2.00
495	32.49	31.95	2.73	3.84	0.92	26.29	4.23	111.21	4.000	No	Yes	2.00
496	32.58	32.77	2.73	3.92	0.91	26.95	4.21	113.53	4.000	No	Yes	2.00
497	32.62	34.34	2.71	3.93	0.91	28.30	4.10	116.05	4.000	No	Yes	2.00
498	32.69	36.23	2.70	3.96	0.90	29.91	3.99	119.21	4.000	No	Yes	2.00
499	32.78	38.18	2.68	3.99	0.90	31.55	3.88	122.28	4.000	No	Yes	2.00
500	32.82	40.40	2.67	4.00	0.89	33.46	3.75	125.60	4.000	No	Yes	2.00
501	32.89	41.76	2.66	4.10	0.89	34.59	3.73	129.05	4.000	No	Yes	2.00
502	32.98	43.04	2.66	4.19	0.89	35.63	3.71	132.21	4.000	No	Yes	2.00
503	33.02	43.56	2.67	4.32	0.89	36.03	3.75	135.06	4.000	No	Yes	2.00
504	33.08	43.60	2.67	4.40	0.89	36.00	3.79	136.47	4.000	No	Yes	2.00
505	33.18	42.94	2.68	4.51	0.90	35.32	3.89	137.25	4.000	No	Yes	2.00
506	33.21	41.11	2.71	4.67	0.91	33.69	4.07	137.02	4.000	No	Yes	2.00
507	33.29	38.50	2.74	4.81	0.92	31.35	4.31	135.03	4.000	No	Yes	2.00
508	33.37	35.87	2.77	4.86	0.93	29.01	4.52	131.27	4.000	No	Yes	2.00
509	33.42	33.58	2.79	4.79	0.94	27.00	4.67	126.23	4.000	No	Yes	2.00
510	33.47	31.71	2.79	4.60	0.94	25.36	4.74	120.24	4.000	No	Yes	2.00
511	33.53	29.91	2.80	4.35	0.94	23.80	4.78	113.67	4.000	No	Yes	2.00
512	33.62	28.55	2.80	4.04	0.94	22.60	4.74	107.22	4.000	No	Yes	2.00
513	33.67	27.44	2.79	3.78	0.94	21.64	4.71	101.83	4.000	No	Yes	2.00
514	33.73	26.35	2.79	3.54	0.94	20.68	4.68	96.75	4.000	No	Yes	2.00
515	33.82	25.32	2.79	3.32	0.94	19.78	4.66	92.18	4.000	No	Yes	2.00
516	33.87	24.46	2.78	3.15	0.94	19.03	4.65	88.49	4.000	No	Yes	2.00
517	33.93	23.71	2.79	3.08	0.94	18.37	4.70	86.36	4.000	No	Yes	2.00
518	34.02	23.04	2.80	3.06	0.94	17.75	4.78	84.94	4.000	No	Yes	2.00
519	34.06	22.45	2.81	3.08	0.95	17.24	4.89	84.26	4.000	No	Yes	2.00
520	34.13	22.07	2.82	3.14	0.95	16.88	4.99	84.31	4.000	No	Yes	2.00
521	34.22	21.81	2.83	3.20	0.96	16.62	5.09	84.59	4.000	No	Yes	2.00
522	34.26	21.71	2.84	3.27	0.96	16.52	5.16	85.19	4.000	No	Yes	2.00
523	34.32	21.73	2.85	3.33	0.96	16.50	5.20	85.88	4.000	No	Yes	2.00
524	34.42	21.79	2.85	3.38	0.96	16.51	5.24	86.45	4.000	No	Yes	2.00
525	34.46	21.86	2.85	3.40	0.96	16.55	5.25	86.87	4.000	No	Yes	2.00
526	34.52	21.87	2.85	3.42	0.96	16.54	5.27	87.08	4.000	No	Yes	2.00
527	34.61	21.89	2.86	3.43	0.96	16.52	5.28	87.14	4.000	No	Yes	2.00
528	34.70	21.91	2.86	3.44	0.96	16.50	5.28	87.14	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
529	34.76	22.00	2.86	3.44	0.96	16.55	5.27	87.27	4.000	No	Yes	2.00
530	34.82	22.08	2.85	3.44	0.96	16.59	5.26	87.34	4.000	No	Yes	2.00
531	34.86	22.20	2.85	3.41	0.96	16.68	5.23	87.15	4.000	No	Yes	2.00
532	34.92	22.38	2.85	3.41	0.96	16.80	5.21	87.52	4.000	No	Yes	2.00
533	35.02	22.61	2.85	3.46	0.96	16.95	5.21	88.35	4.000	No	Yes	2.00
534	35.06	22.92	2.85	3.52	0.96	17.19	5.21	89.58	4.000	No	Yes	2.00
535	35.11	23.26	2.85	3.60	0.96	17.45	5.22	91.14	4.000	No	Yes	2.00
536	35.19	23.32	2.86	3.75	0.97	17.45	5.32	92.89	4.000	No	Yes	2.00
537	35.25	23.48	2.87	3.88	0.97	17.55	5.39	94.66	4.000	No	Yes	2.00
538	35.31	23.92	2.87	3.96	0.97	17.88	5.39	96.33	4.000	No	Yes	2.00
539	35.40	24.41	2.87	4.07	0.97	18.24	5.39	98.39	4.000	No	Yes	2.00
540	35.45	24.90	2.87	4.21	0.97	18.61	5.42	100.88	4.000	No	Yes	2.00
541	35.50	25.37	2.87	4.34	0.97	18.97	5.44	103.26	4.000	No	Yes	2.00
542	35.56	25.84	2.87	4.45	0.97	19.32	5.45	105.30	4.000	No	Yes	2.00
543	35.64	26.20	2.88	4.56	0.97	19.57	5.48	107.20	4.000	No	Yes	2.00
544	35.72	26.53	2.88	4.66	0.97	19.80	5.50	108.86	4.000	No	Yes	2.00
545	35.81	27.10	2.87	4.68	0.97	20.22	5.44	110.03	4.000	No	Yes	2.00
546	35.85	27.52	2.87	4.68	0.97	20.55	5.40	110.86	4.000	No	Yes	2.00
547	35.90	27.57	2.87	4.72	0.97	20.56	5.41	111.30	4.000	No	Yes	2.00
548	35.96	27.50	2.87	4.73	0.97	20.47	5.43	111.25	4.000	No	Yes	2.00
549	36.04	27.44	2.87	4.71	0.97	20.38	5.44	110.83	4.000	No	Yes	2.00
550	36.11	27.37	2.87	4.66	0.97	20.29	5.42	110.01	4.000	No	Yes	2.00
551	36.16	27.38	2.87	4.58	0.97	20.28	5.37	108.99	4.000	No	Yes	2.00
552	36.25	27.49	2.86	4.46	0.96	20.34	5.30	107.76	4.000	No	Yes	2.00
553	36.31	27.53	2.85	4.36	0.96	20.35	5.23	106.50	4.000	No	Yes	2.00
554	36.36	27.55	2.85	4.30	0.96	20.34	5.20	105.82	4.000	No	Yes	2.00
555	36.44	27.59	2.85	4.27	0.96	20.34	5.19	105.48	4.000	No	Yes	2.00
556	36.50	27.55	2.85	4.28	0.96	20.28	5.20	105.38	4.000	No	Yes	2.00
557	36.56	27.51	2.85	4.27	0.96	20.22	5.20	105.22	4.000	No	Yes	2.00
558	36.65	27.46	2.85	4.27	0.96	20.13	5.22	104.99	4.000	No	Yes	2.00
559	36.68	27.32	2.85	4.27	0.96	20.00	5.24	104.73	4.000	No	Yes	2.00
560	36.76	26.99	2.86	4.29	0.96	19.70	5.30	104.31	4.000	No	Yes	2.00
561	36.84	26.59	2.87	4.31	0.97	19.33	5.36	103.68	4.000	No	Yes	2.00
562	36.91	26.14	2.87	4.31	0.97	18.94	5.43	102.81	4.000	No	Yes	2.00
563	36.96	25.72	2.88	4.27	0.97	18.58	5.46	101.52	4.000	No	Yes	2.00
564	37.04	25.31	2.88	4.21	0.97	18.22	5.48	99.92	4.000	No	Yes	2.00
565	37.10	25.01	2.88	4.12	0.97	17.96	5.47	98.29	4.000	No	Yes	2.00
566	37.15	24.79	2.87	4.01	0.97	17.78	5.44	96.70	4.000	No	Yes	2.00
567	37.23	24.57	2.87	3.92	0.97	17.57	5.41	95.11	4.000	No	Yes	2.00
568	37.30	24.39	2.87	3.82	0.97	17.41	5.38	93.56	4.000	No	Yes	2.00
569	37.35	24.27	2.86	3.72	0.97	17.30	5.33	92.22	4.000	No	Yes	2.00
570	37.45	24.09	2.86	3.64	0.96	17.12	5.31	90.90	4.000	No	Yes	2.00
571	37.51	23.91	2.86	3.57	0.96	16.96	5.29	89.72	4.000	No	Yes	2.00
572	37.55	23.68	2.86	3.50	0.96	16.77	5.28	88.48	4.000	No	Yes	2.00
573	37.62	23.41	2.85	3.42	0.96	16.54	5.27	87.10	4.000	No	Yes	2.00
574	37.70	23.18	2.85	3.34	0.96	16.33	5.25	85.68	4.000	No	Yes	2.00
575	37.75	22.99	2.85	3.25	0.96	16.17	5.21	84.25	4.000	No	Yes	2.00
576	37.80	22.83	2.84	3.15	0.96	16.04	5.16	82.80	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
577	37.90	22.79	2.84	3.04	0.96	15.98	5.09	81.34	4.000	No	Yes	2.00
578	37.95	22.85	2.82	2.93	0.95	16.02	4.99	79.99	4.000	No	Yes	2.00
579	38.05	23.13	2.81	2.84	0.95	16.22	4.89	79.28	4.000	No	Yes	2.00
580	38.06	23.67	2.80	2.76	0.94	16.66	4.74	79.02	4.000	No	Yes	2.00
581	38.15	24.36	2.78	2.70	0.93	17.18	4.61	79.14	4.000	No	Yes	2.00
582	38.19	25.07	2.77	2.67	0.93	17.73	4.50	79.75	4.000	No	Yes	2.00
583	38.27	25.90	2.75	2.65	0.92	18.37	4.38	80.47	4.000	No	Yes	2.00
584	38.34	26.81	2.74	2.63	0.92	19.07	4.27	81.37	4.000	No	Yes	2.00
585	38.39	27.68	2.72	2.62	0.91	19.75	4.17	82.26	4.000	No	Yes	2.00
586	38.46	28.48	2.71	2.64	0.91	20.35	4.10	83.39	4.000	No	Yes	2.00
587	38.55	29.24	2.71	2.68	0.91	20.90	4.06	84.87	4.000	No	Yes	2.00
588	38.59	30.19	2.70	2.73	0.90	21.63	4.01	86.82	4.000	No	Yes	2.00
589	38.68	31.64	2.69	2.80	0.90	22.72	3.94	89.49	4.000	No	Yes	2.00
590	38.75	33.31	2.68	2.87	0.90	24.00	3.85	92.51	4.000	No	Yes	2.00
591	38.80	35.48	2.66	2.95	0.89	25.68	3.74	96.14	4.000	No	Yes	2.00
592	38.87	38.37	2.64	2.98	0.88	27.93	3.58	99.97	4.000	No	Yes	2.00
593	38.95	41.80	2.61	3.01	0.87	30.61	3.40	104.15	4.000	No	Yes	2.00
594	38.99	45.31	2.59	3.04	0.86	33.36	3.24	108.24	0.198	No	No	0.48
595	39.04	48.34	2.57	3.06	0.85	35.74	3.13	111.69	0.210	No	No	0.50
596	39.11	49.97	2.56	3.12	0.85	36.96	3.09	114.37	0.219	No	No	0.53
597	39.19	50.69	2.56	3.15	0.85	37.46	3.08	115.54	0.223	No	No	0.54
598	39.27	49.95	2.57	3.16	0.85	36.81	3.12	114.99	0.221	No	No	0.53
599	39.33	48.64	2.58	3.16	0.86	35.72	3.18	113.58	0.216	No	No	0.52
600	39.39	46.71	2.59	3.12	0.86	34.16	3.24	110.84	0.207	No	No	0.50
601	39.45	43.93	2.61	3.09	0.87	31.94	3.36	107.28	4.000	No	Yes	2.00
602	39.53	40.53	2.63	3.06	0.88	29.21	3.53	103.00	4.000	No	Yes	2.00
603	39.57	37.19	2.66	3.01	0.89	26.57	3.71	98.52	4.000	No	Yes	2.00
604	39.64	34.51	2.68	2.91	0.90	24.46	3.83	93.75	4.000	No	Yes	2.00
605	39.72	33.37	2.67	2.68	0.89	23.58	3.77	88.79	4.000	No	Yes	2.00
606	39.79	32.93	2.65	2.44	0.88	23.26	3.63	84.39	4.000	No	Yes	2.00
607	39.84	33.06	2.62	2.25	0.87	23.39	3.47	81.26	4.000	No	Yes	2.00
608	39.93	32.94	2.61	2.15	0.87	23.28	3.41	79.39	4.000	No	Yes	2.00
609	39.98	32.75	2.61	2.14	0.87	23.12	3.42	79.04	4.000	No	Yes	2.00
610	40.05	32.95	2.64	2.33	0.88	23.19	3.56	82.51	4.000	No	Yes	2.00
611	40.09	34.03	2.65	2.55	0.88	23.95	3.64	87.20	4.000	No	Yes	2.00
612	40.19	36.38	2.64	2.72	0.88	25.69	3.60	92.47	4.000	No	Yes	2.00
613	40.23	40.72	2.61	2.85	0.87	29.01	3.42	99.16	4.000	No	Yes	2.00
614	40.34	45.86	2.59	3.00	0.86	32.90	3.25	106.95	0.194	No	No	0.47
615	40.38	50.76	2.57	3.18	0.85	36.64	3.14	115.13	0.222	No	No	0.53
616	40.43	55.28	2.56	3.38	0.85	40.05	3.08	123.53	0.255	No	No	0.61
617	40.50	60.00	2.55	3.54	0.84	43.62	3.01	131.16	0.290	No	No	0.70
618	40.58	64.51	2.53	3.67	0.84	47.00	2.94	138.27	0.326	No	No	0.78
619	40.63	68.60	2.52	3.73	0.83	50.12	2.86	143.45	0.355	No	No	0.85
620	40.70	72.71	2.50	3.75	0.83	53.23	2.78	147.92	0.381	No	No	0.92
621	40.75	76.10	2.49	3.79	0.82	55.80	2.72	151.94	0.406	No	No	0.98
622	40.84	77.61	2.49	3.87	0.82	56.84	2.73	155.10	0.427	No	No	1.03
623	40.88	77.99	2.50	3.98	0.83	57.03	2.77	157.83	0.446	No	No	1.07
624	40.95	78.42	2.51	4.07	0.83	57.23	2.80	160.06	0.461	No	No	1.11

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
625	41.03	79.84	2.50	4.07	0.83	58.24	2.77	161.34	4.000	Yes	No	2.00
626	41.08	83.51	2.48	3.96	0.82	61.08	2.66	162.46	4.000	Yes	No	2.00
627	41.15	90.15	2.43	3.72	0.80	66.29	2.46	162.81	4.000	Yes	No	2.00
628	41.23	97.84	2.39	3.48	0.78	72.34	2.26	163.56	4.000	Yes	No	2.00
629	41.28	105.13	2.35	3.31	0.77	78.11	2.11	164.99	4.000	Yes	No	2.00
630	41.35	112.60	2.31	3.16	0.76	84.00	1.99	166.99	4.000	Yes	No	2.00
631	41.43	119.65	2.28	3.05	0.75	89.52	1.89	169.57	4.000	Yes	No	2.00
632	41.48	126.18	2.26	2.99	0.74	94.65	1.83	172.95	4.000	Yes	No	2.00
633	41.54	132.64	2.24	2.96	0.73	99.67	1.78	177.10	0.597	No	No	1.44
634	41.62	138.98	2.23	2.97	0.72	104.52	1.74	181.95	0.640	No	No	1.55
635	41.68	144.15	2.22	3.01	0.72	108.42	1.73	187.16	0.690	No	No	1.67
636	41.77	147.16	2.23	3.11	0.72	110.47	1.74	192.21	0.740	No	No	1.79
637	41.82	149.61	2.23	3.20	0.73	112.16	1.76	197.02	0.791	No	No	1.91
638	41.88	151.40	2.24	3.30	0.73	113.31	1.77	201.11	4.000	No	No	2.00
639	41.97	152.19	2.25	3.39	0.73	113.59	1.80	204.50	4.000	No	No	2.00
640	42.01	152.63	2.26	3.48	0.74	113.73	1.82	207.46	4.000	No	No	2.00
641	42.10	154.18	2.26	3.51	0.74	114.69	1.83	209.53	4.000	No	No	2.00
642	42.17	155.77	2.26	3.52	0.74	115.77	1.82	210.77	4.000	No	No	2.00
643	42.22	158.63	2.25	3.47	0.73	117.95	1.79	211.47	4.000	No	No	2.00
644	42.28	161.62	2.24	3.39	0.73	120.26	1.76	211.30	4.000	No	No	2.00
645	42.33	166.19	2.21	3.27	0.72	123.89	1.70	210.96	4.000	No	No	2.00
646	42.41	171.05	2.19	3.13	0.71	127.73	1.65	210.27	4.000	No	No	2.00
647	42.48	177.06	2.16	2.98	0.70	132.54	1.58	209.92	4.000	No	No	2.00
648	42.52	184.41	2.13	2.81	0.69	138.54	1.52	210.20	4.000	No	No	2.00
649	42.60	193.18	2.10	2.64	0.67	145.64	1.45	211.30	4.000	No	No	2.00
650	42.66	201.80	2.06	2.48	0.66	152.67	1.39	212.90	4.000	No	No	2.00
651	42.72	210.25	2.03	2.35	0.65	159.58	1.35	214.88	4.000	No	No	2.00
652	42.81	216.71	2.01	2.24	0.64	164.80	1.31	216.24	4.000	No	No	2.00
653	42.87	221.45	1.99	2.15	0.63	168.71	1.29	216.83	4.000	No	No	2.00
654	42.92	223.43	1.97	2.06	0.63	170.44	1.27	215.65	4.000	No	No	2.00
655	43.00	224.17	1.96	1.98	0.62	171.11	1.25	213.60	4.000	No	No	2.00
656	43.06	223.07	1.95	1.91	0.62	170.33	1.24	210.56	4.000	No	No	2.00
657	43.11	220.03	1.94	1.86	0.61	167.97	1.23	206.67	4.000	No	No	2.00
658	43.18	215.77	1.94	1.82	0.61	164.56	1.23	202.06	4.000	No	No	2.00
659	43.25	211.23	1.94	1.78	0.61	160.89	1.23	197.51	0.797	No	No	1.94
660	43.31	206.82	1.94	1.76	0.61	157.31	1.23	193.43	0.753	No	No	1.83
661	43.39	202.67	1.94	1.74	0.62	153.89	1.23	189.65	0.714	No	No	1.74
662	43.45	198.48	1.95	1.73	0.62	150.43	1.24	186.27	0.681	No	No	1.66
663	43.51	194.71	1.96	1.76	0.62	147.19	1.25	184.09	0.660	No	No	1.61
664	43.61	191.33	1.97	1.80	0.63	144.12	1.27	182.63	0.646	No	No	1.57
665	43.65	188.25	1.99	1.85	0.63	141.41	1.29	181.84	0.639	No	No	1.56
666	43.72	185.35	2.00	1.90	0.64	138.80	1.30	180.92	0.631	No	No	1.54
667	43.81	182.33	2.02	1.95	0.64	136.09	1.32	179.83	0.621	No	No	1.51
668	43.85	178.70	2.03	1.99	0.65	133.02	1.34	178.27	0.607	No	No	1.48
669	43.92	174.04	2.04	2.02	0.65	129.13	1.36	175.71	0.585	No	No	1.42
670	44.01	169.31	2.06	2.06	0.66	125.14	1.38	173.09	0.562	No	No	1.37
671	44.05	165.21	2.06	2.05	0.66	121.88	1.39	169.93	0.536	No	No	1.31
672	44.10	160.81	2.06	2.00	0.66	118.50	1.39	165.15	0.499	No	No	1.22

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
673	44.20	156.04	2.07	1.94	0.66	114.74	1.40	160.07	0.461	No	No	1.13
674	44.25	151.36	2.07	1.90	0.66	111.13	1.40	155.35	0.429	No	No	1.05
675	44.30	146.31	2.07	1.88	0.67	107.16	1.41	151.20	0.401	No	No	0.98
676	44.40	140.34	2.09	1.89	0.67	102.33	1.44	147.25	0.377	No	No	0.92
677	44.45	134.81	2.11	1.92	0.68	97.92	1.47	143.99	0.358	No	No	0.87
678	44.50	130.12	2.13	1.97	0.69	94.11	1.51	142.03	0.346	No	No	0.85
679	44.57	125.26	2.15	2.03	0.70	90.13	1.56	140.34	0.337	No	No	0.82
680	44.63	120.31	2.18	2.16	0.71	86.02	1.63	140.23	0.336	No	No	0.82
681	44.69	115.72	2.23	2.38	0.72	82.08	1.74	143.01	0.352	No	No	0.86
682	44.79	111.51	2.27	2.63	0.74	78.40	1.87	146.54	0.373	No	No	0.91
683	44.84	107.77	2.31	2.88	0.76	75.21	2.00	150.25	0.395	No	No	0.97
684	44.89	105.00	2.35	3.09	0.77	72.83	2.11	153.52	0.416	No	No	1.02
685	44.96	103.51	2.37	3.23	0.78	71.48	2.18	156.05	0.433	No	No	1.06
686	45.04	102.01	2.39	3.37	0.78	70.14	2.26	158.16	0.448	No	No	1.10
687	45.09	100.81	2.40	3.47	0.79	69.09	2.31	159.67	0.459	No	No	1.12
688	45.17	100.05	2.41	3.55	0.79	68.35	2.35	160.93	0.468	No	No	1.15
689	45.24	99.52	2.42	3.62	0.80	67.81	2.39	162.05	0.476	No	No	1.17
690	45.28	99.27	2.42	3.65	0.80	67.55	2.41	162.52	0.479	No	No	1.18
691	45.38	98.85	2.43	3.67	0.80	67.10	2.42	162.58	0.480	No	No	1.18
692	45.42	97.77	2.43	3.72	0.80	66.22	2.46	162.63	0.480	No	No	1.18
693	45.49	96.34	2.44	3.77	0.81	65.05	2.50	162.56	0.479	No	No	1.18
694	45.57	94.70	2.45	3.82	0.81	63.72	2.55	162.28	0.477	No	No	1.17
695	45.63	92.37	2.47	3.87	0.82	61.92	2.61	161.36	0.471	No	No	1.16
696	45.69	89.46	2.48	3.89	0.82	59.74	2.66	159.12	0.455	No	No	1.12
697	45.78	85.19	2.50	3.90	0.83	56.57	2.75	155.40	0.429	No	No	1.06
698	45.84	79.80	2.52	3.92	0.84	52.64	2.87	150.88	0.399	No	No	0.98
699	45.89	73.90	2.55	3.94	0.85	48.37	3.01	145.76	0.368	No	No	0.91
700	45.93	67.39	2.58	3.94	0.86	43.71	3.19	139.53	0.333	No	No	0.82
701	46.02	61.02	2.61	3.91	0.87	39.17	3.38	132.47	4.000	No	Yes	2.00
702	46.08	54.84	2.64	3.84	0.88	34.81	3.59	124.90	4.000	No	Yes	2.00
703	46.13	48.82	2.68	3.75	0.89	30.61	3.82	116.87	4.000	No	Yes	2.00
704	46.22	43.62	2.71	3.62	0.91	27.00	4.03	108.93	4.000	No	Yes	2.00
705	46.28	39.06	2.74	3.51	0.92	23.85	4.28	101.99	4.000	No	Yes	2.00
706	46.33	35.80	2.76	3.40	0.93	21.61	4.47	96.55	4.000	No	Yes	2.00
707	46.43	33.77	2.77	3.24	0.93	20.22	4.54	91.86	4.000	No	Yes	2.00
708	46.47	32.28	2.77	3.07	0.93	19.23	4.57	87.81	4.000	No	Yes	2.00
709	46.53	31.55	2.77	2.93	0.93	18.75	4.53	85.02	4.000	No	Yes	2.00
710	46.63	31.27	2.76	2.79	0.93	18.56	4.46	82.79	4.000	No	Yes	2.00
711	46.67	31.09	2.75	2.68	0.92	18.45	4.39	81.06	4.000	No	Yes	2.00
712	46.73	31.01	2.75	2.64	0.92	18.39	4.37	80.34	4.000	No	Yes	2.00
713	46.83	31.04	2.75	2.62	0.92	18.38	4.35	80.02	4.000	No	Yes	2.00
714	46.87	31.05	2.75	2.61	0.92	18.38	4.35	79.94	4.000	No	Yes	2.00
715	46.93	31.18	2.75	2.61	0.92	18.45	4.34	80.00	4.000	No	Yes	2.00
716	47.02	31.31	2.74	2.60	0.92	18.51	4.32	79.99	4.000	No	Yes	2.00
717	47.08	31.45	2.74	2.59	0.92	18.58	4.30	79.99	4.000	No	Yes	2.00
718	47.12	31.65	2.74	2.61	0.92	18.71	4.30	80.42	4.000	No	Yes	2.00
719	47.18	31.90	2.74	2.63	0.92	18.85	4.30	80.99	4.000	No	Yes	2.00
720	47.27	32.12	2.74	2.66	0.92	18.96	4.30	81.54	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
721	47.31	32.24	2.74	2.71	0.92	19.01	4.33	82.39	4.000	No	Yes	2.00
722	47.39	32.73	2.74	2.74	0.92	19.30	4.32	83.31	4.000	No	Yes	2.00
723	47.48	33.47	2.74	2.78	0.92	19.76	4.28	84.52	4.000	No	Yes	2.00
724	47.52	34.18	2.73	2.83	0.92	20.22	4.25	85.98	4.000	No	Yes	2.00
725	47.59	34.88	2.74	2.94	0.92	20.63	4.28	88.32	4.000	No	Yes	2.00
726	47.66	35.57	2.75	3.11	0.92	21.01	4.35	91.45	4.000	No	Yes	2.00
727	47.74	36.36	2.75	3.25	0.92	21.47	4.39	94.26	4.000	No	Yes	2.00
728	47.79	37.63	2.75	3.33	0.92	22.28	4.34	96.75	4.000	No	Yes	2.00
729	47.86	39.62	2.73	3.33	0.91	23.59	4.20	98.98	4.000	Yes	Yes	2.00
730	47.94	42.38	2.69	3.25	0.90	25.46	3.96	100.78	4.000	Yes	Yes	2.00
731	47.99	46.45	2.65	3.10	0.88	28.27	3.63	102.50	4.000	Yes	Yes	2.00
732	48.05	51.69	2.59	2.93	0.86	31.91	3.27	104.31	4.000	Yes	No	2.00
733	48.13	57.43	2.54	2.78	0.84	35.93	2.96	106.37	4.000	Yes	No	2.00
734	48.19	63.46	2.49	2.64	0.82	40.18	2.70	108.40	4.000	Yes	No	2.00
735	48.26	69.35	2.44	2.56	0.81	44.33	2.50	111.00	4.000	Yes	No	2.00
736	48.34	74.27	2.42	2.55	0.80	47.76	2.39	114.21	4.000	Yes	No	2.00
737	48.39	78.06	2.41	2.58	0.79	50.36	2.34	117.60	0.231	No	No	0.58
738	48.43	80.01	2.41	2.66	0.79	51.62	2.34	120.87	0.244	No	No	0.61
739	48.51	80.23	2.42	2.78	0.80	51.58	2.40	123.65	4.000	Yes	No	2.00
740	48.58	78.15	2.45	2.97	0.81	49.87	2.53	126.20	4.000	Yes	No	2.00
741	48.63	73.91	2.50	3.24	0.83	46.66	2.76	128.57	4.000	Yes	No	2.00
742	48.72	69.19	2.55	3.54	0.85	43.12	3.03	130.53	4.000	Yes	No	2.00
743	48.78	64.53	2.60	3.85	0.87	39.71	3.33	132.10	4.000	Yes	No	2.00
744	48.83	60.65	2.64	4.10	0.88	36.92	3.59	132.69	4.000	Yes	Yes	2.00
745	48.90	58.27	2.67	4.28	0.89	35.18	3.78	133.00	4.000	Yes	Yes	2.00
746	48.99	56.81	2.69	4.39	0.90	34.10	3.90	133.10	4.000	No	Yes	2.00
747	49.03	57.34	2.68	4.38	0.90	34.43	3.88	133.52	4.000	Yes	Yes	2.00
748	49.08	59.70	2.66	4.27	0.89	36.02	3.73	134.25	4.000	Yes	Yes	2.00
749	49.17	64.88	2.62	4.05	0.87	39.55	3.43	135.60	4.000	Yes	Yes	2.00
750	49.23	73.51	2.54	3.69	0.85	45.55	3.01	136.90	4.000	Yes	No	2.00
751	49.32	85.21	2.46	3.31	0.81	53.79	2.58	138.53	4.000	Yes	No	2.00
752	49.35	97.81	2.38	3.01	0.78	62.84	2.24	140.98	4.000	Yes	No	2.00
753	49.43	111.56	2.31	2.75	0.76	72.74	1.99	144.42	4.000	Yes	No	2.00
754	49.50	126.07	2.24	2.53	0.73	83.33	1.78	148.53	4.000	Yes	No	2.00
755	49.58	140.81	2.19	2.36	0.71	94.14	1.63	153.61	4.000	Yes	No	2.00
756	49.63	155.36	2.13	2.22	0.69	104.93	1.52	159.57	4.000	Yes	No	2.00
757	49.72	169.50	2.09	2.12	0.67	115.38	1.44	166.05	4.000	Yes	No	2.00
758	49.78	181.49	2.06	2.04	0.66	124.33	1.38	171.86	4.000	Yes	No	2.00
759	49.83	190.73	2.03	1.99	0.65	131.20	1.35	176.75	4.000	Yes	No	2.00
760	49.90	196.54	2.02	1.98	0.65	135.41	1.33	180.17	0.624	No	No	1.57
761	49.98	200.97	2.01	1.97	0.64	138.54	1.32	182.84	0.648	No	No	1.64
762	50.02	203.65	2.01	1.97	0.64	140.45	1.31	184.55	4.000	No	No	2.00
763	50.08	205.02	2.00	1.92	0.64	141.54	1.30	184.09	4.000	No	No	2.00
764	50.18	205.97	1.99	1.87	0.63	142.29	1.29	183.07	4.000	No	No	2.00
765	50.23	206.42	1.98	1.82	0.63	142.77	1.27	181.88	4.000	No	No	2.00
766	50.27	206.67	1.97	1.77	0.63	143.11	1.26	180.71	4.000	No	No	2.00
767	50.36	206.82	1.96	1.73	0.62	143.25	1.25	179.58	4.000	No	No	2.00
768	50.40	206.95	1.95	1.69	0.62	143.47	1.25	178.63	4.000	No	No	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
769	50.47	207.35	1.95	1.66	0.62	143.80	1.24	177.89	4.000	No	No	2.00
770	50.55	207.82	1.94	1.63	0.62	144.14	1.23	177.42	4.000	No	No	2.00
771	50.63	208.28	1.94	1.61	0.61	144.42	1.23	177.15	4.000	No	No	2.00
772	50.67	208.58	1.95	1.66	0.62	144.31	1.24	178.43	4.000	No	No	2.00
773	50.72	208.67	1.96	1.73	0.62	143.92	1.25	180.14	4.000	No	No	2.00
774	50.83	208.48	1.97	1.79	0.63	143.22	1.27	181.54	4.000	No	No	2.00
775	50.88	208.04	1.99	1.85	0.63	142.49	1.28	182.79	4.000	No	No	2.00
776	50.93	207.42	2.00	1.91	0.64	141.67	1.30	183.75	4.000	No	No	2.00
777	51.02	206.85	2.01	1.96	0.64	140.84	1.31	184.53	4.000	No	No	2.00
778	51.08	206.30	2.02	2.00	0.64	140.13	1.32	185.17	4.000	No	No	2.00
779	51.12	205.82	2.02	2.03	0.65	139.57	1.33	185.58	4.000	No	No	2.00
780	51.21	205.38	2.03	2.05	0.65	138.99	1.34	185.59	4.000	No	No	2.00
781	51.27	205.16	2.03	2.05	0.65	138.70	1.34	185.41	4.000	No	No	2.00
782	51.32	205.10	2.03	2.04	0.65	138.60	1.33	185.01	4.000	No	No	2.00
783	51.39	205.14	2.02	2.03	0.65	138.54	1.33	184.61	4.000	No	No	2.00
784	51.47	205.24	2.02	2.02	0.65	138.49	1.33	184.27	4.000	No	No	2.00
785	51.55	205.31	2.02	2.01	0.65	138.40	1.33	184.07	4.000	No	No	2.00
786	51.60	205.08	2.02	2.01	0.65	138.14	1.33	183.84	4.000	No	No	2.00
787	51.67	204.64	2.02	2.02	0.65	137.67	1.33	183.52	4.000	No	No	2.00
788	51.72	203.58	2.03	2.02	0.65	136.81	1.34	182.68	4.000	No	No	2.00
789	51.79	201.52	2.03	2.00	0.65	135.28	1.34	180.62	4.000	No	No	2.00
790	51.87	199.01	2.03	1.99	0.65	133.36	1.34	178.56	4.000	No	No	2.00
791	51.91	196.40	2.03	1.99	0.65	131.39	1.35	176.81	4.000	No	No	2.00
792	51.98	192.80	2.04	1.99	0.65	128.68	1.35	174.31	4.000	No	No	2.00
793	52.06	188.34	2.05	2.00	0.66	125.28	1.37	171.51	4.000	No	No	2.00
794	52.12	183.88	2.06	2.00	0.66	122.00	1.38	168.38	4.000	No	No	2.00
795	52.17	178.11	2.07	2.02	0.66	117.70	1.40	165.18	4.000	No	No	2.00
796	52.26	170.61	2.09	2.08	0.67	112.01	1.44	161.59	4.000	Yes	No	2.00
797	52.31	163.90	2.12	2.15	0.68	106.94	1.49	159.09	4.000	Yes	No	2.00
798	52.38	156.13	2.15	2.26	0.69	101.00	1.56	157.10	4.000	Yes	No	2.00
799	52.47	147.15	2.19	2.39	0.71	94.26	1.64	154.49	4.000	Yes	No	2.00
800	52.51	136.09	2.23	2.52	0.73	86.23	1.75	150.95	4.000	Yes	No	2.00
801	52.56	124.42	2.28	2.68	0.74	77.83	1.89	147.40	4.000	Yes	No	2.00
802	52.66	112.90	2.33	2.84	0.76	69.62	2.06	143.68	4.000	Yes	No	2.00
803	52.70	100.48	2.40	3.06	0.79	60.93	2.30	140.39	4.000	Yes	No	2.00
804	52.77	89.16	2.46	3.25	0.81	53.15	2.57	136.45	4.000	Yes	No	2.00
805	52.87	79.44	2.51	3.37	0.83	46.57	2.82	131.31	4.000	Yes	No	2.00
806	52.92	69.32	2.57	3.51	0.86	39.89	3.15	125.70	4.000	Yes	No	2.00
807	52.97	61.28	2.62	3.61	0.88	34.64	3.48	120.40	4.000	Yes	Yes	2.00
808	53.02	54.61	2.67	3.64	0.89	30.38	3.78	114.68	4.000	Yes	Yes	2.00
809	53.10	50.06	2.70	3.58	0.90	27.50	3.97	109.11	4.000	Yes	Yes	2.00
810	53.16	46.90	2.71	3.45	0.91	25.55	4.07	104.01	4.000	No	Yes	2.00
811	53.22	44.28	2.72	3.26	0.91	23.98	4.11	98.54	4.000	No	Yes	2.00
812	53.31	42.65	2.71	3.01	0.91	23.03	4.05	93.26	4.000	No	Yes	2.00
813	53.36	41.31	2.70	2.77	0.90	22.29	3.97	88.37	4.000	No	Yes	2.00
814	53.42	40.10	2.69	2.59	0.90	21.59	3.91	84.45	4.000	No	Yes	2.00
815	53.51	39.07	2.68	2.42	0.90	21.00	3.85	80.92	4.000	No	Yes	2.00
816	53.56	37.95	2.68	2.28	0.90	20.34	3.83	77.90	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
817	53.62	37.07	2.68	2.21	0.90	19.81	3.83	75.92	4.000	No	Yes	2.00
818	53.71	36.24	2.68	2.16	0.90	19.28	3.86	74.43	4.000	No	Yes	2.00
819	53.75	35.58	2.68	2.12	0.90	18.87	3.88	73.33	4.000	No	Yes	2.00
820	53.83	34.88	2.70	2.16	0.90	18.39	3.98	73.18	4.000	No	Yes	2.00
821	53.91	34.05	2.71	2.20	0.91	17.84	4.09	72.99	4.000	No	Yes	2.00
822	53.98	33.09	2.73	2.23	0.92	17.20	4.22	72.61	4.000	No	Yes	2.00
823	54.01	32.19	2.75	2.27	0.92	16.62	4.35	72.23	4.000	No	Yes	2.00
824	54.11	31.08	2.77	2.31	0.93	15.89	4.51	71.62	4.000	No	Yes	2.00
825	54.15	29.90	2.78	2.32	0.94	15.16	4.66	70.59	4.000	No	Yes	2.00
826	54.21	28.55	2.81	2.34	0.95	14.31	4.85	69.38	4.000	No	Yes	2.00
827	54.27	27.04	2.83	2.33	0.95	13.38	5.05	67.57	4.000	No	Yes	2.00
828	54.35	25.56	2.85	2.30	0.96	12.48	5.24	65.45	4.000	No	Yes	2.00
829	54.42	24.28	2.87	2.22	0.97	11.72	5.38	63.06	4.000	No	Yes	2.00
830	54.46	23.20	2.88	2.13	0.97	11.09	5.48	60.75	4.000	No	Yes	2.00
831	54.55	22.43	2.88	2.02	0.97	10.64	5.50	58.58	4.000	No	Yes	2.00
832	54.60	21.80	2.88	1.91	0.97	10.29	5.51	56.66	4.000	No	Yes	2.00
833	54.67	21.40	2.88	1.80	0.97	10.06	5.46	54.95	4.000	No	Yes	2.00
834	54.74	21.06	2.87	1.72	0.97	9.87	5.43	53.59	4.000	No	Yes	2.00
835	54.79	20.77	2.87	1.66	0.97	9.71	5.41	52.57	4.000	No	Yes	2.00
836	54.86	20.62	2.87	1.62	0.97	9.62	5.40	51.96	4.000	No	Yes	2.00
837	54.96	20.50	2.87	1.60	0.97	9.54	5.41	51.56	4.000	No	Yes	2.00
838	55.03	20.43	2.87	1.59	0.97	9.49	5.41	51.32	4.000	No	Yes	2.00
839	55.06	20.38	2.87	1.58	0.97	9.46	5.41	51.16	4.000	No	Yes	2.00
840	55.14	20.37	2.87	1.57	0.97	9.44	5.40	51.00	4.000	No	Yes	2.00
841	55.21	20.35	2.87	1.56	0.97	9.42	5.40	50.83	4.000	No	Yes	2.00
842	55.25	20.31	2.87	1.55	0.97	9.39	5.39	50.67	4.000	No	Yes	2.00
843	55.32	20.28	2.87	1.54	0.97	9.37	5.39	50.50	4.000	No	Yes	2.00
844	55.41	20.24	2.87	1.53	0.97	9.33	5.39	50.33	4.000	No	Yes	2.00
845	55.45	20.23	2.87	1.53	0.97	9.32	5.39	50.24	4.000	No	Yes	2.00
846	55.52	20.23	2.87	1.53	0.97	9.31	5.39	50.23	4.000	No	Yes	2.00
847	55.61	20.28	2.87	1.53	0.97	9.33	5.39	50.28	4.000	No	Yes	2.00
848	55.65	20.52	2.87	1.56	0.97	9.45	5.38	50.89	4.000	No	Yes	2.00
849	55.71	20.91	2.86	1.60	0.97	9.67	5.35	51.70	4.000	No	Yes	2.00
850	55.80	21.44	2.86	1.63	0.96	9.96	5.29	52.64	4.000	No	Yes	2.00
851	55.86	22.21	2.84	1.66	0.96	10.40	5.17	53.78	4.000	No	Yes	2.00
852	55.95	23.00	2.83	1.70	0.96	10.84	5.08	55.07	4.000	No	Yes	2.00
853	56.00	23.79	2.82	1.74	0.95	11.29	5.00	56.40	4.000	No	Yes	2.00
854	56.05	24.57	2.82	1.79	0.95	11.73	4.92	57.75	4.000	No	Yes	2.00
855	56.11	25.39	2.80	1.79	0.94	12.21	4.79	58.54	4.000	No	Yes	2.00
856	56.20	26.17	2.78	1.76	0.94	12.67	4.65	58.93	4.000	No	Yes	2.00
857	56.24	26.73	2.77	1.71	0.93	13.01	4.52	58.82	4.000	No	Yes	2.00
858	56.31	27.09	2.76	1.68	0.93	13.23	4.43	58.66	4.000	No	Yes	2.00
859	56.39	27.14	2.75	1.65	0.92	13.26	4.40	58.31	4.000	No	Yes	2.00
860	56.43	26.89	2.75	1.63	0.93	13.11	4.41	57.80	4.000	No	Yes	2.00
861	56.50	26.19	2.77	1.62	0.93	12.68	4.49	56.98	4.000	No	Yes	2.00
862	56.60	25.50	2.77	1.60	0.93	12.25	4.57	56.00	4.000	No	Yes	2.00
863	56.66	24.81	2.78	1.55	0.93	11.85	4.62	54.73	4.000	No	Yes	2.00
864	56.70	24.10	2.79	1.53	0.94	11.42	4.72	53.84	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
865	56.79	23.44	2.81	1.53	0.94	11.01	4.83	53.20	4.000	No	Yes	2.00
866	56.84	22.85	2.82	1.55	0.95	10.64	4.96	52.77	4.000	No	Yes	2.00
867	56.92	22.40	2.83	1.57	0.96	10.36	5.08	52.61	4.000	No	Yes	2.00
868	56.99	22.25	2.84	1.59	0.96	10.25	5.14	52.66	4.000	No	Yes	2.00
869	57.03	22.42	2.84	1.60	0.96	10.34	5.12	52.94	4.000	No	Yes	2.00
870	57.09	23.22	2.82	1.60	0.95	10.80	4.97	53.70	4.000	No	Yes	2.00
871	57.18	23.98	2.81	1.62	0.95	11.23	4.87	54.70	4.000	No	Yes	2.00
872	57.23	24.85	2.81	1.70	0.94	11.71	4.83	56.60	4.000	No	Yes	2.00
873	57.31	26.05	2.81	1.86	0.94	12.34	4.84	59.70	4.000	No	Yes	2.00
874	57.38	27.50	2.81	2.04	0.94	13.12	4.83	63.35	4.000	Yes	Yes	2.00
875	57.43	29.89	2.79	2.19	0.94	14.46	4.68	67.68	4.000	Yes	Yes	2.00
876	57.50	33.85	2.75	2.30	0.92	16.75	4.35	72.85	4.000	Yes	Yes	2.00
877	57.58	38.94	2.69	2.33	0.90	19.76	3.94	77.84	4.000	Yes	Yes	2.00
878	57.62	45.95	2.62	2.29	0.87	24.03	3.45	82.77	4.000	Yes	Yes	2.00
879	57.68	53.93	2.55	2.25	0.85	28.96	3.04	88.00	4.000	Yes	No	2.00
880	57.78	62.67	2.49	2.21	0.82	34.40	2.71	93.09	4.000	Yes	No	2.00
881	57.82	72.41	2.43	2.16	0.80	40.59	2.42	98.14	4.000	Yes	No	2.00
882	57.89	82.22	2.37	2.09	0.78	46.92	2.19	102.62	4.000	Yes	No	2.00
883	57.97	91.68	2.32	2.04	0.76	53.07	2.01	106.91	4.000	Yes	No	2.00
884	58.02	99.77	2.28	2.00	0.75	58.36	1.90	110.82	4.000	Yes	No	2.00
885	58.09	105.22	2.26	1.99	0.74	61.89	1.84	113.73	4.000	No	No	2.00
886	58.17	108.62	2.26	2.01	0.73	64.01	1.81	116.09	4.000	No	No	2.00
887	58.23	109.72	2.26	2.06	0.74	64.57	1.83	117.85	4.000	No	No	2.00
888	58.28	109.49	2.27	2.12	0.74	64.23	1.86	119.20	4.000	No	No	2.00
889	58.37	108.18	2.29	2.20	0.75	63.12	1.91	120.41	4.000	Yes	No	2.00
890	58.43	105.44	2.31	2.30	0.76	61.09	1.98	121.15	4.000	Yes	No	2.00
891	58.48	100.57	2.35	2.44	0.77	57.67	2.10	121.32	4.000	Yes	No	2.00
892	58.57	95.05	2.39	2.60	0.78	53.81	2.26	121.56	4.000	Yes	No	2.00
893	58.62	88.67	2.44	2.80	0.80	49.47	2.46	121.83	4.000	Yes	No	2.00
894	58.67	82.27	2.48	3.00	0.82	45.20	2.69	121.69	4.000	Yes	No	2.00
895	58.78	76.27	2.53	3.21	0.84	41.23	2.94	121.38	4.000	Yes	No	2.00
896	58.82	69.93	2.59	3.44	0.86	37.13	3.25	120.73	4.000	Yes	No	2.00
897	58.88	63.59	2.64	3.69	0.88	33.12	3.61	119.62	4.000	Yes	Yes	2.00
898	58.97	57.66	2.70	3.89	0.90	29.45	3.98	117.21	4.000	Yes	Yes	2.00
899	59.01	52.33	2.75	4.08	0.92	26.22	4.37	114.63	4.000	Yes	Yes	2.00
900	59.07	48.78	2.79	4.21	0.94	24.09	4.66	112.37	4.000	Yes	Yes	2.00
901	59.12	45.34	2.82	4.31	0.95	22.06	4.97	109.61	4.000	Yes	Yes	2.00
902	59.19	42.74	2.84	4.31	0.96	20.56	5.17	106.39	4.000	Yes	Yes	2.00
903	59.27	41.35	2.85	4.19	0.96	19.78	5.22	103.23	4.000	No	Yes	2.00
904	59.32	39.96	2.86	4.08	0.96	19.01	5.27	100.24	4.000	No	Yes	2.00
905	59.42	39.47	2.85	3.93	0.96	18.76	5.22	97.90	4.000	No	Yes	2.00
906	59.47	38.99	2.84	3.78	0.96	18.52	5.16	95.59	4.000	No	Yes	2.00
907	59.52	38.64	2.84	3.70	0.96	18.33	5.14	94.16	4.000	No	Yes	2.00
908	59.58	38.47	2.83	3.58	0.95	18.26	5.07	92.55	4.000	No	Yes	2.00
909	59.68	38.20	2.83	3.48	0.95	18.11	5.03	91.05	4.000	No	Yes	2.00
910	59.74	38.28	2.82	3.42	0.95	18.16	4.98	90.38	4.000	Yes	Yes	2.00
911	59.78	38.65	2.78	2.98	0.93	18.53	4.60	85.25	4.000	Yes	Yes	2.00
912	59.88	38.74	2.74	2.60	0.92	18.73	4.29	80.36	4.000	Yes	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
913	59.93	39.33	2.69	2.21	0.90	19.26	3.91	75.24	4.000	Yes	Yes	2.00
914	60.00	40.82	2.61	1.76	0.87	20.43	3.39	69.20	4.000	Yes	Yes	2.00
915	60.05	43.76	2.50	1.30	0.83	22.60	2.77	62.70	4.000	Yes	No	2.00
916	60.13	46.96	2.38	0.91	0.78	25.08	2.24	56.21	4.000	Yes	No	2.00
917	60.18	46.63	2.30	0.63	0.75	25.36	1.96	49.61	4.000	Yes	No	2.00
918	60.25	48.94	2.15	0.31	0.69	27.71	1.00	27.71	4.000	Yes	No	2.00
919	60.33	54.14	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
920	60.38	58.50	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00

Abbreviations

Depth: Depth from free surface, at which CPT was performed (ft)
q_t: Total cone resistance
I_c: Soil behavior type index
Fr: Normalized friction ratio (%)
n: Stress exponent
Q_{tn}: Normalized cone resistance
K_c: Cone resistance correction factor due to fines
$Q_{tn,cs}$: Normalized and adjusted cone resistance
$CRR_{7.5}$: Cyclic resistance ratio for M_w=7.5
FS: Factor of safety against soil liquefaction

:: Liquefaction Potential Index calculation data ::

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
0.10	2.00	0.00	0.00	0.02	0.00	0.16	2.00	0.00	0.00	0.02	0.00
0.21	2.00	0.00	0.00	0.02	0.00	0.29	2.00	0.00	0.00	0.02	0.00
0.36	2.00	0.00	0.00	0.02	0.00	0.40	2.00	0.00	0.00	0.01	0.00
0.51	2.00	0.00	0.00	0.03	0.00	0.57	2.00	0.00	0.00	0.02	0.00
0.61	2.00	0.00	0.00	0.01	0.00	0.70	2.00	0.00	0.00	0.03	0.00
0.76	2.00	0.00	0.00	0.02	0.00	0.81	2.00	0.00	0.00	0.02	0.00
0.87	2.00	0.00	0.00	0.02	0.00	0.96	2.00	0.00	0.00	0.03	0.00
1.00	2.00	0.00	0.00	0.01	0.00	1.05	2.00	0.00	0.00	0.02	0.00
1.16	2.00	0.00	0.00	0.03	0.00	1.20	2.00	0.00	0.00	0.01	0.00
1.26	2.00	0.00	0.00	0.02	0.00	1.35	2.00	0.00	0.00	0.03	0.00
1.40	2.00	0.00	0.00	0.02	0.00	1.45	2.00	0.00	0.00	0.02	0.00
1.55	2.00	0.00	0.00	0.03	0.00	1.60	2.00	0.00	0.00	0.02	0.00
1.64	2.00	0.00	0.00	0.01	0.00	1.71	2.00	0.00	0.00	0.02	0.00
1.79	2.00	0.00	0.00	0.02	0.00	1.87	2.00	0.00	0.00	0.02	0.00
1.95	2.00	0.00	0.00	0.02	0.00	2.00	2.00	0.00	0.00	0.02	0.00
2.04	2.00	0.00	0.00	0.01	0.00	2.11	2.00	0.00	0.00	0.02	0.00
2.19	2.00	0.00	0.00	0.02	0.00	2.24	2.00	0.00	0.00	0.02	0.00
2.30	2.00	0.00	0.00	0.02	0.00	2.38	2.00	0.00	0.00	0.02	0.00
2.45	2.00	0.00	0.00	0.02	0.00	2.50	2.00	0.00	0.00	0.02	0.00
2.58	2.00	0.00	0.00	0.02	0.00	2.64	2.00	0.00	0.00	0.02	0.00
2.69	2.00	0.00	0.00	0.02	0.00	2.79	2.00	0.00	0.00	0.03	0.00
2.85	2.00	0.00	0.00	0.02	0.00	2.90	2.00	0.00	0.00	0.02	0.00
2.98	2.00	0.00	0.00	0.02	0.00	3.05	2.00	0.00	0.00	0.02	0.00
3.09	2.00	0.00	0.00	0.01	0.00	3.17	2.00	0.00	0.00	0.02	0.00
3.24	2.00	0.00	0.00	0.02	0.00	3.29	2.00	0.00	0.00	0.02	0.00
3.36	2.00	0.00	0.00	0.02	0.00	3.44	2.00	0.00	0.00	0.02	0.00
3.48	2.00	0.00	0.00	0.01	0.00	3.56	2.00	0.00	0.00	0.02	0.00
3.64	2.00	0.00	0.00	0.02	0.00	3.69	2.00	0.00	0.00	0.02	0.00
3.76	2.00	0.00	0.00	0.02	0.00	3.84	2.00	0.00	0.00	0.02	0.00
3.88	2.00	0.00	0.00	0.01	0.00	3.98	2.00	0.00	0.00	0.03	0.00
4.03	2.00	0.00	0.00	0.02	0.00	4.08	2.00	0.00	0.00	0.02	0.00
4.14	2.00	0.00	0.00	0.02	0.00	4.23	2.00	0.00	0.00	0.03	0.00
4.27	2.00	0.00	0.00	0.01	0.00	4.36	2.00	0.00	0.00	0.03	0.00
4.41	2.00	0.00	0.00	0.02	0.00	4.46	2.00	0.00	0.00	0.02	0.00
4.55	2.00	0.00	0.00	0.03	0.00	4.61	2.00	0.00	0.00	0.02	0.00
4.66	2.00	0.00	0.00	0.02	0.00	4.75	2.00	0.00	0.00	0.03	0.00
4.80	2.00	0.00	0.00	0.02	0.00	4.86	2.00	0.00	0.00	0.02	0.00
4.96	2.00	0.00	0.00	0.03	0.00	5.01	2.00	0.00	0.00	0.02	0.00
5.06	2.00	0.00	0.00	0.02	0.00	5.16	2.00	0.00	0.00	0.03	0.00
5.21	2.00	0.00	0.00	0.02	0.00	5.26	2.00	0.00	0.00	0.02	0.00
5.32	2.00	0.00	0.00	0.02	0.00	5.41	2.00	0.00	0.00	0.03	0.00
5.46	2.00	0.00	0.00	0.02	0.00	5.52	2.00	0.00	0.00	0.02	0.00
5.60	2.00	0.00	0.00	0.02	0.00	5.66	2.00	0.00	0.00	0.02	0.00
5.71	2.00	0.00	0.00	0.02	0.00	5.81	2.00	0.00	0.00	0.03	0.00
5.89	2.00	0.00	0.00	0.02	0.00	5.91	2.00	0.00	0.00	0.01	0.00
6.00	2.00	0.00	0.00	0.03	0.00	6.06	2.00	0.00	0.00	0.02	0.00
6.11	2.00	0.00	0.00	0.02	0.00	6.20	2.00	0.00	0.00	0.03	0.00
6.24	2.00	0.00	0.00	0.01	0.00	6.30	2.00	0.00	0.00	0.02	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
6.38	2.00	0.00	0.00	0.02	0.00	6.46	2.00	0.00	0.00	0.02	0.00
6.50	2.00	0.00	0.00	0.01	0.00	6.60	2.00	0.00	0.00	0.03	0.00
6.63	2.00	0.00	0.00	0.01	0.00	6.72	2.00	0.00	0.00	0.03	0.00
6.80	2.00	0.00	0.00	0.02	0.00	6.84	2.00	0.00	0.00	0.01	0.00
6.90	2.00	0.00	0.00	0.02	0.00	7.00	2.00	0.00	0.00	0.03	0.00
7.04	2.00	0.00	0.00	0.01	0.00	7.09	2.00	0.00	0.00	0.02	0.00
7.20	2.00	0.00	0.00	0.03	0.00	7.24	2.00	0.00	0.00	0.01	0.00
7.30	2.00	0.00	0.00	0.02	0.00	7.39	2.00	0.00	0.00	0.03	0.00
7.43	2.00	0.00	0.00	0.01	0.00	7.50	2.00	0.00	0.00	0.02	0.00
7.59	2.00	0.00	0.00	0.03	0.00	7.64	2.00	0.00	0.00	0.02	0.00
7.70	2.00	0.00	0.00	0.02	0.00	7.79	2.00	0.00	0.00	0.03	0.00
7.83	2.00	0.00	0.00	0.01	0.00	7.90	2.00	0.00	0.00	0.02	0.00
7.94	2.00	0.00	0.00	0.01	0.00	8.03	2.00	0.00	0.00	0.03	0.00
8.11	2.00	0.00	0.00	0.02	0.00	8.17	2.00	0.00	0.00	0.02	0.00
8.21	2.00	0.00	0.00	0.01	0.00	8.28	2.00	0.00	0.00	0.02	0.00
8.37	2.00	0.00	0.00	0.03	0.00	8.41	2.00	0.00	0.00	0.01	0.00
8.48	2.00	0.00	0.00	0.02	0.00	8.57	2.00	0.00	0.00	0.03	0.00
8.61	2.00	0.00	0.00	0.01	0.00	8.67	2.00	0.00	0.00	0.02	0.00
8.77	2.00	0.00	0.00	0.03	0.00	8.81	2.00	0.00	0.00	0.01	0.00
8.87	2.00	0.00	0.00	0.02	0.00	8.96	2.00	0.00	0.00	0.03	0.00
8.99	2.00	0.00	0.00	0.01	0.00	9.07	2.00	0.00	0.00	0.02	0.00
9.16	2.00	0.00	0.00	0.03	0.00	9.21	2.00	0.00	0.00	0.02	0.00
9.27	2.00	0.00	0.00	0.02	0.00	9.36	2.00	0.00	0.00	0.03	0.00
9.40	2.00	0.00	0.00	0.01	0.00	9.48	2.00	0.00	0.00	0.02	0.00
9.52	2.00	0.00	0.00	0.01	0.00	9.61	2.00	0.00	0.00	0.03	0.00
9.65	2.00	0.00	0.00	0.01	0.00	9.72	2.00	0.00	0.00	0.02	0.00
9.81	2.00	0.00	0.00	0.03	0.00	9.86	2.00	0.00	0.00	0.02	0.00
9.91	2.00	0.00	0.00	0.02	0.00	10.00	2.00	0.00	0.00	0.03	0.00
10.05	2.00	0.00	0.00	0.02	0.00	10.16	2.00	0.00	0.00	0.03	0.00
10.20	2.00	0.00	0.00	0.01	0.00	10.25	2.00	0.00	0.00	0.02	0.00
10.31	2.00	0.00	0.00	0.02	0.00	10.40	2.00	0.00	0.00	0.03	0.00
10.44	2.00	0.00	0.00	0.01	0.00	10.51	2.00	0.00	0.00	0.02	0.00
10.59	2.00	0.00	0.00	0.02	0.00	10.65	2.00	0.00	0.00	0.02	0.00
10.71	2.00	0.00	0.00	0.02	0.00	10.80	2.00	0.00	0.00	0.03	0.00
10.85	2.00	0.00	0.00	0.02	0.00	10.90	2.00	0.00	0.00	0.02	0.00
10.96	2.00	0.00	0.00	0.02	0.00	11.04	2.00	0.00	0.00	0.02	0.00
11.10	2.00	0.00	0.00	0.02	0.00	11.18	2.00	0.00	0.00	0.02	0.00
11.24	2.00	0.00	0.00	0.02	0.00	11.30	2.00	0.00	0.00	0.02	0.00
11.35	2.00	0.00	0.00	0.02	0.00	11.42	2.00	0.00	0.00	0.02	0.00
11.51	2.00	0.00	0.00	0.03	0.00	11.55	2.00	0.00	0.00	0.01	0.00
11.62	2.00	0.00	0.00	0.02	0.00	11.71	2.00	0.00	0.00	0.03	0.00
11.75	2.00	0.00	0.00	0.01	0.00	11.85	2.00	0.00	0.00	0.03	0.00
11.90	2.00	0.00	0.00	0.02	0.00	11.94	2.00	0.00	0.00	0.01	0.00
12.02	2.00	0.00	0.00	0.02	0.00	12.10	2.00	0.00	0.00	0.02	0.00
12.15	2.00	0.00	0.00	0.02	0.00	12.24	2.00	0.00	0.00	0.03	0.00
12.30	2.00	0.00	0.00	0.02	0.00	12.35	2.00	0.00	0.00	0.02	0.00
12.44	2.00	0.00	0.00	0.03	0.00	12.50	2.00	0.00	0.00	0.02	0.00
12.55	2.00	0.00	0.00	0.02	0.00	12.63	2.00	0.00	0.00	0.02	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
12.70	2.00	0.00	0.00	0.02	0.00	12.74	2.00	0.00	0.00	0.01	0.00
12.84	2.00	0.00	0.00	0.03	0.00	12.86	2.00	0.00	0.00	0.01	0.00
12.94	2.00	0.00	0.00	0.02	0.00	13.01	2.00	0.00	0.00	0.02	0.00
13.09	2.00	0.00	0.00	0.02	0.00	13.14	2.00	0.00	0.00	0.02	0.00
13.20	2.00	0.00	0.00	0.02	0.00	13.29	2.00	0.00	0.00	0.03	0.00
13.33	2.00	0.00	0.00	0.01	0.00	13.39	2.00	0.00	0.00	0.02	0.00
13.49	2.00	0.00	0.00	0.03	0.00	13.53	2.00	0.00	0.00	0.01	0.00
13.59	2.00	0.00	0.00	0.02	0.00	13.69	2.00	0.00	0.00	0.03	0.00
13.73	2.00	0.00	0.00	0.01	0.00	13.79	2.00	0.00	0.00	0.02	0.00
13.89	2.00	0.00	0.00	0.03	0.00	13.94	2.00	0.00	0.00	0.02	0.00
13.99	2.00	0.00	0.00	0.02	0.00	14.08	2.00	0.00	0.00	0.03	0.00
14.13	2.00	0.00	0.00	0.02	0.00	14.18	2.00	0.00	0.00	0.02	0.00
14.27	2.00	0.00	0.00	0.03	0.00	14.32	2.00	0.00	0.00	0.02	0.00
14.37	2.00	0.00	0.00	0.02	0.00	14.48	2.00	0.00	0.00	0.03	0.00
14.52	2.00	0.00	0.00	0.01	0.00	14.58	2.00	0.00	0.00	0.02	0.00
14.68	2.00	0.00	0.00	0.03	0.00	14.72	2.00	0.00	0.00	0.01	0.00
14.77	2.00	0.00	0.00	0.02	0.00	14.83	2.00	0.00	0.00	0.02	0.00
14.92	2.00	0.00	0.00	0.03	0.00	14.98	2.00	0.00	0.00	0.02	0.00
15.07	2.00	0.00	0.00	0.03	0.00	15.11	2.00	0.00	0.00	0.01	0.00
15.17	2.00	0.00	0.00	0.02	0.00	15.27	2.00	0.00	0.00	0.03	0.00
15.31	2.00	0.00	0.00	0.01	0.00	15.38	2.00	0.00	0.00	0.02	0.00
15.47	2.00	0.00	0.00	0.03	0.00	15.52	2.00	0.00	0.00	0.02	0.00
15.56	2.00	0.00	0.00	0.01	0.00	15.64	2.00	0.00	0.00	0.02	0.00
15.71	2.00	0.00	0.00	0.02	0.00	15.75	2.00	0.00	0.00	0.01	0.00
15.87	2.00	0.00	0.00	0.04	0.00	15.91	2.00	0.00	0.00	0.01	0.00
15.96	2.00	0.00	0.00	0.02	0.00	16.01	2.00	0.00	0.00	0.02	0.00
16.11	2.00	0.00	0.00	0.03	0.00	16.15	2.00	0.00	0.00	0.01	0.00
16.22	2.00	0.00	0.00	0.02	0.00	16.31	2.00	0.00	0.00	0.03	0.00
16.36	2.00	0.00	0.00	0.02	0.00	16.41	2.00	0.00	0.00	0.02	0.00
16.51	2.00	0.00	0.00	0.03	0.00	16.54	2.00	0.00	0.00	0.01	0.00
16.61	2.00	0.00	0.00	0.02	0.00	16.70	2.00	0.00	0.00	0.03	0.00
16.75	2.00	0.00	0.00	0.02	0.00	16.81	2.00	0.00	0.00	0.02	0.00
16.91	2.00	0.00	0.00	0.03	0.00	16.95	2.00	0.00	0.00	0.01	0.00
17.01	2.00	0.00	0.00	0.02	0.00	17.11	2.00	0.00	0.00	0.03	0.00
17.13	2.00	0.00	0.00	0.01	0.00	17.21	2.00	0.00	0.00	0.02	0.00
17.29	2.00	0.00	0.00	0.02	0.00	17.34	2.00	0.00	0.00	0.02	0.00
17.43	2.00	0.00	0.00	0.03	0.00	17.48	2.00	0.00	0.00	0.02	0.00
17.54	2.00	0.00	0.00	0.02	0.00	17.63	2.00	0.00	0.00	0.03	0.00
17.68	2.00	0.00	0.00	0.02	0.00	17.73	2.00	0.00	0.00	0.02	0.00
17.83	2.00	0.00	0.00	0.03	0.00	17.85	2.00	0.00	0.00	0.01	0.00
17.93	2.00	0.00	0.00	0.02	0.00	17.98	2.00	0.00	0.00	0.02	0.00
18.07	2.00	0.00	0.00	0.03	0.00	18.12	2.00	0.00	0.00	0.02	0.00
18.18	2.00	0.00	0.00	0.02	0.00	18.24	2.00	0.00	0.00	0.02	0.00
18.33	2.00	0.00	0.00	0.03	0.00	18.38	2.00	0.00	0.00	0.02	0.00
18.47	2.00	0.00	0.00	0.03	0.00	18.53	2.00	0.00	0.00	0.02	0.00
18.57	2.00	0.00	0.00	0.01	0.00	18.67	2.00	0.00	0.00	0.03	0.00
18.72	2.00	0.00	0.00	0.02	0.00	18.78	2.00	0.00	0.00	0.02	0.00
18.85	2.00	0.00	0.00	0.02	0.00	18.93	2.00	0.00	0.00	0.02	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
18.97	2.00	0.00	0.00	0.01	0.00	19.08	2.00	0.00	0.00	0.03	0.00
19.12	2.00	0.00	0.00	0.01	0.00	19.22	2.00	0.00	0.00	0.03	0.00
19.27	2.00	0.00	0.00	0.02	0.00	19.32	2.00	0.00	0.00	0.02	0.00
19.37	2.00	0.00	0.00	0.02	0.00	19.43	2.00	0.00	0.00	0.02	0.00
19.52	2.00	0.00	0.00	0.03	0.00	19.57	2.00	0.00	0.00	0.02	0.00
19.67	2.00	0.00	0.00	0.03	0.00	19.72	2.00	0.00	0.00	0.02	0.00
19.77	2.00	0.00	0.00	0.02	0.00	19.82	2.00	0.00	0.00	0.02	0.00
19.92	2.00	0.00	0.00	0.03	0.00	19.97	2.00	0.00	0.00	0.02	0.00
20.04	2.00	0.00	0.00	0.02	0.00	20.08	2.00	0.00	0.00	0.01	0.00
20.16	2.00	0.00	0.00	0.02	0.00	20.24	2.00	0.00	0.00	0.02	0.00
20.28	2.00	0.00	0.00	0.01	0.00	20.37	2.00	0.00	0.00	0.03	0.00
20.41	2.00	0.00	0.00	0.01	0.00	20.50	2.00	0.00	0.00	0.03	0.00
20.57	2.00	0.00	0.00	0.02	0.00	20.61	2.00	0.00	0.00	0.01	0.00
20.70	2.00	0.00	0.00	0.03	0.00	20.76	2.00	0.00	0.00	0.02	0.00
20.81	2.00	0.00	0.00	0.02	0.00	20.89	2.00	0.00	0.00	0.02	0.00
20.95	2.00	0.00	0.00	0.02	0.00	21.00	2.00	0.00	0.00	0.02	0.00
21.10	2.00	0.00	0.00	0.03	0.00	21.14	2.00	0.00	0.00	0.01	0.00
21.21	2.00	0.00	0.00	0.02	0.00	21.30	2.00	0.00	0.00	0.03	0.00
21.34	2.00	0.00	0.00	0.01	0.00	21.40	2.00	0.00	0.00	0.02	0.00
21.48	2.00	0.00	0.00	0.02	0.00	21.54	2.00	0.00	0.00	0.02	0.00
21.60	2.00	0.00	0.00	0.02	0.00	21.68	2.00	0.00	0.00	0.02	0.00
21.75	2.00	0.00	0.00	0.02	0.00	21.80	2.00	0.00	0.00	0.02	0.00
21.88	2.00	0.00	0.00	0.02	0.00	21.92	2.00	0.00	0.00	0.01	0.00
21.99	2.00	0.00	0.00	0.02	0.00	22.08	2.00	0.00	0.00	0.03	0.00
22.15	2.00	0.00	0.00	0.02	0.00	22.19	2.00	0.00	0.00	0.01	0.00
22.28	2.00	0.00	0.00	0.03	0.00	22.34	2.00	0.00	0.00	0.02	0.00
22.39	2.00	0.00	0.00	0.02	0.00	22.47	2.00	0.00	0.00	0.02	0.00
22.54	2.00	0.00	0.00	0.02	0.00	22.58	2.00	0.00	0.00	0.01	0.00
22.68	2.00	0.00	0.00	0.03	0.00	22.74	2.00	0.00	0.00	0.02	0.00
22.79	2.00	0.00	0.00	0.02	0.00	22.84	2.00	0.00	0.00	0.02	0.00
22.94	2.00	0.00	0.00	0.03	0.00	22.99	2.00	0.00	0.00	0.02	0.00
23.04	2.00	0.00	0.00	0.02	0.00	23.11	2.00	0.00	0.00	0.02	0.00
23.18	2.00	0.00	0.00	0.02	0.00	23.23	2.00	0.00	0.00	0.02	0.00
23.34	2.00	0.00	0.00	0.03	0.00	23.37	2.00	0.00	0.00	0.01	0.00
23.44	2.00	0.00	0.00	0.02	0.00	23.54	2.00	0.00	0.00	0.03	0.00
23.60	2.00	0.00	0.00	0.02	0.00	23.64	2.00	0.00	0.00	0.01	0.00
23.71	2.00	0.00	0.00	0.02	0.00	23.79	2.00	0.00	0.00	0.02	0.00
23.84	2.00	0.00	0.00	0.02	0.00	23.89	2.00	0.00	0.00	0.02	0.00
23.99	2.00	0.00	0.00	0.03	0.00	24.03	2.00	0.00	0.00	0.01	0.00
24.10	2.00	0.00	0.00	0.02	0.00	24.18	2.00	0.00	0.00	0.02	0.00
24.23	2.00	0.00	0.00	0.02	0.00	24.31	2.00	0.00	0.00	0.02	0.00
24.36	2.00	0.00	0.00	0.02	0.00	24.45	2.00	0.00	0.00	0.03	0.00
24.49	2.00	0.00	0.00	0.01	0.00	24.57	2.00	0.00	0.00	0.02	0.00
24.61	2.00	0.00	0.00	0.01	0.00	24.69	2.00	0.00	0.00	0.02	0.00
24.74	2.00	0.00	0.00	0.02	0.00	24.82	2.00	0.00	0.00	0.02	0.00
24.89	2.00	0.00	0.00	0.02	0.00	24.94	2.00	0.00	0.00	0.02	0.00
25.01	2.00	0.00	0.00	0.02	0.00	25.09	2.00	0.00	0.00	0.02	0.00
25.13	2.00	0.00	0.00	0.01	0.00	25.22	2.00	0.00	0.00	0.03	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
25.28	2.00	0.00	0.00	0.02	0.00	25.34	2.00	0.00	0.00	0.02	0.00
25.44	2.00	0.00	0.00	0.03	0.00	25.48	2.00	0.00	0.00	0.01	0.00
25.53	2.00	0.00	0.00	0.02	0.00	25.59	2.00	0.00	0.00	0.02	0.00
25.68	2.00	0.00	0.00	0.03	0.00	25.73	2.00	0.00	0.00	0.02	0.00
25.79	2.00	0.00	0.00	0.02	0.00	25.88	2.00	0.00	0.00	0.03	0.00
25.93	2.00	0.00	0.00	0.02	0.00	25.99	2.00	0.00	0.00	0.02	0.00
26.08	2.00	0.00	0.00	0.03	0.00	26.14	2.00	0.00	0.00	0.02	0.00
26.19	2.00	0.00	0.00	0.02	0.00	26.28	2.00	0.00	0.00	0.03	0.00
26.34	2.00	0.00	0.00	0.02	0.00	26.39	2.00	0.00	0.00	0.02	0.00
26.45	2.00	0.00	0.00	0.02	0.00	26.53	2.00	0.00	0.00	0.02	0.00
26.58	2.00	0.00	0.00	0.02	0.00	26.68	2.00	0.00	0.00	0.03	0.00
26.73	2.00	0.00	0.00	0.02	0.00	26.78	2.00	0.00	0.00	0.02	0.00
26.88	2.00	0.00	0.00	0.03	0.00	26.93	2.00	0.00	0.00	0.02	0.00
26.98	2.00	0.00	0.00	0.02	0.00	27.04	2.00	0.00	0.00	0.02	0.00
27.13	2.00	0.00	0.00	0.03	0.00	27.22	2.00	0.00	0.00	0.03	0.00
27.24	2.00	0.00	0.00	0.01	0.00	27.33	2.00	0.00	0.00	0.03	0.00
27.37	2.00	0.00	0.00	0.01	0.00	27.43	2.00	0.00	0.00	0.02	0.00
27.52	2.00	0.00	0.00	0.03	0.00	27.57	2.00	0.00	0.00	0.02	0.00
27.63	2.00	0.00	0.00	0.02	0.00	27.72	2.00	0.00	0.00	0.03	0.00
27.76	2.00	0.00	0.00	0.01	0.00	27.84	2.00	0.00	0.00	0.02	0.00
27.93	2.00	0.00	0.00	0.03	0.00	27.97	2.00	0.00	0.00	0.01	0.00
28.02	2.00	0.00	0.00	0.02	0.00	28.12	2.00	0.00	0.00	0.03	0.00
28.17	2.00	0.00	0.00	0.02	0.00	28.23	2.00	0.00	0.00	0.02	0.00
28.32	2.00	0.00	0.00	0.03	0.00	28.37	2.00	0.00	0.00	0.02	0.00
28.42	2.00	0.00	0.00	0.02	0.00	28.48	2.00	0.00	0.00	0.02	0.00
28.57	2.00	0.00	0.00	0.03	0.00	28.61	2.00	0.00	0.00	0.01	0.00
28.69	2.00	0.00	0.00	0.02	0.00	28.77	2.00	0.00	0.00	0.02	0.00
28.83	2.00	0.00	0.00	0.02	0.00	28.88	2.00	0.00	0.00	0.02	0.00
28.97	2.00	0.00	0.00	0.03	0.00	29.02	2.00	0.00	0.00	0.02	0.00
29.08	2.00	0.00	0.00	0.02	0.00	29.17	2.00	0.00	0.00	0.03	0.00
29.21	2.00	0.00	0.00	0.01	0.00	29.28	2.00	0.00	0.00	0.02	0.00
29.37	2.00	0.00	0.00	0.03	0.00	29.41	2.00	0.00	0.00	0.01	0.00
29.47	2.00	0.00	0.00	0.02	0.00	29.56	2.00	0.00	0.00	0.03	0.00
29.62	2.00	0.00	0.00	0.02	0.00	29.68	2.00	0.00	0.00	0.02	0.00
29.76	2.00	0.00	0.00	0.02	0.00	29.83	2.00	0.00	0.00	0.02	0.00
29.87	2.00	0.00	0.00	0.01	0.00	29.96	2.00	0.00	0.00	0.03	0.00
30.01	2.00	0.00	0.00	0.02	0.00	30.07	2.00	0.00	0.00	0.02	0.00
30.16	2.00	0.00	0.00	0.03	0.00	30.20	2.00	0.00	0.00	0.01	0.00
30.27	2.00	0.00	0.00	0.02	0.00	30.34	2.00	0.00	0.00	0.02	0.00
30.42	2.00	0.00	0.00	0.02	0.00	30.46	2.00	0.00	0.00	0.01	0.00
30.52	2.00	0.00	0.00	0.02	0.00	30.58	2.00	0.00	0.00	0.02	0.00
30.66	2.00	0.00	0.00	0.02	0.00	30.71	2.00	0.00	0.00	0.02	0.00
30.81	2.00	0.00	0.00	0.03	0.00	30.87	2.00	0.00	0.00	0.02	0.00
30.91	2.00	0.00	0.00	0.01	0.00	31.01	2.00	0.00	0.00	0.03	0.00
31.06	2.00	0.00	0.00	0.02	0.00	31.11	2.00	0.00	0.00	0.02	0.00
31.19	2.00	0.00	0.00	0.02	0.00	31.26	2.00	0.00	0.00	0.02	0.00
31.35	2.00	0.00	0.00	0.03	0.00	31.37	2.00	0.00	0.00	0.01	0.00
31.46	2.00	0.00	0.00	0.03	0.00	31.55	2.00	0.00	0.00	0.03	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
31.59	2.00	0.00	0.00	0.01	0.00	31.66	2.00	0.00	0.00	0.02	0.00
31.70	2.00	0.00	0.00	0.01	0.00	31.79	2.00	0.00	0.00	0.03	0.00
31.86	2.00	0.00	0.00	0.02	0.00	31.91	2.00	0.00	0.00	0.02	0.00
31.99	2.00	0.00	0.00	0.02	0.00	32.06	2.00	0.00	0.00	0.02	0.00
32.10	2.00	0.00	0.00	0.01	0.00	32.20	2.00	0.00	0.00	0.03	0.00
32.26	2.00	0.00	0.00	0.02	0.00	32.30	2.00	0.00	0.00	0.01	0.00
32.35	2.00	0.00	0.00	0.02	0.00	32.46	2.00	0.00	0.00	0.03	0.00
32.49	2.00	0.00	0.00	0.01	0.00	32.58	2.00	0.00	0.00	0.03	0.00
32.62	2.00	0.00	0.00	0.01	0.00	32.69	2.00	0.00	0.00	0.02	0.00
32.78	2.00	0.00	0.00	0.03	0.00	32.82	2.00	0.00	0.00	0.01	0.00
32.89	2.00	0.00	0.00	0.02	0.00	32.98	2.00	0.00	0.00	0.03	0.00
33.02	2.00	0.00	0.00	0.01	0.00	33.08	2.00	0.00	0.00	0.02	0.00
33.18	2.00	0.00	0.00	0.03	0.00	33.21	2.00	0.00	0.00	0.01	0.00
33.29	2.00	0.00	0.00	0.02	0.00	33.37	2.00	0.00	0.00	0.02	0.00
33.42	2.00	0.00	0.00	0.02	0.00	33.47	2.00	0.00	0.00	0.02	0.00
33.53	2.00	0.00	0.00	0.02	0.00	33.62	2.00	0.00	0.00	0.03	0.00
33.67	2.00	0.00	0.00	0.02	0.00	33.73	2.00	0.00	0.00	0.02	0.00
33.82	2.00	0.00	0.00	0.03	0.00	33.87	2.00	0.00	0.00	0.02	0.00
33.93	2.00	0.00	0.00	0.02	0.00	34.02	2.00	0.00	0.00	0.03	0.00
34.06	2.00	0.00	0.00	0.01	0.00	34.13	2.00	0.00	0.00	0.02	0.00
34.22	2.00	0.00	0.00	0.03	0.00	34.26	2.00	0.00	0.00	0.01	0.00
34.32	2.00	0.00	0.00	0.02	0.00	34.42	2.00	0.00	0.00	0.03	0.00
34.46	2.00	0.00	0.00	0.01	0.00	34.52	2.00	0.00	0.00	0.02	0.00
34.61	2.00	0.00	0.00	0.03	0.00	34.70	2.00	0.00	0.00	0.03	0.00
34.76	2.00	0.00	0.00	0.02	0.00	34.82	2.00	0.00	0.00	0.02	0.00
34.86	2.00	0.00	0.00	0.01	0.00	34.92	2.00	0.00	0.00	0.02	0.00
35.02	2.00	0.00	0.00	0.03	0.00	35.06	2.00	0.00	0.00	0.01	0.00
35.11	2.00	0.00	0.00	0.02	0.00	35.19	2.00	0.00	0.00	0.02	0.00
35.25	2.00	0.00	0.00	0.02	0.00	35.31	2.00	0.00	0.00	0.02	0.00
35.40	2.00	0.00	0.00	0.03	0.00	35.45	2.00	0.00	0.00	0.02	0.00
35.50	2.00	0.00	0.00	0.02	0.00	35.56	2.00	0.00	0.00	0.02	0.00
35.64	2.00	0.00	0.00	0.02	0.00	35.72	2.00	0.00	0.00	0.02	0.00
35.81	2.00	0.00	0.00	0.03	0.00	35.85	2.00	0.00	0.00	0.01	0.00
35.90	2.00	0.00	0.00	0.02	0.00	35.96	2.00	0.00	0.00	0.02	0.00
36.04	2.00	0.00	0.00	0.02	0.00	36.11	2.00	0.00	0.00	0.02	0.00
36.16	2.00	0.00	0.00	0.02	0.00	36.25	2.00	0.00	0.00	0.03	0.00
36.31	2.00	0.00	0.00	0.02	0.00	36.36	2.00	0.00	0.00	0.02	0.00
36.44	2.00	0.00	0.00	0.02	0.00	36.50	2.00	0.00	0.00	0.02	0.00
36.56	2.00	0.00	0.00	0.02	0.00	36.65	2.00	0.00	0.00	0.03	0.00
36.68	2.00	0.00	0.00	0.01	0.00	36.76	2.00	0.00	0.00	0.02	0.00
36.84	2.00	0.00	0.00	0.02	0.00	36.91	2.00	0.00	0.00	0.02	0.00
36.96	2.00	0.00	0.00	0.02	0.00	37.04	2.00	0.00	0.00	0.02	0.00
37.10	2.00	0.00	0.00	0.02	0.00	37.15	2.00	0.00	0.00	0.02	0.00
37.23	2.00	0.00	0.00	0.02	0.00	37.30	2.00	0.00	0.00	0.02	0.00
37.35	2.00	0.00	0.00	0.02	0.00	37.45	2.00	0.00	0.00	0.03	0.00
37.51	2.00	0.00	0.00	0.02	0.00	37.55	2.00	0.00	0.00	0.01	0.00
37.62	2.00	0.00	0.00	0.02	0.00	37.70	2.00	0.00	0.00	0.02	0.00
37.75	2.00	0.00	0.00	0.02	0.00	37.80	2.00	0.00	0.00	0.02	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
37.90	2.00	0.00	0.00	0.03	0.00	37.95	2.00	0.00	0.00	0.02	0.00
38.05	2.00	0.00	0.00	0.03	0.00	38.06	2.00	0.00	0.00	0.00	0.00
38.15	2.00	0.00	0.00	0.03	0.00	38.19	2.00	0.00	0.00	0.01	0.00
38.27	2.00	0.00	0.00	0.02	0.00	38.34	2.00	0.00	0.00	0.02	0.00
38.39	2.00	0.00	0.00	0.02	0.00	38.46	2.00	0.00	0.00	0.02	0.00
38.55	2.00	0.00	0.00	0.03	0.00	38.59	2.00	0.00	0.00	0.01	0.00
38.68	2.00	0.00	0.00	0.03	0.00	38.75	2.00	0.00	0.00	0.02	0.00
38.80	2.00	0.00	0.00	0.02	0.00	38.87	2.00	0.00	0.00	0.02	0.00
38.95	2.00	0.00	0.00	0.02	0.00	38.99	0.48	0.52	0.45	0.04	0.03
39.04	0.50	0.50	0.48	0.05	0.03	39.11	0.53	0.47	0.51	0.07	0.04
39.19	0.54	0.46	0.53	0.08	0.05	39.27	0.53	0.47	0.52	0.08	0.05
39.33	0.52	0.48	0.50	0.06	0.04	39.39	0.50	0.50	0.48	0.06	0.04
39.45	2.00	0.00	0.00	0.02	0.00	39.53	2.00	0.00	0.00	0.02	0.00
39.57	2.00	0.00	0.00	0.01	0.00	39.64	2.00	0.00	0.00	0.02	0.00
39.72	2.00	0.00	0.00	0.02	0.00	39.79	2.00	0.00	0.00	0.02	0.00
39.84	2.00	0.00	0.00	0.02	0.00	39.93	2.00	0.00	0.00	0.03	0.00
39.98	2.00	0.00	0.00	0.02	0.00	40.05	2.00	0.00	0.00	0.02	0.00
40.09	2.00	0.00	0.00	0.01	0.00	40.19	2.00	0.00	0.00	0.03	0.00
40.23	2.00	0.00	0.00	0.01	0.00	40.34	0.47	0.53	0.44	0.11	0.07
40.38	0.53	0.47	0.52	0.04	0.02	40.43	0.61	0.39	0.66	0.05	0.02
40.50	0.70	0.30	0.91	0.07	0.02	40.58	0.78	0.22	1.48	0.08	0.02
40.63	0.85	0.15	2.81	0.05	0.01	40.70	0.92	0.08	9.75	0.07	0.01
40.75	0.98	0.02	8683.83	0.05	0.00	40.84	1.03	0.00	0.00	0.03	0.00
40.88	1.07	0.00	0.00	0.01	0.00	40.95	1.11	0.00	0.00	0.02	0.00
41.03	2.00	0.00	0.00	0.02	0.00	41.08	2.00	0.00	0.00	0.02	0.00
41.15	2.00	0.00	0.00	0.02	0.00	41.23	2.00	0.00	0.00	0.02	0.00
41.28	2.00	0.00	0.00	0.02	0.00	41.35	2.00	0.00	0.00	0.02	0.00
41.43	2.00	0.00	0.00	0.02	0.00	41.48	2.00	0.00	0.00	0.02	0.00
41.54	1.44	0.00	0.00	0.02	0.00	41.62	1.55	0.00	0.00	0.02	0.00
41.68	1.67	0.00	0.00	0.02	0.00	41.77	1.79	0.00	0.00	0.03	0.00
41.82	1.91	0.00	0.00	0.02	0.00	41.88	2.00	0.00	0.00	0.02	0.00
41.97	2.00	0.00	0.00	0.03	0.00	42.01	2.00	0.00	0.00	0.01	0.00
42.10	2.00	0.00	0.00	0.03	0.00	42.17	2.00	0.00	0.00	0.02	0.00
42.22	2.00	0.00	0.00	0.02	0.00	42.28	2.00	0.00	0.00	0.02	0.00
42.33	2.00	0.00	0.00	0.02	0.00	42.41	2.00	0.00	0.00	0.02	0.00
42.48	2.00	0.00	0.00	0.02	0.00	42.52	2.00	0.00	0.00	0.01	0.00
42.60	2.00	0.00	0.00	0.02	0.00	42.66	2.00	0.00	0.00	0.02	0.00
42.72	2.00	0.00	0.00	0.02	0.00	42.81	2.00	0.00	0.00	0.03	0.00
42.87	2.00	0.00	0.00	0.02	0.00	42.92	2.00	0.00	0.00	0.02	0.00
43.00	2.00	0.00	0.00	0.02	0.00	43.06	2.00	0.00	0.00	0.02	0.00
43.11	2.00	0.00	0.00	0.02	0.00	43.18	2.00	0.00	0.00	0.02	0.00
43.25	1.94	0.00	0.00	0.02	0.00	43.31	1.83	0.00	0.00	0.02	0.00
43.39	1.74	0.00	0.00	0.02	0.00	43.45	1.66	0.00	0.00	0.02	0.00
43.51	1.61	0.00	0.00	0.02	0.00	43.61	1.57	0.00	0.00	0.03	0.00
43.65	1.56	0.00	0.00	0.01	0.00	43.72	1.54	0.00	0.00	0.02	0.00
43.81	1.51	0.00	0.00	0.03	0.00	43.85	1.48	0.00	0.00	0.01	0.00
43.92	1.42	0.00	0.00	0.02	0.00	44.01	1.37	0.00	0.00	0.03	0.00
44.05	1.31	0.00	0.00	0.01	0.00	44.10	1.22	0.00	0.00	0.02	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
44.20	1.13	0.00	0.00	0.03	0.00	44.25	1.05	0.00	0.00	0.02	0.00
44.30	0.98	0.02	19369.06	0.05	0.00	44.40	0.92	0.08	10.80	0.10	0.01
44.45	0.87	0.13	3.71	0.05	0.01	44.50	0.85	0.15	2.58	0.05	0.01
44.57	0.82	0.18	2.04	0.07	0.01	44.63	0.82	0.18	2.01	0.06	0.01
44.69	0.86	0.14	3.09	0.06	0.01	44.79	0.91	0.09	8.24	0.10	0.01
44.84	0.97	0.03	445.51	0.05	0.00	44.89	1.02	0.00	0.00	0.02	0.00
44.96	1.06	0.00	0.00	0.02	0.00	45.04	1.10	0.00	0.00	0.02	0.00
45.09	1.12	0.00	0.00	0.02	0.00	45.17	1.15	0.00	0.00	0.02	0.00
45.24	1.17	0.00	0.00	0.02	0.00	45.28	1.18	0.00	0.00	0.01	0.00
45.38	1.18	0.00	0.00	0.03	0.00	45.42	1.18	0.00	0.00	0.01	0.00
45.49	1.18	0.00	0.00	0.02	0.00	45.57	1.17	0.00	0.00	0.02	0.00
45.63	1.16	0.00	0.00	0.02	0.00	45.69	1.12	0.00	0.00	0.02	0.00
45.78	1.06	0.00	0.00	0.03	0.00	45.84	0.98	0.02	100523.05	0.06	0.00
45.89	0.91	0.09	7.00	0.05	0.00	45.93	0.82	0.18	1.95	0.04	0.01
46.02	2.00	0.00	0.00	0.03	0.00	46.08	2.00	0.00	0.00	0.02	0.00
46.13	2.00	0.00	0.00	0.02	0.00	46.22	2.00	0.00	0.00	0.03	0.00
46.28	2.00	0.00	0.00	0.02	0.00	46.33	2.00	0.00	0.00	0.02	0.00
46.43	2.00	0.00	0.00	0.03	0.00	46.47	2.00	0.00	0.00	0.01	0.00
46.53	2.00	0.00	0.00	0.02	0.00	46.63	2.00	0.00	0.00	0.03	0.00
46.67	2.00	0.00	0.00	0.01	0.00	46.73	2.00	0.00	0.00	0.02	0.00
46.83	2.00	0.00	0.00	0.03	0.00	46.87	2.00	0.00	0.00	0.01	0.00
46.93	2.00	0.00	0.00	0.02	0.00	47.02	2.00	0.00	0.00	0.03	0.00
47.08	2.00	0.00	0.00	0.02	0.00	47.12	2.00	0.00	0.00	0.01	0.00
47.18	2.00	0.00	0.00	0.02	0.00	47.27	2.00	0.00	0.00	0.03	0.00
47.31	2.00	0.00	0.00	0.01	0.00	47.39	2.00	0.00	0.00	0.02	0.00
47.48	2.00	0.00	0.00	0.03	0.00	47.52	2.00	0.00	0.00	0.01	0.00
47.59	2.00	0.00	0.00	0.02	0.00	47.66	2.00	0.00	0.00	0.02	0.00
47.74	2.00	0.00	0.00	0.02	0.00	47.79	2.00	0.00	0.00	0.02	0.00
47.86	2.00	0.00	0.00	0.02	0.00	47.94	2.00	0.00	0.00	0.02	0.00
47.99	2.00	0.00	0.00	0.02	0.00	48.05	2.00	0.00	0.00	0.02	0.00
48.13	2.00	0.00	0.00	0.02	0.00	48.19	2.00	0.00	0.00	0.02	0.00
48.26	2.00	0.00	0.00	0.02	0.00	48.34	2.00	0.00	0.00	0.02	0.00
48.39	0.58	0.42	0.59	0.05	0.02	48.43	0.61	0.39	0.65	0.04	0.01
48.51	2.00	0.00	0.00	0.02	0.00	48.58	2.00	0.00	0.00	0.02	0.00
48.63	2.00	0.00	0.00	0.02	0.00	48.72	2.00	0.00	0.00	0.03	0.00
48.78	2.00	0.00	0.00	0.02	0.00	48.83	2.00	0.00	0.00	0.02	0.00
48.90	2.00	0.00	0.00	0.02	0.00	48.99	2.00	0.00	0.00	0.03	0.00
49.03	2.00	0.00	0.00	0.01	0.00	49.08	2.00	0.00	0.00	0.02	0.00
49.17	2.00	0.00	0.00	0.03	0.00	49.23	2.00	0.00	0.00	0.02	0.00
49.32	2.00	0.00	0.00	0.03	0.00	49.35	2.00	0.00	0.00	0.01	0.00
49.43	2.00	0.00	0.00	0.02	0.00	49.50	2.00	0.00	0.00	0.02	0.00
49.58	2.00	0.00	0.00	0.02	0.00	49.63	2.00	0.00	0.00	0.02	0.00
49.72	2.00	0.00	0.00	0.03	0.00	49.78	2.00	0.00	0.00	0.02	0.00
49.83	2.00	0.00	0.00	0.02	0.00	49.90	1.57	0.00	0.00	0.02	0.00
49.98	1.64	0.00	0.00	0.02	0.00	50.02	2.00	0.00	0.00	0.01	0.00
50.08	2.00	0.00	0.00	0.02	0.00	50.18	2.00	0.00	0.00	0.03	0.00
50.23	2.00	0.00	0.00	0.02	0.00	50.27	2.00	0.00	0.00	0.01	0.00
50.36	2.00	0.00	0.00	0.03	0.00	50.40	2.00	0.00	0.00	0.01	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
50.47	2.00	0.00	0.00	0.02	0.00	50.55	2.00	0.00	0.00	0.02	0.00
50.63	2.00	0.00	0.00	0.02	0.00	50.67	2.00	0.00	0.00	0.01	0.00
50.72	2.00	0.00	0.00	0.02	0.00	50.83	2.00	0.00	0.00	0.03	0.00
50.88	2.00	0.00	0.00	0.02	0.00	50.93	2.00	0.00	0.00	0.02	0.00
51.02	2.00	0.00	0.00	0.03	0.00	51.08	2.00	0.00	0.00	0.02	0.00
51.12	2.00	0.00	0.00	0.01	0.00	51.21	2.00	0.00	0.00	0.03	0.00
51.27	2.00	0.00	0.00	0.02	0.00	51.32	2.00	0.00	0.00	0.02	0.00
51.39	2.00	0.00	0.00	0.02	0.00	51.47	2.00	0.00	0.00	0.02	0.00
51.55	2.00	0.00	0.00	0.02	0.00	51.60	2.00	0.00	0.00	0.02	0.00
51.67	2.00	0.00	0.00	0.02	0.00	51.72	2.00	0.00	0.00	0.02	0.00
51.79	2.00	0.00	0.00	0.02	0.00	51.87	2.00	0.00	0.00	0.02	0.00
51.91	2.00	0.00	0.00	0.01	0.00	51.98	2.00	0.00	0.00	0.02	0.00
52.06	2.00	0.00	0.00	0.02	0.00	52.12	2.00	0.00	0.00	0.02	0.00
52.17	2.00	0.00	0.00	0.02	0.00	52.26	2.00	0.00	0.00	0.03	0.00
52.31	2.00	0.00	0.00	0.02	0.00	52.38	2.00	0.00	0.00	0.02	0.00
52.47	2.00	0.00	0.00	0.03	0.00	52.51	2.00	0.00	0.00	0.01	0.00
52.56	2.00	0.00	0.00	0.02	0.00	52.66	2.00	0.00	0.00	0.03	0.00
52.70	2.00	0.00	0.00	0.01	0.00	52.77	2.00	0.00	0.00	0.02	0.00
52.87	2.00	0.00	0.00	0.03	0.00	52.92	2.00	0.00	0.00	0.02	0.00
52.97	2.00	0.00	0.00	0.02	0.00	53.02	2.00	0.00	0.00	0.02	0.00
53.10	2.00	0.00	0.00	0.02	0.00	53.16	2.00	0.00	0.00	0.02	0.00
53.22	2.00	0.00	0.00	0.02	0.00	53.31	2.00	0.00	0.00	0.03	0.00
53.36	2.00	0.00	0.00	0.02	0.00	53.42	2.00	0.00	0.00	0.02	0.00
53.51	2.00	0.00	0.00	0.03	0.00	53.56	2.00	0.00	0.00	0.02	0.00
53.62	2.00	0.00	0.00	0.02	0.00	53.71	2.00	0.00	0.00	0.03	0.00
53.75	2.00	0.00	0.00	0.01	0.00	53.83	2.00	0.00	0.00	0.02	0.00
53.91	2.00	0.00	0.00	0.02	0.00	53.98	2.00	0.00	0.00	0.02	0.00
54.01	2.00	0.00	0.00	0.01	0.00	54.11	2.00	0.00	0.00	0.03	0.00
54.15	2.00	0.00	0.00	0.01	0.00	54.21	2.00	0.00	0.00	0.02	0.00
54.27	2.00	0.00	0.00	0.02	0.00	54.35	2.00	0.00	0.00	0.02	0.00
54.42	2.00	0.00	0.00	0.02	0.00	54.46	2.00	0.00	0.00	0.01	0.00
54.55	2.00	0.00	0.00	0.03	0.00	54.60	2.00	0.00	0.00	0.02	0.00
54.67	2.00	0.00	0.00	0.02	0.00	54.74	2.00	0.00	0.00	0.02	0.00
54.79	2.00	0.00	0.00	0.02	0.00	54.86	2.00	0.00	0.00	0.02	0.00
54.96	2.00	0.00	0.00	0.03	0.00	55.03	2.00	0.00	0.00	0.02	0.00
55.06	2.00	0.00	0.00	0.01	0.00	55.14	2.00	0.00	0.00	0.02	0.00
55.21	2.00	0.00	0.00	0.02	0.00	55.25	2.00	0.00	0.00	0.01	0.00
55.32	2.00	0.00	0.00	0.02	0.00	55.41	2.00	0.00	0.00	0.03	0.00
55.45	2.00	0.00	0.00	0.01	0.00	55.52	2.00	0.00	0.00	0.02	0.00
55.61	2.00	0.00	0.00	0.03	0.00	55.65	2.00	0.00	0.00	0.01	0.00
55.71	2.00	0.00	0.00	0.02	0.00	55.80	2.00	0.00	0.00	0.03	0.00
55.86	2.00	0.00	0.00	0.02	0.00	55.95	2.00	0.00	0.00	0.03	0.00
56.00	2.00	0.00	0.00	0.02	0.00	56.05	2.00	0.00	0.00	0.02	0.00
56.11	2.00	0.00	0.00	0.02	0.00	56.20	2.00	0.00	0.00	0.03	0.00
56.24	2.00	0.00	0.00	0.01	0.00	56.31	2.00	0.00	0.00	0.02	0.00
56.39	2.00	0.00	0.00	0.02	0.00	56.43	2.00	0.00	0.00	0.01	0.00
56.50	2.00	0.00	0.00	0.02	0.00	56.60	2.00	0.00	0.00	0.03	0.00
56.66	2.00	0.00	0.00	0.02	0.00	56.70	2.00	0.00	0.00	0.01	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
56.79	2.00	0.00	0.00	0.03	0.00	56.84	2.00	0.00	0.00	0.02	0.00
56.92	2.00	0.00	0.00	0.02	0.00	56.99	2.00	0.00	0.00	0.02	0.00
57.03	2.00	0.00	0.00	0.01	0.00	57.09	2.00	0.00	0.00	0.02	0.00
57.18	2.00	0.00	0.00	0.03	0.00	57.23	2.00	0.00	0.00	0.02	0.00
57.31	2.00	0.00	0.00	0.02	0.00	57.38	2.00	0.00	0.00	0.02	0.00
57.43	2.00	0.00	0.00	0.02	0.00	57.50	2.00	0.00	0.00	0.02	0.00
57.58	2.00	0.00	0.00	0.02	0.00	57.62	2.00	0.00	0.00	0.01	0.00
57.68	2.00	0.00	0.00	0.02	0.00	57.78	2.00	0.00	0.00	0.03	0.00
57.82	2.00	0.00	0.00	0.01	0.00	57.89	2.00	0.00	0.00	0.02	0.00
57.97	2.00	0.00	0.00	0.02	0.00	58.02	2.00	0.00	0.00	0.02	0.00
58.09	2.00	0.00	0.00	0.02	0.00	58.17	2.00	0.00	0.00	0.02	0.00
58.23	2.00	0.00	0.00	0.02	0.00	58.28	2.00	0.00	0.00	0.02	0.00
58.37	2.00	0.00	0.00	0.03	0.00	58.43	2.00	0.00	0.00	0.02	0.00
58.48	2.00	0.00	0.00	0.02	0.00	58.57	2.00	0.00	0.00	0.03	0.00
58.62	2.00	0.00	0.00	0.02	0.00	58.67	2.00	0.00	0.00	0.02	0.00
58.78	2.00	0.00	0.00	0.03	0.00	58.82	2.00	0.00	0.00	0.01	0.00
58.88	2.00	0.00	0.00	0.02	0.00	58.97	2.00	0.00	0.00	0.03	0.00
59.01	2.00	0.00	0.00	0.01	0.00	59.07	2.00	0.00	0.00	0.02	0.00
59.12	2.00	0.00	0.00	0.02	0.00	59.19	2.00	0.00	0.00	0.02	0.00
59.27	2.00	0.00	0.00	0.02	0.00	59.32	2.00	0.00	0.00	0.02	0.00
59.42	2.00	0.00	0.00	0.03	0.00	59.47	2.00	0.00	0.00	0.02	0.00
59.52	2.00	0.00	0.00	0.02	0.00	59.58	2.00	0.00	0.00	0.02	0.00
59.68	2.00	0.00	0.00	0.03	0.00	59.74	2.00	0.00	0.00	0.02	0.00
59.78	2.00	0.00	0.00	0.01	0.00	59.88	2.00	0.00	0.00	0.03	0.00
59.93	2.00	0.00	0.00	0.02	0.00	60.00	2.00	0.00	0.00	0.02	0.00
60.05	2.00	0.00	0.00	0.02	0.00	60.13	2.00	0.00	0.00	0.02	0.00
60.18	2.00	0.00	0.00	0.02	0.00	60.25	2.00	0.00	0.00	0.02	0.00
60.33	2.00	0.00	0.00	0.02	0.00	60.38	2.00	0.00	0.00	0.02	0.00

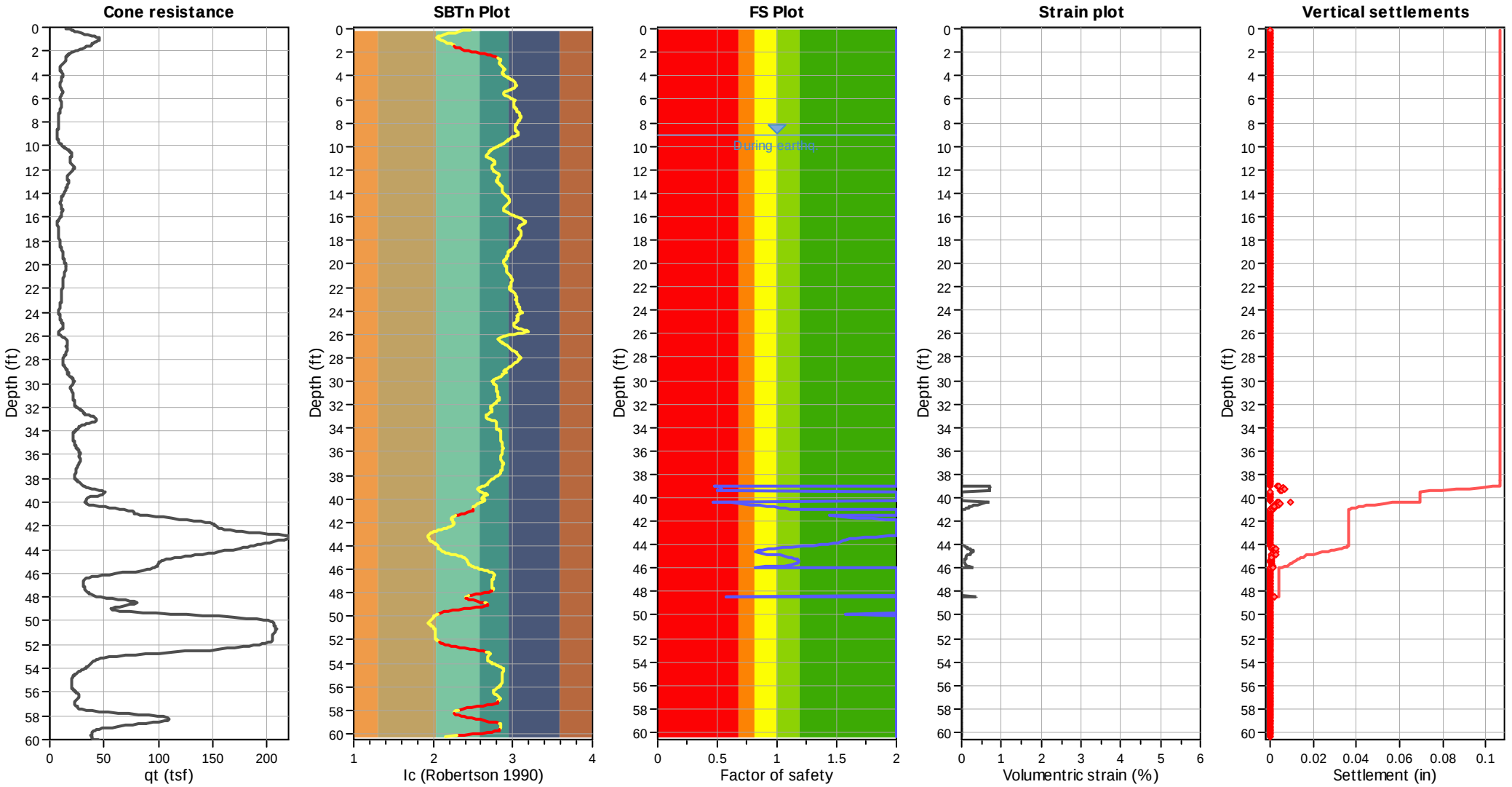
Overall liquefaction potential: 0.54

LPI = 0.00 - Liquefaction risk very low
LPI between 0.00 and 5.00 - Liquefaction risk low
LPI between 5.00 and 15.00 - Liquefaction risk high
LPI > 15.00 - Liquefaction risk very high

Abbreviations

FS: Calculated factor of safety for test point
F_L: 1 - FS
w_z: Function value of the extend of soil liquefaction according to depth
d_z: Layer thickness (ft)
LPI: Liquefaction potential index value for test point

Estimation of post-earthquake settlements



Abbreviations

q_t:	Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c:	Soil Behaviour Type Index
FS:	Calculated Factor of Safety against liquefaction
Volumentric strain:	Post-liquefaction volumentric strain

:: Lateral displacement index calculation ::

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
9.07	6.38	9.45	3.08	68.47	2.00	0.00	0.00	0.00
9.16	6.56	9.73	2.96	68.19	2.00	0.00	0.00	0.00
9.21	6.75	10.03	2.83	67.73	2.00	0.00	0.00	0.00
9.27	6.95	10.34	2.70	67.24	2.00	0.00	0.00	0.00
9.36	7.12	10.61	2.61	66.90	2.00	0.00	0.00	0.00
9.40	7.28	10.86	2.52	66.54	2.00	0.00	0.00	0.00
9.48	7.42	11.08	2.47	66.51	2.00	0.00	0.00	0.00
9.52	7.61	11.38	2.48	67.29	2.00	0.00	0.00	0.00
9.61	7.88	11.80	2.50	68.36	2.00	0.00	0.00	0.00
9.65	8.20	12.31	2.55	70.02	2.00	0.00	0.00	0.00
9.72	8.71	13.12	2.65	72.94	2.00	0.00	0.00	0.00
9.81	9.31	14.09	2.77	76.25	2.00	2.32	0.00	0.00
9.86	10.14	15.41	2.94	80.94	2.00	5.28	0.00	0.00
9.91	11.02	16.83	3.08	85.53	2.00	8.19	0.00	0.00
10.00	11.92	18.26	3.23	90.08	2.00	10.88	0.00	0.00
10.05	12.98	19.95	3.36	94.97	2.00	13.80	0.00	0.00
10.16	14.05	21.67	3.46	99.56	2.00	16.53	0.00	0.00
10.20	15.10	23.35	3.55	103.70	2.00	18.99	0.00	0.00
10.25	16.16	25.05	3.62	107.64	2.00	21.31	0.00	0.00
10.31	17.03	26.44	3.69	111.04	2.00	23.09	0.00	0.00
10.40	17.83	27.73	3.75	114.17	2.00	24.66	0.00	0.00
10.44	18.60	28.95	3.76	116.36	2.00	26.09	0.00	0.00
10.51	19.07	29.70	3.76	117.57	2.00	26.93	0.00	0.00
10.59	19.49	30.36	3.72	117.93	2.00	27.66	0.00	0.00
10.65	19.75	30.58	3.66	117.21	2.00	27.90	0.00	0.00
10.71	19.91	30.63	3.58	115.91	2.00	27.94	0.00	0.00
10.80	20.00	30.53	3.57	115.58	2.00	27.84	0.00	0.00
10.85	20.00	30.40	3.58	115.50	2.00	27.70	0.00	0.00
10.90	19.65	29.79	3.65	115.78	2.00	27.03	0.00	0.00
10.96	19.02	28.80	3.80	116.70	2.00	25.91	0.00	0.00
11.04	18.63	28.09	3.92	117.49	2.00	25.09	0.00	0.00
11.10	18.54	27.88	4.05	119.21	2.00	24.84	0.00	0.00
11.18	18.55	27.77	4.21	121.48	2.00	24.71	0.00	0.00
11.24	18.66	27.84	4.35	123.77	2.00	24.79	0.00	0.00
11.30	18.82	27.98	4.50	126.31	2.00	24.96	0.00	0.00
11.35	19.00	28.17	4.63	128.55	2.00	25.18	0.00	0.00
11.42	19.22	28.35	4.75	130.69	2.00	25.40	0.00	0.00
11.51	19.84	29.02	4.75	132.02	2.00	26.17	0.00	0.00
11.55	20.77	30.20	4.64	132.54	2.00	27.48	0.00	0.00
11.62	21.32	30.79	4.60	132.86	2.00	28.12	0.00	0.00
11.71	21.83	31.26	4.55	132.97	2.00	28.62	0.00	0.00
11.75	22.14	31.58	4.53	133.24	2.00	28.96	0.00	0.00
11.85	22.14	31.34	4.57	133.38	2.00	28.70	0.00	0.00
11.90	22.04	31.09	4.60	133.42	2.00	28.44	0.00	0.00
11.94	21.77	30.62	4.60	132.59	2.00	27.94	0.00	0.00
12.02	21.29	29.80	4.60	131.08	2.00	27.04	0.00	0.00
12.10	20.69	28.88	4.59	129.32	2.00	26.00	0.00	0.00
12.15	19.88	27.73	4.62	127.53	2.00	24.66	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
12.24	18.97	26.39	4.65	125.46	2.00	23.03	0.00	0.00
12.30	18.13	25.19	4.64	122.90	2.00	21.49	0.00	0.00
12.35	17.31	24.01	4.60	119.91	2.00	19.91	0.00	0.00
12.44	16.81	23.21	4.47	116.58	2.00	18.79	0.00	0.00
12.50	16.42	22.60	4.33	113.49	2.00	17.91	0.00	0.00
12.55	16.24	22.28	4.20	111.12	2.00	17.44	0.00	0.00
12.63	16.22	22.16	4.08	109.20	2.00	17.26	0.00	0.00
12.70	16.29	22.18	4.01	108.36	2.00	17.29	0.00	0.00
12.74	16.47	22.38	3.98	108.34	2.00	17.59	0.00	0.00
12.84	16.72	22.63	3.97	108.74	2.00	17.95	0.00	0.00
12.86	16.90	22.86	4.01	109.69	2.00	18.29	0.00	0.00
12.94	17.15	23.14	4.05	110.77	2.00	18.69	0.00	0.00
13.01	17.16	23.11	4.14	111.95	2.00	18.65	0.00	0.00
13.09	17.06	22.94	4.24	113.02	2.00	18.40	0.00	0.00
13.14	16.85	22.63	4.32	113.48	2.00	17.96	0.00	0.00
13.20	16.59	22.25	4.38	113.51	2.00	17.40	0.00	0.00
13.29	16.32	21.82	4.40	112.86	2.00	16.76	0.00	0.00
13.33	16.03	21.41	4.40	112.02	2.00	16.12	0.00	0.00
13.39	15.74	20.96	4.39	110.88	2.00	15.43	0.00	0.00
13.49	15.44	20.49	4.37	109.66	2.00	14.67	0.00	0.00
13.53	15.17	20.10	4.35	108.60	2.00	14.04	0.00	0.00
13.59	14.97	19.77	4.23	106.39	2.00	13.49	0.00	0.00
13.69	14.77	19.40	4.07	103.62	2.00	12.88	0.00	0.00
13.73	14.50	19.00	3.98	101.62	2.00	12.19	0.00	0.00
13.79	14.20	18.55	3.91	99.88	2.00	11.39	0.00	0.00
13.89	13.86	18.03	3.86	98.09	2.00	10.45	0.00	0.00
13.94	13.52	17.54	3.78	96.12	2.00	9.55	0.00	0.00
13.99	12.93	16.74	3.75	94.08	2.00	8.00	0.00	0.00
14.08	12.45	16.04	3.68	91.65	2.00	6.59	0.00	0.00
14.13	12.06	15.48	3.57	89.13	2.00	5.43	0.00	0.00
14.18	11.66	14.93	3.54	87.67	2.00	4.24	0.00	0.00
14.27	11.28	14.38	3.57	86.68	2.00	3.00	0.00	0.00
14.32	10.95	13.93	3.53	85.22	2.00	1.93	0.00	0.00
14.37	10.65	13.50	3.46	83.50	2.00	0.92	0.00	0.00
14.48	10.39	13.11	3.39	81.76	2.00	0.00	0.00	0.00
14.52	10.14	12.75	3.33	80.28	2.00	0.00	0.00	0.00
14.58	10.13	12.71	3.21	78.93	2.00	0.00	0.00	0.00
14.68	10.02	12.51	3.16	77.91	2.00	0.00	0.00	0.00
14.72	9.92	12.36	3.11	77.05	2.00	0.00	0.00	0.00
14.77	9.92	12.33	3.07	76.51	2.00	0.00	0.00	0.00
14.83	10.03	12.44	3.01	76.16	2.00	0.00	0.00	0.00
14.92	10.18	12.58	2.95	75.75	2.00	0.00	0.00	0.00
14.98	10.38	12.80	2.89	75.61	2.00	0.00	0.00	0.00
15.07	10.58	13.01	2.84	75.43	2.00	0.00	0.00	0.00
15.11	10.79	13.25	2.79	75.41	2.00	0.29	0.00	0.00
15.17	11.01	13.50	2.78	75.74	2.00	0.90	0.00	0.00
15.27	11.22	13.72	2.76	76.03	2.00	1.43	0.00	0.00
15.31	11.35	13.86	2.78	76.54	2.00	1.78	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
15.38	11.41	13.93	2.84	77.42	2.00	1.94	0.00	0.00
15.47	11.44	13.94	2.91	78.29	2.00	1.95	0.00	0.00
15.52	11.40	13.88	3.02	79.45	2.00	1.82	0.00	0.00
15.56	11.30	13.74	3.15	80.64	2.00	1.49	0.00	0.00
15.64	11.17	13.56	3.28	81.77	2.00	1.05	0.00	0.00
15.71	11.01	13.34	3.41	82.68	2.00	0.52	0.00	0.00
15.75	10.82	13.08	3.53	83.34	2.00	0.00	0.00	0.00
15.87	10.55	12.67	3.64	83.46	2.00	0.00	0.00	0.00
15.91	10.21	12.21	3.76	83.43	2.00	0.00	0.00	0.00
15.96	9.82	11.68	3.85	82.74	2.00	0.00	0.00	0.00
16.01	9.34	11.02	3.93	81.57	2.00	0.00	0.00	0.00
16.11	8.88	10.39	3.97	79.98	2.00	0.00	0.00	0.00
16.15	8.47	9.84	3.96	78.20	2.00	0.00	0.00	0.00
16.22	8.05	9.27	3.92	75.99	2.00	0.00	0.00	0.00
16.31	7.65	8.73	3.88	73.81	2.00	0.00	0.00	0.00
16.36	7.32	8.28	3.80	71.63	2.00	0.00	0.00	0.00
16.41	7.12	8.01	3.68	69.84	2.00	0.00	0.00	0.00
16.51	7.03	7.86	3.53	68.16	2.00	0.00	0.00	0.00
16.54	7.08	7.92	3.36	67.09	2.00	0.00	0.00	0.00
16.61	7.22	8.08	3.16	66.02	2.00	0.00	0.00	0.00
16.70	7.38	8.26	2.97	65.01	2.00	0.00	0.00	0.00
16.75	7.55	8.46	2.93	65.30	2.00	0.00	0.00	0.00
16.81	7.72	8.66	2.97	66.21	2.00	0.00	0.00	0.00
16.91	7.89	8.85	3.02	67.19	2.00	0.00	0.00	0.00
16.95	8.03	9.01	3.07	68.19	2.00	0.00	0.00	0.00
17.01	8.12	9.11	3.15	69.14	2.00	0.00	0.00	0.00
17.11	8.17	9.14	3.23	69.91	2.00	0.00	0.00	0.00
17.13	8.17	9.13	3.29	70.48	2.00	0.00	0.00	0.00
17.21	8.14	9.07	3.41	71.32	2.00	0.00	0.00	0.00
17.29	8.11	9.00	3.55	72.26	2.00	0.00	0.00	0.00
17.34	8.11	8.99	3.56	72.32	2.00	0.00	0.00	0.00
17.43	8.11	8.96	3.55	72.13	2.00	0.00	0.00	0.00
17.48	8.11	8.95	3.52	71.86	2.00	0.00	0.00	0.00
17.54	8.15	8.98	3.48	71.60	2.00	0.00	0.00	0.00
17.63	8.21	9.02	3.43	71.32	2.00	0.00	0.00	0.00
17.68	8.30	9.12	3.38	71.20	2.00	0.00	0.00	0.00
17.73	8.37	9.20	3.34	71.18	2.00	0.00	0.00	0.00
17.83	8.49	9.32	3.31	71.25	2.00	0.00	0.00	0.00
17.85	8.62	9.47	3.29	71.50	2.00	0.00	0.00	0.00
17.93	8.75	9.61	3.28	71.80	2.00	0.00	0.00	0.00
17.98	8.91	9.79	3.25	72.13	2.00	0.00	0.00	0.00
18.07	9.08	9.96	3.24	72.54	2.00	0.00	0.00	0.00
18.12	9.20	10.09	3.25	72.96	2.00	0.00	0.00	0.00
18.18	9.30	10.19	3.27	73.48	2.00	0.00	0.00	0.00
18.24	9.40	10.30	3.30	73.99	2.00	0.00	0.00	0.00
18.33	9.51	10.40	3.32	74.48	2.00	0.00	0.00	0.00
18.38	9.64	10.54	3.33	74.99	2.00	0.00	0.00	0.00
18.47	9.84	10.75	3.32	75.47	2.00	0.00	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
18.53	10.04	10.97	3.30	75.85	2.00	0.00	0.00	0.00
18.57	10.26	11.24	3.28	76.36	2.00	0.00	0.00	0.00
18.67	10.50	11.49	3.28	77.01	2.00	0.00	0.00	0.00
18.72	10.79	11.82	3.27	77.79	2.00	0.00	0.00	0.00
18.78	11.12	12.19	3.25	78.44	2.00	0.00	0.00	0.00
18.85	11.42	12.53	3.23	79.06	2.00	0.00	0.00	0.00
18.93	11.67	12.79	3.23	79.67	2.00	0.00	0.00	0.00
18.97	11.84	12.97	3.24	80.21	2.00	0.00	0.00	0.00
19.08	11.93	13.03	3.25	80.49	2.00	0.00	0.00	0.00
19.12	11.99	13.09	3.26	80.75	2.00	0.00	0.00	0.00
19.22	12.04	13.10	3.26	80.74	2.00	0.00	0.00	0.00
19.27	12.17	13.22	3.20	80.34	2.00	0.23	0.00	0.00
19.32	12.24	13.28	3.14	79.86	2.00	0.36	0.00	0.00
19.37	12.33	13.36	3.11	79.68	2.00	0.55	0.00	0.00
19.43	12.44	13.47	3.09	79.68	2.00	0.82	0.00	0.00
19.52	12.63	13.64	3.07	79.84	2.00	1.25	0.00	0.00
19.57	12.91	13.94	3.05	80.20	2.00	1.96	0.00	0.00
19.67	13.22	14.24	3.03	80.60	2.00	2.67	0.00	0.00
19.72	13.55	14.59	3.03	81.43	2.00	3.48	0.00	0.00
19.77	13.86	14.93	3.10	82.85	2.00	4.22	0.00	0.00
19.82	14.07	15.16	3.19	84.47	2.00	4.74	0.00	0.00
19.92	14.31	15.39	3.28	86.10	2.00	5.24	0.00	0.00
19.97	14.46	15.55	3.36	87.31	2.00	5.56	0.00	0.00
20.04	14.51	15.57	3.43	88.24	2.00	5.62	0.00	0.00
20.08	14.51	15.56	3.48	88.85	2.00	5.59	0.00	0.00
20.16	14.47	15.48	3.53	89.24	2.00	5.43	0.00	0.00
20.24	14.41	15.38	3.57	89.46	2.00	5.21	0.00	0.00
20.28	14.35	15.28	3.59	89.45	2.00	5.00	0.00	0.00
20.37	14.28	15.16	3.56	88.94	2.00	4.74	0.00	0.00
20.41	14.20	15.05	3.55	88.47	2.00	4.50	0.00	0.00
20.50	14.10	14.90	3.51	87.78	2.00	4.16	0.00	0.00
20.57	14.00	14.75	3.50	87.30	2.00	3.84	0.00	0.00
20.61	13.91	14.63	3.49	86.92	2.00	3.57	0.00	0.00
20.70	13.81	14.48	3.50	86.69	2.00	3.22	0.00	0.00
20.76	13.64	14.27	3.52	86.42	2.00	2.73	0.00	0.00
20.81	13.44	14.03	3.55	86.25	2.00	2.17	0.00	0.00
20.89	13.21	13.74	3.59	85.97	2.00	1.48	0.00	0.00
20.95	12.98	13.45	3.61	85.49	2.00	0.79	0.00	0.00
21.00	12.77	13.18	3.59	84.66	2.00	0.12	0.00	0.00
21.10	12.56	12.90	3.57	83.76	2.00	0.00	0.00	0.00
21.14	12.37	12.67	3.54	82.83	2.00	0.00	0.00	0.00
21.21	12.21	12.47	3.50	81.94	2.00	0.00	0.00	0.00
21.30	12.05	12.25	3.46	80.94	2.00	0.00	0.00	0.00
21.34	11.94	12.11	3.41	80.06	2.00	0.00	0.00	0.00
21.40	11.83	11.97	3.35	79.15	2.00	0.00	0.00	0.00
21.48	11.77	11.87	3.28	78.22	2.00	0.00	0.00	0.00
21.54	11.71	11.78	3.22	77.30	2.00	0.00	0.00	0.00
21.60	11.65	11.69	3.17	76.56	2.00	0.00	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
21.68	11.61	11.62	3.12	75.91	2.00	0.00	0.00	0.00
21.75	11.56	11.53	3.07	75.16	2.00	0.00	0.00	0.00
21.80	11.54	11.49	2.98	74.21	2.00	0.00	0.00	0.00
21.88	11.53	11.46	2.90	73.23	2.00	0.00	0.00	0.00
21.92	11.51	11.42	2.82	72.27	2.00	0.00	0.00	0.00
21.99	11.48	11.36	2.76	71.48	2.00	0.00	0.00	0.00
22.08	11.39	11.23	2.72	70.79	2.00	0.00	0.00	0.00
22.15	11.30	11.11	2.70	70.32	2.00	0.00	0.00	0.00
22.19	11.15	10.93	2.72	70.10	2.00	0.00	0.00	0.00
22.28	10.97	10.71	2.74	69.83	2.00	0.00	0.00	0.00
22.34	10.82	10.51	2.79	69.90	2.00	0.00	0.00	0.00
22.39	10.66	10.32	2.85	69.97	2.00	0.00	0.00	0.00
22.47	10.52	10.15	2.89	70.01	2.00	0.00	0.00	0.00
22.54	10.38	9.97	2.95	70.16	2.00	0.00	0.00	0.00
22.58	10.32	9.90	2.98	70.23	2.00	0.00	0.00	0.00
22.68	10.27	9.81	3.01	70.25	2.00	0.00	0.00	0.00
22.74	10.22	9.74	3.04	70.41	2.00	0.00	0.00	0.00
22.79	10.24	9.75	3.05	70.48	2.00	0.00	0.00	0.00
22.84	10.28	9.78	3.05	70.55	2.00	0.00	0.00	0.00
22.94	10.32	9.79	3.04	70.48	2.00	0.00	0.00	0.00
22.99	10.34	9.80	3.03	70.45	2.00	0.00	0.00	0.00
23.04	10.29	9.73	3.04	70.40	2.00	0.00	0.00	0.00
23.11	10.24	9.65	3.04	70.14	2.00	0.00	0.00	0.00
23.18	10.14	9.52	3.04	69.77	2.00	0.00	0.00	0.00
23.23	10.06	9.42	3.02	69.31	2.00	0.00	0.00	0.00
23.34	9.96	9.28	2.97	68.49	2.00	0.00	0.00	0.00
23.37	9.83	9.14	2.92	67.61	2.00	0.00	0.00	0.00
23.44	9.70	8.98	2.85	66.58	2.00	0.00	0.00	0.00
23.54	9.51	8.75	2.78	65.30	2.00	0.00	0.00	0.00
23.60	9.31	8.52	2.71	64.01	2.00	0.00	0.00	0.00
23.64	9.08	8.27	2.64	62.70	2.00	0.00	0.00	0.00
23.71	8.86	8.01	2.56	61.22	2.00	0.00	0.00	0.00
23.79	8.59	7.72	2.48	59.70	2.00	0.00	0.00	0.00
23.84	8.38	7.48	2.40	58.28	2.00	0.00	0.00	0.00
23.89	8.28	7.37	2.33	57.37	2.00	0.00	0.00	0.00
23.99	8.23	7.29	2.31	56.92	2.00	0.00	0.00	0.00
24.03	8.16	7.20	2.38	57.36	2.00	0.00	0.00	0.00
24.10	8.16	7.20	2.49	58.28	2.00	0.00	0.00	0.00
24.18	8.37	7.40	2.56	59.50	2.00	0.00	0.00	0.00
24.23	8.74	7.77	2.59	60.88	2.00	0.00	0.00	0.00
24.31	9.13	8.17	2.62	62.20	2.00	0.00	0.00	0.00
24.36	9.53	8.57	2.65	63.60	2.00	0.00	0.00	0.00
24.45	9.75	8.78	2.74	65.00	2.00	0.00	0.00	0.00
24.49	9.88	8.90	2.82	66.16	2.00	0.00	0.00	0.00
24.57	9.92	8.92	2.88	66.74	2.00	0.00	0.00	0.00
24.61	10.03	9.03	2.87	66.94	2.00	0.00	0.00	0.00
24.69	10.16	9.14	2.89	67.43	2.00	0.00	0.00	0.00
24.74	10.29	9.26	2.98	68.63	2.00	0.00	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
24.82	10.59	9.55	3.14	70.88	2.00	0.00	0.00	0.00
24.89	11.03	9.99	3.29	73.55	2.00	0.00	0.00	0.00
24.94	11.56	10.52	3.38	75.87	2.00	0.00	0.00	0.00
25.01	12.05	11.00	3.38	77.20	2.00	0.00	0.00	0.00
25.09	12.40	11.33	3.35	77.76	2.00	0.00	0.00	0.00
25.13	12.40	11.32	3.33	77.46	2.00	0.00	0.00	0.00
25.22	12.27	11.16	3.30	76.77	2.00	0.00	0.00	0.00
25.28	12.04	10.90	3.22	75.36	2.00	0.00	0.00	0.00
25.34	11.57	10.40	3.12	73.08	2.00	0.00	0.00	0.00
25.44	10.81	9.60	2.97	69.50	2.00	0.00	0.00	0.00
25.48	9.88	8.64	2.83	65.59	2.00	0.00	0.00	0.00
25.53	8.92	7.65	2.68	61.35	2.00	0.00	0.00	0.00
25.59	8.18	6.88	2.60	58.29	2.00	0.00	0.00	0.00
25.68	7.57	6.25	2.61	56.35	2.00	0.00	0.00	0.00
25.73	7.56	6.23	2.73	57.21	2.00	0.00	0.00	0.00
25.79	7.85	6.51	2.69	57.85	2.00	0.00	0.00	0.00
25.88	8.49	7.15	2.58	58.97	2.00	0.00	0.00	0.00
25.93	9.38	8.03	2.45	60.40	2.00	0.00	0.00	0.00
25.99	10.48	9.12	2.38	62.43	2.00	0.00	0.00	0.00
26.08	11.74	10.37	2.30	64.43	2.00	0.00	0.00	0.00
26.14	12.92	11.53	2.30	66.84	2.00	0.00	0.00	0.00
26.19	13.96	12.54	2.30	68.72	2.00	0.00	0.00	0.00
26.28	14.97	13.52	2.26	69.87	2.00	0.95	0.00	0.00
26.34	15.73	14.24	2.19	70.17	2.00	2.68	0.00	0.00
26.39	16.16	14.65	2.21	71.17	2.00	3.60	0.00	0.00
26.45	16.25	14.72	2.28	72.27	2.00	3.75	0.00	0.00
26.53	16.18	14.62	2.37	73.29	2.00	3.54	0.00	0.00
26.58	16.05	14.48	2.46	74.34	2.00	3.21	0.00	0.00
26.68	15.79	14.19	2.58	75.29	2.00	2.55	0.00	0.00
26.73	15.60	13.99	2.67	76.13	2.00	2.07	0.00	0.00
26.78	15.54	13.91	2.78	77.37	2.00	1.90	0.00	0.00
26.88	15.47	13.80	2.96	79.32	2.00	1.63	0.00	0.00
26.93	15.41	13.73	3.14	81.33	2.00	1.46	0.00	0.00
26.98	15.48	13.78	3.30	83.25	2.00	1.58	0.00	0.00
27.04	15.59	13.87	3.46	85.19	2.00	1.79	0.00	0.00
27.13	15.68	13.92	3.61	86.96	2.00	1.92	0.00	0.00
27.22	15.61	13.82	3.75	88.26	2.00	1.67	0.00	0.00
27.24	15.48	13.68	3.87	89.16	2.00	1.34	0.00	0.00
27.33	15.33	13.50	3.97	89.67	2.00	0.90	0.00	0.00
27.37	15.08	13.24	4.05	89.80	2.00	0.26	0.00	0.00
27.43	14.77	12.92	4.09	89.38	2.00	0.00	0.00	0.00
27.52	14.46	12.58	4.13	88.85	2.00	0.00	0.00	0.00
27.57	14.10	12.22	4.16	88.05	2.00	0.00	0.00	0.00
27.63	13.68	11.79	4.15	86.71	2.00	0.00	0.00	0.00
27.72	13.24	11.33	4.12	85.09	2.00	0.00	0.00	0.00
27.76	12.84	10.93	4.05	83.26	2.00	0.00	0.00	0.00
27.84	12.46	10.54	3.97	81.35	2.00	0.00	0.00	0.00
27.93	12.10	10.17	3.89	79.56	2.00	0.00	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
27.97	11.82	9.89	3.80	77.87	2.00	0.00	0.00	0.00
28.02	11.70	9.75	3.66	76.27	2.00	0.00	0.00	0.00
28.12	11.66	9.69	3.49	74.61	2.00	0.00	0.00	0.00
28.17	11.67	9.68	3.35	73.40	2.00	0.00	0.00	0.00
28.23	11.80	9.79	3.27	72.95	2.00	0.00	0.00	0.00
28.32	12.03	9.99	3.22	73.01	2.00	0.00	0.00	0.00
28.37	12.28	10.22	3.19	73.44	2.00	0.00	0.00	0.00
28.42	12.60	10.51	3.20	74.28	2.00	0.00	0.00	0.00
28.48	12.97	10.84	3.22	75.36	2.00	0.00	0.00	0.00
28.57	13.52	11.33	3.21	76.48	2.00	0.00	0.00	0.00
28.61	14.02	11.79	3.21	77.67	2.00	0.00	0.00	0.00
28.69	14.48	12.21	3.22	78.81	2.00	0.00	0.00	0.00
28.77	14.97	12.64	3.21	79.74	2.00	0.00	0.00	0.00
28.83	15.40	13.03	3.18	80.28	2.00	0.00	0.00	0.00
28.88	15.75	13.34	3.15	80.59	2.00	0.50	0.00	0.00
28.97	16.12	13.65	3.11	80.85	2.00	1.27	0.00	0.00
29.02	16.58	14.07	3.06	81.19	2.00	2.27	0.00	0.00
29.08	17.07	14.50	3.01	81.51	2.00	3.27	0.00	0.00
29.17	17.42	14.80	3.00	81.91	2.00	3.93	0.00	0.00
29.21	16.68	14.09	3.21	82.99	2.00	2.32	0.00	0.00
29.28	17.35	14.69	3.20	84.17	2.00	3.68	0.00	0.00
29.37	18.08	15.34	3.21	85.65	2.00	5.12	0.00	0.00
29.41	18.84	16.03	3.24	87.42	2.00	6.57	0.00	0.00
29.47	19.66	16.76	3.25	88.96	2.00	8.05	0.00	0.00
29.56	20.44	17.45	3.20	89.65	2.00	9.38	0.00	0.00
29.62	21.08	18.02	3.14	89.89	2.00	10.43	0.00	0.00
29.68	21.55	18.43	3.06	89.53	2.00	11.17	0.00	0.00
29.76	21.98	18.79	2.96	88.74	2.00	11.81	0.00	0.00
29.83	23.16	19.85	2.72	86.86	2.00	13.63	0.00	0.00
29.87	22.72	19.43	2.63	84.78	2.00	12.92	0.00	0.00
29.96	22.10	18.81	2.52	82.22	2.00	11.85	0.00	0.00
30.01	21.54	18.28	2.38	79.33	2.00	10.91	0.00	0.00
30.07	20.81	17.58	2.27	76.65	2.00	9.62	0.00	0.00
30.16	20.20	16.98	2.22	74.98	2.00	8.48	0.00	0.00
30.20	19.65	16.47	2.19	73.79	2.00	7.46	0.00	0.00
30.27	19.26	16.07	2.20	73.29	2.00	6.66	0.00	0.00
30.34	18.94	15.75	2.24	73.36	2.00	6.00	0.00	0.00
30.42	18.95	15.73	2.28	73.99	2.00	5.95	0.00	0.00
30.46	19.17	15.91	2.34	75.17	2.00	6.34	0.00	0.00
30.52	19.53	16.22	2.41	76.59	2.00	6.96	0.00	0.00
30.58	19.82	16.46	2.49	78.24	2.00	7.45	0.00	0.00
30.66	20.28	16.84	2.56	79.86	2.00	8.20	0.00	0.00
30.71	20.64	17.15	2.63	81.34	2.00	8.80	0.00	0.00
30.81	20.94	17.37	2.70	82.69	2.00	9.23	0.00	0.00
30.87	21.17	17.56	2.77	83.92	2.00	9.59	0.00	0.00
30.91	21.30	17.66	2.84	85.10	2.00	9.77	0.00	0.00
31.01	21.41	17.71	2.91	86.23	2.00	9.87	0.00	0.00
31.06	21.53	17.80	2.98	87.37	2.00	10.03	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
31.11	21.63	17.86	3.05	88.36	2.00	10.15	0.00	0.00
31.19	21.81	17.99	3.09	89.14	2.00	10.38	0.00	0.00
31.26	21.98	18.11	3.11	89.73	2.00	10.59	0.00	0.00
31.35	22.12	18.19	3.13	90.16	2.00	10.74	0.00	0.00
31.37	22.15	18.20	3.17	90.62	2.00	10.77	0.00	0.00
31.46	22.28	18.27	3.18	90.91	2.00	10.90	0.00	0.00
31.55	22.33	18.28	3.19	91.09	2.00	10.91	0.00	0.00
31.59	22.49	18.41	3.17	91.01	2.00	11.15	0.00	0.00
31.66	22.71	18.58	3.11	90.48	2.00	11.44	0.00	0.00
31.70	23.00	18.82	3.03	89.81	2.00	11.87	0.00	0.00
31.79	23.13	18.90	2.97	89.15	2.00	12.00	0.00	0.00
31.86	23.24	18.96	2.92	88.51	2.00	12.12	0.00	0.00
31.91	23.55	19.22	2.88	88.37	2.00	12.56	0.00	0.00
31.99	24.39	19.93	2.85	89.06	2.00	13.75	0.00	0.00
32.06	25.44	20.82	2.85	90.39	2.00	15.21	0.00	0.00
32.10	26.88	22.09	2.84	92.23	2.00	17.15	0.00	0.00
32.20	28.15	23.16	2.91	94.85	2.00	18.72	0.00	0.00
32.26	28.72	23.62	3.07	98.16	2.00	19.37	0.00	0.00
32.30	29.57	24.34	3.22	101.69	2.00	20.36	0.00	0.00
32.35	30.28	24.92	3.38	105.09	2.00	21.14	0.00	0.00
32.46	31.21	25.67	3.50	108.18	2.00	22.12	0.00	0.00
32.49	31.95	26.29	3.63	111.21	2.00	22.90	0.00	0.00
32.58	32.77	26.95	3.71	113.53	2.00	23.73	0.00	0.00
32.62	34.34	28.30	3.73	116.05	2.00	25.34	0.00	0.00
32.69	36.23	29.91	3.77	119.21	2.00	27.16	0.00	0.00
32.78	38.18	31.55	3.80	122.28	2.00	28.93	0.00	0.00
32.82	40.40	33.46	3.82	125.60	2.00	30.87	0.00	0.00
32.89	41.76	34.59	3.92	129.05	2.00	31.96	0.00	0.00
32.98	43.04	35.63	4.01	132.21	2.00	32.94	0.00	0.00
33.02	43.56	36.03	4.14	135.06	2.00	33.30	0.00	0.00
33.08	43.60	36.00	4.22	136.47	2.00	33.28	0.00	0.00
33.18	42.94	35.32	4.32	137.25	2.00	32.65	0.00	0.00
33.21	41.11	33.69	4.46	137.02	2.00	31.09	0.00	0.00
33.29	38.50	31.35	4.58	135.03	2.00	28.71	0.00	0.00
33.37	35.87	29.01	4.61	131.27	2.00	26.15	0.00	0.00
33.42	33.58	27.00	4.53	126.23	2.00	23.79	0.00	0.00
33.47	31.71	25.36	4.33	120.24	2.00	21.72	0.00	0.00
33.53	29.91	23.80	4.08	113.67	2.00	19.61	0.00	0.00
33.62	28.55	22.60	3.78	107.22	2.00	17.91	0.00	0.00
33.67	27.44	21.64	3.52	101.83	2.00	16.47	0.00	0.00
33.73	26.35	20.68	3.29	96.75	2.00	14.99	0.00	0.00
33.82	25.32	19.78	3.08	92.18	2.00	13.51	0.00	0.00
33.87	24.46	19.03	2.91	88.49	2.00	12.23	0.00	0.00
33.93	23.71	18.37	2.84	86.36	2.00	11.07	0.00	0.00
34.02	23.04	17.75	2.81	84.94	2.00	9.95	0.00	0.00
34.06	22.45	17.24	2.82	84.26	2.00	8.97	0.00	0.00
34.13	22.07	16.88	2.87	84.31	2.00	8.28	0.00	0.00
34.22	21.81	16.62	2.92	84.59	2.00	7.77	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
34.26	21.71	16.52	2.98	85.19	2.00	7.56	0.00	0.00
34.32	21.73	16.50	3.04	85.88	2.00	7.54	0.00	0.00
34.42	21.79	16.51	3.08	86.45	2.00	7.55	0.00	0.00
34.46	21.86	16.55	3.11	86.87	2.00	7.63	0.00	0.00
34.52	21.87	16.54	3.12	87.08	2.00	7.60	0.00	0.00
34.61	21.89	16.52	3.13	87.14	2.00	7.56	0.00	0.00
34.70	21.91	16.50	3.13	87.14	2.00	7.52	0.00	0.00
34.76	22.00	16.55	3.14	87.27	2.00	7.62	0.00	0.00
34.82	22.08	16.59	3.14	87.34	2.00	7.71	0.00	0.00
34.86	22.20	16.68	3.11	87.15	2.00	7.88	0.00	0.00
34.92	22.38	16.80	3.12	87.52	2.00	8.13	0.00	0.00
35.02	22.61	16.95	3.16	88.35	2.00	8.42	0.00	0.00
35.06	22.92	17.19	3.22	89.58	2.00	8.87	0.00	0.00
35.11	23.26	17.45	3.30	91.14	2.00	9.38	0.00	0.00
35.19	23.32	17.45	3.44	92.89	2.00	9.38	0.00	0.00
35.25	23.48	17.55	3.56	94.66	2.00	9.57	0.00	0.00
35.31	23.92	17.88	3.64	96.33	2.00	10.19	0.00	0.00
35.40	24.41	18.24	3.74	98.39	2.00	10.84	0.00	0.00
35.45	24.90	18.61	3.88	100.88	2.00	11.50	0.00	0.00
35.50	25.37	18.97	4.01	103.26	2.00	12.14	0.00	0.00
35.56	25.84	19.32	4.11	105.30	2.00	12.74	0.00	0.00
35.64	26.20	19.57	4.22	107.20	2.00	13.16	0.00	0.00
35.72	26.53	19.80	4.31	108.86	2.00	13.54	0.00	0.00
35.81	27.10	20.22	4.33	110.03	2.00	14.23	0.00	0.00
35.85	27.52	20.55	4.34	110.86	2.00	14.77	0.00	0.00
35.90	27.57	20.56	4.38	111.30	2.00	14.79	0.00	0.00
35.96	27.50	20.47	4.39	111.25	2.00	14.64	0.00	0.00
36.04	27.44	20.38	4.37	110.83	2.00	14.50	0.00	0.00
36.11	27.37	20.29	4.32	110.01	2.00	14.36	0.00	0.00
36.16	27.38	20.28	4.24	108.99	2.00	14.34	0.00	0.00
36.25	27.49	20.34	4.13	107.76	2.00	14.43	0.00	0.00
36.31	27.53	20.35	4.04	106.50	2.00	14.45	0.00	0.00
36.36	27.55	20.34	3.98	105.82	2.00	14.44	0.00	0.00
36.44	27.59	20.34	3.96	105.48	2.00	14.43	0.00	0.00
36.50	27.55	20.28	3.96	105.38	2.00	14.33	0.00	0.00
36.56	27.51	20.22	3.96	105.22	2.00	14.23	0.00	0.00
36.65	27.46	20.13	3.95	104.99	2.00	14.09	0.00	0.00
36.68	27.32	20.00	3.95	104.73	2.00	13.89	0.00	0.00
36.76	26.99	19.70	3.97	104.31	2.00	13.38	0.00	0.00
36.84	26.59	19.33	3.98	103.68	2.00	12.75	0.00	0.00
36.91	26.14	18.94	3.97	102.81	2.00	12.07	0.00	0.00
36.96	25.72	18.58	3.93	101.52	2.00	11.45	0.00	0.00
37.04	25.31	18.22	3.86	99.92	2.00	10.80	0.00	0.00
37.10	25.01	17.96	3.78	98.29	2.00	10.33	0.00	0.00
37.15	24.79	17.78	3.68	96.70	2.00	9.99	0.00	0.00
37.23	24.57	17.57	3.59	95.11	2.00	9.60	0.00	0.00
37.30	24.39	17.41	3.49	93.56	2.00	9.29	0.00	0.00
37.35	24.27	17.30	3.40	92.22	2.00	9.09	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
37.45	24.09	17.12	3.33	90.90	2.00	8.75	0.00	0.00
37.51	23.91	16.96	3.26	89.72	2.00	8.44	0.00	0.00
37.55	23.68	16.77	3.19	88.48	2.00	8.07	0.00	0.00
37.62	23.41	16.54	3.12	87.10	2.00	7.61	0.00	0.00
37.70	23.18	16.33	3.04	85.68	2.00	7.19	0.00	0.00
37.75	22.99	16.17	2.95	84.25	2.00	6.86	0.00	0.00
37.80	22.83	16.04	2.86	82.80	2.00	6.59	0.00	0.00
37.90	22.79	15.98	2.76	81.34	2.00	6.47	0.00	0.00
37.95	22.85	16.02	2.66	79.99	2.00	6.56	0.00	0.00
38.05	23.13	16.22	2.58	79.28	2.00	6.96	0.00	0.00
38.06	23.67	16.66	2.51	79.02	2.00	7.85	0.00	0.00
38.15	24.36	17.18	2.46	79.14	2.00	8.87	0.00	0.00
38.19	25.07	17.73	2.45	79.75	2.00	9.91	0.00	0.00
38.27	25.90	18.37	2.43	80.47	2.00	11.07	0.00	0.00
38.34	26.81	19.07	2.42	81.37	2.00	12.30	0.00	0.00
38.39	27.68	19.75	2.42	82.26	2.00	13.46	0.00	0.00
38.46	28.48	20.35	2.44	83.39	2.00	14.45	0.00	0.00
38.55	29.24	20.90	2.48	84.87	2.00	15.33	0.00	0.00
38.59	30.19	21.63	2.54	86.82	2.00	16.47	0.00	0.00
38.68	31.64	22.72	2.61	89.49	2.00	18.09	0.00	0.00
38.75	33.31	24.00	2.69	92.51	2.00	19.90	0.00	0.00
38.80	35.48	25.68	2.77	96.14	2.00	22.13	0.00	0.00
38.87	38.37	27.93	2.81	99.97	2.00	24.91	0.00	0.00
38.95	41.80	30.61	2.86	104.15	2.00	27.92	0.00	0.00
38.99	45.31	33.36	2.89	108.24	0.48	30.77	51.20	0.00
39.04	48.34	35.74	2.92	111.69	0.50	33.04	51.20	0.00
39.11	49.97	36.96	2.98	114.37	0.53	34.15	51.20	0.00
39.19	50.69	37.46	3.01	115.54	0.54	34.59	51.20	0.00
39.27	49.95	36.81	3.02	114.99	0.53	34.01	51.20	0.00
39.33	48.64	35.72	3.02	113.58	0.52	33.02	51.20	0.00
39.39	46.71	34.16	2.98	110.84	0.50	31.55	51.20	0.00
39.45	43.93	31.94	2.93	107.28	2.00	29.32	0.00	0.00
39.53	40.53	29.21	2.89	103.00	2.00	26.38	0.00	0.00
39.57	37.19	26.57	2.83	98.52	2.00	23.26	0.00	0.00
39.64	34.51	24.46	2.72	93.75	2.00	20.53	0.00	0.00
39.72	33.37	23.58	2.50	88.79	2.00	19.32	0.00	0.00
39.79	32.93	23.26	2.27	84.39	2.00	18.87	0.00	0.00
39.84	33.06	23.39	2.09	81.26	2.00	19.05	0.00	0.00
39.93	32.94	23.28	2.00	79.39	2.00	18.90	0.00	0.00
39.98	32.75	23.12	1.99	79.04	2.00	18.66	0.00	0.00
40.05	32.95	23.19	2.17	82.51	2.00	18.76	0.00	0.00
40.09	34.03	23.95	2.38	87.20	2.00	19.83	0.00	0.00
40.19	36.38	25.69	2.56	92.47	2.00	22.14	0.00	0.00
40.23	40.72	29.01	2.70	99.16	2.00	26.16	0.00	0.00
40.34	45.86	32.90	2.85	106.95	0.47	30.31	51.20	0.00
40.38	50.76	36.64	3.04	115.13	0.53	33.86	51.20	0.00
40.43	55.28	40.05	3.25	123.53	0.61	36.80	51.20	0.00
40.50	60.00	43.62	3.40	131.16	0.70	39.62	51.20	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
40.58	64.51	47.00	3.54	138.27	0.78	42.08	51.20	0.00
40.63	68.60	50.12	3.60	143.45	0.85	44.20	40.07	0.00
40.70	72.71	53.23	3.63	147.92	0.92	46.19	7.31	0.00
40.75	76.10	55.80	3.68	151.94	0.98	47.75	4.85	0.00
40.84	77.61	56.84	3.76	155.10	1.03	48.35	3.52	0.00
40.88	77.99	57.03	3.86	157.83	1.07	48.46	2.68	0.00
40.95	78.42	57.23	3.95	160.06	1.11	48.58	2.15	0.00
41.03	79.84	58.24	3.95	161.34	2.00	49.16	0.00	0.00
41.08	83.51	61.08	3.85	162.46	2.00	50.73	0.00	0.00
41.15	90.15	66.29	3.62	162.81	2.00	53.43	0.00	0.00
41.23	97.84	72.34	3.40	163.56	2.00	56.31	0.00	0.00
41.28	105.13	78.11	3.23	164.99	2.00	58.85	0.00	0.00
41.35	112.60	84.00	3.09	166.99	2.00	61.25	0.00	0.00
41.43	119.65	89.52	2.99	169.57	2.00	63.35	0.00	0.00
41.48	126.18	94.65	2.94	172.95	2.00	65.18	0.00	0.00
41.54	132.64	99.67	2.91	177.10	1.44	66.89	1.12	0.00
41.62	138.98	104.52	2.92	181.95	1.55	68.46	0.91	0.00
41.68	144.15	108.42	2.96	187.16	1.67	69.67	0.73	0.00
41.77	147.16	110.47	3.06	192.21	1.79	70.29	0.60	0.00
41.82	149.61	112.16	3.15	197.02	1.91	70.79	0.49	0.00
41.88	151.40	113.31	3.24	201.11	2.00	71.12	0.00	0.00
41.97	152.19	113.59	3.34	204.50	2.00	71.21	0.00	0.00
42.01	152.63	113.73	3.43	207.46	2.00	71.25	0.00	0.00
42.10	154.18	114.69	3.46	209.53	2.00	71.53	0.00	0.00
42.17	155.77	115.77	3.46	210.77	2.00	71.83	0.00	0.00
42.22	158.63	117.95	3.42	211.47	2.00	72.45	0.00	0.00
42.28	161.62	120.26	3.34	211.30	2.00	73.09	0.00	0.00
42.33	166.19	123.89	3.22	210.96	2.00	74.07	0.00	0.00
42.41	171.05	127.73	3.09	210.27	2.00	75.08	0.00	0.00
42.48	177.06	132.54	2.94	209.92	2.00	76.30	0.00	0.00
42.52	184.41	138.54	2.77	210.20	2.00	77.76	0.00	0.00
42.60	193.18	145.64	2.60	211.30	2.00	79.41	0.00	0.00
42.66	201.80	152.67	2.46	212.90	2.00	80.97	0.00	0.00
42.72	210.25	159.58	2.32	214.88	2.00	82.43	0.00	0.00
42.81	216.71	164.80	2.22	216.24	2.00	83.49	0.00	0.00
42.87	221.45	168.71	2.13	216.83	2.00	84.26	0.00	0.00
42.92	223.43	170.44	2.04	215.65	2.00	84.60	0.00	0.00
43.00	224.17	171.11	1.96	213.60	2.00	84.73	0.00	0.00
43.06	223.07	170.33	1.89	210.56	2.00	84.58	0.00	0.00
43.11	220.03	167.97	1.84	206.67	2.00	84.12	0.00	0.00
43.18	215.77	164.56	1.80	202.06	2.00	83.44	0.00	0.00
43.25	211.23	160.89	1.76	197.51	1.94	82.70	0.82	0.00
43.31	206.82	157.31	1.73	193.43	1.83	81.95	0.92	0.00
43.39	202.67	153.89	1.71	189.65	1.74	81.23	1.02	0.00
43.45	198.48	150.43	1.71	186.27	1.66	80.48	1.13	0.00
43.51	194.71	147.19	1.73	184.09	1.61	79.76	1.20	0.00
43.61	191.33	144.12	1.78	182.63	1.57	79.06	1.25	0.00
43.65	188.25	141.41	1.83	181.84	1.56	78.44	1.28	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
43.72	185.35	138.80	1.88	180.92	1.54	77.82	1.32	0.00
43.81	182.33	136.09	1.92	179.83	1.51	77.17	1.36	0.00
43.85	178.70	133.02	1.96	178.27	1.48	76.42	1.43	0.00
43.92	174.04	129.13	1.99	175.71	1.42	75.44	1.54	0.00
44.01	169.31	125.14	2.03	173.09	1.37	74.40	1.29	0.00
44.05	165.21	121.88	2.02	169.93	1.31	73.53	1.47	0.00
44.10	160.81	118.50	1.97	165.15	1.22	72.60	1.81	0.00
44.20	156.04	114.74	1.91	160.07	1.13	71.54	2.27	0.00
44.25	151.36	111.13	1.87	155.35	1.05	70.48	2.81	0.00
44.30	146.31	107.16	1.85	151.20	0.98	69.28	3.39	0.00
44.40	140.34	102.33	1.86	147.25	0.92	67.76	4.06	0.00
44.45	134.81	97.92	1.88	143.99	0.87	66.31	4.73	0.00
44.50	130.12	94.11	1.93	142.03	0.85	65.00	7.47	0.00
44.57	125.26	90.13	1.99	140.34	0.82	63.57	8.42	0.00
44.63	120.31	86.02	2.11	140.23	0.82	62.03	8.48	0.00
44.69	115.72	82.08	2.33	143.01	0.86	60.48	6.93	0.00
44.79	111.51	78.40	2.57	146.54	0.91	58.97	5.38	0.00
44.84	107.77	75.21	2.81	150.25	0.97	57.60	4.13	0.00
44.89	105.00	72.83	3.01	153.52	1.02	56.54	3.28	0.00
44.96	103.51	71.48	3.15	156.05	1.06	55.92	2.75	0.00
45.04	102.01	70.14	3.28	158.16	1.10	55.29	2.37	0.00
45.09	100.81	69.09	3.38	159.67	1.12	54.79	2.00	0.00
45.17	100.05	68.35	3.46	160.93	1.15	54.44	1.76	0.00
45.24	99.52	67.81	3.53	162.05	1.17	54.18	1.57	0.00
45.28	99.27	67.55	3.56	162.52	1.18	54.05	1.50	0.00
45.38	98.85	67.10	3.58	162.58	1.18	53.83	1.49	0.00
45.42	97.77	66.22	3.62	162.63	1.18	53.39	1.48	0.00
45.49	96.34	65.05	3.67	162.56	1.18	52.81	1.48	0.00
45.57	94.70	63.72	3.72	162.28	1.17	52.13	1.52	0.00
45.63	92.37	61.92	3.76	161.36	1.16	51.18	1.66	0.00
45.69	89.46	59.74	3.78	159.12	1.12	50.00	2.07	0.00
45.78	85.19	56.57	3.78	155.40	1.06	48.20	2.99	0.00
45.84	79.80	52.64	3.79	150.88	0.98	45.82	4.71	0.00
45.89	73.90	48.37	3.80	145.76	0.91	43.03	27.02	0.00
45.93	67.39	43.71	3.79	139.53	0.82	39.69	48.74	0.00
46.02	61.02	39.17	3.74	132.47	2.00	36.06	0.00	0.00
46.08	54.84	34.81	3.66	124.90	2.00	32.17	0.00	0.00
46.13	48.82	30.61	3.55	116.87	2.00	27.92	0.00	0.00
46.22	43.62	27.00	3.40	108.93	2.00	23.78	0.00	0.00
46.28	39.06	23.85	3.27	101.99	2.00	19.69	0.00	0.00
46.33	35.80	21.61	3.15	96.55	2.00	16.44	0.00	0.00
46.43	33.77	20.22	2.98	91.86	2.00	14.25	0.00	0.00
46.47	32.28	19.23	2.82	87.81	2.00	12.59	0.00	0.00
46.53	31.55	18.75	2.68	85.02	2.00	11.75	0.00	0.00
46.63	31.27	18.56	2.56	82.79	2.00	11.41	0.00	0.00
46.67	31.09	18.45	2.45	81.06	2.00	11.22	0.00	0.00
46.73	31.01	18.39	2.41	80.34	2.00	11.11	0.00	0.00
46.83	31.04	18.38	2.39	80.02	2.00	11.09	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
46.87	31.05	18.38	2.39	79.94	2.00	11.08	0.00	0.00
46.93	31.18	18.45	2.38	80.00	2.00	11.21	0.00	0.00
47.02	31.31	18.51	2.38	79.99	2.00	11.31	0.00	0.00
47.08	31.45	18.58	2.37	79.99	2.00	11.45	0.00	0.00
47.12	31.65	18.71	2.39	80.42	2.00	11.67	0.00	0.00
47.18	31.90	18.85	2.41	80.99	2.00	11.92	0.00	0.00
47.27	32.12	18.96	2.44	81.54	2.00	12.11	0.00	0.00
47.31	32.24	19.01	2.48	82.39	2.00	12.20	0.00	0.00
47.39	32.73	19.30	2.52	83.31	2.00	12.71	0.00	0.00
47.48	33.47	19.76	2.55	84.52	2.00	13.48	0.00	0.00
47.52	34.18	20.22	2.60	85.98	2.00	14.24	0.00	0.00
47.59	34.88	20.63	2.71	88.32	2.00	14.90	0.00	0.00
47.66	35.57	21.01	2.87	91.45	2.00	15.51	0.00	0.00
47.74	36.36	21.47	3.01	94.26	2.00	16.22	0.00	0.00
47.79	37.63	22.28	3.09	96.75	2.00	17.44	0.00	0.00
47.86	39.62	23.59	3.10	98.98	2.00	19.33	0.00	0.00
47.94	42.38	25.46	3.04	100.78	2.00	21.84	0.00	0.00
47.99	46.45	28.27	2.92	102.50	2.00	25.30	0.00	0.00
48.05	51.69	31.91	2.77	104.31	2.00	29.30	0.00	0.00
48.13	57.43	35.93	2.65	106.37	2.00	33.21	0.00	0.00
48.19	63.46	40.18	2.53	108.40	2.00	36.91	0.00	0.00
48.26	69.35	44.33	2.46	111.00	2.00	40.15	0.00	0.00
48.34	74.27	47.76	2.45	114.21	2.00	42.61	0.00	0.00
48.39	78.06	50.36	2.49	117.60	0.58	44.36	51.20	0.00
48.43	80.01	51.62	2.57	120.87	0.61	45.17	34.10	0.00
48.51	80.23	51.58	2.68	123.65	2.00	45.15	0.00	0.00
48.58	78.15	49.87	2.86	126.20	2.00	44.04	0.00	0.00
48.63	73.91	46.66	3.11	128.57	2.00	41.84	0.00	0.00
48.72	69.19	43.12	3.39	130.53	2.00	39.24	0.00	0.00
48.78	64.53	39.71	3.68	132.10	2.00	36.52	0.00	0.00
48.83	60.65	36.92	3.91	132.69	2.00	34.11	0.00	0.00
48.90	58.27	35.18	4.07	133.00	2.00	32.52	0.00	0.00
48.99	56.81	34.10	4.17	133.10	2.00	31.49	0.00	0.00
49.03	57.34	34.43	4.16	133.52	2.00	31.81	0.00	0.00
49.08	59.70	36.02	4.07	134.25	2.00	33.30	0.00	0.00
49.17	64.88	39.55	3.87	135.60	2.00	36.38	0.00	0.00
49.23	73.51	45.55	3.55	136.90	2.00	41.05	0.00	0.00
49.32	85.21	53.79	3.20	138.53	2.00	46.53	0.00	0.00
49.35	97.81	62.84	2.92	140.98	2.00	51.67	0.00	0.00
49.43	111.56	72.74	2.68	144.42	2.00	56.50	0.00	0.00
49.50	126.07	83.33	2.48	148.53	2.00	60.98	0.00	0.00
49.58	140.81	94.14	2.31	153.61	2.00	65.01	0.00	0.00
49.63	155.36	104.93	2.18	159.57	2.00	68.59	0.00	0.00
49.72	169.50	115.38	2.08	166.05	2.00	71.72	0.00	0.00
49.78	181.49	124.33	2.01	171.86	2.00	74.19	0.00	0.00
49.83	190.73	131.20	1.96	176.75	2.00	75.96	0.00	0.00
49.90	196.54	135.41	1.95	180.17	1.57	77.00	1.25	0.00
49.98	200.97	138.54	1.94	182.84	1.64	77.76	1.16	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
50.02	203.65	140.45	1.94	184.55	2.00	78.21	0.00	0.00
50.08	205.02	141.54	1.90	184.09	2.00	78.47	0.00	0.00
50.18	205.97	142.29	1.84	183.07	2.00	78.64	0.00	0.00
50.23	206.42	142.77	1.79	181.88	2.00	78.75	0.00	0.00
50.27	206.67	143.11	1.74	180.71	2.00	78.83	0.00	0.00
50.36	206.82	143.25	1.70	179.58	2.00	78.86	0.00	0.00
50.40	206.95	143.47	1.67	178.63	2.00	78.91	0.00	0.00
50.47	207.35	143.80	1.63	177.89	2.00	78.99	0.00	0.00
50.55	207.82	144.14	1.61	177.42	2.00	79.07	0.00	0.00
50.63	208.28	144.42	1.59	177.15	2.00	79.13	0.00	0.00
50.67	208.58	144.31	1.63	178.43	2.00	79.11	0.00	0.00
50.72	208.67	143.92	1.70	180.14	2.00	79.02	0.00	0.00
50.83	208.48	143.22	1.77	181.54	2.00	78.86	0.00	0.00
50.88	208.04	142.49	1.83	182.79	2.00	78.69	0.00	0.00
50.93	207.42	141.67	1.88	183.75	2.00	78.50	0.00	0.00
51.02	206.85	140.84	1.93	184.53	2.00	78.30	0.00	0.00
51.08	206.30	140.13	1.97	185.17	2.00	78.14	0.00	0.00
51.12	205.82	139.57	2.00	185.58	2.00	78.00	0.00	0.00
51.21	205.38	138.99	2.02	185.59	2.00	77.87	0.00	0.00
51.27	205.16	138.70	2.02	185.41	2.00	77.80	0.00	0.00
51.32	205.10	138.60	2.01	185.01	2.00	77.77	0.00	0.00
51.39	205.14	138.54	2.00	184.61	2.00	77.76	0.00	0.00
51.47	205.24	138.49	1.99	184.27	2.00	77.75	0.00	0.00
51.55	205.31	138.40	1.99	184.07	2.00	77.73	0.00	0.00
51.60	205.08	138.14	1.99	183.84	2.00	77.66	0.00	0.00
51.67	204.64	137.67	1.99	183.52	2.00	77.55	0.00	0.00
51.72	203.58	136.81	1.99	182.68	2.00	77.34	0.00	0.00
51.79	201.52	135.28	1.97	180.62	2.00	76.97	0.00	0.00
51.87	199.01	133.36	1.96	178.56	2.00	76.50	0.00	0.00
51.91	196.40	131.39	1.96	176.81	2.00	76.01	0.00	0.00
51.98	192.80	128.68	1.96	174.31	2.00	75.32	0.00	0.00
52.06	188.34	125.28	1.97	171.51	2.00	74.44	0.00	0.00
52.12	183.88	122.00	1.97	168.38	2.00	73.56	0.00	0.00
52.17	178.11	117.70	1.99	165.18	2.00	72.38	0.00	0.00
52.26	170.61	112.01	2.04	161.59	2.00	70.74	0.00	0.00
52.31	163.90	106.94	2.11	159.09	2.00	69.21	0.00	0.00
52.38	156.13	101.00	2.22	157.10	2.00	67.33	0.00	0.00
52.47	147.15	94.26	2.34	154.49	2.00	65.05	0.00	0.00
52.51	136.09	86.23	2.47	150.95	2.00	62.11	0.00	0.00
52.56	124.42	77.83	2.62	147.40	2.00	58.73	0.00	0.00
52.66	112.90	69.62	2.77	143.68	2.00	55.05	0.00	0.00
52.70	100.48	60.93	2.97	140.39	2.00	50.65	0.00	0.00
52.77	89.16	53.15	3.14	136.45	2.00	46.14	0.00	0.00
52.87	79.44	46.57	3.24	131.31	2.00	41.78	0.00	0.00
52.92	69.32	39.89	3.35	125.70	2.00	36.66	0.00	0.00
52.97	61.28	34.64	3.43	120.40	2.00	32.01	0.00	0.00
53.02	54.61	30.38	3.44	114.68	2.00	27.67	0.00	0.00
53.10	50.06	27.50	3.36	109.11	2.00	24.39	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
53.16	46.90	25.55	3.22	104.01	2.00	21.97	0.00	0.00
53.22	44.28	23.98	3.03	98.54	2.00	19.87	0.00	0.00
53.31	42.65	23.03	2.80	93.26	2.00	18.54	0.00	0.00
53.36	41.31	22.29	2.56	88.37	2.00	17.45	0.00	0.00
53.42	40.10	21.59	2.39	84.45	2.00	16.41	0.00	0.00
53.51	39.07	21.00	2.22	80.92	2.00	15.48	0.00	0.00
53.56	37.95	20.34	2.10	77.90	2.00	14.43	0.00	0.00
53.62	37.07	19.81	2.02	75.92	2.00	13.56	0.00	0.00
53.71	36.24	19.28	1.97	74.43	2.00	12.67	0.00	0.00
53.75	35.58	18.87	1.94	73.33	2.00	11.97	0.00	0.00
53.83	34.88	18.39	1.96	73.18	2.00	11.11	0.00	0.00
53.91	34.05	17.84	1.99	72.99	2.00	10.10	0.00	0.00
53.98	33.09	17.20	2.02	72.61	2.00	8.90	0.00	0.00
54.01	32.19	16.62	2.05	72.23	2.00	7.77	0.00	0.00
54.11	31.08	15.89	2.07	71.62	2.00	6.30	0.00	0.00
54.15	29.90	15.16	2.08	70.59	2.00	4.73	0.00	0.00
54.21	28.55	14.31	2.08	69.38	2.00	2.83	0.00	0.00
54.27	27.04	13.38	2.06	67.57	2.00	0.62	0.00	0.00
54.35	25.56	12.48	2.01	65.45	2.00	0.00	0.00	0.00
54.42	24.28	11.72	1.93	63.06	2.00	0.00	0.00	0.00
54.46	23.20	11.09	1.84	60.75	2.00	0.00	0.00	0.00
54.55	22.43	10.64	1.73	58.58	2.00	0.00	0.00	0.00
54.60	21.80	10.29	1.64	56.66	2.00	0.00	0.00	0.00
54.67	21.40	10.06	1.54	54.95	2.00	0.00	0.00	0.00
54.74	21.06	9.87	1.46	53.59	2.00	0.00	0.00	0.00
54.79	20.77	9.71	1.41	52.57	2.00	0.00	0.00	0.00
54.86	20.62	9.62	1.37	51.96	2.00	0.00	0.00	0.00
54.96	20.50	9.54	1.35	51.56	2.00	0.00	0.00	0.00
55.03	20.43	9.49	1.34	51.32	2.00	0.00	0.00	0.00
55.06	20.38	9.46	1.34	51.16	2.00	0.00	0.00	0.00
55.14	20.37	9.44	1.33	51.00	2.00	0.00	0.00	0.00
55.21	20.35	9.42	1.32	50.83	2.00	0.00	0.00	0.00
55.25	20.31	9.39	1.31	50.67	2.00	0.00	0.00	0.00
55.32	20.28	9.37	1.30	50.50	2.00	0.00	0.00	0.00
55.41	20.24	9.33	1.29	50.33	2.00	0.00	0.00	0.00
55.45	20.23	9.32	1.29	50.24	2.00	0.00	0.00	0.00
55.52	20.23	9.31	1.29	50.23	2.00	0.00	0.00	0.00
55.61	20.28	9.33	1.29	50.28	2.00	0.00	0.00	0.00
55.65	20.52	9.45	1.32	50.89	2.00	0.00	0.00	0.00
55.71	20.91	9.67	1.35	51.70	2.00	0.00	0.00	0.00
55.80	21.44	9.96	1.38	52.64	2.00	0.00	0.00	0.00
55.86	22.21	10.40	1.42	53.78	2.00	0.00	0.00	0.00
55.95	23.00	10.84	1.46	55.07	2.00	0.00	0.00	0.00
56.00	23.79	11.29	1.50	56.40	2.00	0.00	0.00	0.00
56.05	24.57	11.73	1.55	57.75	2.00	0.00	0.00	0.00
56.11	25.39	12.21	1.56	58.54	2.00	0.00	0.00	0.00
56.20	26.17	12.67	1.54	58.93	2.00	0.00	0.00	0.00
56.24	26.73	13.01	1.50	58.82	2.00	0.00	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
56.31	27.09	13.23	1.48	58.66	2.00	0.24	0.00	0.00
56.39	27.14	13.26	1.45	58.31	2.00	0.30	0.00	0.00
56.43	26.89	13.11	1.43	57.80	2.00	0.00	0.00	0.00
56.50	26.19	12.68	1.42	56.98	2.00	0.00	0.00	0.00
56.60	25.50	12.25	1.39	56.00	2.00	0.00	0.00	0.00
56.66	24.81	11.85	1.34	54.73	2.00	0.00	0.00	0.00
56.70	24.10	11.42	1.32	53.84	2.00	0.00	0.00	0.00
56.79	23.44	11.01	1.32	53.20	2.00	0.00	0.00	0.00
56.84	22.85	10.64	1.32	52.77	2.00	0.00	0.00	0.00
56.92	22.40	10.36	1.34	52.61	2.00	0.00	0.00	0.00
56.99	22.25	10.25	1.35	52.66	2.00	0.00	0.00	0.00
57.03	22.42	10.34	1.36	52.94	2.00	0.00	0.00	0.00
57.09	23.22	10.80	1.37	53.70	2.00	0.00	0.00	0.00
57.18	23.98	11.23	1.39	54.70	2.00	0.00	0.00	0.00
57.23	24.85	11.71	1.48	56.60	2.00	0.00	0.00	0.00
57.31	26.05	12.34	1.62	59.70	2.00	0.00	0.00	0.00
57.38	27.50	13.12	1.79	63.35	2.00	0.00	0.00	0.00
57.43	29.89	14.46	1.95	67.68	2.00	3.17	0.00	0.00
57.50	33.85	16.75	2.07	72.85	2.00	8.03	0.00	0.00
57.58	38.94	19.76	2.13	77.84	2.00	13.48	0.00	0.00
57.62	45.95	24.03	2.12	82.77	2.00	19.93	0.00	0.00
57.68	53.93	28.96	2.11	88.00	2.00	26.09	0.00	0.00
57.78	62.67	34.40	2.10	93.09	2.00	31.78	0.00	0.00
57.82	72.41	40.59	2.06	98.14	2.00	37.24	0.00	0.00
57.89	82.22	46.92	2.01	102.62	2.00	42.02	0.00	0.00
57.97	91.68	53.07	1.96	106.91	2.00	46.09	0.00	0.00
58.02	99.77	58.36	1.93	110.82	2.00	49.23	0.00	0.00
58.09	105.22	61.89	1.93	113.73	2.00	51.16	0.00	0.00
58.17	108.62	64.01	1.95	116.09	2.00	52.28	0.00	0.00
58.23	109.72	64.57	1.99	117.85	2.00	52.56	0.00	0.00
58.28	109.49	64.23	2.05	119.20	2.00	52.39	0.00	0.00
58.37	108.18	63.12	2.13	120.41	2.00	51.81	0.00	0.00
58.43	105.44	61.09	2.23	121.15	2.00	50.73	0.00	0.00
58.48	100.57	57.67	2.35	121.32	2.00	48.83	0.00	0.00
58.57	95.05	53.81	2.51	121.56	2.00	46.55	0.00	0.00
58.62	88.67	49.47	2.69	121.83	2.00	43.77	0.00	0.00
58.67	82.27	45.20	2.88	121.69	2.00	40.79	0.00	0.00
58.78	76.27	41.23	3.06	121.38	2.00	37.75	0.00	0.00
58.82	69.93	37.13	3.27	120.73	2.00	34.30	0.00	0.00
58.88	63.59	33.12	3.49	119.62	2.00	30.53	0.00	0.00
58.97	57.66	29.45	3.66	117.21	2.00	26.65	0.00	0.00
59.01	52.33	26.22	3.82	114.63	2.00	22.82	0.00	0.00
59.07	48.78	24.09	3.91	112.37	2.00	20.02	0.00	0.00
59.12	45.34	22.06	3.98	109.61	2.00	17.11	0.00	0.00
59.19	42.74	20.56	3.96	106.39	2.00	14.79	0.00	0.00
59.27	41.35	19.78	3.84	103.23	2.00	13.52	0.00	0.00
59.32	39.96	19.01	3.73	100.24	2.00	12.21	0.00	0.00
59.42	39.47	18.76	3.59	97.90	2.00	11.76	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
59.47	38.99	18.52	3.45	95.59	2.00	11.34	0.00	0.00
59.52	38.64	18.33	3.37	94.16	2.00	11.00	0.00	0.00
59.58	38.47	18.26	3.26	92.55	2.00	10.87	0.00	0.00
59.68	38.20	18.11	3.17	91.05	2.00	10.60	0.00	0.00
59.74	38.28	18.16	3.11	90.38	2.00	10.69	0.00	0.00
59.78	38.65	18.53	2.71	85.25	2.00	11.37	0.00	0.00
59.88	38.74	18.73	2.37	80.36	2.00	11.70	0.00	0.00
59.93	39.33	19.26	2.01	75.24	2.00	12.63	0.00	0.00
60.00	40.82	20.43	1.61	69.20	2.00	14.57	0.00	0.00
60.05	43.76	22.60	1.20	62.70	2.00	17.92	0.00	0.00
60.13	46.96	25.08	0.84	56.21	2.00	21.35	0.00	0.00
60.18	46.63	25.36	0.58	49.61	2.00	21.71	0.00	0.00
60.25	48.94	27.71	0.29	27.71	2.00	24.64	0.00	0.00
60.33	54.14	N/A	0.00	-1.00	2.00	0.00	0.00	0.00
60.38	58.50	N/A	0.00	-1.00	2.00	0.00	0.00	0.00

Total estimated displacement: 0.00

Abbreviations

q_t: Total cone resistance
Q_{tn}: Adjusted cone resistance to an effective overburden stress of 1 atm
R_f: Friction ration
$Q_{tn,cs}$: Adjusted and corrected cone resistance due to fines
FS: Calculated factor of safety against liquefaction
D_r: Calculated relative density
$Gamma_{max}$: Calculated maximum cyclic shear strain
Lat. disp.: Lateral displacement

:: Strength loss calculation (Robertson (2009) ::

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
0.10	15.36	24.68	2.58	63.55	2.46	N/A	N/A
0.16	18.18	29.20	2.21	64.47	2.37	N/A	N/A
0.21	20.36	32.69	2.00	65.27	2.31	N/A	N/A
0.29	21.38	34.33	1.91	65.70	2.29	N/A	N/A
0.36	22.80	36.60	1.80	66.00	2.25	N/A	N/A
0.40	26.01	41.75	1.63	68.26	2.19	N/A	N/A
0.51	29.38	47.16	1.52	71.49	2.13	N/A	N/A
0.57	32.38	51.97	1.44	75.04	2.09	N/A	N/A
0.61	35.46	56.92	1.40	79.41	2.07	N/A	N/A
0.70	38.31	61.48	1.38	84.75	2.05	N/A	N/A
0.76	40.98	65.78	1.37	90.30	2.05	N/A	N/A
0.81	43.44	69.72	1.38	96.06	2.05	N/A	N/A
0.87	45.02	72.26	1.41	101.55	2.07	N/A	N/A
0.96	46.00	73.82	1.44	106.65	2.09	N/A	N/A
1.00	46.15	74.05	1.50	110.83	2.12	N/A	N/A
1.05	45.49	72.99	1.56	113.61	2.15	N/A	N/A
1.16	44.58	71.53	1.62	115.80	2.18	N/A	N/A
1.20	43.39	69.61	1.68	117.12	2.21	N/A	N/A
1.26	42.04	67.43	1.73	116.97	2.23	N/A	N/A
1.35	40.70	65.27	1.78	116.40	2.24	N/A	N/A
1.40	39.42	63.22	1.83	115.37	2.26	N/A	N/A
1.45	38.31	61.42	1.85	113.69	2.27	N/A	N/A
1.55	36.98	59.27	1.89	111.93	2.28	N/A	N/A
1.60	35.41	56.74	1.95	110.41	2.30	N/A	N/A
1.64	33.59	53.81	2.04	109.72	2.33	N/A	N/A
1.71	31.62	50.64	2.16	109.52	2.36	N/A	N/A
1.79	29.70	47.55	2.31	109.74	2.40	N/A	N/A
1.87	28.02	44.86	2.47	110.96	2.44	N/A	N/A
1.95	26.09	41.75	2.70	112.56	2.49	N/A	N/A
2.00	24.07	38.50	2.97	114.43	2.54	N/A	N/A
2.04	22.09	35.30	3.29	116.10	2.59	N/A	N/A
2.11	20.34	32.49	3.61	117.33	2.64	N/A	N/A
2.19	18.97	30.28	3.91	118.26	2.69	N/A	N/A
2.24	17.93	28.61	4.15	118.85	2.72	N/A	N/A
2.30	17.03	27.15	4.39	119.14	2.75	N/A	N/A
2.38	16.21	25.83	4.62	119.35	2.78	N/A	N/A
2.45	15.52	24.71	4.82	119.16	2.80	N/A	N/A
2.50	15.08	24.00	4.95	118.88	2.82	N/A	N/A
2.58	14.72	23.42	5.06	118.54	2.83	N/A	N/A
2.64	14.48	23.03	5.13	118.11	2.84	N/A	N/A
2.69	14.36	22.83	5.12	116.92	2.84	N/A	N/A
2.79	14.25	22.65	5.08	115.12	2.83	N/A	N/A
2.85	14.17	22.50	5.02	112.97	2.83	N/A	N/A
2.90	13.76	21.84	5.04	110.17	2.83	N/A	N/A
2.98	13.13	20.82	5.12	106.59	2.84	N/A	N/A
3.05	12.47	19.76	5.18	102.45	2.85	N/A	N/A
3.09	11.81	18.69	5.23	97.68	2.85	N/A	N/A
3.17	11.04	17.45	5.32	92.83	2.86	N/A	N/A

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
3.24	10.27	16.21	5.42	87.93	2.87	N/A	N/A
3.29	9.66	15.22	5.52	83.96	2.88	N/A	N/A
3.36	9.23	14.52	5.60	81.34	2.89	N/A	N/A
3.44	8.90	13.99	5.68	79.42	2.90	N/A	N/A
3.48	9.04	14.21	5.59	79.36	2.89	N/A	N/A
3.56	9.43	14.82	5.48	81.26	2.88	N/A	N/A
3.64	9.85	15.50	5.43	84.14	2.87	N/A	N/A
3.69	10.29	16.20	5.44	88.06	2.87	N/A	N/A
3.76	10.82	17.04	5.40	92.12	2.87	N/A	N/A
3.84	11.33	17.85	5.40	96.35	2.87	N/A	N/A
3.88	11.63	18.33	5.48	100.41	2.88	N/A	N/A
3.98	11.73	18.49	5.61	103.76	2.89	N/A	N/A
4.03	11.65	18.35	5.83	106.89	2.91	N/A	N/A
4.08	11.56	18.20	6.01	109.42	2.93	N/A	N/A
4.14	11.46	18.03	6.17	111.18	2.95	N/A	N/A
4.23	11.31	17.80	6.32	112.52	2.96	N/A	N/A
4.27	11.11	17.46	6.48	113.17	2.98	N/A	N/A
4.36	10.88	17.08	6.63	113.32	2.99	N/A	N/A
4.41	10.61	16.64	6.79	113.06	3.00	N/A	N/A
4.46	10.35	16.22	6.93	112.50	3.02	N/A	N/A
4.55	10.12	15.85	7.05	111.73	3.03	N/A	N/A
4.61	10.03	15.70	7.06	110.75	3.03	N/A	N/A
4.66	9.83	15.37	7.11	109.37	3.03	N/A	N/A
4.75	9.64	15.06	7.17	107.97	3.04	N/A	N/A
4.80	9.49	14.82	7.20	106.75	3.04	N/A	N/A
4.86	9.44	14.73	7.17	105.64	3.04	N/A	N/A
4.96	9.44	14.72	7.11	104.71	3.03	N/A	N/A
5.01	9.55	14.90	6.97	103.88	3.02	N/A	N/A
5.06	9.80	15.29	6.74	103.13	3.00	N/A	N/A
5.16	10.15	15.84	6.47	102.54	2.98	N/A	N/A
5.21	10.54	16.46	6.20	102.01	2.95	N/A	N/A
5.26	10.94	17.10	5.95	101.76	2.93	N/A	N/A
5.32	11.28	17.64	5.74	101.29	2.90	N/A	N/A
5.41	11.50	18.00	5.59	100.63	2.89	N/A	N/A
5.46	11.59	18.14	5.52	100.02	2.88	N/A	N/A
5.52	11.55	18.07	5.51	99.48	2.88	N/A	N/A
5.60	11.35	17.72	5.59	99.14	2.89	N/A	N/A
5.66	11.02	17.19	5.76	98.96	2.91	N/A	N/A
5.71	10.61	16.53	5.98	98.90	2.93	N/A	N/A
5.81	10.22	15.90	6.24	99.15	2.95	N/A	N/A
5.89	9.86	15.32	6.50	99.57	2.98	N/A	N/A
5.91	9.60	14.90	6.75	100.59	3.00	N/A	N/A
6.00	9.50	14.72	6.92	101.89	3.02	N/A	N/A
6.06	9.56	14.81	6.99	103.57	3.02	N/A	N/A
6.11	9.75	15.12	6.99	105.64	3.02	N/A	N/A
6.20	10.06	15.61	6.92	107.97	3.02	N/A	N/A
6.24	10.37	16.10	6.85	110.35	3.01	N/A	N/A
6.30	10.62	16.49	6.81	112.39	3.01	N/A	N/A

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
6.38	10.79	16.76	6.81	114.12	3.01	N/A	N/A
6.46	10.91	16.94	6.82	115.45	3.01	N/A	N/A
6.50	10.94	16.98	6.84	116.11	3.01	N/A	N/A
6.60	10.90	16.91	6.88	116.40	3.01	N/A	N/A
6.63	10.77	16.70	6.95	116.12	3.02	N/A	N/A
6.72	10.55	16.34	7.04	115.09	3.03	N/A	N/A
6.80	10.30	15.93	7.13	113.56	3.03	N/A	N/A
6.84	10.05	15.53	7.20	111.82	3.04	N/A	N/A
6.90	9.79	15.11	7.29	110.15	3.05	N/A	N/A
7.00	9.55	14.71	7.38	108.54	3.05	N/A	N/A
7.04	9.31	14.33	7.48	107.12	3.06	N/A	N/A
7.09	9.08	13.96	7.58	105.77	3.07	N/A	N/A
7.20	8.89	13.63	7.68	104.61	3.08	N/A	N/A
7.24	8.72	13.35	7.75	103.54	3.09	N/A	N/A
7.30	8.61	13.17	7.80	102.79	3.09	N/A	N/A
7.39	8.52	13.02	7.84	102.04	3.09	N/A	N/A
7.43	8.43	12.87	7.88	101.39	3.10	N/A	N/A
7.50	8.39	12.81	7.88	100.85	3.10	N/A	N/A
7.59	8.35	12.74	7.88	100.32	3.10	N/A	N/A
7.64	8.35	12.73	7.84	99.80	3.09	N/A	N/A
7.70	8.37	12.76	7.79	99.38	3.09	N/A	N/A
7.79	8.41	12.81	7.71	98.76	3.08	N/A	N/A
7.83	8.43	12.84	7.63	98.02	3.08	N/A	N/A
7.90	8.45	12.87	7.56	97.27	3.07	N/A	N/A
7.94	8.50	12.95	7.46	96.63	3.06	N/A	N/A
8.03	8.53	12.98	7.37	95.64	3.05	N/A	N/A
8.11	8.52	12.96	7.28	94.29	3.05	N/A	N/A
8.17	8.50	12.93	7.17	92.70	3.04	N/A	N/A
8.21	8.43	12.81	7.09	90.83	3.03	N/A	N/A
8.28	8.32	12.62	7.03	88.68	3.03	N/A	N/A
8.37	8.16	12.36	7.00	86.47	3.02	N/A	N/A
8.41	7.97	12.06	6.98	84.20	3.02	N/A	N/A
8.48	7.72	11.65	7.02	81.74	3.02	N/A	N/A
8.57	7.42	11.15	7.09	79.06	3.03	N/A	N/A
8.61	7.14	10.70	7.17	76.70	3.04	N/A	N/A
8.67	6.87	10.26	7.26	74.54	3.05	N/A	N/A
8.77	6.62	9.85	7.37	72.60	3.05	N/A	N/A
8.81	6.40	9.50	7.48	71.07	3.06	N/A	N/A
8.87	6.27	9.29	7.53	69.97	3.07	N/A	N/A
8.96	6.21	9.17	7.55	69.19	3.07	N/A	N/A
8.99	6.25	9.23	7.45	68.74	3.06	N/A	N/A
9.07	6.38	9.45	7.25	68.47	3.04	0.40	0.83
9.16	6.56	9.73	7.01	68.19	3.02	0.39	0.85
9.21	6.75	10.03	6.75	67.73	3.00	0.39	0.87
9.27	6.95	10.34	6.50	67.24	2.98	0.39	0.89
9.36	7.12	10.61	6.31	66.90	2.96	0.37	0.91
9.40	7.28	10.86	6.13	66.54	2.94	0.35	0.93
9.48	7.42	11.08	6.00	66.51	2.93	0.32	0.94

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
9.52	7.61	11.38	5.91	67.29	2.92	0.30	0.96
9.61	7.88	11.80	5.79	68.36	2.91	0.32	0.99
9.65	8.20	12.31	5.69	70.02	2.90	1.03	1.03
9.72	8.71	13.12	5.56	72.94	2.89	1.09	1.09
9.81	9.31	14.09	5.41	76.25	2.87	1.16	1.16
9.86	10.14	15.41	5.25	80.94	2.85	1.26	1.26
9.91	11.02	16.83	5.08	85.53	2.83	1.37	1.37
10.00	11.92	18.26	4.93	90.08	2.82	1.47	1.47
10.05	12.98	19.95	4.76	94.97	2.80	1.60	1.60
10.16	14.05	21.67	4.59	99.56	2.78	1.72	1.72
10.20	15.10	23.35	4.44	103.70	2.76	1.84	1.84
10.25	16.16	25.05	4.30	107.64	2.74	1.97	1.97
10.31	17.03	26.44	4.20	111.04	2.73	2.06	2.06
10.40	17.83	27.73	4.12	114.17	2.72	2.14	2.14
10.44	18.60	28.95	4.02	116.36	2.70	2.23	2.23
10.51	19.07	29.70	3.96	117.57	2.69	2.27	2.27
10.59	19.49	30.36	3.88	117.93	2.68	2.30	2.30
10.65	19.75	30.58	3.83	117.21	2.68	2.32	2.32
10.71	19.91	30.63	3.78	115.91	2.67	2.33	2.33
10.80	20.00	30.53	3.79	115.58	2.67	2.32	2.32
10.85	20.00	30.40	3.80	115.50	2.67	2.31	2.31
10.90	19.65	29.79	3.89	115.78	2.68	2.25	2.25
10.96	19.02	28.80	4.05	116.70	2.71	2.17	2.17
11.04	18.63	28.09	4.18	117.49	2.73	2.10	2.10
11.10	18.54	27.88	4.28	119.21	2.74	2.08	2.08
11.18	18.55	27.77	4.37	121.48	2.75	2.07	2.07
11.24	18.66	27.84	4.45	123.77	2.76	2.07	2.07
11.30	18.82	27.98	4.51	126.31	2.77	2.07	2.07
11.35	19.00	28.17	4.56	128.55	2.77	2.08	2.08
11.42	19.22	28.35	4.61	130.69	2.78	2.09	2.09
11.51	19.84	29.02	4.55	132.02	2.77	2.15	2.15
11.55	20.77	30.20	4.39	132.54	2.75	2.24	2.24
11.62	21.32	30.79	4.31	132.86	2.74	2.29	2.29
11.71	21.83	31.26	4.25	132.97	2.73	2.32	2.32
11.75	22.14	31.58	4.22	133.24	2.73	2.35	2.35
11.85	22.14	31.34	4.26	133.38	2.73	2.33	2.33
11.90	22.04	31.09	4.29	133.42	2.74	2.31	2.31
11.94	21.77	30.62	4.33	132.59	2.74	2.27	2.27
12.02	21.29	29.80	4.40	131.08	2.75	2.20	2.20
12.10	20.69	28.88	4.48	129.32	2.76	2.13	2.13
12.15	19.88	27.73	4.60	127.53	2.78	2.04	2.04
12.24	18.97	26.39	4.75	125.46	2.80	1.94	1.94
12.30	18.13	25.19	4.88	122.90	2.81	1.84	1.84
12.35	17.31	24.01	4.99	119.91	2.82	1.75	1.75
12.44	16.81	23.21	5.02	116.58	2.83	1.69	1.69
12.50	16.42	22.60	5.02	113.49	2.83	1.65	1.65
12.55	16.24	22.28	4.99	111.12	2.82	1.63	1.63
12.63	16.22	22.16	4.93	109.20	2.82	1.62	1.62

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
12.70	16.29	22.18	4.89	108.36	2.81	1.62	1.62
12.74	16.47	22.38	4.84	108.34	2.81	1.64	1.64
12.84	16.72	22.63	4.81	108.74	2.80	1.66	1.66
12.86	16.90	22.86	4.80	109.69	2.80	1.67	1.67
12.94	17.15	23.14	4.79	110.77	2.80	1.69	1.69
13.01	17.16	23.11	4.84	111.95	2.81	1.69	1.69
13.09	17.06	22.94	4.93	113.02	2.82	1.67	1.67
13.14	16.85	22.63	5.01	113.48	2.83	1.65	1.65
13.20	16.59	22.25	5.10	113.51	2.84	1.62	1.62
13.29	16.32	21.82	5.17	112.86	2.84	1.59	1.59
13.33	16.03	21.41	5.23	112.02	2.85	1.55	1.55
13.39	15.74	20.96	5.29	110.88	2.86	1.52	1.52
13.49	15.44	20.49	5.35	109.66	2.86	1.48	1.48
13.53	15.17	20.10	5.40	108.60	2.87	1.45	1.45
13.59	14.97	19.77	5.38	106.39	2.87	1.43	1.43
13.69	14.77	19.40	5.34	103.62	2.86	1.40	1.40
13.73	14.50	19.00	5.35	101.62	2.86	1.38	1.38
13.79	14.20	18.55	5.39	99.88	2.87	1.34	1.34
13.89	13.86	18.03	5.44	98.09	2.87	1.30	1.30
13.94	13.52	17.54	5.48	96.12	2.88	1.27	1.27
13.99	12.93	16.74	5.62	94.08	2.89	1.21	1.21
14.08	12.45	16.04	5.72	91.65	2.90	1.15	1.15
14.13	12.06	15.48	5.76	89.13	2.91	1.11	1.11
14.18	11.66	14.93	5.87	87.67	2.92	1.07	1.07
14.27	11.28	14.38	6.03	86.68	2.93	1.03	1.03
14.32	10.95	13.93	6.12	85.22	2.94	1.00	1.00
14.37	10.65	13.50	6.18	83.50	2.95	0.97	0.97
14.48	10.39	13.11	6.24	81.76	2.95	0.94	0.94
14.52	10.14	12.75	6.30	80.28	2.96	0.91	0.91
14.58	10.13	12.71	6.21	78.93	2.95	0.91	0.91
14.68	10.02	12.51	6.23	77.91	2.95	0.89	0.89
14.72	9.92	12.36	6.24	77.05	2.95	0.88	0.88
14.77	9.92	12.33	6.21	76.51	2.95	0.88	0.88
14.83	10.03	12.44	6.12	76.16	2.94	0.89	0.89
14.92	10.18	12.58	6.02	75.75	2.93	0.90	0.90
14.98	10.38	12.80	5.91	75.61	2.92	0.92	0.92
15.07	10.58	13.01	5.80	75.43	2.91	0.93	0.93
15.11	10.79	13.25	5.69	75.41	2.90	0.95	0.95
15.17	11.01	13.50	5.61	75.74	2.89	0.97	0.97
15.27	11.22	13.72	5.54	76.03	2.88	0.99	0.99
15.31	11.35	13.86	5.52	76.54	2.88	1.00	1.00
15.38	11.41	13.93	5.56	77.42	2.89	1.00	1.00
15.47	11.44	13.94	5.62	78.29	2.89	1.00	1.00
15.52	11.40	13.88	5.73	79.45	2.90	1.00	1.00
15.56	11.30	13.74	5.87	80.64	2.92	0.99	0.99
15.64	11.17	13.56	6.03	81.77	2.93	0.97	0.97
15.71	11.01	13.34	6.20	82.68	2.95	0.95	0.95
15.75	10.82	13.08	6.37	83.34	2.97	0.93	0.93

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
15.87	10.55	12.67	6.59	83.46	2.99	0.91	0.91
15.91	10.21	12.21	6.83	83.43	3.01	0.87	0.87
15.96	9.82	11.68	7.08	82.74	3.03	0.83	0.83
16.01	9.34	11.02	7.40	81.57	3.06	0.79	0.79
16.11	8.88	10.39	7.70	79.98	3.08	0.74	0.74
16.15	8.47	9.84	7.95	78.20	3.10	0.70	0.70
16.22	8.05	9.27	8.19	75.99	3.12	0.66	0.66
16.31	7.65	8.73	8.45	73.81	3.14	0.62	0.62
16.36	7.32	8.28	8.65	71.63	3.16	0.59	0.59
16.41	7.12	8.01	8.72	69.84	3.16	0.32	0.57
16.51	7.03	7.86	8.67	68.16	3.16	0.28	0.56
16.54	7.08	7.92	8.47	67.09	3.14	0.28	0.57
16.61	7.22	8.08	8.17	66.02	3.12	0.28	0.58
16.70	7.38	8.26	7.87	65.01	3.10	0.28	0.59
16.75	7.55	8.46	7.72	65.30	3.08	0.28	0.60
16.81	7.72	8.66	7.65	66.21	3.08	0.29	0.62
16.91	7.89	8.85	7.60	67.19	3.07	0.25	0.63
16.95	8.03	9.01	7.57	68.19	3.07	0.24	0.64
17.01	8.12	9.11	7.59	69.14	3.07	0.34	0.65
17.11	8.17	9.14	7.65	69.91	3.08	0.37	0.65
17.13	8.17	9.13	7.72	70.48	3.08	0.65	0.65
17.21	8.14	9.07	7.87	71.32	3.10	0.65	0.65
17.29	8.11	9.00	8.02	72.26	3.11	0.64	0.64
17.34	8.11	8.99	8.05	72.32	3.11	0.64	0.64
17.43	8.11	8.96	8.05	72.13	3.11	0.64	0.64
17.48	8.11	8.95	8.03	71.86	3.11	0.64	0.64
17.54	8.15	8.98	7.98	71.60	3.10	0.64	0.64
17.63	8.21	9.02	7.90	71.32	3.10	0.64	0.64
17.68	8.30	9.12	7.81	71.20	3.09	0.65	0.65
17.73	8.37	9.20	7.74	71.18	3.08	0.66	0.66
17.83	8.49	9.32	7.65	71.25	3.08	0.67	0.67
17.85	8.62	9.47	7.55	71.50	3.07	0.68	0.68
17.93	8.75	9.61	7.47	71.80	3.06	0.69	0.69
17.98	8.91	9.79	7.37	72.13	3.05	0.70	0.70
18.07	9.08	9.96	7.28	72.54	3.05	0.71	0.71
18.12	9.20	10.09	7.23	72.96	3.04	0.72	0.72
18.18	9.30	10.19	7.21	73.48	3.04	0.73	0.73
18.24	9.40	10.30	7.19	73.99	3.04	0.74	0.74
18.33	9.51	10.40	7.16	74.48	3.04	0.74	0.74
18.38	9.64	10.54	7.11	74.99	3.03	0.75	0.75
18.47	9.84	10.75	7.02	75.47	3.02	0.77	0.77
18.53	10.04	10.97	6.91	75.85	3.02	0.78	0.78
18.57	10.26	11.24	6.80	76.36	3.00	0.80	0.80
18.67	10.50	11.49	6.70	77.01	3.00	0.82	0.82
18.72	10.79	11.82	6.58	77.79	2.99	0.84	0.84
18.78	11.12	12.19	6.43	78.44	2.97	0.87	0.87
18.85	11.42	12.53	6.31	79.06	2.96	0.89	0.89
18.93	11.67	12.79	6.23	79.67	2.95	0.91	0.91

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
18.97	11.84	12.97	6.18	80.21	2.95	0.93	0.93
19.08	11.93	13.03	6.18	80.49	2.95	0.93	0.93
19.12	11.99	13.09	6.17	80.75	2.95	0.94	0.94
19.22	12.04	13.10	6.16	80.74	2.95	0.94	0.94
19.27	12.17	13.22	6.08	80.34	2.94	0.95	0.95
19.32	12.24	13.28	6.01	79.86	2.93	0.95	0.95
19.37	12.33	13.36	5.97	79.68	2.93	0.96	0.96
19.43	12.44	13.47	5.92	79.68	2.92	0.96	0.96
19.52	12.63	13.64	5.85	79.84	2.92	0.98	0.98
19.57	12.91	13.94	5.75	80.20	2.91	1.00	1.00
19.67	13.22	14.24	5.66	80.60	2.90	1.02	1.02
19.72	13.55	14.59	5.58	81.43	2.89	1.05	1.05
19.77	13.86	14.93	5.55	82.85	2.88	1.07	1.07
19.82	14.07	15.16	5.57	84.47	2.89	1.09	1.09
19.92	14.31	15.39	5.59	86.10	2.89	1.11	1.11
19.97	14.46	15.55	5.62	87.31	2.89	1.12	1.12
20.04	14.51	15.57	5.67	88.24	2.90	1.12	1.12
20.08	14.51	15.56	5.71	88.85	2.90	1.12	1.12
20.16	14.47	15.48	5.76	89.24	2.91	1.11	1.11
20.24	14.41	15.38	5.82	89.46	2.91	1.10	1.10
20.28	14.35	15.28	5.85	89.45	2.92	1.09	1.09
20.37	14.28	15.16	5.87	88.94	2.92	1.09	1.09
20.41	14.20	15.05	5.88	88.47	2.92	1.08	1.08
20.50	14.10	14.90	5.89	87.78	2.92	1.07	1.07
20.57	14.00	14.75	5.92	87.30	2.92	1.06	1.06
20.61	13.91	14.63	5.94	86.92	2.92	1.05	1.05
20.70	13.81	14.48	5.99	86.69	2.93	1.04	1.04
20.76	13.64	14.27	6.06	86.42	2.94	1.02	1.02
20.81	13.44	14.03	6.15	86.25	2.94	1.00	1.00
20.89	13.21	13.74	6.26	85.97	2.96	0.98	0.98
20.95	12.98	13.45	6.36	85.49	2.96	0.96	0.96
21.00	12.77	13.18	6.42	84.66	2.97	0.94	0.94
21.10	12.56	12.90	6.49	83.76	2.98	0.92	0.92
21.14	12.37	12.67	6.54	82.83	2.98	0.91	0.91
21.21	12.21	12.47	6.57	81.94	2.98	0.89	0.89
21.30	12.05	12.25	6.61	80.94	2.99	0.88	0.88
21.34	11.94	12.11	6.61	80.06	2.99	0.87	0.87
21.40	11.83	11.97	6.61	79.15	2.99	0.85	0.85
21.48	11.77	11.87	6.59	78.22	2.99	0.85	0.85
21.54	11.71	11.78	6.56	77.30	2.98	0.84	0.84
21.60	11.65	11.69	6.55	76.56	2.98	0.83	0.83
21.68	11.61	11.62	6.53	75.91	2.98	0.83	0.83
21.75	11.56	11.53	6.52	75.16	2.98	0.82	0.82
21.80	11.54	11.49	6.46	74.21	2.97	0.82	0.82
21.88	11.53	11.46	6.39	73.23	2.97	0.82	0.82
21.92	11.51	11.42	6.33	72.27	2.96	0.82	0.82
21.99	11.48	11.36	6.29	71.48	2.96	0.81	0.81
22.08	11.39	11.23	6.30	70.79	2.96	0.80	0.80

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
22.15	11.30	11.11	6.33	70.32	2.96	0.79	0.79
22.19	11.15	10.93	6.41	70.10	2.97	0.78	0.78
22.28	10.97	10.71	6.52	69.83	2.98	0.33	0.76
22.34	10.82	10.51	6.65	69.90	2.99	0.33	0.75
22.39	10.66	10.32	6.78	69.97	3.00	0.33	0.74
22.47	10.52	10.15	6.90	70.01	3.01	0.72	0.72
22.54	10.38	9.97	7.04	70.16	3.03	0.71	0.71
22.58	10.32	9.90	7.10	70.23	3.03	0.71	0.71
22.68	10.27	9.81	7.16	70.25	3.04	0.70	0.70
22.74	10.22	9.74	7.23	70.41	3.04	0.70	0.70
22.79	10.24	9.75	7.23	70.48	3.04	0.70	0.70
22.84	10.28	9.78	7.22	70.55	3.04	0.70	0.70
22.94	10.32	9.79	7.20	70.48	3.04	0.70	0.70
22.99	10.34	9.80	7.19	70.45	3.04	0.70	0.70
23.04	10.29	9.73	7.24	70.40	3.04	0.69	0.69
23.11	10.24	9.65	7.26	70.14	3.05	0.69	0.69
23.18	10.14	9.52	7.33	69.77	3.05	0.34	0.68
23.23	10.06	9.42	7.36	69.31	3.05	0.33	0.67
23.34	9.96	9.28	7.38	68.49	3.06	0.32	0.66
23.37	9.83	9.14	7.40	67.61	3.06	0.31	0.65
23.44	9.70	8.98	7.42	66.58	3.06	0.30	0.64
23.54	9.51	8.75	7.46	65.30	3.06	0.29	0.62
23.60	9.31	8.52	7.51	64.01	3.07	0.27	0.61
23.64	9.08	8.27	7.58	62.70	3.07	0.26	0.59
23.71	8.86	8.01	7.64	61.22	3.08	0.24	0.57
23.79	8.59	7.72	7.74	59.70	3.08	0.22	0.55
23.84	8.38	7.48	7.79	58.28	3.09	0.21	0.53
23.89	8.28	7.37	7.79	57.37	3.09	0.20	0.53
23.99	8.23	7.29	7.80	56.92	3.09	0.18	0.52
24.03	8.16	7.20	7.96	57.36	3.10	0.17	0.51
24.10	8.16	7.20	8.10	58.28	3.11	0.17	0.51
24.18	8.37	7.40	8.04	59.50	3.11	0.19	0.53
24.23	8.74	7.77	7.83	60.88	3.09	0.22	0.56
24.31	9.13	8.17	7.62	62.20	3.07	0.28	0.58
24.36	9.53	8.57	7.42	63.60	3.06	0.30	0.61
24.45	9.75	8.78	7.41	65.00	3.06	0.31	0.63
24.49	9.88	8.90	7.43	66.16	3.06	0.31	0.64
24.57	9.92	8.92	7.48	66.74	3.06	0.29	0.64
24.61	10.03	9.03	7.42	66.94	3.06	0.29	0.64
24.69	10.16	9.14	7.38	67.43	3.06	0.30	0.65
24.74	10.29	9.26	7.41	68.63	3.06	0.30	0.66
24.82	10.59	9.55	7.42	70.88	3.06	0.68	0.68
24.89	11.03	9.99	7.36	73.55	3.05	0.71	0.71
24.94	11.56	10.52	7.21	75.87	3.04	0.75	0.75
25.01	12.05	11.00	7.02	77.20	3.02	0.79	0.79
25.09	12.40	11.33	6.86	77.76	3.01	0.81	0.81
25.13	12.40	11.32	6.84	77.46	3.01	0.81	0.81
25.22	12.27	11.16	6.88	76.77	3.01	0.80	0.80

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
25.28	12.04	10.90	6.91	75.36	3.02	0.78	0.78
25.34	11.57	10.40	7.02	73.08	3.02	0.74	0.74
25.44	10.81	9.60	7.24	69.50	3.04	0.24	0.69
25.48	9.88	8.64	7.59	65.59	3.07	0.22	0.62
25.53	8.92	7.65	8.01	61.35	3.11	0.19	0.55
25.59	8.18	6.88	8.47	58.29	3.14	0.18	0.49
25.68	7.57	6.25	9.02	56.35	3.18	0.17	0.45
25.73	7.56	6.23	9.18	57.21	3.20	0.19	0.45
25.79	7.85	6.51	8.88	57.85	3.17	0.16	0.47
25.88	8.49	7.15	8.25	58.97	3.13	0.20	0.51
25.93	9.38	8.03	7.52	60.40	3.07	0.23	0.57
25.99	10.48	9.12	6.84	62.43	3.01	0.32	0.65
26.08	11.74	10.37	6.21	64.43	2.95	0.26	0.74
26.14	12.92	11.53	5.80	66.84	2.91	0.26	0.82
26.19	13.96	12.54	5.48	68.72	2.88	0.28	0.90
26.28	14.97	13.52	5.17	69.87	2.84	0.34	0.97
26.34	15.73	14.24	4.93	70.17	2.82	1.02	1.02
26.39	16.16	14.65	4.86	71.17	2.81	1.05	1.05
26.45	16.25	14.72	4.91	72.27	2.81	1.05	1.05
26.53	16.18	14.62	5.01	73.29	2.83	1.05	1.05
26.58	16.05	14.48	5.13	74.34	2.84	1.04	1.04
26.68	15.79	14.19	5.31	75.29	2.86	1.02	1.02
26.73	15.60	13.99	5.44	76.13	2.87	1.00	1.00
26.78	15.54	13.91	5.56	77.37	2.89	0.99	0.99
26.88	15.47	13.80	5.75	79.32	2.91	0.99	0.99
26.93	15.41	13.73	5.93	81.33	2.92	0.98	0.98
26.98	15.48	13.78	6.04	83.25	2.93	0.98	0.98
27.04	15.59	13.87	6.14	85.19	2.94	0.99	0.99
27.13	15.68	13.92	6.25	86.96	2.95	0.99	0.99
27.22	15.61	13.82	6.39	88.26	2.97	0.99	0.99
27.24	15.48	13.68	6.52	89.16	2.98	0.98	0.98
27.33	15.33	13.50	6.64	89.67	2.99	0.96	0.96
27.37	15.08	13.24	6.78	89.80	3.00	0.95	0.95
27.43	14.77	12.92	6.92	89.38	3.02	0.92	0.92
27.52	14.46	12.58	7.06	88.85	3.03	0.90	0.90
27.57	14.10	12.22	7.21	88.05	3.04	0.87	0.87
27.63	13.68	11.79	7.35	86.71	3.05	0.84	0.84
27.72	13.24	11.33	7.51	85.09	3.07	0.81	0.81
27.76	12.84	10.93	7.62	83.26	3.07	0.78	0.78
27.84	12.46	10.54	7.72	81.35	3.08	0.75	0.75
27.93	12.10	10.17	7.82	79.56	3.09	0.73	0.73
27.97	11.82	9.89	7.87	77.87	3.10	0.71	0.71
28.02	11.70	9.75	7.82	76.27	3.09	0.70	0.70
28.12	11.66	9.69	7.70	74.61	3.08	0.69	0.69
28.17	11.67	9.68	7.58	73.40	3.07	0.69	0.69
28.23	11.80	9.79	7.45	72.95	3.06	0.70	0.70
28.32	12.03	9.99	7.31	73.01	3.05	0.71	0.71
28.37	12.28	10.22	7.19	73.44	3.04	0.73	0.73

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
28.42	12.60	10.51	7.07	74.28	3.03	0.75	0.75
28.48	12.97	10.84	6.95	75.36	3.02	0.77	0.77
28.57	13.52	11.33	6.75	76.48	3.00	0.81	0.81
28.61	14.02	11.79	6.59	77.67	2.99	0.84	0.84
28.69	14.48	12.21	6.45	78.81	2.97	0.87	0.87
28.77	14.97	12.64	6.31	79.74	2.96	0.90	0.90
28.83	15.40	13.03	6.16	80.28	2.95	0.93	0.93
28.88	15.75	13.34	6.04	80.59	2.93	0.95	0.95
28.97	16.12	13.65	5.92	80.85	2.92	0.97	0.97
29.02	16.58	14.07	5.77	81.19	2.91	1.00	1.00
29.08	17.07	14.50	5.62	81.51	2.89	1.04	1.04
29.17	17.42	14.80	5.54	81.91	2.88	1.06	1.06
29.21	16.68	14.09	5.89	82.99	2.92	1.01	1.01
29.28	17.35	14.69	5.73	84.17	2.90	1.05	1.05
29.37	18.08	15.34	5.58	85.65	2.89	1.10	1.10
29.41	18.84	16.03	5.45	87.42	2.87	1.14	1.14
29.47	19.66	16.76	5.31	88.96	2.86	1.20	1.20
29.56	20.44	17.45	5.14	89.65	2.84	1.25	1.25
29.62	21.08	18.02	4.99	89.89	2.82	1.29	1.29
29.68	21.55	18.43	4.86	89.53	2.81	1.31	1.31
29.76	21.98	18.79	4.72	88.74	2.79	1.34	1.34
29.83	23.16	19.85	4.38	86.86	2.75	1.42	1.42
29.87	22.72	19.43	4.36	84.78	2.75	1.38	1.38
29.96	22.10	18.81	4.37	82.22	2.75	1.34	1.34
30.01	21.54	18.28	4.34	79.33	2.75	1.30	1.30
30.07	20.81	17.58	4.36	76.65	2.75	1.25	1.25
30.16	20.20	16.98	4.41	74.98	2.76	1.21	1.21
30.20	19.65	16.47	4.48	73.79	2.76	1.17	1.17
30.27	19.26	16.07	4.56	73.29	2.77	1.15	1.15
30.34	18.94	15.75	4.66	73.36	2.78	1.12	1.12
30.42	18.95	15.73	4.70	73.99	2.79	1.12	1.12
30.46	19.17	15.91	4.72	75.17	2.79	1.13	1.13
30.52	19.53	16.22	4.72	76.59	2.79	1.16	1.16
30.58	19.82	16.46	4.75	78.24	2.80	1.17	1.17
30.66	20.28	16.84	4.74	79.86	2.79	1.20	1.20
30.71	20.64	17.15	4.74	81.34	2.80	1.22	1.22
30.81	20.94	17.37	4.76	82.69	2.80	1.24	1.24
30.87	21.17	17.56	4.78	83.92	2.80	1.25	1.25
30.91	21.30	17.66	4.82	85.10	2.80	1.26	1.26
31.01	21.41	17.71	4.87	86.23	2.81	1.26	1.26
31.06	21.53	17.80	4.91	87.37	2.81	1.27	1.27
31.11	21.63	17.86	4.95	88.36	2.82	1.27	1.27
31.19	21.81	17.99	4.96	89.14	2.82	1.28	1.28
31.26	21.98	18.11	4.96	89.73	2.82	1.29	1.29
31.35	22.12	18.19	4.96	90.16	2.82	1.30	1.30
31.37	22.15	18.20	4.98	90.62	2.82	1.30	1.30
31.46	22.28	18.27	4.97	90.91	2.82	1.30	1.30
31.55	22.33	18.28	4.98	91.09	2.82	1.30	1.30

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
31.59	22.49	18.41	4.94	91.01	2.82	1.31	1.31
31.66	22.71	18.58	4.87	90.48	2.81	1.32	1.32
31.70	23.00	18.82	4.77	89.81	2.80	1.34	1.34
31.79	23.13	18.90	4.72	89.15	2.79	1.34	1.34
31.86	23.24	18.96	4.67	88.51	2.79	1.35	1.35
31.91	23.55	19.22	4.60	88.37	2.78	1.37	1.37
31.99	24.39	19.93	4.47	89.06	2.76	1.42	1.42
32.06	25.44	20.82	4.34	90.39	2.75	1.48	1.48
32.10	26.88	22.09	4.18	92.23	2.72	1.57	1.57
32.20	28.15	23.16	4.10	94.85	2.71	1.64	1.64
32.26	28.72	23.62	4.16	98.16	2.72	1.67	1.67
32.30	29.57	24.34	4.18	101.69	2.72	1.73	1.73
32.35	30.28	24.92	4.22	105.09	2.73	1.77	1.77
32.46	31.21	25.67	4.21	108.18	2.73	1.82	1.82
32.49	31.95	26.29	4.23	111.21	2.73	1.86	1.86
32.58	32.77	26.95	4.21	113.53	2.73	1.91	1.91
32.62	34.34	28.30	4.10	116.05	2.71	2.00	2.00
32.69	36.23	29.91	3.99	119.21	2.70	2.12	2.12
32.78	38.18	31.55	3.88	122.28	2.68	2.23	2.23
32.82	40.40	33.46	3.75	125.60	2.67	2.37	2.37
32.89	41.76	34.59	3.73	129.05	2.66	2.44	2.44
32.98	43.04	35.63	3.71	132.21	2.66	2.52	2.52
33.02	43.56	36.03	3.75	135.06	2.67	2.54	2.54
33.08	43.60	36.00	3.79	136.47	2.67	2.54	2.54
33.18	42.94	35.32	3.89	137.25	2.68	2.50	2.50
33.21	41.11	33.69	4.07	137.02	2.71	2.38	2.38
33.29	38.50	31.35	4.31	135.03	2.74	2.22	2.22
33.37	35.87	29.01	4.52	131.27	2.77	2.06	2.06
33.42	33.58	27.00	4.67	126.23	2.79	1.92	1.92
33.47	31.71	25.36	4.74	120.24	2.79	1.80	1.80
33.53	29.91	23.80	4.78	113.67	2.80	1.69	1.69
33.62	28.55	22.60	4.74	107.22	2.80	1.60	1.60
33.67	27.44	21.64	4.71	101.83	2.79	1.53	1.53
33.73	26.35	20.68	4.68	96.75	2.79	1.47	1.47
33.82	25.32	19.78	4.66	92.18	2.79	1.40	1.40
33.87	24.46	19.03	4.65	88.49	2.78	1.35	1.35
33.93	23.71	18.37	4.70	86.36	2.79	1.30	1.30
34.02	23.04	17.75	4.78	84.94	2.80	1.26	1.26
34.06	22.45	17.24	4.89	84.26	2.81	1.22	1.22
34.13	22.07	16.88	4.99	84.31	2.82	1.20	1.20
34.22	21.81	16.62	5.09	84.59	2.83	1.18	1.18
34.26	21.71	16.52	5.16	85.19	2.84	1.17	1.17
34.32	21.73	16.50	5.20	85.88	2.85	1.17	1.17
34.42	21.79	16.51	5.24	86.45	2.85	1.17	1.17
34.46	21.86	16.55	5.25	86.87	2.85	1.18	1.18
34.52	21.87	16.54	5.27	87.08	2.85	1.18	1.18
34.61	21.89	16.52	5.28	87.14	2.86	1.17	1.17
34.70	21.91	16.50	5.28	87.14	2.86	1.17	1.17

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
34.76	22.00	16.55	5.27	87.27	2.86	1.18	1.18
34.82	22.08	16.59	5.26	87.34	2.85	1.18	1.18
34.86	22.20	16.68	5.23	87.15	2.85	1.18	1.18
34.92	22.38	16.80	5.21	87.52	2.85	1.19	1.19
35.02	22.61	16.95	5.21	88.35	2.85	1.20	1.20
35.06	22.92	17.19	5.21	89.58	2.85	1.22	1.22
35.11	23.26	17.45	5.22	91.14	2.85	1.24	1.24
35.19	23.32	17.45	5.32	92.89	2.86	1.24	1.24
35.25	23.48	17.55	5.39	94.66	2.87	1.25	1.25
35.31	23.92	17.88	5.39	96.33	2.87	1.27	1.27
35.40	24.41	18.24	5.39	98.39	2.87	1.30	1.30
35.45	24.90	18.61	5.42	100.88	2.87	1.32	1.32
35.50	25.37	18.97	5.44	103.26	2.87	1.35	1.35
35.56	25.84	19.32	5.45	105.30	2.87	1.37	1.37
35.64	26.20	19.57	5.48	107.20	2.88	1.39	1.39
35.72	26.53	19.80	5.50	108.86	2.88	1.41	1.41
35.81	27.10	20.22	5.44	110.03	2.87	1.44	1.44
35.85	27.52	20.55	5.40	110.86	2.87	1.46	1.46
35.90	27.57	20.56	5.41	111.30	2.87	1.46	1.46
35.96	27.50	20.47	5.43	111.25	2.87	1.45	1.45
36.04	27.44	20.38	5.44	110.83	2.87	1.45	1.45
36.11	27.37	20.29	5.42	110.01	2.87	1.44	1.44
36.16	27.38	20.28	5.37	108.99	2.87	1.44	1.44
36.25	27.49	20.34	5.30	107.76	2.86	1.44	1.44
36.31	27.53	20.35	5.23	106.50	2.85	1.44	1.44
36.36	27.55	20.34	5.20	105.82	2.85	1.44	1.44
36.44	27.59	20.34	5.19	105.48	2.85	1.44	1.44
36.50	27.55	20.28	5.20	105.38	2.85	1.44	1.44
36.56	27.51	20.22	5.20	105.22	2.85	1.43	1.43
36.65	27.46	20.13	5.22	104.99	2.85	1.43	1.43
36.68	27.32	20.00	5.24	104.73	2.85	1.42	1.42
36.76	26.99	19.70	5.30	104.31	2.86	1.40	1.40
36.84	26.59	19.33	5.36	103.68	2.87	1.37	1.37
36.91	26.14	18.94	5.43	102.81	2.87	1.34	1.34
36.96	25.72	18.58	5.46	101.52	2.88	1.32	1.32
37.04	25.31	18.22	5.48	99.92	2.88	1.29	1.29
37.10	25.01	17.96	5.47	98.29	2.88	1.28	1.28
37.15	24.79	17.78	5.44	96.70	2.87	1.26	1.26
37.23	24.57	17.57	5.41	95.11	2.87	1.25	1.25
37.30	24.39	17.41	5.38	93.56	2.87	1.24	1.24
37.35	24.27	17.30	5.33	92.22	2.86	1.23	1.23
37.45	24.09	17.12	5.31	90.90	2.86	1.21	1.21
37.51	23.91	16.96	5.29	89.72	2.86	1.20	1.20
37.55	23.68	16.77	5.28	88.48	2.86	1.19	1.19
37.62	23.41	16.54	5.27	87.10	2.85	1.17	1.17
37.70	23.18	16.33	5.25	85.68	2.85	1.16	1.16
37.75	22.99	16.17	5.21	84.25	2.85	1.15	1.15
37.80	22.83	16.04	5.16	82.80	2.84	1.14	1.14

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
37.90	22.79	15.98	5.09	81.34	2.84	1.13	1.13
37.95	22.85	16.02	4.99	79.99	2.82	1.13	1.13
38.05	23.13	16.22	4.89	79.28	2.81	1.15	1.15
38.06	23.67	16.66	4.74	79.02	2.80	1.18	1.18
38.15	24.36	17.18	4.61	79.14	2.78	1.21	1.21
38.19	25.07	17.73	4.50	79.75	2.77	1.25	1.25
38.27	25.90	18.37	4.38	80.47	2.75	1.29	1.29
38.34	26.81	19.07	4.27	81.37	2.74	1.34	1.34
38.39	27.68	19.75	4.17	82.26	2.72	1.38	1.38
38.46	28.48	20.35	4.10	83.39	2.71	1.42	1.42
38.55	29.24	20.90	4.06	84.87	2.71	1.46	1.46
38.59	30.19	21.63	4.01	86.82	2.70	1.51	1.51
38.68	31.64	22.72	3.94	89.49	2.69	1.59	1.59
38.75	33.31	24.00	3.85	92.51	2.68	1.67	1.67
38.80	35.48	25.68	3.74	96.14	2.66	1.79	1.79
38.87	38.37	27.93	3.58	99.97	2.64	1.94	1.94
38.95	41.80	30.61	3.40	104.15	2.61	2.12	2.12
38.99	45.31	33.36	3.24	108.24	2.59	0.68	0.68
39.04	48.34	35.74	3.13	111.69	2.57	0.69	0.69
39.11	49.97	36.96	3.09	114.37	2.56	0.70	0.70
39.19	50.69	37.46	3.08	115.54	2.56	0.70	0.70
39.27	49.95	36.81	3.12	114.99	2.57	0.70	0.70
39.33	48.64	35.72	3.18	113.58	2.58	0.69	0.69
39.39	46.71	34.16	3.24	110.84	2.59	0.69	0.69
39.45	43.93	31.94	3.36	107.28	2.61	2.21	2.21
39.53	40.53	29.21	3.53	103.00	2.63	2.03	2.03
39.57	37.19	26.57	3.71	98.52	2.66	1.85	1.85
39.64	34.51	24.46	3.83	93.75	2.68	1.70	1.70
39.72	33.37	23.58	3.77	88.79	2.67	1.64	1.64
39.79	32.93	23.26	3.63	84.39	2.65	1.61	1.61
39.84	33.06	23.39	3.47	81.26	2.62	1.62	1.62
39.93	32.94	23.28	3.41	79.39	2.61	1.61	1.61
39.98	32.75	23.12	3.42	79.04	2.61	1.60	1.60
40.05	32.95	23.19	3.56	82.51	2.64	1.61	1.61
40.09	34.03	23.95	3.64	87.20	2.65	1.66	1.66
40.19	36.38	25.69	3.60	92.47	2.64	1.78	1.78
40.23	40.72	29.01	3.42	99.16	2.61	2.00	2.00
40.34	45.86	32.90	3.25	106.95	2.59	0.68	0.68
40.38	50.76	36.64	3.14	115.13	2.57	0.70	0.70
40.43	55.28	40.05	3.08	123.53	2.56	0.71	0.71
40.50	60.00	43.62	3.01	131.16	2.55	0.72	0.72
40.58	64.51	47.00	2.94	138.27	2.53	0.73	0.73
40.63	68.60	50.12	2.86	143.45	2.52	0.73	0.73
40.70	72.71	53.23	2.78	147.92	2.50	0.74	0.74
40.75	76.10	55.80	2.72	151.94	2.49	0.75	0.75
40.84	77.61	56.84	2.73	155.10	2.49	0.75	0.75
40.88	77.99	57.03	2.77	157.83	2.50	0.75	0.75
40.95	78.42	57.23	2.80	160.06	2.51	0.75	0.75

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
41.03	79.84	58.24	2.77	161.34	2.50	0.75	0.75
41.08	83.51	61.08	2.66	162.46	2.48	0.76	0.76
41.15	90.15	66.29	2.46	162.81	2.43	0.77	0.77
41.23	97.84	72.34	2.26	163.56	2.39	0.78	0.78
41.28	105.13	78.11	2.11	164.99	2.35	0.79	0.79
41.35	112.60	84.00	1.99	166.99	2.31	0.80	0.80
41.43	119.65	89.52	1.89	169.57	2.28	0.81	0.81
41.48	126.18	94.65	1.83	172.95	2.26	0.82	0.82
41.54	132.64	99.67	1.78	177.10	2.24	0.83	0.83
41.62	138.98	104.52	1.74	181.95	2.23	0.83	0.83
41.68	144.15	108.42	1.73	187.16	2.22	0.84	0.84
41.77	147.16	110.47	1.74	192.21	2.23	0.84	0.84
41.82	149.61	112.16	1.76	197.02	2.23	0.84	0.84
41.88	151.40	113.31	1.77	201.11	2.24	0.84	0.84
41.97	152.19	113.59	1.80	204.50	2.25	0.85	0.85
42.01	152.63	113.73	1.82	207.46	2.26	0.85	0.85
42.10	154.18	114.69	1.83	209.53	2.26	0.85	0.85
42.17	155.77	115.77	1.82	210.77	2.26	0.85	0.85
42.22	158.63	117.95	1.79	211.47	2.25	0.85	0.85
42.28	161.62	120.26	1.76	211.30	2.24	0.85	0.85
42.33	166.19	123.89	1.70	210.96	2.21	0.86	0.86
42.41	171.05	127.73	1.65	210.27	2.19	0.86	0.86
42.48	177.06	132.54	1.58	209.92	2.16	0.87	0.87
42.52	184.41	138.54	1.52	210.20	2.13	0.87	0.87
42.60	193.18	145.64	1.45	211.30	2.10	0.88	0.88
42.66	201.80	152.67	1.39	212.90	2.06	0.89	0.89
42.72	210.25	159.58	1.35	214.88	2.03	0.90	0.90
42.81	216.71	164.80	1.31	216.24	2.01	0.90	0.90
42.87	221.45	168.71	1.29	216.83	1.99	0.90	0.90
42.92	223.43	170.44	1.27	215.65	1.97	0.91	0.91
43.00	224.17	171.11	1.25	213.60	1.96	0.91	0.91
43.06	223.07	170.33	1.24	210.56	1.95	0.90	0.90
43.11	220.03	167.97	1.23	206.67	1.94	0.90	0.90
43.18	215.77	164.56	1.23	202.06	1.94	0.90	0.90
43.25	211.23	160.89	1.23	197.51	1.94	0.90	0.90
43.31	206.82	157.31	1.23	193.43	1.94	0.89	0.89
43.39	202.67	153.89	1.23	189.65	1.94	0.89	0.89
43.45	198.48	150.43	1.24	186.27	1.95	0.89	0.89
43.51	194.71	147.19	1.25	184.09	1.96	0.88	0.88
43.61	191.33	144.12	1.27	182.63	1.97	0.88	0.88
43.65	188.25	141.41	1.29	181.84	1.99	0.88	0.88
43.72	185.35	138.80	1.30	180.92	2.00	0.87	0.87
43.81	182.33	136.09	1.32	179.83	2.02	0.87	0.87
43.85	178.70	133.02	1.34	178.27	2.03	0.87	0.87
43.92	174.04	129.13	1.36	175.71	2.04	0.86	0.86
44.01	169.31	125.14	1.38	173.09	2.06	0.86	0.86
44.05	165.21	121.88	1.39	169.93	2.06	0.86	0.86
44.10	160.81	118.50	1.39	165.15	2.06	0.85	0.85

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
44.20	156.04	114.74	1.40	160.07	2.07	0.85	0.85
44.25	151.36	111.13	1.40	155.35	2.07	0.84	0.84
44.30	146.31	107.16	1.41	151.20	2.07	0.84	0.84
44.40	140.34	102.33	1.44	147.25	2.09	0.83	0.83
44.45	134.81	97.92	1.47	143.99	2.11	0.82	0.82
44.50	130.12	94.11	1.51	142.03	2.13	0.82	0.82
44.57	125.26	90.13	1.56	140.34	2.15	0.81	0.81
44.63	120.31	86.02	1.63	140.23	2.18	0.81	0.81
44.69	115.72	82.08	1.74	143.01	2.23	0.80	0.80
44.79	111.51	78.40	1.87	146.54	2.27	0.79	0.79
44.84	107.77	75.21	2.00	150.25	2.31	0.79	0.79
44.89	105.00	72.83	2.11	153.52	2.35	0.78	0.78
44.96	103.51	71.48	2.18	156.05	2.37	0.78	0.78
45.04	102.01	70.14	2.26	158.16	2.39	0.78	0.78
45.09	100.81	69.09	2.31	159.67	2.40	0.78	0.78
45.17	100.05	68.35	2.35	160.93	2.41	0.78	0.78
45.24	99.52	67.81	2.39	162.05	2.42	0.77	0.77
45.28	99.27	67.55	2.41	162.52	2.42	0.77	0.77
45.38	98.85	67.10	2.42	162.58	2.43	0.77	0.77
45.42	97.77	66.22	2.46	162.63	2.43	0.77	0.77
45.49	96.34	65.05	2.50	162.56	2.44	0.77	0.77
45.57	94.70	63.72	2.55	162.28	2.45	0.77	0.77
45.63	92.37	61.92	2.61	161.36	2.47	0.76	0.76
45.69	89.46	59.74	2.66	159.12	2.48	0.76	0.76
45.78	85.19	56.57	2.75	155.40	2.50	0.75	0.75
45.84	79.80	52.64	2.87	150.88	2.52	0.74	0.74
45.89	73.90	48.37	3.01	145.76	2.55	0.73	0.73
45.93	67.39	43.71	3.19	139.53	2.58	0.72	0.72
46.02	61.02	39.17	3.38	132.47	2.61	2.66	2.66
46.08	54.84	34.81	3.59	124.90	2.64	2.37	2.37
46.13	48.82	30.61	3.82	116.87	2.68	2.10	2.10
46.22	43.62	27.00	4.03	108.93	2.71	1.86	1.86
46.28	39.06	23.85	4.28	101.99	2.74	1.65	1.65
46.33	35.80	21.61	4.47	96.55	2.76	1.50	1.50
46.43	33.77	20.22	4.54	91.86	2.77	1.41	1.41
46.47	32.28	19.23	4.57	87.81	2.77	1.34	1.34
46.53	31.55	18.75	4.53	85.02	2.77	1.30	1.30
46.63	31.27	18.56	4.46	82.79	2.76	1.29	1.29
46.67	31.09	18.45	4.39	81.06	2.75	1.28	1.28
46.73	31.01	18.39	4.37	80.34	2.75	1.27	1.27
46.83	31.04	18.38	4.35	80.02	2.75	1.27	1.27
46.87	31.05	18.38	4.35	79.94	2.75	1.27	1.27
46.93	31.18	18.45	4.34	80.00	2.75	1.28	1.28
47.02	31.31	18.51	4.32	79.99	2.74	1.28	1.28
47.08	31.45	18.58	4.30	79.99	2.74	1.28	1.28
47.12	31.65	18.71	4.30	80.42	2.74	1.29	1.29
47.18	31.90	18.85	4.30	80.99	2.74	1.30	1.30
47.27	32.12	18.96	4.30	81.54	2.74	1.31	1.31

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
47.31	32.24	19.01	4.33	82.39	2.74	1.31	1.31
47.39	32.73	19.30	4.32	83.31	2.74	1.33	1.33
47.48	33.47	19.76	4.28	84.52	2.74	1.36	1.36
47.52	34.18	20.22	4.25	85.98	2.73	1.39	1.39
47.59	34.88	20.63	4.28	88.32	2.74	1.42	1.42
47.66	35.57	21.01	4.35	91.45	2.75	1.45	1.45
47.74	36.36	21.47	4.39	94.26	2.75	1.48	1.48
47.79	37.63	22.28	4.34	96.75	2.75	1.54	1.54
47.86	39.62	23.59	4.20	98.98	2.73	1.62	1.62
47.94	42.38	25.46	3.96	100.78	2.69	1.74	1.74
47.99	46.45	28.27	3.63	102.50	2.65	1.92	1.92
48.05	51.69	31.91	3.27	104.31	2.59	0.68	0.68
48.13	57.43	35.93	2.96	106.37	2.54	0.69	0.69
48.19	63.46	40.18	2.70	108.40	2.49	0.71	0.71
48.26	69.35	44.33	2.50	111.00	2.44	0.72	0.72
48.34	74.27	47.76	2.39	114.21	2.42	0.73	0.73
48.39	78.06	50.36	2.34	117.60	2.41	0.74	0.74
48.43	80.01	51.62	2.34	120.87	2.41	0.74	0.74
48.51	80.23	51.58	2.40	123.65	2.42	0.74	0.74
48.58	78.15	49.87	2.53	126.20	2.45	0.73	0.73
48.63	73.91	46.66	2.76	128.57	2.50	0.73	0.73
48.72	69.19	43.12	3.03	130.53	2.55	0.72	0.72
48.78	64.53	39.71	3.33	132.10	2.60	0.71	0.71
48.83	60.65	36.92	3.59	132.69	2.64	2.50	2.50
48.90	58.27	35.18	3.78	133.00	2.67	2.40	2.40
48.99	56.81	34.10	3.90	133.10	2.69	2.33	2.33
49.03	57.34	34.43	3.88	133.52	2.68	2.35	2.35
49.08	59.70	36.02	3.73	134.25	2.66	2.45	2.45
49.17	64.88	39.55	3.43	135.60	2.62	2.67	2.67
49.23	73.51	45.55	3.01	136.90	2.54	0.72	0.72
49.32	85.21	53.79	2.58	138.53	2.46	0.74	0.74
49.35	97.81	62.84	2.24	140.98	2.38	0.76	0.76
49.43	111.56	72.74	1.99	144.42	2.31	0.78	0.78
49.50	126.07	83.33	1.78	148.53	2.24	0.80	0.80
49.58	140.81	94.14	1.63	153.61	2.19	0.82	0.82
49.63	155.36	104.93	1.52	159.57	2.13	0.83	0.83
49.72	169.50	115.38	1.44	166.05	2.09	0.85	0.85
49.78	181.49	124.33	1.38	171.86	2.06	0.86	0.86
49.83	190.73	131.20	1.35	176.75	2.03	0.87	0.87
49.90	196.54	135.41	1.33	180.17	2.02	0.87	0.87
49.98	200.97	138.54	1.32	182.84	2.01	0.87	0.87
50.02	203.65	140.45	1.31	184.55	2.01	0.88	0.88
50.08	205.02	141.54	1.30	184.09	2.00	0.88	0.88
50.18	205.97	142.29	1.29	183.07	1.99	0.88	0.88
50.23	206.42	142.77	1.27	181.88	1.98	0.88	0.88
50.27	206.67	143.11	1.26	180.71	1.97	0.88	0.88
50.36	206.82	143.25	1.25	179.58	1.96	0.88	0.88
50.40	206.95	143.47	1.25	178.63	1.95	0.88	0.88

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
50.47	207.35	143.80	1.24	177.89	1.95	0.88	0.88
50.55	207.82	144.14	1.23	177.42	1.94	0.88	0.88
50.63	208.28	144.42	1.23	177.15	1.94	0.88	0.88
50.67	208.58	144.31	1.24	178.43	1.95	0.88	0.88
50.72	208.67	143.92	1.25	180.14	1.96	0.88	0.88
50.83	208.48	143.22	1.27	181.54	1.97	0.88	0.88
50.88	208.04	142.49	1.28	182.79	1.99	0.88	0.88
50.93	207.42	141.67	1.30	183.75	2.00	0.88	0.88
51.02	206.85	140.84	1.31	184.53	2.01	0.88	0.88
51.08	206.30	140.13	1.32	185.17	2.02	0.88	0.88
51.12	205.82	139.57	1.33	185.58	2.02	0.88	0.88
51.21	205.38	138.99	1.34	185.59	2.03	0.87	0.87
51.27	205.16	138.70	1.34	185.41	2.03	0.87	0.87
51.32	205.10	138.60	1.33	185.01	2.03	0.87	0.87
51.39	205.14	138.54	1.33	184.61	2.02	0.87	0.87
51.47	205.24	138.49	1.33	184.27	2.02	0.87	0.87
51.55	205.31	138.40	1.33	184.07	2.02	0.87	0.87
51.60	205.08	138.14	1.33	183.84	2.02	0.87	0.87
51.67	204.64	137.67	1.33	183.52	2.02	0.87	0.87
51.72	203.58	136.81	1.34	182.68	2.03	0.87	0.87
51.79	201.52	135.28	1.34	180.62	2.03	0.87	0.87
51.87	199.01	133.36	1.34	178.56	2.03	0.87	0.87
51.91	196.40	131.39	1.35	176.81	2.03	0.87	0.87
51.98	192.80	128.68	1.35	174.31	2.04	0.86	0.86
52.06	188.34	125.28	1.37	171.51	2.05	0.86	0.86
52.12	183.88	122.00	1.38	168.38	2.06	0.86	0.86
52.17	178.11	117.70	1.40	165.18	2.07	0.85	0.85
52.26	170.61	112.01	1.44	161.59	2.09	0.84	0.84
52.31	163.90	106.94	1.49	159.09	2.12	0.84	0.84
52.38	156.13	101.00	1.56	157.10	2.15	0.83	0.83
52.47	147.15	94.26	1.64	154.49	2.19	0.82	0.82
52.51	136.09	86.23	1.75	150.95	2.23	0.81	0.81
52.56	124.42	77.83	1.89	147.40	2.28	0.79	0.79
52.66	112.90	69.62	2.06	143.68	2.33	0.78	0.78
52.70	100.48	60.93	2.30	140.39	2.40	0.76	0.76
52.77	89.16	53.15	2.57	136.45	2.46	0.74	0.74
52.87	79.44	46.57	2.82	131.31	2.51	0.73	0.73
52.92	69.32	39.89	3.15	125.70	2.57	0.71	0.71
52.97	61.28	34.64	3.48	120.40	2.62	2.32	2.32
53.02	54.61	30.38	3.78	114.68	2.67	2.05	2.05
53.10	50.06	27.50	3.97	109.11	2.70	1.87	1.87
53.16	46.90	25.55	4.07	104.01	2.71	1.74	1.74
53.22	44.28	23.98	4.11	98.54	2.72	1.63	1.63
53.31	42.65	23.03	4.05	93.26	2.71	1.57	1.57
53.36	41.31	22.29	3.97	88.37	2.70	1.51	1.51
53.42	40.10	21.59	3.91	84.45	2.69	1.46	1.46
53.51	39.07	21.00	3.85	80.92	2.68	1.42	1.42
53.56	37.95	20.34	3.83	77.90	2.68	1.37	1.37

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
53.62	37.07	19.81	3.83	75.92	2.68	1.34	1.34
53.71	36.24	19.28	3.86	74.43	2.68	1.30	1.30
53.75	35.58	18.87	3.88	73.33	2.68	1.28	1.28
53.83	34.88	18.39	3.98	73.18	2.70	1.25	1.25
53.91	34.05	17.84	4.09	72.99	2.71	1.21	1.21
53.98	33.09	17.20	4.22	72.61	2.73	1.17	1.17
54.01	32.19	16.62	4.35	72.23	2.75	1.14	1.14
54.11	31.08	15.89	4.51	71.62	2.77	1.09	1.09
54.15	29.90	15.16	4.66	70.59	2.78	1.05	1.05
54.21	28.55	14.31	4.85	69.38	2.81	0.34	0.99
54.27	27.04	13.38	5.05	67.57	2.83	0.31	0.93
54.35	25.56	12.48	5.24	65.45	2.85	0.28	0.87
54.42	24.28	11.72	5.38	63.06	2.87	0.25	0.82
54.46	23.20	11.09	5.48	60.75	2.88	0.22	0.78
54.55	22.43	10.64	5.50	58.58	2.88	0.19	0.75
54.60	21.80	10.29	5.51	56.66	2.88	0.17	0.72
54.67	21.40	10.06	5.46	54.95	2.88	0.16	0.71
54.74	21.06	9.87	5.43	53.59	2.87	0.16	0.69
54.79	20.77	9.71	5.41	52.57	2.87	0.15	0.68
54.86	20.62	9.62	5.40	51.96	2.87	0.15	0.68
54.96	20.50	9.54	5.41	51.56	2.87	0.15	0.67
55.03	20.43	9.49	5.41	51.32	2.87	0.15	0.67
55.06	20.38	9.46	5.41	51.16	2.87	0.15	0.66
55.14	20.37	9.44	5.40	51.00	2.87	0.15	0.66
55.21	20.35	9.42	5.40	50.83	2.87	0.15	0.66
55.25	20.31	9.39	5.39	50.67	2.87	0.15	0.66
55.32	20.28	9.37	5.39	50.50	2.87	0.15	0.66
55.41	20.24	9.33	5.39	50.33	2.87	0.14	0.65
55.45	20.23	9.32	5.39	50.24	2.87	0.14	0.65
55.52	20.23	9.31	5.39	50.23	2.87	0.13	0.65
55.61	20.28	9.33	5.39	50.28	2.87	0.13	0.65
55.65	20.52	9.45	5.38	50.89	2.87	0.13	0.66
55.71	20.91	9.67	5.35	51.70	2.86	0.14	0.68
55.80	21.44	9.96	5.29	52.64	2.86	0.14	0.70
55.86	22.21	10.40	5.17	53.78	2.84	0.15	0.73
55.95	23.00	10.84	5.08	55.07	2.83	0.19	0.75
56.00	23.79	11.29	5.00	56.40	2.82	0.20	0.78
56.05	24.57	11.73	4.92	57.75	2.82	0.21	0.81
56.11	25.39	12.21	4.79	58.54	2.80	0.22	0.84
56.20	26.17	12.67	4.65	58.93	2.78	0.23	0.87
56.24	26.73	13.01	4.52	58.82	2.77	0.24	0.89
56.31	27.09	13.23	4.43	58.66	2.76	0.25	0.91
56.39	27.14	13.26	4.40	58.31	2.75	0.21	0.91
56.43	26.89	13.11	4.41	57.80	2.75	0.19	0.90
56.50	26.19	12.68	4.49	56.98	2.77	0.18	0.87
56.60	25.50	12.25	4.57	56.00	2.77	0.19	0.84
56.66	24.81	11.85	4.62	54.73	2.78	0.18	0.81
56.70	24.10	11.42	4.72	53.84	2.79	0.17	0.79

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
56.79	23.44	11.01	4.83	53.20	2.81	0.16	0.76
56.84	22.85	10.64	4.96	52.77	2.82	0.16	0.74
56.92	22.40	10.36	5.08	52.61	2.83	0.15	0.72
56.99	22.25	10.25	5.14	52.66	2.84	0.14	0.71
57.03	22.42	10.34	5.12	52.94	2.84	0.14	0.72
57.09	23.22	10.80	4.97	53.70	2.82	0.15	0.75
57.18	23.98	11.23	4.87	54.70	2.81	0.17	0.78
57.23	24.85	11.71	4.83	56.60	2.81	0.18	0.81
57.31	26.05	12.34	4.84	59.70	2.81	0.19	0.85
57.38	27.50	13.12	4.83	63.35	2.81	0.22	0.91
57.43	29.89	14.46	4.68	67.68	2.79	0.24	1.00
57.50	33.85	16.75	4.35	72.85	2.75	1.14	1.14
57.58	38.94	19.76	3.94	77.84	2.69	1.33	1.33
57.62	45.95	24.03	3.45	82.77	2.62	1.59	1.59
57.68	53.93	28.96	3.04	88.00	2.55	0.67	0.67
57.78	62.67	34.40	2.71	93.09	2.49	0.69	0.69
57.82	72.41	40.59	2.42	98.14	2.43	0.71	0.71
57.89	82.22	46.92	2.19	102.62	2.37	0.73	0.73
57.97	91.68	53.07	2.01	106.91	2.32	0.74	0.74
58.02	99.77	58.36	1.90	110.82	2.28	0.75	0.75
58.09	105.22	61.89	1.84	113.73	2.26	0.76	0.76
58.17	108.62	64.01	1.81	116.09	2.26	0.77	0.77
58.23	109.72	64.57	1.83	117.85	2.26	0.77	0.77
58.28	109.49	64.23	1.86	119.20	2.27	0.77	0.77
58.37	108.18	63.12	1.91	120.41	2.29	0.76	0.76
58.43	105.44	61.09	1.98	121.15	2.31	0.76	0.76
58.48	100.57	57.67	2.10	121.32	2.35	0.75	0.75
58.57	95.05	53.81	2.26	121.56	2.39	0.74	0.74
58.62	88.67	49.47	2.46	121.83	2.44	0.73	0.73
58.67	82.27	45.20	2.69	121.69	2.48	0.72	0.72
58.78	76.27	41.23	2.94	121.38	2.53	0.71	0.71
58.82	69.93	37.13	3.25	120.73	2.59	0.70	0.70
58.88	63.59	33.12	3.61	119.62	2.64	2.20	2.20
58.97	57.66	29.45	3.98	117.21	2.70	1.98	1.98
59.01	52.33	26.22	4.37	114.63	2.75	1.79	1.79
59.07	48.78	24.09	4.66	112.37	2.79	1.66	1.66
59.12	45.34	22.06	4.97	109.61	2.82	1.53	1.53
59.19	42.74	20.56	5.17	106.39	2.84	1.43	1.43
59.27	41.35	19.78	5.22	103.23	2.85	1.38	1.38
59.32	39.96	19.01	5.27	100.24	2.86	1.33	1.33
59.42	39.47	18.76	5.22	97.90	2.85	1.31	1.31
59.47	38.99	18.52	5.16	95.59	2.84	1.29	1.29
59.52	38.64	18.33	5.14	94.16	2.84	1.28	1.28
59.58	38.47	18.26	5.07	92.55	2.83	1.27	1.27
59.68	38.20	18.11	5.03	91.05	2.83	1.26	1.26
59.74	38.28	18.16	4.98	90.38	2.82	1.26	1.26
59.78	38.65	18.53	4.60	85.25	2.78	1.27	1.27
59.88	38.74	18.73	4.29	80.36	2.74	1.27	1.27

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
59.93	39.33	19.26	3.91	75.24	2.69	1.29	1.29
60.00	40.82	20.43	3.39	69.20	2.61	0.63	1.34
60.05	43.76	22.60	2.77	62.70	2.50	0.11	0.64
60.13	46.96	25.08	2.24	56.21	2.38	0.08	0.65
60.18	46.63	25.36	1.96	49.61	2.30	0.06	0.65
60.25	48.94	27.71	1.00	27.71	2.15	0.03	0.66
60.33	54.14	-1.00	1.00	-1.00	-1.00	N/A	N/A
60.38	58.50	-1.00	1.00	-1.00	-1.00	N/A	N/A

Abbreviations

q_t:	Total cone resistance
K_c:	Cone resistance correction factor due to fines
$Q_{tn,cs}$:	Adjusted and corrected cone resistance due to fines
I_c:	Soil behavior type index
$S_{u(liq)}/\sigma'_v$:	Calculated liquefied undrained strength ratio
$S_{u(peak)}/\sigma'_v$:	Calculated peak undrained strength ratio

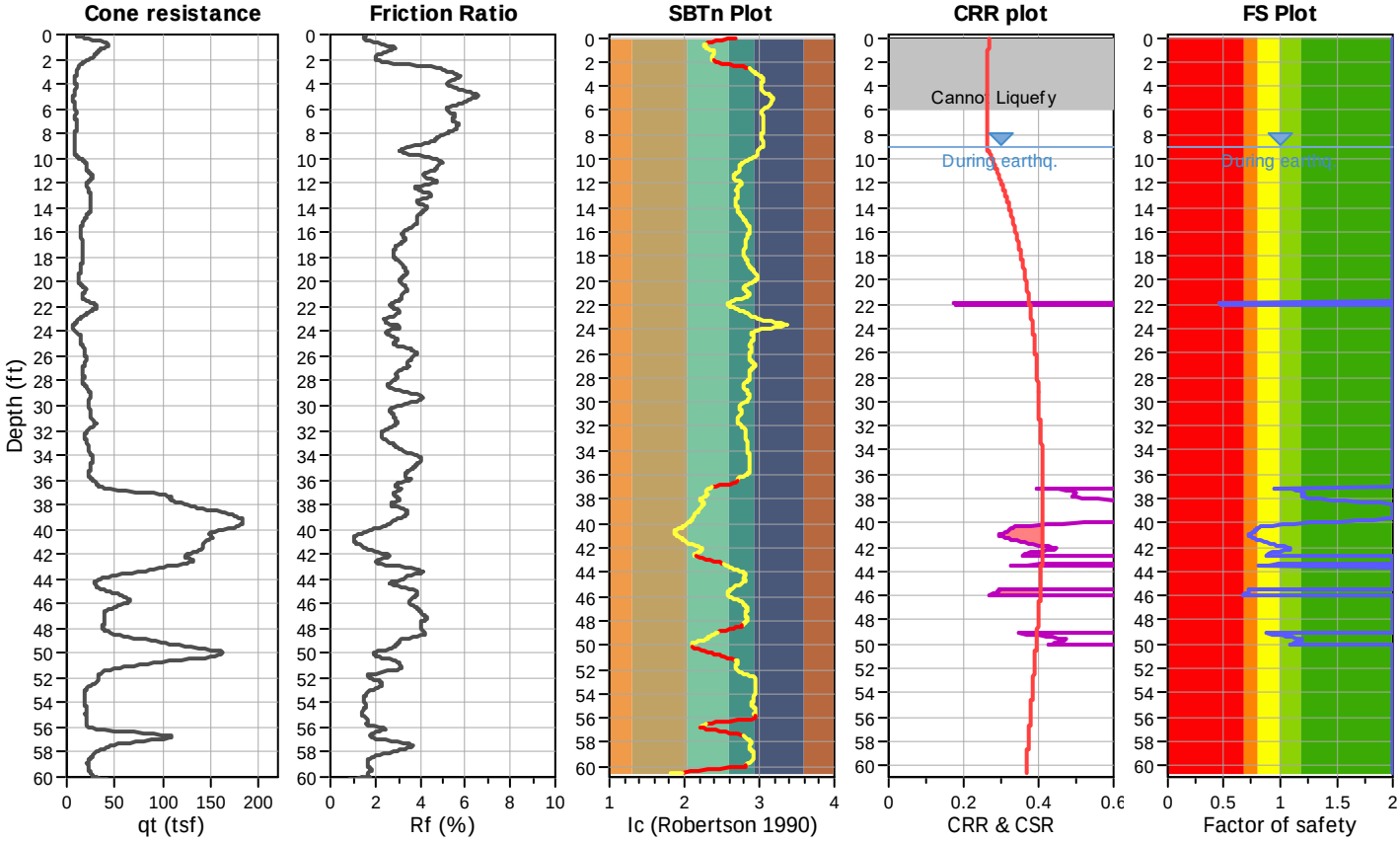
LIQUEFACTION ANALYSIS REPORT

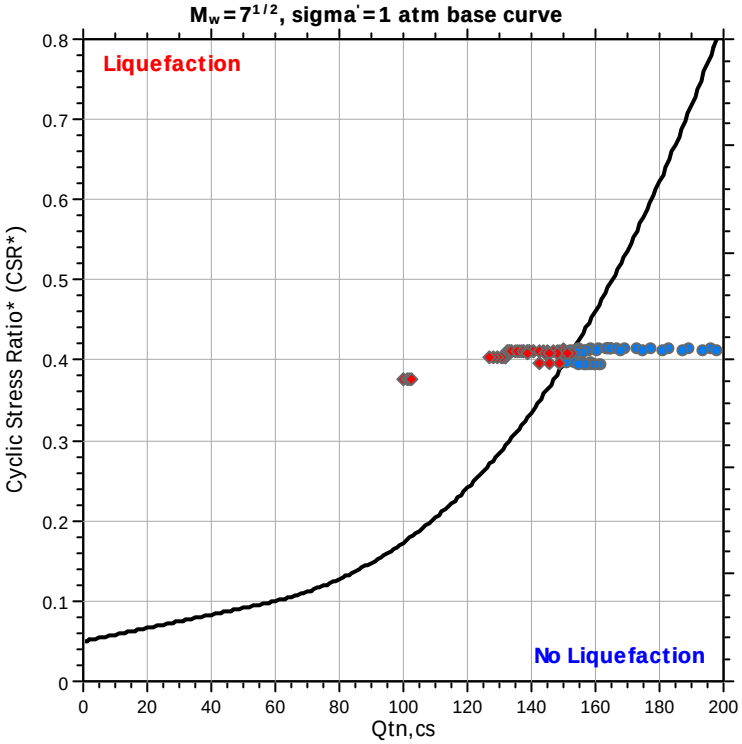
Project title : W1301-06-01 **Location : Perry Street**

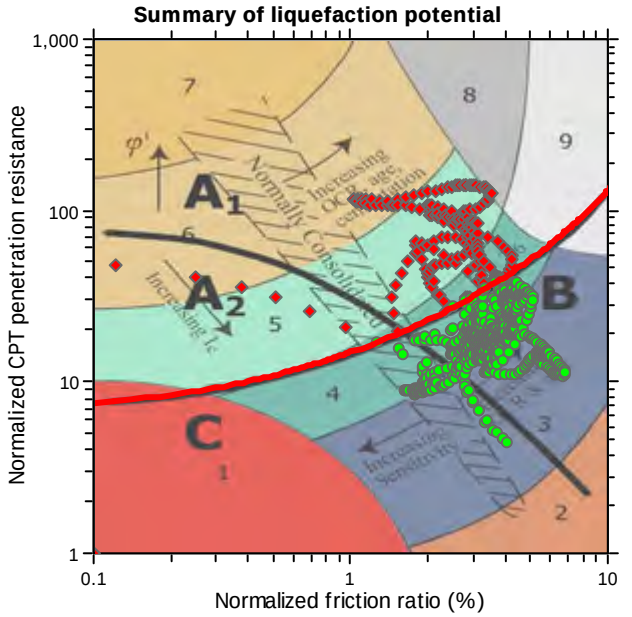
CPT file : CPT-3

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	12.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	9.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	.	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	6.68	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

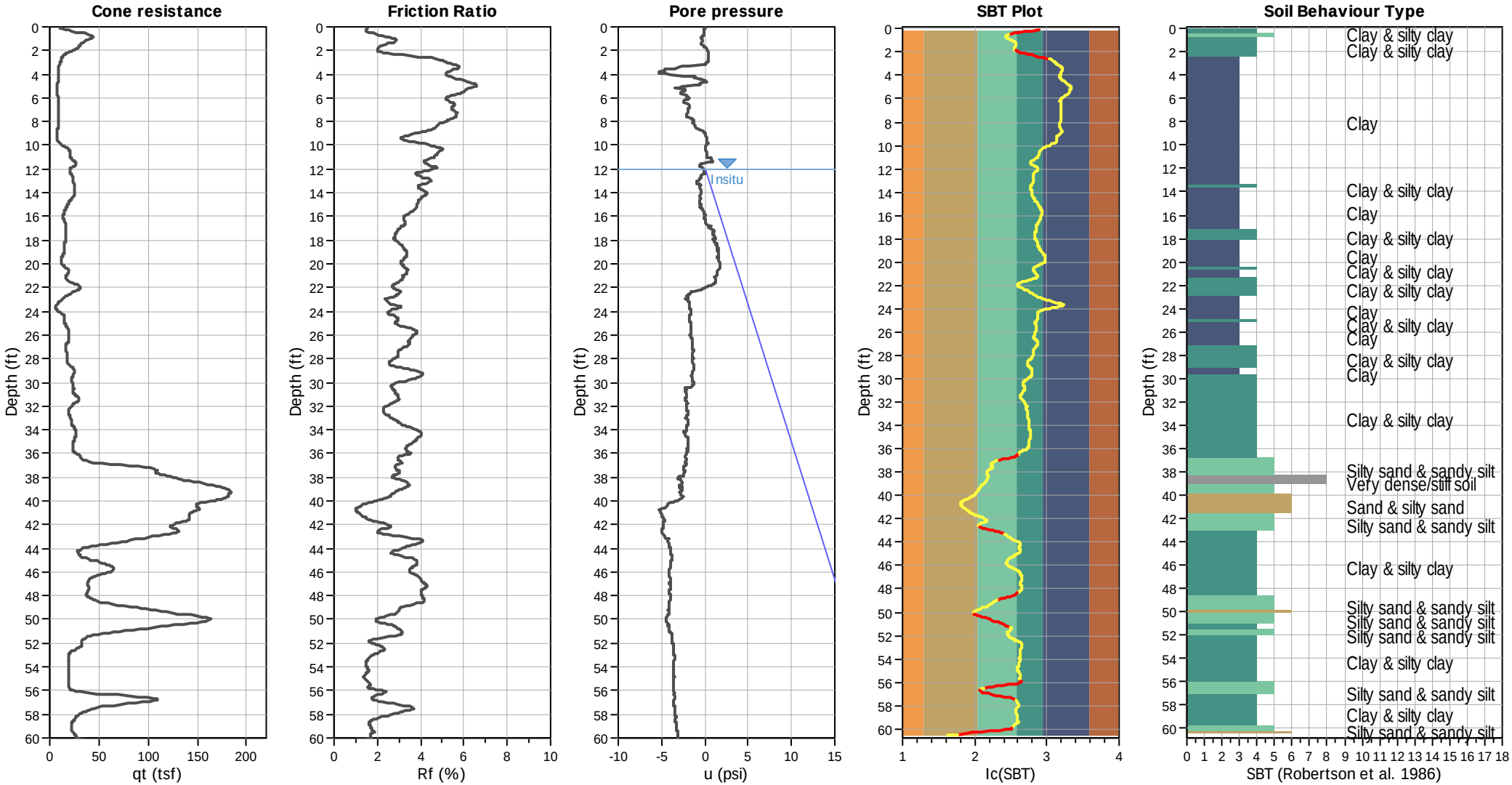






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



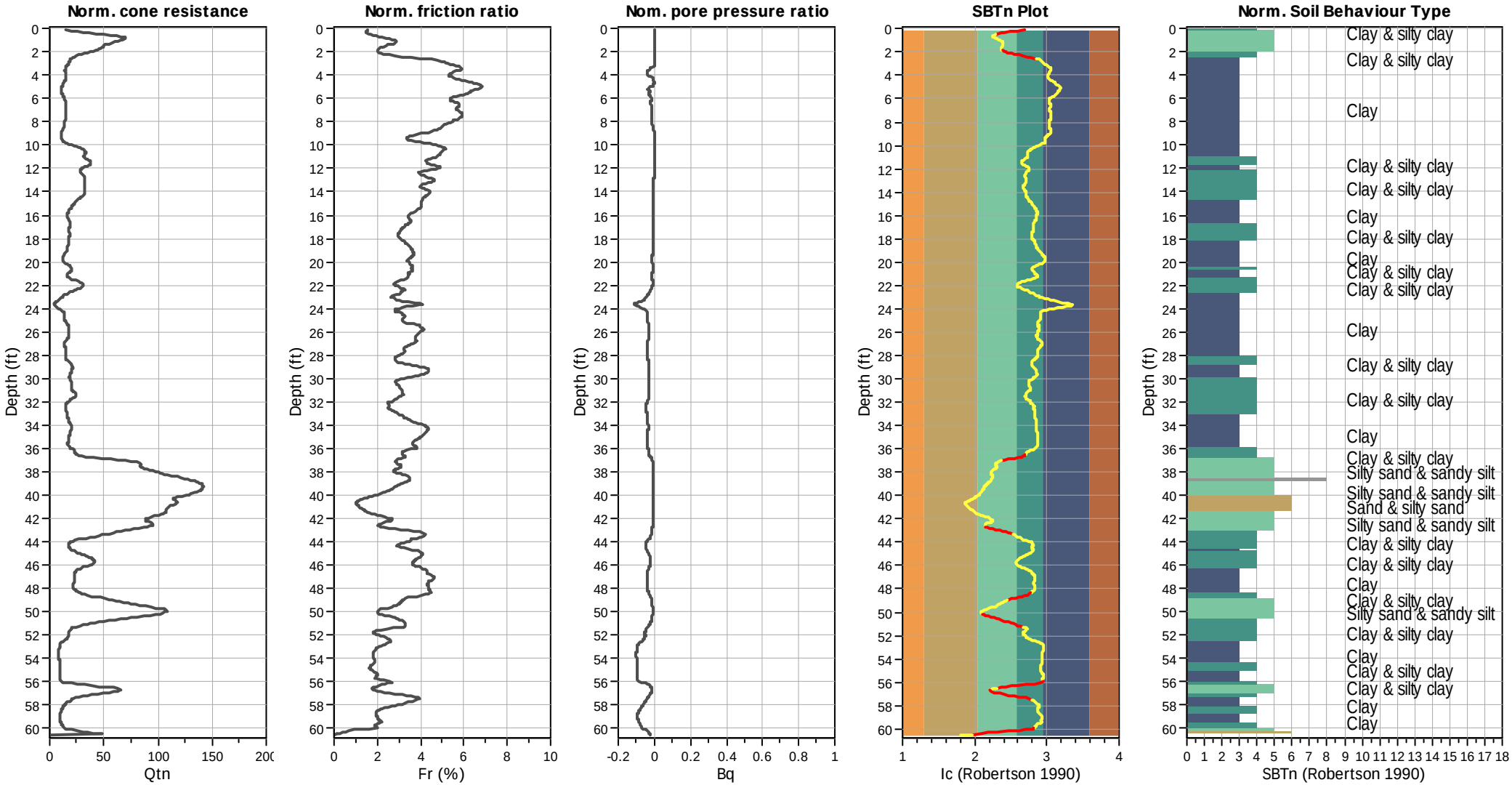
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	9.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	.	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.68	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	12.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

CPT basic interpretation plots (normalized)



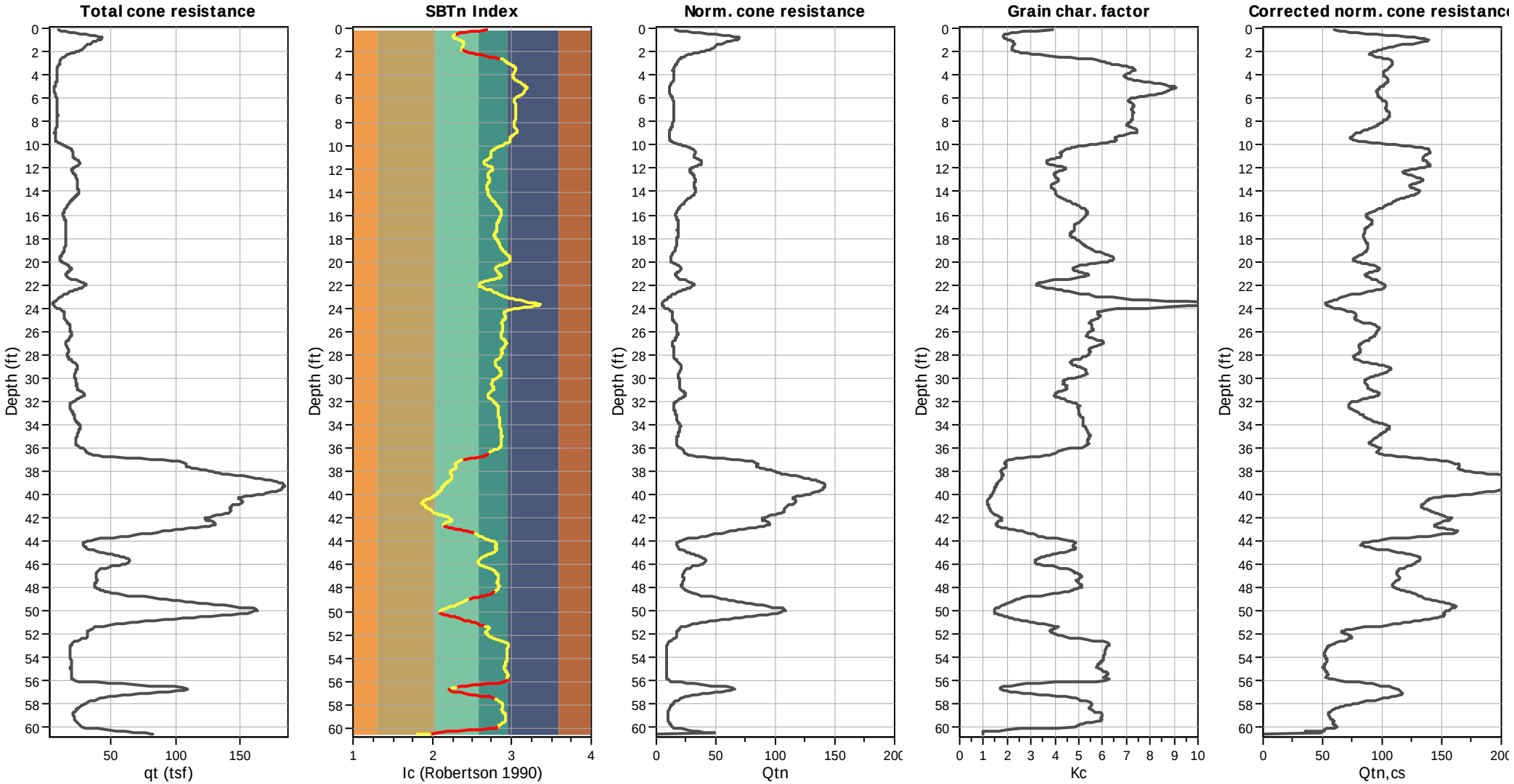
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	9.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	.	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.68	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	12.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

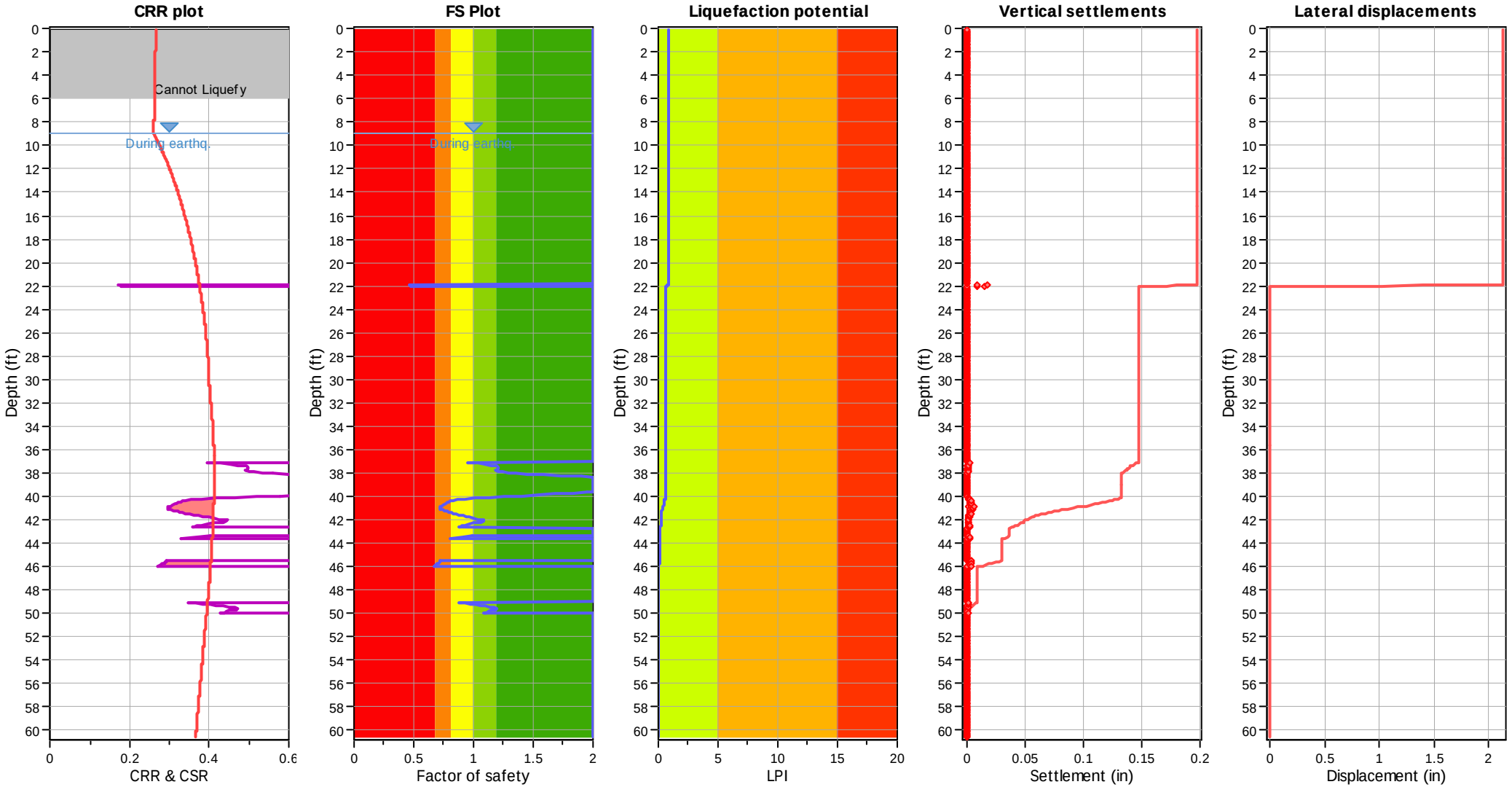
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	9.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	.	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.68	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	12.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	9.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	.	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.68	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	12.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

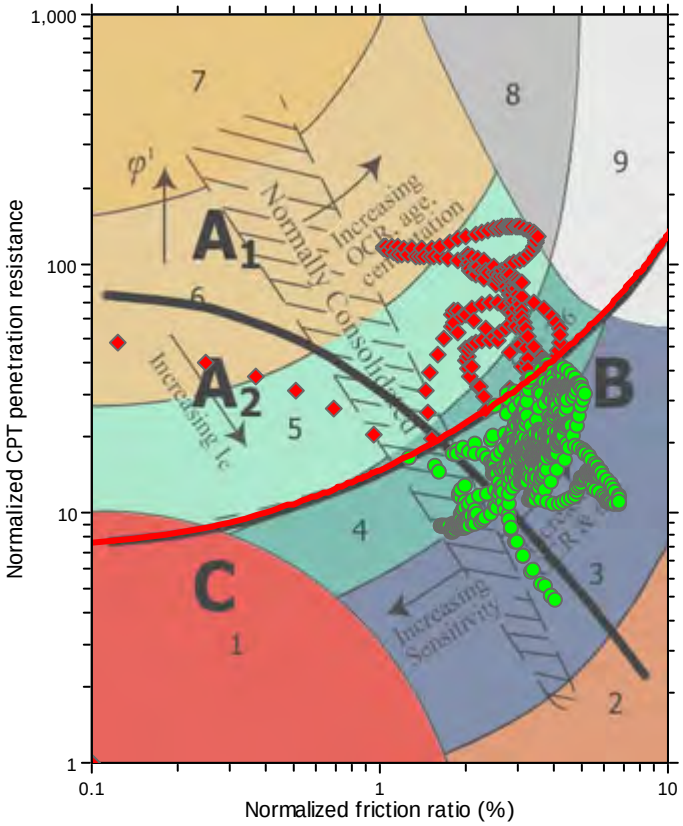
F.S. color scheme

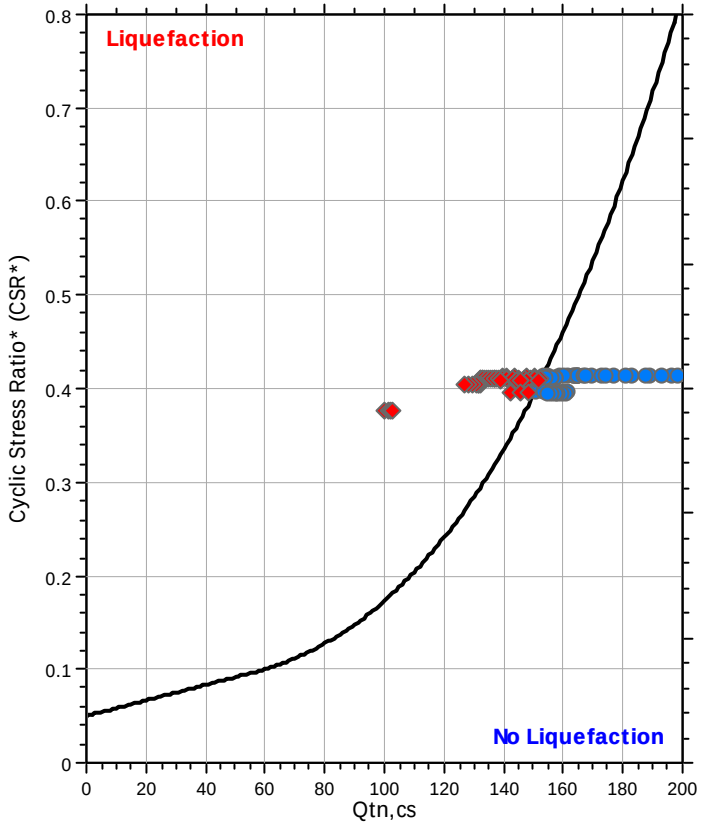
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

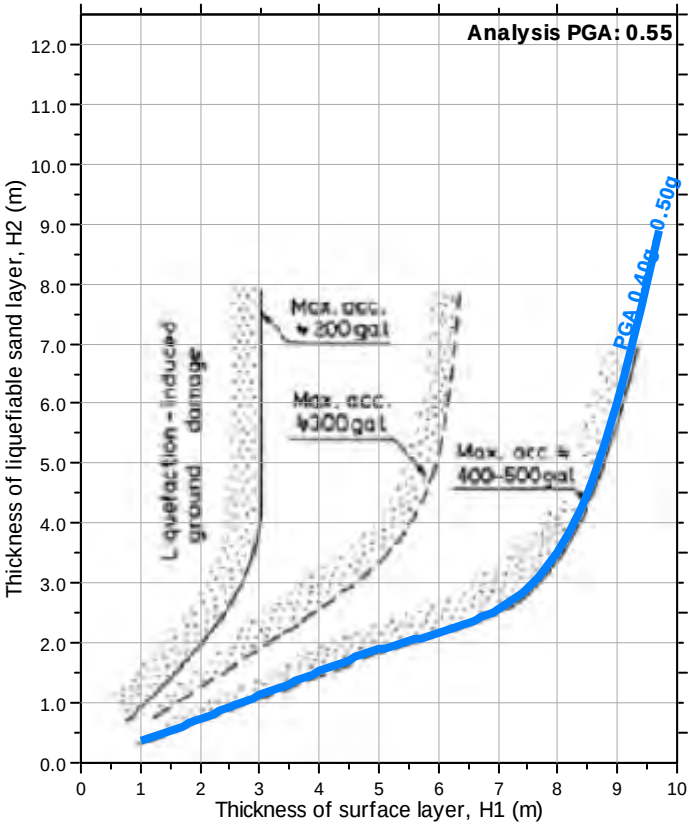
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



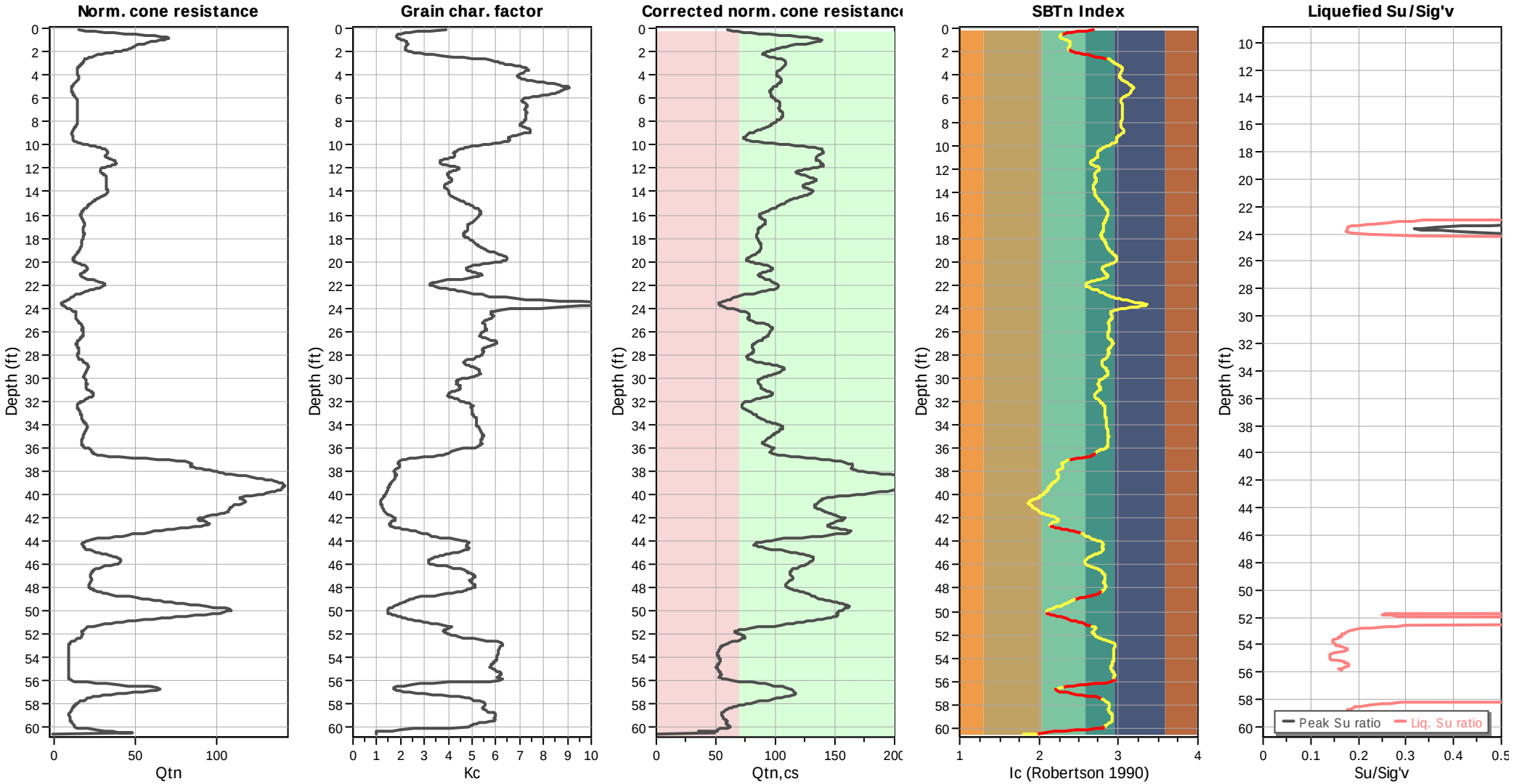




Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	9.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	.	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.68	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	12.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

Check for strength loss plots (Robertson (2010))



Input parameters and analysis data

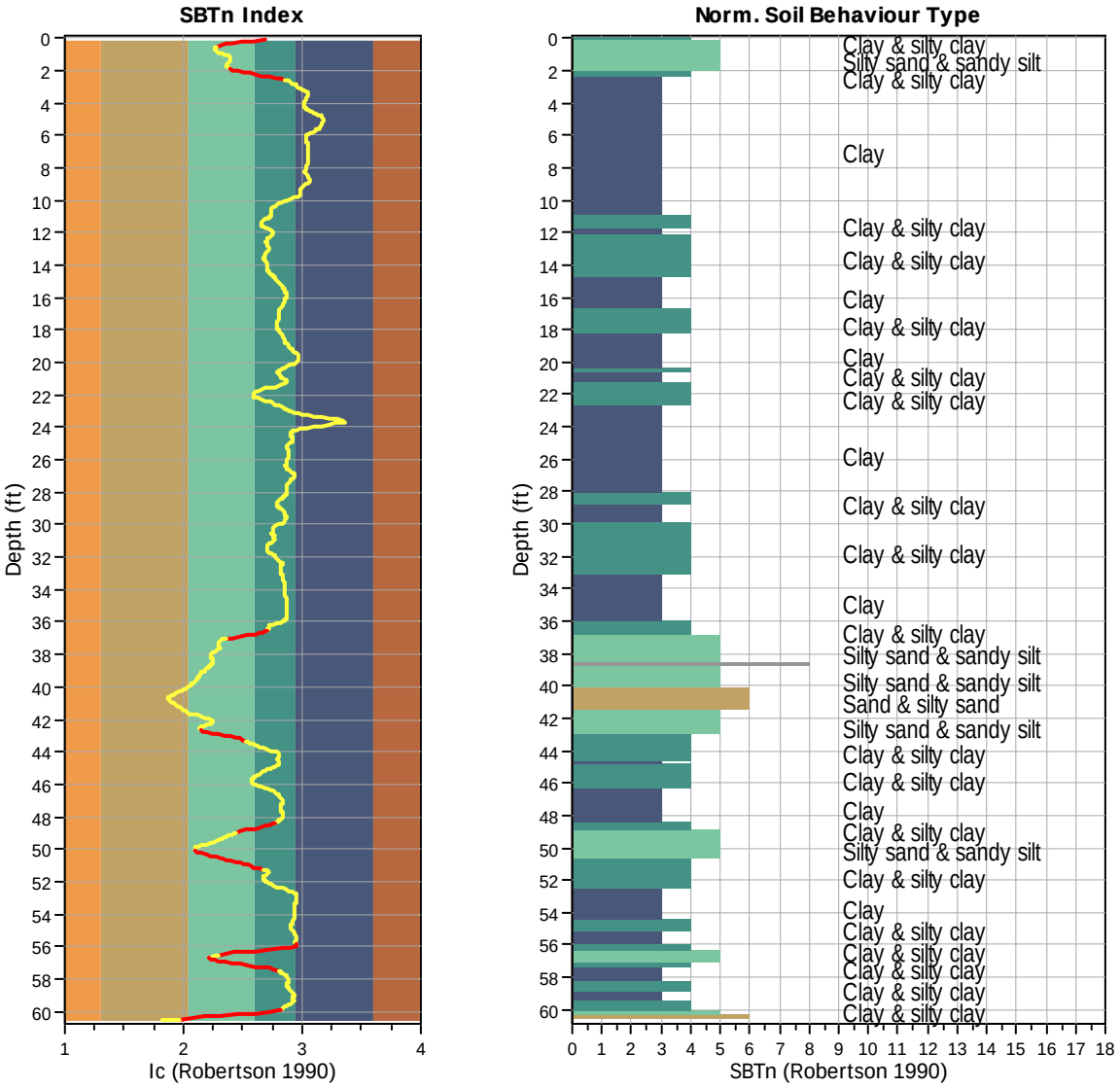
Analysis method:	NCEER (1998)	Depth to water table (erthq.):	9.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	.	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.68	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	12.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

TRANSITION LAYER DETECTION ALGORITHM REPORT
Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between 1.80 < I_c < 3.0) and a rate of change of I_c. Transitions typically occur when the rate of change of I_c is fast (i.e. delta I_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



Transition layer algorithm properties		General statistics	
I_c minimum check value:	1.70	Total points in CPT file:	924
I_c maximum check value:	3.00	Total points excluded:	101
I_c change ratio value:	0.0250	Exclusion percentage:	10.93%
Minimum number of points in layer:	4	Number of layers detected:	9

Transition layer No	Number of points	Depth	SBT_n number	SBT_n description
Transition layer 1	8	Start depth: 0.08 (ft)	4	Clay & silty clay
		End depth: 0.55 (ft)	5	Silty sand & sandy silt
Transition layer 2	12	Start depth: 1.94 (ft)	5	Silty sand & sandy silt
		End depth: 2.63 (ft)	3	Clay
Transition layer 3	9	Start depth: 36.58 (ft)	4	Clay & silty clay
		End depth: 37.08 (ft)	5	Silty sand & sandy silt
Transition layer 4	11	Start depth: 42.73 (ft)	5	Silty sand & sandy silt
		End depth: 43.39 (ft)	4	Clay & silty clay
Transition layer 5	10	Start depth: 48.44 (ft)	3	Clay
		End depth: 49.03 (ft)	5	Silty sand & sandy silt
Transition layer 6	18	Start depth: 50.22 (ft)	5	Silty sand & sandy silt
		End depth: 51.34 (ft)	4	Clay & silty clay
Transition layer 7	11	Start depth: 55.93 (ft)	3	Clay
		End depth: 56.57 (ft)	5	Silty sand & sandy silt
Transition layer 8	13	Start depth: 56.78 (ft)	5	Silty sand & sandy silt
		End depth: 57.55 (ft)	3	Clay
Transition layer 9	9	Start depth: 59.99 (ft)	4	Clay & silty clay
		End depth: 60.53 (ft)	6	Sand & silty sand

Start depth: Depth where the transition layer begins
End depth: Depth where the transition layer ends

:: Field input data ::

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
1	0.08	6.98	0.12	0.00	39.64	101.91
2	0.15	9.12	0.15	-0.10	34.72	104.11
3	0.23	11.45	0.17	-0.10	30.19	106.24
4	0.30	14.31	0.20	-0.10	27.00	108.14
5	0.35	16.63	0.23	-0.10	24.91	109.97
6	0.43	24.86	0.36	-0.10	23.15	112.11
7	0.50	35.32	0.50	-0.10	21.93	113.89
8	0.55	40.24	0.58	-0.10	21.22	115.50
9	0.61	45.70	0.74	-0.10	20.99	116.97
10	0.70	46.23	0.92	-0.10	20.93	118.25
11	0.73	46.05	0.99	-0.19	21.19	119.21
12	0.80	45.61	1.10	-0.19	21.77	119.80
13	0.89	44.09	1.25	-0.38	22.53	120.21
14	0.93	43.37	1.31	-0.38	23.57	120.37
15	1.01	41.94	1.32	-0.38	24.47	120.30
16	1.09	39.71	1.19	-0.29	25.28	120.07
17	1.13	38.45	1.14	-0.19	25.90	119.67
18	1.19	34.52	1.06	-0.19	26.10	119.10
19	1.29	32.46	0.94	-0.38	26.17	118.43
20	1.34	31.03	0.82	-0.43	26.12	117.70
21	1.39	30.14	0.70	-0.43	25.91	117.07
22	1.45	30.85	0.64	-0.48	26.00	116.42
23	1.54	30.49	0.63	-0.10	25.39	115.89
24	1.59	29.87	0.62	-0.10	25.05	115.42
25	1.67	31.39	0.62	-0.10	25.00	114.98
26	1.72	27.36	0.62	0.10	25.14	114.63
27	1.79	32.28	0.61	0.19	25.44	114.21
28	1.85	28.62	0.58	0.19	25.91	113.70
29	1.94	25.04	0.52	0.19	26.55	113.17
30	1.98	23.79	0.48	0.29	27.75	112.60
31	2.04	22.36	0.40	0.38	28.77	112.07
32	2.13	19.76	0.36	0.48	30.94	111.51
33	2.17	17.97	0.36	0.48	33.14	111.06
34	2.24	15.74	0.38	0.38	35.62	110.88
35	2.32	14.49	0.40	0.38	38.52	110.83
36	2.39	13.41	0.44	0.38	41.80	110.94
37	2.43	12.79	0.46	0.38	44.82	111.13
38	2.52	11.89	0.53	0.38	47.47	111.34
39	2.58	11.45	0.56	0.38	49.47	111.54
40	2.63	11.45	0.57	0.48	51.08	111.72
41	2.72	11.45	0.56	0.48	52.42	111.88
42	2.78	11.71	0.56	0.48	53.60	112.01
43	2.83	11.71	0.56	0.48	54.34	112.03
44	2.89	11.54	0.56	0.48	54.96	111.98
45	2.98	11.18	0.58	0.29	55.60	111.89
46	3.03	10.82	0.58	0.29	56.57	111.80
47	3.09	10.37	0.57	0.10	57.74	111.70
48	3.18	9.84	0.55	0.00	58.94	111.58

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
49	3.22	9.66	0.54	-0.19	60.02	111.43
50	3.32	9.03	0.54	-1.72	60.92	111.26
51	3.37	8.94	0.54	-2.58	61.61	111.08
52	3.42	8.94	0.53	-3.16	62.08	110.92
53	3.52	8.94	0.51	-3.54	62.25	110.76
54	3.57	8.94	0.51	-3.92	62.20	110.60
55	3.61	8.94	0.50	-4.69	61.70	110.46
56	3.68	8.94	0.49	-4.69	61.18	110.34
57	3.77	9.03	0.47	-5.26	60.70	110.27
58	3.83	9.12	0.45	-4.64	60.28	110.28
59	3.91	9.30	0.45	-5.26	59.86	110.28
60	3.95	9.30	0.46	-4.59	59.61	110.36
61	4.02	9.48	0.48	-3.92	59.50	110.48
62	4.12	9.66	0.50	-2.49	59.65	110.64
63	4.14	9.66	0.50	-1.34	59.87	110.80
64	4.22	9.66	0.53	-1.05	59.94	110.85
65	4.27	9.66	0.55	-1.24	60.48	110.97
66	4.37	9.48	0.56	-0.48	61.14	111.02
67	4.42	9.39	0.54	-0.67	61.98	110.99
68	4.46	9.39	0.48	-0.38	62.95	110.94
69	4.57	8.85	0.54	0.10	64.57	110.80
70	4.61	8.59	0.53	0.19	65.81	110.62
71	4.67	8.14	0.51	-0.19	66.92	110.42
72	4.76	7.87	0.50	-0.67	68.12	110.21
73	4.81	6.62	0.50	-0.38	69.61	110.08
74	4.90	7.15	0.49	-0.67	70.46	109.85
75	4.96	7.15	0.48	-1.15	71.23	109.60
76	5.00	7.06	0.46	-2.39	71.76	109.39
77	5.05	7.06	0.45	-2.58	72.00	109.24
78	5.14	7.06	0.44	-2.87	71.11	109.16
79	5.20	6.89	0.42	-3.45	70.63	109.06
80	5.30	6.89	0.42	-2.20	70.28	108.97
81	5.35	7.15	0.43	-2.20	69.94	108.93
82	5.39	7.42	0.44	-2.30	69.70	108.92
83	5.48	7.42	0.43	-2.78	69.32	108.94
84	5.55	7.33	0.43	-2.78	68.72	109.01
85	5.59	7.33	0.43	-2.78	68.01	109.09
86	5.64	7.33	0.44	-2.78	67.02	109.17
87	5.74	7.60	0.44	-2.11	65.97	109.22
88	5.79	7.87	0.44	-2.11	64.59	109.30
89	5.84	8.05	0.44	-2.11	63.30	109.45
90	5.94	8.67	0.44	-2.01	62.19	109.66
91	5.97	9.03	0.44	-1.91	61.21	109.86
92	6.05	9.57	0.43	-1.82	60.68	110.05
93	6.14	9.75	0.47	-2.01	60.40	110.25
94	6.19	9.84	0.50	-2.30	60.30	110.45
95	6.24	9.66	0.51	-2.39	60.47	110.61
96	6.33	9.30	0.52	-2.39	60.75	110.72

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
97	6.38	9.21	0.53	-2.39	61.26	110.81
98	6.44	9.12	0.54	-2.39	61.59	110.83
99	6.52	9.12	0.53	-2.01	61.80	110.82
100	6.59	9.12	0.51	-1.82	61.92	110.79
101	6.64	9.12	0.49	-1.82	61.79	110.76
102	6.70	9.30	0.49	-1.82	61.73	110.71
103	6.78	9.48	0.50	-1.82	61.43	110.66
104	6.83	9.39	0.50	-1.72	61.40	110.64
105	6.89	9.39	0.50	-2.01	61.36	110.68
106	6.98	9.12	0.50	-2.01	61.41	110.75
107	7.03	9.39	0.50	-2.01	61.44	110.86
108	7.09	9.12	0.52	-2.01	61.53	110.97
109	7.18	9.39	0.53	-2.01	61.66	111.08
110	7.23	9.39	0.53	-2.01	61.77	111.20
111	7.29	9.75	0.55	-2.01	61.72	111.26
112	7.38	9.84	0.56	-2.11	61.70	111.24
113	7.42	9.75	0.57	-2.11	61.62	111.23
114	7.48	9.75	0.57	-2.11	61.64	111.21
115	7.58	9.48	0.53	-2.11	61.67	111.18
116	7.62	9.39	0.49	-1.91	61.71	111.07
117	7.68	9.21	0.51	-1.63	61.68	110.91
118	7.78	9.30	0.52	-1.44	61.56	110.74
119	7.81	9.21	0.51	-1.44	61.33	110.53
120	7.88	9.21	0.49	-1.34	61.18	110.40
121	7.97	9.21	0.47	-1.35	61.12	110.31
122	8.01	9.21	0.47	-1.35	60.86	110.17
123	8.11	9.21	0.45	-1.36	60.57	109.99
124	8.14	9.21	0.46	-1.35	60.30	109.80
125	8.22	9.12	0.44	-1.34	60.14	109.62
126	8.31	9.03	0.43	-1.15	60.21	109.45
127	8.35	9.03	0.42	-1.15	60.41	109.24
128	8.41	8.85	0.41	-1.15	60.87	108.99
129	8.50	8.76	0.40	-1.15	61.30	108.67
130	8.56	8.41	0.39	-0.96	61.79	108.33
131	8.61	8.05	0.38	-0.77	62.17	107.96
132	8.68	7.51	0.35	-0.67	62.56	107.58
133	8.75	7.33	0.33	-0.38	62.70	107.14
134	8.80	7.15	0.31	-0.10	62.76	106.71
135	8.89	7.15	0.29	-0.10	62.58	106.30
136	8.94	7.15	0.28	-0.10	62.05	105.91
137	9.00	7.15	0.25	0.10	61.14	105.60
138	9.08	7.24	0.25	0.10	60.04	105.31
139	9.15	7.33	0.25	0.10	58.97	105.09
140	9.20	7.51	0.25	0.10	58.15	104.88
141	9.28	7.69	0.24	0.19	57.58	104.68
142	9.35	7.87	0.23	0.19	57.31	104.58
143	9.40	7.87	0.23	0.19	57.20	104.59
144	9.45	7.60	0.22	0.19	57.17	104.71

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
145	9.55	7.33	0.22	0.19	57.35	104.96
146	9.59	7.24	0.22	0.19	57.19	105.48
147	9.69	7.42	0.25	0.19	57.00	106.36
148	9.74	7.78	0.28	0.29	56.15	107.40
149	9.79	8.14	0.32	0.19	55.03	108.80
150	9.84	9.66	0.38	0.38	53.69	110.16
151	9.94	11.27	0.49	0.19	52.29	111.48
152	10.00	13.15	0.56	0.00	50.55	112.75
153	10.09	15.38	0.73	0.00	48.92	113.93
154	10.13	16.28	0.79	0.00	47.45	114.95
155	10.18	17.26	0.86	0.10	46.33	115.83
156	10.24	19.23	0.94	0.10	45.43	116.55
157	10.33	20.21	1.01	0.10	44.80	117.13
158	10.37	20.39	1.03	0.10	44.03	117.41
159	10.43	20.75	1.06	0.10	43.31	117.62
160	10.52	21.02	1.09	0.19	42.66	117.76
161	10.59	21.19	1.09	0.29	42.33	117.81
162	10.64	21.37	0.96	0.29	42.16	117.78
163	10.70	21.64	0.96	0.29	42.34	117.70
164	10.78	21.73	0.96	0.19	42.42	117.61
165	10.83	21.37	0.97	0.19	42.40	117.49
166	10.94	20.66	0.96	0.19	42.47	117.38
167	10.99	18.96	0.96	0.19	42.53	117.39
168	11.03	19.94	0.96	0.57	41.95	117.48
169	11.09	20.30	0.96	0.67	41.21	117.60
170	11.17	20.48	0.97	0.67	40.18	117.81
171	11.24	21.55	0.97	0.77	39.11	118.10
172	11.33	25.75	1.00	0.86	38.18	118.40
173	11.37	27.36	1.02	0.86	37.82	118.68
174	11.44	30.05	1.10	0.38	37.75	118.91
175	11.52	30.85	1.17	-0.19	37.77	119.11
176	11.57	29.15	1.19	-0.48	37.97	119.22
177	11.63	26.38	1.24	-0.67	38.69	119.21
178	11.72	24.41	1.21	-0.48	39.77	119.15
179	11.76	23.70	1.19	-0.67	41.00	118.93
180	11.83	22.18	1.12	-0.48	42.25	118.55
181	11.92	21.37	1.05	-0.29	43.28	118.12
182	11.94	20.39	1.04	-0.19	43.64	117.65
183	12.02	20.12	0.94	-0.10	43.65	117.22
184	12.11	19.67	0.82	-0.10	43.45	116.79
185	12.16	19.50	0.78	-0.10	42.79	116.45
186	12.22	19.58	0.76	-0.10	42.08	116.21
187	12.31	20.30	0.76	0.00	41.31	116.05
188	12.36	20.66	0.76	0.00	40.83	116.10
189	12.42	22.00	0.75	-0.10	40.58	116.33
190	12.50	22.62	0.79	-0.48	40.38	116.64
191	12.56	22.89	0.85	-0.38	40.26	116.98
192	12.62	23.25	0.95	-0.38	40.35	117.36

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
193	12.70	23.61	1.00	-0.38	40.49	117.73
194	12.77	24.23	1.04	-0.48	40.81	118.09
195	12.81	24.14	1.06	-0.57	41.13	118.38
196	12.91	24.32	1.13	-0.67	41.42	118.57
197	12.96	24.50	1.14	-0.77	41.46	118.66
198	13.01	24.68	1.15	-0.77	41.51	118.69
199	13.06	24.41	1.13	-0.96	41.38	118.62
200	13.16	23.88	1.08	-0.96	41.11	118.52
201	13.21	24.41	1.06	-0.96	40.69	118.35
202	13.26	23.79	1.03	-0.57	40.24	118.12
203	13.36	24.41	0.95	-0.48	39.76	117.87
204	13.40	24.86	0.92	-0.57	39.51	117.74
205	13.46	24.86	0.90	-0.67	39.34	117.72
206	13.55	24.59	0.85	-0.57	39.28	117.74
207	13.60	24.86	0.84	-0.67	39.21	117.82
208	13.67	24.50	0.98	-0.57	39.45	117.98
209	13.75	24.86	1.04	-0.48	39.86	118.16
210	13.80	25.31	1.07	-0.48	40.09	118.35
211	13.86	25.40	1.10	-0.48	40.30	118.57
212	13.95	25.13	1.13	-0.51	40.59	118.76
213	13.99	24.95	1.14	-0.51	40.63	118.80
214	14.06	26.11	1.13	-0.51	40.62	118.74
215	14.15	26.20	1.10	-0.48	40.72	118.62
216	14.19	25.84	1.08	-0.57	40.84	118.42
217	14.26	24.95	1.03	-0.57	40.96	118.17
218	14.35	24.50	0.97	-0.57	41.12	117.90
219	14.40	23.43	0.93	-0.57	41.48	117.57
220	14.45	22.45	0.89	-0.48	41.87	117.20
221	14.55	21.55	0.86	-0.57	42.31	116.82
222	14.58	21.10	0.86	-0.67	42.70	116.44
223	14.65	20.39	0.81	-0.57	43.22	116.11
224	14.74	20.03	0.76	-0.57	43.80	115.81
225	14.77	19.76	0.75	-0.57	44.29	115.53
226	14.84	19.14	0.71	-0.57	44.76	115.26
227	14.94	18.78	0.71	-0.57	45.19	114.97
228	15.00	17.97	0.70	-0.48	45.60	114.73
229	15.03	17.71	0.69	-0.57	46.06	114.53
230	15.11	17.26	0.67	-0.48	46.59	114.28
231	15.19	16.90	0.65	-0.57	47.10	114.08
232	15.24	16.81	0.65	-0.48	47.54	113.85
233	15.29	16.54	0.63	-0.38	47.87	113.58
234	15.39	15.83	0.59	-0.29	48.26	113.29
235	15.42	15.83	0.59	-0.29	48.59	113.01
236	15.49	15.47	0.57	-0.19	48.95	112.69
237	15.59	14.84	0.53	-0.10	49.35	112.35
238	15.63	14.49	0.52	-0.10	49.56	112.01
239	15.69	14.13	0.50	-0.10	49.72	111.71
240	15.78	13.68	0.47	-0.10	49.82	111.39

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
241	15.84	13.41	0.46	0.00	49.85	111.10
242	15.89	13.68	0.44	0.00	49.75	110.88
243	15.95	13.50	0.43	0.00	49.65	110.73
244	16.04	13.68	0.42	-0.10	49.61	110.65
245	16.08	13.68	0.42	-0.10	49.47	110.70
246	16.18	13.95	0.42	-0.10	49.25	110.83
247	16.24	13.95	0.44	0.10	49.20	111.00
248	16.28	13.95	0.46	0.10	48.83	111.20
249	16.36	14.49	0.49	0.10	48.52	111.44
250	16.43	15.02	0.51	0.10	48.22	111.69
251	16.47	15.02	0.52	0.10	48.08	111.95
252	16.54	16.01	0.52	0.10	47.74	112.13
253	16.63	16.36	0.53	0.19	47.27	112.26
254	16.68	16.45	0.54	0.19	46.87	112.27
255	16.78	16.19	0.55	0.57	46.64	112.20
256	16.83	16.54	0.53	0.57	46.37	112.09
257	16.87	16.63	0.51	0.67	46.37	111.97
258	16.93	16.05	0.48	0.38	46.33	111.81
259	17.01	15.56	0.46	0.77	46.28	111.62
260	17.09	15.29	0.45	0.77	46.15	111.44
261	17.15	15.20	0.45	1.05	46.17	111.28
262	17.20	15.47	0.44	1.05	46.35	111.17
263	17.27	15.47	0.44	1.05	46.31	111.13
264	17.35	15.56	0.45	0.96	46.16	111.15
265	17.40	15.47	0.45	0.96	45.73	111.18
266	17.45	15.38	0.46	0.96	45.38	111.20
267	17.55	16.10	0.46	0.96	45.19	111.24
268	17.59	16.36	0.46	1.05	45.05	111.27
269	17.65	17.08	0.45	1.05	45.04	111.26
270	17.75	16.72	0.45	1.15	45.09	111.24
271	17.79	16.63	0.45	1.24	45.04	111.20
272	17.87	16.28	0.45	1.24	45.23	111.17
273	17.94	15.65	0.44	0.96	45.52	111.16
274	17.98	15.38	0.44	1.05	46.03	111.16
275	18.05	15.38	0.44	1.15	46.51	111.20
276	18.14	15.38	0.45	1.15	46.98	111.23
277	18.18	15.38	0.46	1.15	47.31	111.27
278	18.24	15.47	0.47	1.34	47.55	111.36
279	18.34	15.47	0.48	1.34	47.83	111.46
280	18.39	15.47	0.48	1.24	48.11	111.56
281	18.44	15.56	0.48	1.44	48.33	111.63
282	18.54	15.56	0.49	1.44	48.64	111.69
283	18.59	15.38	0.50	1.44	48.90	111.73
284	18.64	15.29	0.50	1.63	49.17	111.73
285	18.74	15.20	0.49	1.53	49.52	111.73
286	18.79	15.02	0.50	1.44	49.92	111.73
287	18.84	15.02	0.50	1.53	50.28	111.69
288	18.92	14.76	0.49	1.44	50.63	111.64

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
289	18.97	14.58	0.49	1.53	51.07	111.55
290	19.04	14.40	0.49	1.53	51.56	111.43
291	19.14	14.31	0.48	1.63	52.18	111.26
292	19.17	14.13	0.48	1.63	52.78	111.05
293	19.24	13.59	0.47	1.63	53.48	110.81
294	19.34	13.15	0.44	1.63	54.23	110.57
295	19.39	12.43	0.43	1.44	54.80	110.24
296	19.43	12.16	0.41	1.63	55.38	109.88
297	19.52	11.63	0.39	1.44	56.00	109.53
298	19.56	11.45	0.39	1.63	56.47	109.22
299	19.63	11.27	0.35	1.63	56.73	108.94
300	19.73	11.09	0.33	1.63	56.82	108.74
301	19.78	11.09	0.34	1.63	56.77	108.54
302	19.83	11.09	0.35	1.72	56.76	108.46
303	19.90	11.36	0.33	1.72	56.35	108.54
304	19.96	11.45	0.35	1.72	55.72	108.91
305	20.03	11.40	0.33	1.72	55.09	109.51
306	20.09	11.36	0.36	1.72	53.80	110.15
307	20.16	12.79	0.41	1.82	51.96	110.86
308	20.23	14.49	0.48	1.82	50.54	111.73
309	20.31	15.65	0.56	1.72	49.27	112.55
310	20.35	17.80	0.59	1.72	48.02	113.32
311	20.42	20.21	0.63	1.72	46.89	113.89
312	20.50	21.19	0.73	1.63	45.95	114.31
313	20.55	21.37	0.76	1.53	45.81	114.53
314	20.62	21.64	0.75	1.34	45.70	114.56
315	20.70	20.39	0.68	1.34	45.87	114.46
316	20.75	20.39	0.65	1.34	46.39	114.23
317	20.82	17.17	0.63	1.44	46.99	113.80
318	20.90	16.54	0.57	1.44	47.56	113.28
319	20.96	16.45	0.53	1.44	48.20	112.73
320	21.01	16.19	0.49	1.44	48.87	112.31
321	21.11	15.29	0.46	1.15	49.94	112.03
322	21.15	15.20	0.45	1.15	50.26	111.87
323	21.21	15.20	0.44	1.24	49.83	111.99
324	21.27	15.11	0.46	1.24	49.13	112.25
325	21.36	15.11	0.53	1.24	48.27	112.63
326	21.40	15.11	0.55	1.24	46.50	113.18
327	21.51	18.87	0.62	1.24	44.40	113.81
328	21.55	20.75	0.65	1.24	42.42	114.49
329	21.60	22.09	0.67	1.15	40.27	115.21
330	21.69	26.20	0.72	1.05	38.24	115.80
331	21.75	29.51	0.76	0.86	36.45	116.33
332	21.80	30.76	0.80	0.77	35.44	116.70
333	21.90	33.80	0.86	0.38	34.81	117.01
334	21.95	34.07	0.86	0.19	34.59	117.26
335	22.00	33.71	0.86	0.10	34.74	117.40
336	22.09	31.30	0.86	-0.10	35.18	117.43

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
337	22.11	30.32	0.87	-0.19	35.77	117.37
338	22.19	27.54	0.87	-0.38	36.72	117.17
339	22.26	27.36	0.86	-0.67	38.13	116.83
340	22.35	26.74	0.81	-1.34	39.74	116.46
341	22.39	25.49	0.79	-1.63	41.16	115.96
342	22.44	24.23	0.74	-1.63	42.32	115.15
343	22.55	20.12	0.66	-1.91	43.44	114.31
344	22.58	19.14	0.64	-1.82	44.74	113.41
345	22.65	17.35	0.53	-1.91	46.35	112.49
346	22.74	15.56	0.30	-2.11	47.94	111.51
347	22.83	14.13	0.33	-2.01	49.49	110.49
348	22.85	13.41	0.33	-2.11	50.33	109.53
349	22.94	12.79	0.33	-1.98	51.09	108.47
350	23.00	12.61	0.32	-2.20	52.15	107.50
351	23.05	12.52	0.30	-1.95	54.34	107.10
352	23.10	11.71	0.27	-1.95	56.23	106.53
353	23.18	11.18	0.25	-1.95	58.83	105.87
354	23.25	9.66	0.22	-1.72	61.52	105.14
355	23.30	8.59	0.21	-1.72	65.15	104.37
356	23.38	7.69	0.19	-1.72	69.63	103.61
357	23.45	5.90	0.18	-1.72	74.72	102.93
358	23.50	5.63	0.17	-1.72	80.69	102.31
359	23.60	4.74	0.17	-1.72	84.62	101.92
360	23.65	4.74	0.17	-1.72	86.53	101.70
361	23.70	4.65	0.17	-1.72	84.28	101.94
362	23.76	4.56	0.17	-1.72	79.47	102.32
363	23.84	5.99	0.17	-1.63	74.79	102.81
364	23.89	6.89	0.18	-1.63	69.65	103.71
365	23.99	9.75	0.22	-1.63	65.07	104.64
366	24.03	10.46	0.22	-1.63	60.93	105.62
367	24.09	11.00	0.23	-1.63	57.45	106.60
368	24.19	12.61	0.32	-1.63	55.20	107.56
369	24.24	13.50	0.34	-1.63	53.41	108.44
370	24.30	14.40	0.37	-1.72	52.68	109.12
371	24.34	14.84	0.40	-1.72	52.46	109.73
372	24.44	15.11	0.43	-1.72	52.43	110.24
373	24.50	15.56	0.45	-1.72	52.50	110.50
374	24.58	15.38	0.46	-1.72	52.80	110.66
375	24.65	14.58	0.46	-1.72	53.16	110.69
376	24.69	14.31	0.45	-1.72	53.22	110.64
377	24.74	14.13	0.44	-1.72	53.03	110.57
378	24.84	13.77	0.42	-1.72	52.84	110.45
379	24.89	13.68	0.39	-1.72	52.62	110.47
380	24.95	14.49	0.38	-1.63	52.10	110.59
381	25.04	15.29	0.39	-1.63	51.55	110.82
382	25.08	15.56	0.39	-1.63	50.88	111.17
383	25.19	16.19	0.46	-1.63	50.50	111.75
384	25.24	16.90	0.50	-1.53	50.29	112.41

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
385	25.28	17.53	0.54	-1.63	50.40	113.06
386	25.35	18.51	0.59	-1.63	50.76	113.70
387	25.43	19.14	0.70	-1.63	50.97	114.21
388	25.48	19.14	0.74	-1.63	50.95	114.53
389	25.53	19.14	0.77	-1.63	50.89	114.78
390	25.63	19.14	0.81	-1.63	50.95	115.03
391	25.68	19.05	0.74	-1.63	51.09	115.20
392	25.74	19.05	0.69	-1.63	51.10	115.24
393	25.79	19.32	0.68	-1.63	51.46	115.20
394	25.88	19.67	0.73	-1.63	51.39	115.14
395	25.92	19.58	0.73	-1.63	50.88	115.04
396	25.99	19.58	0.73	-1.72	50.45	115.03
397	26.05	17.53	0.72	-1.56	50.13	115.07
398	26.13	19.14	0.72	-1.56	49.96	115.09
399	26.20	20.30	0.71	-1.56	49.79	115.03
400	26.26	20.75	0.71	-1.50	49.68	114.95
401	26.31	20.75	0.70	-1.44	49.73	114.85
402	26.40	20.39	0.69	-1.44	49.51	114.76
403	26.45	19.94	0.67	-1.44	49.72	114.59
404	26.54	19.41	0.66	-1.44	50.23	114.38
405	26.59	18.69	0.66	-1.44	50.89	114.14
406	26.65	17.80	0.64	-1.44	51.69	113.86
407	26.74	16.90	0.60	-1.44	52.50	113.58
408	26.78	16.81	0.58	-1.44	53.29	113.30
409	26.84	16.45	0.57	-1.44	53.85	112.97
410	26.94	15.83	0.54	-1.44	54.24	112.64
411	26.99	15.65	0.53	-1.44	54.20	112.33
412	27.04	15.38	0.52	-1.44	53.85	112.13
413	27.13	15.38	0.47	-1.44	53.46	111.97
414	27.18	15.38	0.47	-1.44	52.93	111.85
415	27.24	15.92	0.46	-1.34	52.30	111.86
416	27.34	16.63	0.47	-1.34	51.65	111.90
417	27.40	17.08	0.48	-1.34	51.01	111.99
418	27.44	17.35	0.49	-1.44	50.66	112.18
419	27.53	17.89	0.52	-1.44	50.42	112.33
420	27.57	18.15	0.53	-1.44	50.34	112.46
421	27.64	18.24	0.55	-1.44	50.44	112.54
422	27.72	17.97	0.56	-1.44	50.50	112.52
423	27.79	17.44	0.54	-1.44	50.52	112.45
424	27.83	17.26	0.53	-1.44	50.50	112.31
425	27.90	17.08	0.52	-1.44	50.43	112.14
426	27.98	16.90	0.47	-1.34	50.31	111.93
427	28.03	16.90	0.45	-1.44	50.08	111.71
428	28.09	16.99	0.44	-1.44	49.81	111.55
429	28.18	17.26	0.43	-1.44	49.44	111.42
430	28.22	17.26	0.43	-1.44	48.86	111.35
431	28.28	17.26	0.44	-1.44	48.29	111.49
432	28.38	17.35	0.45	-1.44	47.65	111.69

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
433	28.43	17.71	0.45	-1.34	46.99	112.11
434	28.48	18.69	0.47	-1.34	46.05	112.54
435	28.58	20.03	0.52	-1.24	45.42	113.09
436	28.62	20.93	0.53	-1.34	45.20	113.85
437	28.69	22.80	0.63	-1.34	45.17	114.61
438	28.77	24.59	0.63	-1.34	45.29	115.34
439	28.82	24.86	0.72	-1.34	45.56	115.99
440	28.88	25.13	0.89	-1.34	45.98	116.56
441	28.97	24.95	0.96	-1.34	46.49	117.08
442	29.01	24.59	0.98	-1.34	46.94	117.45
443	29.07	24.32	1.00	-1.40	47.69	117.77
444	29.15	24.32	1.03	-1.47	48.32	117.97
445	29.21	24.32	1.03	-1.47	48.73	118.00
446	29.30	24.77	1.01	-1.50	49.06	117.96
447	29.33	24.68	1.00	-1.50	49.29	117.87
448	29.41	24.32	0.97	-1.53	49.47	117.69
449	29.50	23.52	0.94	-1.53	49.62	117.46
450	29.53	23.25	0.94	-1.44	49.62	117.18
451	29.61	22.54	0.90	-1.44	49.69	116.86
452	29.70	21.73	0.82	-1.44	49.56	116.54
453	29.74	21.37	0.80	-1.44	49.24	116.18
454	29.80	21.37	0.75	-1.48	48.65	115.83
455	29.90	21.37	0.71	-1.44	48.05	115.47
456	29.93	22.18	0.69	-1.44	47.25	115.17
457	30.00	22.27	0.64	-1.34	46.15	114.98
458	30.09	22.71	0.61	-1.34	44.62	114.83
459	30.15	22.62	0.62	-1.34	43.75	114.69
460	30.19	23.25	0.63	-1.44	43.45	114.59
461	30.30	24.95	0.62	-1.44	43.02	114.56
462	30.33	27.36	0.62	-1.44	43.07	114.62
463	30.40	24.41	0.61	-1.53	43.07	114.77
464	30.49	22.00	0.63	-2.20	42.94	114.91
465	30.54	24.41	0.65	-2.30	42.88	115.01
466	30.59	22.71	0.68	-2.11	43.12	115.05
467	30.64	24.41	0.71	-2.30	43.77	115.04
468	30.72	25.04	0.71	-2.11	44.05	115.11
469	30.80	24.86	0.70	-2.20	43.83	115.17
470	30.88	24.23	0.66	-2.11	44.19	115.27
471	30.93	23.97	0.64	-2.11	44.08	115.50
472	31.00	23.92	0.67	-2.11	43.67	115.83
473	31.04	23.92	0.66	-2.11	43.10	116.18
474	31.13	23.88	0.74	-2.11	42.32	116.56
475	31.20	25.93	0.85	-2.11	41.57	116.96
476	31.29	30.32	0.94	-2.11	41.06	117.30
477	31.34	32.28	0.96	-2.20	40.86	117.53
478	31.38	34.07	0.97	-2.20	40.77	117.73
479	31.43	33.89	0.96	-2.30	40.60	117.76
480	31.51	31.93	0.92	-2.30	40.43	117.57

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
481	31.58	28.44	0.87	-2.11	40.55	117.17
482	31.63	27.28	0.84	-2.11	40.87	116.66
483	31.71	25.67	0.76	-2.11	41.56	116.04
484	31.78	24.68	0.65	-2.01	42.36	115.38
485	31.83	24.41	0.58	-2.11	43.16	114.71
486	31.90	23.70	0.53	-2.11	43.88	114.05
487	31.98	22.45	0.50	-2.11	44.20	113.38
488	32.03	21.73	0.49	-2.11	44.42	112.77
489	32.09	20.48	0.48	-2.11	44.90	112.27
490	32.16	18.15	0.46	-2.07	45.63	111.88
491	32.22	19.41	0.44	-2.07	46.45	111.56
492	32.30	19.14	0.42	-2.09	47.13	111.34
493	32.38	18.33	0.40	-2.11	47.64	111.16
494	32.42	18.06	0.40	-2.01	47.65	111.12
495	32.50	17.97	0.40	-2.01	47.22	111.19
496	32.56	18.15	0.41	-2.01	47.17	111.32
497	32.62	18.60	0.42	-2.01	47.34	111.58
498	32.72	20.21	0.46	-2.01	47.44	111.90
499	32.77	20.48	0.48	-2.11	47.48	112.25
500	32.82	20.75	0.50	-2.11	47.45	112.64
501	32.91	20.66	0.55	-2.11	47.39	113.02
502	32.97	20.66	0.56	-2.11	47.32	113.38
503	33.02	20.84	0.58	-2.20	47.45	113.68
504	33.11	21.46	0.61	-2.01	47.64	113.97
505	33.16	21.82	0.62	-2.01	47.82	114.22
506	33.22	22.18	0.63	-2.01	47.89	114.41
507	33.29	22.45	0.65	-2.01	47.97	114.58
508	33.37	22.54	0.67	-2.01	48.06	114.73
509	33.41	22.36	0.67	-2.01	48.25	114.88
510	33.47	22.27	0.68	-1.91	48.48	115.10
511	33.57	22.09	0.68	-2.01	48.85	115.33
512	33.60	22.09	0.69	-2.01	48.76	115.62
513	33.67	22.09	0.72	-2.11	48.66	115.99
514	33.76	23.07	0.79	-2.11	48.64	116.41
515	33.80	23.07	0.82	-2.11	48.63	116.87
516	33.86	25.75	0.87	-2.11	48.73	117.34
517	33.96	27.01	0.97	-2.11	48.85	117.78
518	34.00	27.01	1.02	-2.11	48.84	118.16
519	34.06	27.36	1.09	-2.11	48.79	118.44
520	34.16	27.01	1.13	-2.39	48.72	118.68
521	34.20	26.74	1.13	-2.39	48.97	118.83
522	34.26	26.74	1.12	-2.20	49.27	118.84
523	34.36	26.83	1.09	-2.20	49.47	118.80
524	34.39	26.65	1.08	-2.20	49.58	118.70
525	34.46	26.29	1.05	-2.20	49.64	118.55
526	34.56	25.75	1.00	-2.11	49.72	118.39
527	34.60	25.84	0.99	-2.01	49.84	118.21
528	34.65	25.67	0.98	-2.01	50.00	118.03

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
529	34.75	25.04	0.96	-2.01	50.15	117.85
530	34.80	24.68	0.95	-2.01	50.23	117.69
531	34.86	24.14	0.93	-2.01	50.33	117.55
532	34.95	24.14	0.91	-2.01	50.45	117.40
533	34.99	24.14	0.90	-2.02	50.46	117.24
534	35.06	24.14	0.88	-2.02	50.38	117.09
535	35.11	23.97	0.87	-2.03	50.31	116.93
536	35.19	23.79	0.84	-2.03	50.19	116.77
537	35.25	23.97	0.82	-2.03	50.11	116.61
538	35.31	23.97	0.81	-1.91	49.99	116.43
539	35.39	23.43	0.80	-1.91	49.94	116.25
540	35.49	23.16	0.77	-1.91	49.86	116.07
541	35.53	22.98	0.76	-2.01	49.88	115.96
542	35.60	22.89	0.73	-2.01	50.02	115.90
543	35.63	22.71	0.72	-2.11	50.20	115.93
544	35.70	22.71	0.71	-2.01	49.99	116.09
545	35.78	22.71	0.75	-2.06	49.69	116.39
546	35.84	22.98	0.78	-2.01	49.39	116.76
547	35.90	23.52	0.84	-2.11	49.02	117.25
548	35.98	26.11	0.92	-2.11	48.30	117.74
549	36.06	27.81	1.01	-2.11	46.77	118.08
550	36.09	28.44	1.07	-2.11	44.91	118.22
551	36.18	30.32	1.17	-2.20	43.21	118.27
552	36.23	32.10	1.15	-2.20	42.04	118.24
553	36.29	35.23	0.96	-2.20	41.55	118.23
554	36.38	35.23	0.77	-2.20	41.30	118.19
555	36.42	34.52	0.72	-2.11	40.99	118.29
556	36.49	30.94	0.73	-2.11	40.42	118.58
557	36.58	29.42	0.87	-2.11	39.83	119.00
558	36.62	29.24	0.95	-2.11	38.97	119.69
559	36.68	32.19	1.15	-2.20	37.62	120.84
560	36.77	38.99	1.43	-2.11	35.74	122.13
561	36.83	43.19	1.55	-2.20	32.71	123.51
562	36.88	53.48	1.67	-2.11	29.56	124.87
563	36.97	67.87	2.09	-2.11	27.07	126.08
564	37.02	79.86	2.36	-2.20	25.12	127.13
565	37.08	100.51	2.58	-2.39	23.83	127.98
566	37.17	116.16	2.90	-2.39	22.88	128.71
567	37.22	118.22	3.03	-2.39	22.40	129.32
568	37.27	117.95	3.15	-2.39	22.18	129.73
569	37.37	111.34	3.27	-2.39	22.09	130.03
570	37.41	107.85	3.30	-2.39	22.29	130.23
571	37.47	101.50	3.32	-2.20	22.58	130.31
572	37.57	98.73	3.29	-2.30	22.79	130.37
573	37.61	100.69	3.28	-2.39	22.71	130.36
574	37.67	105.43	3.30	-2.39	22.27	130.40
575	37.76	111.34	3.28	-2.39	21.70	130.44
576	37.81	115.09	3.30	-2.39	20.91	130.44

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
577	37.87	120.28	3.08	-2.49	20.43	130.61
578	37.97	130.29	3.27	-2.87	20.02	130.82
579	38.02	131.63	3.22	-3.06	19.80	131.08
580	38.07	131.90	3.02	-3.16	19.80	131.39
581	38.17	129.13	3.69	-3.16	20.07	131.83
582	38.20	132.44	3.85	-2.86	20.45	132.34
583	38.27	132.98	4.11	-2.86	20.71	132.87
584	38.33	134.05	4.44	-2.86	20.74	133.45
585	38.42	134.50	5.07	-2.58	20.77	134.05
586	38.46	140.67	5.31	-2.58	20.52	134.51
587	38.53	158.82	5.68	-2.58	20.36	134.91
588	38.62	175.63	5.90	-2.78	20.21	135.24
589	38.66	179.93	5.95	-2.87	20.04	135.50
590	38.73	181.09	5.95	-2.87	19.67	135.63
591	38.81	177.33	5.95	-2.68	19.27	135.72
592	38.86	173.04	5.90	-2.87	18.89	135.73
593	38.93	167.76	5.82	-2.68	18.59	135.67
594	39.02	170.00	5.62	-2.78	18.16	135.58
595	39.05	174.83	5.57	-2.68	17.73	135.48
596	39.12	182.79	5.43	-2.68	17.40	135.36
597	39.18	190.03	5.35	-2.68	17.16	135.23
598	39.27	199.69	5.13	-2.87	16.94	135.08
599	39.31	199.33	5.05	-2.78	16.67	134.96
600	39.37	188.51	5.04	-2.78	16.57	134.79
601	39.44	175.54	4.98	-2.78	16.41	134.62
602	39.50	169.28	4.88	-2.78	16.18	134.46
603	39.59	176.44	4.79	-2.49	16.02	134.28
604	39.65	165.08	4.60	-2.58	15.82	134.06
605	39.71	177.33	4.44	-2.58	15.57	133.74
606	39.77	189.31	4.36	-2.68	15.27	133.32
607	39.84	194.32	4.16	-2.87	14.89	132.79
608	39.91	190.92	3.84	-2.97	14.62	132.17
609	39.97	174.11	3.39	-3.16	14.05	131.50
610	40.03	156.85	2.96	-3.45	13.68	130.78
611	40.11	144.78	2.44	-3.64	13.35	129.97
612	40.17	136.82	2.21	-4.02	12.96	129.16
613	40.26	144.33	1.92	-4.31	12.55	128.37
614	40.30	138.25	1.86	-4.31	11.98	127.68
615	40.36	143.89	1.80	-4.31	11.36	127.10
616	40.45	154.35	1.77	-4.40	10.83	126.71
617	40.49	157.39	1.75	-4.40	10.35	126.40
618	40.57	159.71	1.64	-4.59	10.06	126.12
619	40.62	156.94	1.57	-4.88	9.74	125.85
620	40.70	153.90	1.52	-5.36	9.59	125.67
621	40.76	149.43	1.50	-5.36	9.68	125.58
622	40.86	145.85	1.33	-5.17	9.88	125.56
623	40.89	143.71	1.31	-5.17	10.17	125.62
624	40.95	142.54	1.46	-5.07	10.53	125.74

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
625	41.03	141.38	1.65	-5.17	10.89	125.91
626	41.11	141.47	1.76	-5.03	11.23	126.12
627	41.16	141.92	1.81	-4.99	11.62	126.46
628	41.23	140.18	1.86	-4.99	12.05	126.85
629	41.29	141.83	1.91	-4.89	12.40	127.18
630	41.35	141.74	1.96	-4.78	12.69	127.44
631	41.41	143.17	2.04	-4.78	12.98	127.69
632	41.49	144.24	2.18	-4.88	13.32	127.95
633	41.56	143.62	2.22	-4.69	13.85	128.32
634	41.64	142.28	2.27	-4.69	14.51	128.70
635	41.69	141.56	2.38	-4.69	15.33	129.08
636	41.73	140.76	2.49	-4.78	16.33	129.44
637	41.84	135.57	2.90	-4.88	17.38	129.74
638	41.89	131.72	3.05	-4.88	18.43	130.04
639	41.98	123.23	3.22	-4.88	19.29	130.29
640	42.04	115.72	3.36	-4.88	19.97	130.47
641	42.09	113.39	3.42	-4.78	20.47	130.59
642	42.16	114.11	3.47	-4.78	20.48	130.57
643	42.24	121.26	3.37	-4.78	20.21	130.46
644	42.28	124.84	3.23	-4.78	19.63	130.28
645	42.33	128.15	3.06	-4.88	18.87	130.06
646	42.39	133.87	2.82	-4.97	18.10	129.82
647	42.47	136.73	2.58	-4.97	17.42	129.54
648	42.53	136.46	2.44	-4.97	17.06	129.31
649	42.59	134.94	2.38	-4.97	17.01	129.19
650	42.66	132.53	2.40	-4.97	17.37	129.15
651	42.73	127.88	2.41	-4.97	17.99	129.22
652	42.83	123.14	2.58	-4.82	19.10	129.38
653	42.88	120.19	2.89	-4.82	20.62	129.61
654	42.93	108.29	3.06	-4.66	22.35	129.86
655	42.99	110.08	3.21	-4.66	24.25	130.11
656	43.07	98.99	3.39	-4.66	26.12	130.32
657	43.14	89.34	3.61	-4.43	27.87	130.45
658	43.19	86.39	3.72	-4.21	29.49	130.41
659	43.25	83.26	3.80	-4.31	30.68	130.19
660	43.34	82.81	3.73	-4.31	31.96	129.82
661	43.39	81.91	3.60	-4.31	32.85	129.35
662	43.45	77.35	3.27	-4.31	33.69	128.70
663	43.54	70.56	2.63	-4.21	34.54	127.93
664	43.59	66.35	2.25	-4.21	35.31	127.02
665	43.64	61.61	2.01	-4.21	36.43	125.89
666	43.74	48.29	1.70	-4.21	37.72	124.60
667	43.78	44.09	1.59	-4.21	39.16	123.22
668	43.83	40.60	1.45	-4.21	40.89	121.95
669	43.94	32.55	1.14	-4.02	42.94	120.75
670	43.98	30.76	1.00	-4.11	45.00	119.60
671	44.04	28.53	0.87	-3.92	45.87	118.69
672	44.14	27.10	0.75	-3.92	46.36	117.82

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
673	44.17	27.28	0.72	-3.92	46.58	117.05
674	44.23	27.90	0.72	-3.92	46.39	116.71
675	44.33	29.24	0.72	-3.92	46.22	116.56
676	44.37	29.51	0.73	-3.92	45.72	116.56
677	44.44	29.51	0.74	-3.92	45.68	116.90
678	44.53	29.51	0.83	-4.02	45.92	117.39
679	44.58	30.05	0.86	-3.83	46.29	117.97
680	44.64	31.57	0.85	-3.83	46.58	118.66
681	44.73	31.66	1.03	-3.83	46.34	119.47
682	44.78	32.37	1.17	-3.73	45.98	120.29
683	44.82	33.53	1.30	-3.83	45.29	121.12
684	44.90	37.11	1.45	-3.83	44.37	121.98
685	44.97	42.84	1.62	-3.83	43.46	122.84
686	45.03	44.71	1.74	-3.92	42.10	123.58
687	45.09	48.02	1.90	-3.92	40.87	124.21
688	45.17	52.58	2.06	-3.92	39.76	124.75
689	45.22	55.53	2.15	-3.92	38.78	125.25
690	45.29	59.47	2.19	-3.92	37.94	125.66
691	45.38	58.93	2.22	-3.92	37.09	126.02
692	45.42	58.66	2.25	-3.92	36.18	126.28
693	45.50	61.26	2.36	-3.92	35.43	126.43
694	45.57	64.74	2.42	-4.02	34.87	126.53
695	45.62	66.18	2.42	-4.02	34.54	126.56
696	45.69	68.32	2.36	-4.02	34.28	126.55
697	45.77	68.41	2.29	-4.11	34.07	126.51
698	45.82	67.16	2.28	-4.11	34.05	126.38
699	45.88	66.00	2.22	-4.11	34.35	126.17
700	45.97	62.87	2.13	-4.11	34.83	125.92
701	46.02	60.90	2.10	-4.11	35.69	125.62
702	46.10	57.68	2.05	-4.11	37.01	125.30
703	46.17	53.92	1.98	-4.11	38.40	124.96
704	46.21	51.60	1.92	-4.21	39.78	124.63
705	46.27	47.04	1.82	-4.11	41.01	124.28
706	46.36	41.94	1.79	-4.21	42.18	123.93
707	46.42	40.96	1.76	-4.11	43.25	123.60
708	46.46	41.81	1.72	-4.02	44.26	123.29
709	46.56	41.67	1.60	-3.92	45.19	123.02
710	46.61	41.49	1.56	-3.92	45.83	122.82
711	46.66	40.60	1.54	-3.92	46.10	122.69
712	46.74	38.81	1.54	-3.92	46.41	122.63
713	46.81	38.63	1.53	-3.92	46.88	122.61
714	46.87	38.18	1.53	-4.11	47.56	122.64
715	46.94	37.47	1.59	-3.92	47.79	122.71
716	47.01	37.74	1.69	-4.11	47.95	122.81
717	47.06	38.01	1.73	-3.92	48.08	122.91
718	47.12	37.38	1.72	-4.02	48.11	123.00
719	47.19	41.40	1.71	-4.02	47.91	123.04
720	47.25	41.31	1.72	-4.02	47.60	123.05

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
721	47.34	39.88	1.73	-4.02	47.32	122.99
722	47.39	40.24	1.69	-4.02	47.11	122.89
723	47.44	40.69	1.59	-3.92	46.80	122.78
724	47.54	40.06	1.56	-4.11	46.99	122.60
725	47.59	39.08	1.55	-4.11	47.27	122.43
726	47.65	37.92	1.53	-4.11	47.37	122.31
727	47.74	37.83	1.49	-4.11	47.72	122.20
728	47.81	37.02	1.42	-4.11	48.11	122.15
729	47.85	36.22	1.46	-3.92	48.25	122.16
730	47.94	37.11	1.53	-4.02	48.21	122.19
731	47.98	36.13	1.55	-4.02	48.07	122.32
732	48.04	37.20	1.54	-4.02	47.64	122.55
733	48.13	39.26	1.58	-4.02	47.06	122.85
734	48.17	40.24	1.60	-4.02	46.29	123.21
735	48.24	41.23	1.72	-4.02	45.79	123.60
736	48.32	45.25	1.83	-4.02	45.19	124.00
737	48.37	47.22	1.88	-4.02	44.40	124.44
738	48.44	49.27	2.02	-4.21	43.25	124.90
739	48.53	49.27	2.20	-4.11	41.74	125.37
740	48.56	49.81	2.25	-4.11	40.04	125.80
741	48.64	53.83	2.32	-4.11	37.94	126.24
742	48.72	61.08	2.40	-4.11	35.90	126.69
743	48.78	67.61	2.42	-4.11	33.68	127.15
744	48.83	71.81	2.45	-4.11	31.47	127.61
745	48.90	84.24	2.53	-4.11	29.59	128.05
746	48.97	89.96	2.63	-4.11	28.25	128.51
747	49.03	99.98	2.77	-4.11	27.24	128.96
748	49.12	106.24	2.96	-4.21	26.48	129.41
749	49.16	106.24	3.03	-4.11	25.72	129.86
750	49.23	104.45	3.29	-4.31	25.05	130.27
751	49.31	107.67	3.47	-4.11	24.26	130.66
752	49.36	110.26	3.58	-4.11	23.57	131.00
753	49.43	117.06	3.66	-4.11	22.81	131.32
754	49.52	127.79	3.69	-4.21	21.90	131.63
755	49.58	139.33	3.73	-4.31	20.86	131.87
756	49.62	145.32	3.77	-4.31	19.86	132.03
757	49.71	155.33	3.84	-4.31	18.66	131.96
758	49.78	164.19	3.86	-4.40	17.51	131.79
759	49.81	166.87	3.80	-4.40	16.60	131.60
760	49.88	166.87	3.69	-4.40	15.97	131.43
761	49.97	166.33	2.81	-4.40	15.60	131.29
762	50.00	165.71	2.51	-4.40	15.62	131.13
763	50.07	165.35	2.63	-4.40	15.71	131.03
764	50.14	162.67	2.83	-4.40	15.93	130.97
765	50.22	157.39	3.13	-4.39	16.41	130.91
766	50.27	140.13	3.31	-4.37	17.43	131.02
767	50.35	151.58	3.58	-4.37	18.71	131.16
768	50.40	148.36	3.68	-4.29	20.17	131.18

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
769	50.47	133.96	3.67	-4.21	21.63	131.02
770	50.55	118.40	3.57	-4.21	22.94	130.72
771	50.59	110.62	3.48	-4.31	23.79	130.37
772	50.66	97.83	3.25	-4.11	25.02	129.89
773	50.75	89.34	2.79	-4.11	26.40	129.32
774	50.79	87.73	2.53	-4.11	27.87	128.69
775	50.86	88.89	2.41	-4.11	29.36	127.99
776	50.94	83.79	2.34	-4.11	30.91	127.24
777	50.99	78.16	2.26	-4.11	32.34	126.46
778	51.05	65.10	2.17	-4.02	33.72	125.69
779	51.14	52.67	1.94	-4.02	35.25	124.86
780	51.18	48.56	1.82	-3.83	37.12	123.93
781	51.25	43.28	1.63	-3.83	38.95	122.86
782	51.34	41.05	1.28	-3.83	40.76	121.60
783	51.41	40.06	1.01	-3.73	41.64	120.27
784	51.44	39.26	0.90	-3.73	41.46	118.99
785	51.52	36.84	0.70	-3.73	40.87	117.62
786	51.67	33.00	0.50	-3.73	39.81	116.30
787	51.70	32.19	0.48	-3.73	39.16	115.26
788	51.75	31.84	0.46	-3.73	39.05	114.59
789	51.78	31.39	0.45	-3.73	39.16	114.10
790	51.88	31.84	0.48	-3.73	39.39	114.05
791	51.92	31.21	0.51	-3.73	39.68	114.39
792	51.99	31.84	0.57	-3.73	40.07	114.77
793	52.04	32.10	0.61	-3.68	40.77	115.20
794	52.14	34.88	0.68	-3.68	41.59	115.58
795	52.19	35.41	0.71	-3.68	42.54	115.87
796	52.26	34.61	0.73	-3.64	43.63	116.00
797	52.33	32.82	0.77	-3.64	44.82	115.89
798	52.38	31.21	0.75	-3.64	46.10	115.68
799	52.43	29.42	0.73	-3.64	47.88	115.29
800	52.51	25.93	0.65	-3.64	49.76	114.75
801	52.58	23.25	0.54	-3.64	51.52	114.13
802	52.63	22.09	0.51	-3.64	52.93	113.37
803	52.69	20.66	0.47	-3.64	54.17	112.56
804	52.77	20.30	0.41	-3.64	55.16	111.73
805	52.83	20.30	0.38	-3.62	55.56	111.00
806	52.90	19.76	0.35	-3.62	55.69	110.47
807	52.99	19.41	0.33	-3.62	55.59	109.96
808	53.05	19.23	0.33	-3.54	55.26	109.54
809	53.10	19.05	0.32	-3.54	55.08	109.25
810	53.16	18.96	0.31	-3.54	55.01	109.00
811	53.25	18.96	0.30	-3.54	54.96	108.83
812	53.29	18.96	0.30	-3.54	54.89	108.72
813	53.38	18.96	0.30	-3.54	54.67	108.55
814	53.44	18.96	0.29	-3.64	54.48	108.41
815	53.50	18.91	0.29	-3.64	54.36	108.29
816	53.55	18.96	0.29	-3.64	54.33	108.20

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
817	53.64	18.96	0.27	-3.64	54.44	108.13
818	53.72	18.78	0.27	-3.64	54.54	108.07
819	53.74	18.69	0.27	-3.64	54.49	108.04
820	53.82	18.51	0.27	-3.64	54.33	108.05
821	53.90	18.33	0.28	-3.64	54.26	108.12
822	53.94	18.33	0.28	-3.64	54.24	108.28
823	54.01	18.96	0.28	-3.64	54.23	108.46
824	54.09	19.58	0.29	-3.64	54.23	108.65
825	54.19	19.76	0.31	-3.64	54.15	108.80
826	54.24	20.12	0.32	-3.64	54.00	108.93
827	54.29	20.12	0.33	-3.64	53.84	109.02
828	54.35	20.03	0.33	-3.64	53.69	109.03
829	54.44	19.94	0.32	-3.64	53.55	108.96
830	54.49	19.76	0.32	-3.64	53.31	108.82
831	54.53	19.58	0.31	-3.64	53.09	108.65
832	54.63	19.58	0.28	-3.64	52.86	108.45
833	54.68	19.67	0.26	-3.64	52.59	108.25
834	54.74	19.67	0.26	-3.64	52.41	108.07
835	54.83	19.76	0.26	-3.54	52.20	107.91
836	54.88	19.67	0.26	-3.64	52.17	107.85
837	54.94	19.58	0.26	-3.64	52.44	107.97
838	55.03	19.41	0.26	-3.64	52.82	108.15
839	55.07	19.58	0.27	-3.64	53.20	108.35
840	55.13	19.32	0.29	-3.64	53.70	108.58
841	55.23	19.58	0.32	-3.64	54.17	108.80
842	55.28	19.76	0.32	-3.64	54.58	109.01
843	55.32	19.85	0.33	-3.64	54.94	109.22
844	55.42	19.76	0.34	-3.64	55.19	109.35
845	55.50	19.76	0.34	-3.64	55.10	109.41
846	55.53	19.76	0.34	-3.64	54.85	109.37
847	55.58	19.76	0.34	-3.64	54.80	109.34
848	55.66	19.85	0.32	-3.64	54.72	109.27
849	55.73	20.12	0.31	-3.64	54.10	108.96
850	55.78	20.12	0.30	-3.64	54.62	109.41
851	55.86	19.85	0.31	-3.64	55.35	110.19
852	55.93	19.67	0.30	-3.64	55.76	111.17
853	55.97	19.76	0.22	-3.64	54.85	112.87
854	56.08	21.28	0.51	-3.64	52.24	114.70
855	56.12	22.98	0.65	-3.64	47.69	116.55
856	56.17	25.67	0.77	-3.54	40.66	118.53
857	56.28	37.11	1.15	-3.60	35.33	120.26
858	56.32	48.20	1.35	-3.60	31.24	121.84
859	56.37	64.21	1.50	-3.60	27.66	123.01
860	56.47	97.30	1.72	-3.54	24.80	123.99
861	56.52	104.27	1.77	-3.54	22.49	124.82
862	56.57	110.44	1.81	-3.54	20.88	125.48
863	56.67	115.54	1.77	-3.54	19.85	126.02
864	56.72	116.88	1.78	-3.54	19.53	126.46

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
865	56.78	118.31	1.81	-3.64	20.09	126.72
866	56.87	114.55	2.04	-3.64	21.06	126.88
867	56.91	110.08	2.17	-3.64	22.36	126.93
868	56.97	98.91	2.31	-3.64	24.36	126.88
869	57.03	91.75	2.39	-3.64	26.77	126.77
870	57.11	78.78	2.31	-3.64	29.69	126.62
871	57.17	70.91	2.21	-3.64	32.65	126.30
872	57.26	54.37	2.07	-3.64	35.65	125.81
873	57.32	49.99	2.03	-3.64	38.36	125.25
874	57.35	47.57	2.01	-3.54	41.20	124.56
875	57.42	46.77	1.83	-3.45	43.69	123.86
876	57.51	46.23	1.57	-3.45	45.93	123.14
877	57.55	44.89	1.48	-3.45	46.82	122.48
878	57.62	40.06	1.36	-3.45	47.44	121.72
879	57.71	36.75	1.25	-3.45	47.93	120.88
880	57.78	35.41	1.14	-3.45	48.62	120.05
881	57.82	34.07	1.03	-3.45	49.58	119.25
882	57.90	31.12	0.88	-3.45	50.55	118.42
883	57.96	29.60	0.84	-3.45	50.94	117.60
884	58.01	28.80	0.80	-3.45	50.99	116.79
885	58.11	27.99	0.67	-3.45	50.99	116.00
886	58.15	27.63	0.63	-3.35	50.90	115.22
887	58.21	27.28	0.57	-3.35	50.73	114.53
888	58.31	26.47	0.52	-3.35	50.50	113.81
889	58.35	26.29	0.49	-3.45	50.25	113.07
890	58.42	25.75	0.44	-3.45	50.38	112.48
891	58.50	24.59	0.40	-3.45	50.54	111.91
892	58.55	23.43	0.38	-3.45	50.90	111.42
893	58.61	22.71	0.37	-3.45	51.26	110.99
894	58.70	21.91	0.36	-3.35	51.84	110.61
895	58.75	21.82	0.35	-3.35	52.57	110.35
896	58.81	21.55	0.35	-3.35	53.20	110.22
897	58.89	21.46	0.34	-3.35	53.61	110.17
898	58.95	21.02	0.34	-3.35	53.87	110.21
899	59.00	21.02	0.35	-3.35	53.83	110.34
900	59.10	21.37	0.36	-3.35	53.71	110.47
901	59.15	21.82	0.37	-3.35	53.57	110.60
902	59.20	22.18	0.39	-3.35	53.51	110.75
903	59.28	23.07	0.41	-3.25	53.41	110.90
904	59.35	23.43	0.40	-3.35	53.65	111.16
905	59.38	23.16	0.40	-3.19	53.75	111.47
906	59.46	22.89	0.40	-3.19	53.55	111.71
907	59.53	22.62	0.40	-3.19	52.49	111.89
908	59.59	22.45	0.47	-3.06	50.91	111.89
909	59.67	23.52	0.50	-3.06	49.64	111.92
910	59.73	24.77	0.48	-3.06	48.60	111.95
911	59.79	27.90	0.45	-3.06	47.99	112.09
912	59.89	29.60	0.37	-3.06	47.37	112.33

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
913	59.94	29.24	0.38	-3.06	46.97	112.68
914	59.99	28.26	0.39	-3.06	46.47	113.29
915	60.07	27.19	0.45	-3.06	41.22	112.67
916	60.12	28.12	0.50	-3.06	35.84	112.04
917	60.19	27.99	0.63	-2.97	29.05	111.64
918	60.25	32.64	0.81	-2.97	22.89	111.14
919	60.33	48.20	0.00	-2.97	18.61	110.35
920	60.38	57.77	0.00	-2.97	5.00	109.08
921	60.48	86.03	0.00	-3.06	5.00	107.14
922	60.53	99.62	0.00	-3.35	5.00	103.25
923	60.61	88.89	0.00	-3.35	N/A	87.36
924	60.63	81.65	0.00	-3.25	N/A	87.36

Abbreviations

Depth: Depth from free surface, at which CPT was performed (ft)
q_c: Measured cone resistance (tsf)
f_s: Sleeve friction resistance (tsf)
u: Pore pressure (tsf)
Fines content: Percentage of fines in soil (%)
Unit weight: Bulk soil unit weight (pcf)

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data ::

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
1	0.08	0.00	0.00	0.00	1.00	0.358	1.34	0.266	1.00	1.00	2.000	Yes
2	0.15	0.01	0.00	0.01	1.00	0.358	1.34	0.266	1.00	1.00	2.000	Yes
3	0.23	0.01	0.00	0.01	1.00	0.358	1.34	0.266	1.00	1.00	2.000	Yes
4	0.30	0.02	0.00	0.02	1.00	0.358	1.34	0.266	1.00	1.00	2.000	Yes
5	0.35	0.02	0.00	0.02	1.00	0.358	1.34	0.266	1.00	1.00	2.000	Yes
6	0.43	0.02	0.00	0.02	1.00	0.358	1.34	0.266	1.00	1.00	2.000	Yes
7	0.50	0.03	0.00	0.03	1.00	0.358	1.34	0.266	1.00	1.00	2.000	Yes
8	0.55	0.03	0.00	0.03	1.00	0.358	1.34	0.266	1.00	1.00	2.000	Yes
9	0.61	0.03	0.00	0.03	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
10	0.70	0.04	0.00	0.04	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
11	0.73	0.04	0.00	0.04	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
12	0.80	0.04	0.00	0.04	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
13	0.89	0.05	0.00	0.05	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
14	0.93	0.05	0.00	0.05	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
15	1.01	0.06	0.00	0.06	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
16	1.09	0.06	0.00	0.06	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
17	1.13	0.06	0.00	0.06	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
18	1.19	0.07	0.00	0.07	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
19	1.29	0.07	0.00	0.07	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
20	1.34	0.08	0.00	0.08	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
21	1.39	0.08	0.00	0.08	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
22	1.45	0.08	0.00	0.08	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
23	1.54	0.09	0.00	0.09	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
24	1.59	0.09	0.00	0.09	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
25	1.67	0.10	0.00	0.10	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
26	1.72	0.10	0.00	0.10	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
27	1.79	0.10	0.00	0.10	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
28	1.85	0.11	0.00	0.11	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
29	1.94	0.11	0.00	0.11	1.00	0.357	1.34	0.265	1.00	1.00	2.000	Yes
30	1.98	0.11	0.00	0.11	1.00	0.357	1.34	0.265	1.00	1.00	2.000	Yes
31	2.04	0.12	0.00	0.12	1.00	0.357	1.34	0.265	1.00	1.00	2.000	Yes
32	2.13	0.12	0.00	0.12	1.00	0.356	1.34	0.265	1.00	1.00	2.000	Yes
33	2.17	0.12	0.00	0.12	1.00	0.356	1.34	0.265	1.00	1.00	2.000	Yes
34	2.24	0.13	0.00	0.13	1.00	0.356	1.34	0.265	1.00	1.00	2.000	Yes
35	2.32	0.13	0.00	0.13	1.00	0.356	1.34	0.265	1.00	1.00	2.000	Yes
36	2.39	0.14	0.00	0.14	1.00	0.356	1.34	0.265	1.00	1.00	2.000	Yes
37	2.43	0.14	0.00	0.14	1.00	0.356	1.34	0.265	1.00	1.00	2.000	Yes
38	2.52	0.14	0.00	0.14	1.00	0.356	1.34	0.265	1.00	1.00	2.000	Yes
39	2.58	0.15	0.00	0.15	1.00	0.356	1.34	0.265	1.00	1.00	2.000	Yes
40	2.63	0.15	0.00	0.15	1.00	0.356	1.34	0.265	1.00	1.00	2.000	Yes
41	2.72	0.15	0.00	0.15	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
42	2.78	0.16	0.00	0.16	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
43	2.83	0.16	0.00	0.16	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
44	2.89	0.16	0.00	0.16	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
45	2.98	0.17	0.00	0.17	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
46	3.03	0.17	0.00	0.17	0.99	0.356	1.34	0.265	1.00	1.00	2.000	No
47	3.09	0.18	0.00	0.18	0.99	0.356	1.34	0.264	1.00	1.00	2.000	No
48	3.18	0.18	0.00	0.18	0.99	0.356	1.34	0.264	1.00	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
49	3.22	0.18	0.00	0.18	0.99	0.356	1.34	0.264	1.00	1.00	2.000	No
50	3.32	0.19	0.00	0.19	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
51	3.37	0.19	0.00	0.19	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
52	3.42	0.19	0.00	0.19	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
53	3.52	0.20	0.00	0.20	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
54	3.57	0.20	0.00	0.20	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
55	3.61	0.20	0.00	0.20	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
56	3.68	0.21	0.00	0.21	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
57	3.77	0.21	0.00	0.21	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
58	3.83	0.22	0.00	0.22	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
59	3.91	0.22	0.00	0.22	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
60	3.95	0.22	0.00	0.22	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
61	4.02	0.23	0.00	0.23	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
62	4.12	0.23	0.00	0.23	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
63	4.14	0.23	0.00	0.23	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
64	4.22	0.24	0.00	0.24	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
65	4.27	0.24	0.00	0.24	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
66	4.37	0.25	0.00	0.25	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
67	4.42	0.25	0.00	0.25	0.99	0.354	1.34	0.264	1.00	1.00	2.000	No
68	4.46	0.25	0.00	0.25	0.99	0.354	1.34	0.264	1.00	1.00	2.000	No
69	4.57	0.26	0.00	0.26	0.99	0.354	1.34	0.264	1.00	1.00	2.000	No
70	4.61	0.26	0.00	0.26	0.99	0.354	1.34	0.264	1.00	1.00	2.000	No
71	4.67	0.26	0.00	0.26	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
72	4.76	0.27	0.00	0.27	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
73	4.81	0.27	0.00	0.27	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
74	4.90	0.28	0.00	0.28	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
75	4.96	0.28	0.00	0.28	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
76	5.00	0.28	0.00	0.28	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
77	5.05	0.28	0.00	0.28	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
78	5.14	0.29	0.00	0.29	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
79	5.20	0.29	0.00	0.29	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
80	5.30	0.30	0.00	0.30	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
81	5.35	0.30	0.00	0.30	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
82	5.39	0.30	0.00	0.30	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
83	5.48	0.31	0.00	0.31	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
84	5.55	0.31	0.00	0.31	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
85	5.59	0.31	0.00	0.31	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
86	5.64	0.32	0.00	0.32	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
87	5.74	0.32	0.00	0.32	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
88	5.79	0.32	0.00	0.32	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
89	5.84	0.33	0.00	0.33	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
90	5.94	0.33	0.00	0.33	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
91	5.97	0.33	0.00	0.33	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
92	6.05	0.34	0.00	0.34	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
93	6.14	0.34	0.00	0.34	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
94	6.19	0.35	0.00	0.35	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
95	6.24	0.35	0.00	0.35	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
96	6.33	0.35	0.00	0.35	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
97	6.38	0.36	0.00	0.36	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
98	6.44	0.36	0.00	0.36	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
99	6.52	0.36	0.00	0.36	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
100	6.59	0.37	0.00	0.37	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
101	6.64	0.37	0.00	0.37	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
102	6.70	0.37	0.00	0.37	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
103	6.78	0.38	0.00	0.38	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
104	6.83	0.38	0.00	0.38	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
105	6.89	0.39	0.00	0.39	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
106	6.98	0.39	0.00	0.39	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
107	7.03	0.39	0.00	0.39	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
108	7.09	0.40	0.00	0.40	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
109	7.18	0.40	0.00	0.40	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
110	7.23	0.40	0.00	0.40	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
111	7.29	0.41	0.00	0.41	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
112	7.38	0.41	0.00	0.41	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
113	7.42	0.41	0.00	0.41	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
114	7.48	0.42	0.00	0.42	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
115	7.58	0.42	0.00	0.42	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
116	7.62	0.43	0.00	0.43	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
117	7.68	0.43	0.00	0.43	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
118	7.78	0.43	0.00	0.43	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
119	7.81	0.44	0.00	0.44	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
120	7.88	0.44	0.00	0.44	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
121	7.97	0.44	0.00	0.44	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
122	8.01	0.45	0.00	0.45	0.98	0.352	1.34	0.261	1.00	1.00	2.000	No
123	8.11	0.45	0.00	0.45	0.98	0.352	1.34	0.261	1.00	1.00	2.000	No
124	8.14	0.45	0.00	0.45	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
125	8.22	0.46	0.00	0.46	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
126	8.31	0.46	0.00	0.46	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
127	8.35	0.47	0.00	0.47	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
128	8.41	0.47	0.00	0.47	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
129	8.50	0.47	0.00	0.47	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
130	8.56	0.48	0.00	0.48	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
131	8.61	0.48	0.00	0.48	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
132	8.68	0.48	0.00	0.48	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
133	8.75	0.49	0.00	0.49	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
134	8.80	0.49	0.00	0.49	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
135	8.89	0.49	0.00	0.49	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
136	8.94	0.50	0.00	0.50	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
137	9.00	0.50	0.00	0.50	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
138	9.08	0.50	0.00	0.50	0.98	0.352	1.34	0.262	1.00	1.00	0.262	No
139	9.15	0.51	0.00	0.50	0.98	0.354	1.34	0.263	1.00	1.00	0.263	No
140	9.20	0.51	0.01	0.50	0.98	0.355	1.34	0.264	1.00	1.00	0.264	No
141	9.28	0.52	0.01	0.51	0.98	0.357	1.34	0.265	1.00	1.00	0.265	No
142	9.35	0.52	0.01	0.51	0.98	0.358	1.34	0.266	1.00	1.00	0.266	No
143	9.40	0.52	0.01	0.51	0.98	0.359	1.34	0.267	1.00	1.00	0.267	No
144	9.45	0.52	0.01	0.51	0.98	0.360	1.34	0.268	1.00	1.00	0.268	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
145	9.55	0.53	0.02	0.51	0.98	0.362	1.34	0.269	1.00	1.00	0.269	No
146	9.59	0.53	0.02	0.51	0.98	0.363	1.34	0.270	1.00	1.00	0.270	No
147	9.69	0.54	0.02	0.52	0.98	0.365	1.34	0.271	1.00	1.00	0.271	No
148	9.74	0.54	0.02	0.52	0.98	0.366	1.34	0.272	1.00	1.00	0.272	No
149	9.79	0.54	0.02	0.52	0.98	0.367	1.34	0.273	1.00	1.00	0.273	No
150	9.84	0.55	0.03	0.52	0.98	0.368	1.34	0.274	1.00	1.00	0.274	No
151	9.94	0.55	0.03	0.52	0.98	0.370	1.34	0.275	1.00	1.00	0.275	No
152	10.00	0.55	0.03	0.52	0.98	0.371	1.34	0.276	1.00	1.00	0.276	No
153	10.09	0.56	0.03	0.53	0.98	0.373	1.34	0.277	1.00	1.00	0.277	No
154	10.13	0.56	0.04	0.53	0.98	0.373	1.34	0.278	1.00	1.00	0.278	No
155	10.18	0.56	0.04	0.53	0.98	0.374	1.34	0.278	1.00	1.00	0.278	No
156	10.24	0.57	0.04	0.53	0.98	0.375	1.34	0.279	1.00	1.00	0.279	No
157	10.33	0.57	0.04	0.53	0.98	0.377	1.34	0.280	1.00	1.00	0.280	No
158	10.37	0.58	0.04	0.53	0.98	0.378	1.34	0.281	1.00	1.00	0.281	No
159	10.43	0.58	0.04	0.53	0.98	0.379	1.34	0.282	1.00	1.00	0.282	No
160	10.52	0.58	0.05	0.54	0.98	0.381	1.34	0.283	1.00	1.00	0.283	No
161	10.59	0.59	0.05	0.54	0.98	0.382	1.34	0.284	1.00	1.00	0.284	No
162	10.64	0.59	0.05	0.54	0.98	0.383	1.34	0.285	1.00	1.00	0.285	No
163	10.70	0.59	0.05	0.54	0.98	0.384	1.34	0.285	1.00	1.00	0.285	No
164	10.78	0.60	0.06	0.54	0.98	0.385	1.34	0.286	1.00	1.00	0.286	No
165	10.83	0.60	0.06	0.55	0.98	0.386	1.34	0.287	1.00	1.00	0.287	No
166	10.94	0.61	0.06	0.55	0.98	0.388	1.34	0.288	1.00	1.00	0.288	No
167	10.99	0.61	0.06	0.55	0.98	0.389	1.34	0.289	1.00	1.00	0.289	No
168	11.03	0.61	0.06	0.55	0.98	0.389	1.34	0.290	1.00	1.00	0.290	No
169	11.09	0.62	0.07	0.55	0.98	0.390	1.34	0.290	1.00	1.00	0.290	No
170	11.17	0.62	0.07	0.55	0.98	0.392	1.34	0.291	1.00	1.00	0.291	No
171	11.24	0.63	0.07	0.56	0.98	0.393	1.34	0.292	1.00	1.00	0.292	No
172	11.33	0.63	0.07	0.56	0.98	0.394	1.34	0.293	1.00	1.00	0.293	No
173	11.37	0.63	0.07	0.56	0.98	0.395	1.34	0.294	1.00	1.00	0.294	No
174	11.44	0.64	0.08	0.56	0.98	0.396	1.34	0.295	1.00	1.00	0.295	No
175	11.52	0.64	0.08	0.56	0.98	0.397	1.34	0.296	1.00	1.00	0.296	No
176	11.57	0.65	0.08	0.57	0.98	0.398	1.34	0.296	1.00	1.00	0.296	No
177	11.63	0.65	0.08	0.57	0.98	0.399	1.34	0.297	1.00	1.00	0.297	No
178	11.72	0.66	0.08	0.57	0.98	0.401	1.34	0.298	1.00	1.00	0.298	No
179	11.76	0.66	0.09	0.57	0.98	0.401	1.34	0.298	1.00	1.00	0.298	No
180	11.83	0.66	0.09	0.57	0.98	0.402	1.34	0.299	1.00	1.00	0.299	No
181	11.92	0.67	0.09	0.58	0.98	0.404	1.34	0.300	1.00	1.00	0.300	No
182	11.94	0.67	0.09	0.58	0.98	0.404	1.34	0.301	1.00	1.00	0.301	No
183	12.02	0.67	0.09	0.58	0.97	0.405	1.34	0.301	1.00	1.00	0.301	No
184	12.11	0.68	0.10	0.58	0.97	0.407	1.34	0.302	1.00	1.00	0.302	No
185	12.16	0.68	0.10	0.58	0.97	0.407	1.34	0.303	1.00	1.00	0.303	No
186	12.22	0.68	0.10	0.58	0.97	0.408	1.34	0.304	1.00	1.00	0.304	No
187	12.31	0.69	0.10	0.59	0.97	0.410	1.34	0.305	1.00	1.00	0.305	No
188	12.36	0.69	0.10	0.59	0.97	0.410	1.34	0.305	1.00	1.00	0.305	No
189	12.42	0.70	0.11	0.59	0.97	0.411	1.34	0.306	1.00	1.00	0.306	No
190	12.50	0.70	0.11	0.59	0.97	0.412	1.34	0.307	1.00	1.00	0.307	No
191	12.56	0.70	0.11	0.59	0.97	0.413	1.34	0.307	1.00	1.00	0.307	No
192	12.62	0.71	0.11	0.59	0.97	0.414	1.34	0.308	1.00	1.00	0.308	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
193	12.70	0.71	0.12	0.60	0.97	0.415	1.34	0.309	1.00	1.00	0.309	No
194	12.77	0.72	0.12	0.60	0.97	0.416	1.34	0.310	1.00	1.00	0.310	No
195	12.81	0.72	0.12	0.60	0.97	0.417	1.34	0.310	1.00	1.00	0.310	No
196	12.91	0.73	0.12	0.60	0.97	0.418	1.34	0.311	1.00	1.00	0.311	No
197	12.96	0.73	0.12	0.60	0.97	0.419	1.34	0.312	1.00	1.00	0.312	No
198	13.01	0.73	0.13	0.61	0.97	0.420	1.34	0.312	1.00	1.00	0.312	No
199	13.06	0.73	0.13	0.61	0.97	0.420	1.34	0.313	1.00	1.00	0.313	No
200	13.16	0.74	0.13	0.61	0.97	0.422	1.34	0.314	1.00	1.00	0.314	No
201	13.21	0.74	0.13	0.61	0.97	0.422	1.34	0.314	1.00	1.00	0.314	No
202	13.26	0.75	0.13	0.61	0.97	0.423	1.34	0.315	1.00	1.00	0.315	No
203	13.36	0.75	0.14	0.62	0.97	0.424	1.34	0.316	1.00	1.00	0.316	No
204	13.40	0.75	0.14	0.62	0.97	0.425	1.34	0.316	1.00	1.00	0.316	No
205	13.46	0.76	0.14	0.62	0.97	0.426	1.34	0.317	1.00	1.00	0.317	No
206	13.55	0.76	0.14	0.62	0.97	0.427	1.34	0.317	1.00	1.00	0.317	No
207	13.60	0.77	0.14	0.62	0.97	0.427	1.34	0.318	1.00	1.00	0.318	No
208	13.67	0.77	0.15	0.62	0.97	0.428	1.34	0.319	1.00	1.00	0.319	No
209	13.75	0.77	0.15	0.63	0.97	0.429	1.34	0.319	1.00	1.00	0.319	No
210	13.80	0.78	0.15	0.63	0.97	0.430	1.34	0.320	1.00	1.00	0.320	No
211	13.86	0.78	0.15	0.63	0.97	0.431	1.34	0.320	1.00	1.00	0.320	No
212	13.95	0.79	0.15	0.63	0.97	0.432	1.34	0.321	1.00	1.00	0.321	No
213	13.99	0.79	0.16	0.63	0.97	0.432	1.34	0.322	1.00	1.00	0.322	No
214	14.06	0.79	0.16	0.64	0.97	0.433	1.34	0.322	1.00	1.00	0.322	No
215	14.15	0.80	0.16	0.64	0.97	0.434	1.34	0.323	1.00	1.00	0.323	No
216	14.19	0.80	0.16	0.64	0.97	0.435	1.34	0.323	1.00	1.00	0.323	No
217	14.26	0.80	0.16	0.64	0.97	0.436	1.34	0.324	1.00	1.00	0.324	No
218	14.35	0.81	0.17	0.64	0.97	0.437	1.34	0.325	1.00	1.00	0.325	No
219	14.40	0.81	0.17	0.64	0.97	0.437	1.34	0.325	1.00	1.00	0.325	No
220	14.45	0.82	0.17	0.65	0.97	0.438	1.34	0.326	1.00	1.00	0.326	No
221	14.55	0.82	0.17	0.65	0.97	0.439	1.34	0.327	1.00	1.00	0.327	No
222	14.58	0.82	0.17	0.65	0.97	0.439	1.34	0.327	1.00	1.00	0.327	No
223	14.65	0.83	0.18	0.65	0.97	0.440	1.34	0.327	1.00	1.00	0.327	No
224	14.74	0.83	0.18	0.65	0.97	0.441	1.34	0.328	1.00	1.00	0.328	No
225	14.77	0.83	0.18	0.65	0.97	0.442	1.34	0.329	1.00	1.00	0.329	No
226	14.84	0.84	0.18	0.66	0.97	0.443	1.34	0.329	1.00	1.00	0.329	No
227	14.94	0.84	0.19	0.66	0.97	0.444	1.34	0.330	1.00	1.00	0.330	No
228	15.00	0.85	0.19	0.66	0.97	0.444	1.34	0.331	1.00	1.00	0.331	No
229	15.03	0.85	0.19	0.66	0.97	0.445	1.34	0.331	1.00	1.00	0.331	No
230	15.11	0.85	0.19	0.66	0.97	0.446	1.34	0.331	1.00	1.00	0.331	No
231	15.19	0.86	0.19	0.67	0.97	0.447	1.34	0.332	1.00	1.00	0.332	No
232	15.24	0.86	0.19	0.67	0.97	0.447	1.34	0.333	1.00	1.00	0.333	No
233	15.29	0.86	0.20	0.67	0.97	0.448	1.34	0.333	1.00	1.00	0.333	No
234	15.39	0.87	0.20	0.67	0.97	0.449	1.34	0.334	1.00	1.00	0.334	No
235	15.42	0.87	0.20	0.67	0.97	0.449	1.34	0.334	1.00	1.00	0.334	No
236	15.49	0.88	0.20	0.67	0.97	0.450	1.34	0.335	1.00	1.00	0.335	No
237	15.59	0.88	0.21	0.68	0.97	0.451	1.34	0.335	1.00	1.00	0.335	No
238	15.63	0.88	0.21	0.68	0.97	0.451	1.34	0.336	1.00	1.00	0.336	No
239	15.69	0.89	0.21	0.68	0.97	0.452	1.34	0.336	1.00	1.00	0.336	No
240	15.78	0.89	0.21	0.68	0.97	0.453	1.34	0.337	1.00	1.00	0.337	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
241	15.84	0.90	0.21	0.68	0.97	0.454	1.34	0.337	1.00	1.00	0.337	No
242	15.89	0.90	0.21	0.68	0.97	0.454	1.34	0.338	1.00	1.00	0.338	No
243	15.95	0.90	0.22	0.68	0.97	0.455	1.34	0.338	1.00	1.00	0.338	No
244	16.04	0.91	0.22	0.69	0.97	0.456	1.34	0.339	1.00	1.00	0.339	No
245	16.08	0.91	0.22	0.69	0.97	0.456	1.34	0.339	1.00	1.00	0.339	No
246	16.18	0.91	0.22	0.69	0.97	0.457	1.34	0.340	1.00	1.00	0.340	No
247	16.24	0.92	0.23	0.69	0.97	0.458	1.34	0.341	1.00	1.00	0.341	No
248	16.28	0.92	0.23	0.69	0.97	0.458	1.34	0.341	1.00	1.00	0.341	No
249	16.36	0.92	0.23	0.69	0.97	0.459	1.34	0.342	1.00	1.00	0.342	No
250	16.43	0.93	0.23	0.70	0.97	0.460	1.34	0.342	1.00	1.00	0.342	No
251	16.47	0.93	0.23	0.70	0.97	0.460	1.34	0.342	1.00	1.00	0.342	No
252	16.54	0.93	0.24	0.70	0.97	0.461	1.34	0.343	1.00	1.00	0.343	No
253	16.63	0.94	0.24	0.70	0.96	0.462	1.34	0.344	1.00	1.00	0.344	No
254	16.68	0.94	0.24	0.70	0.96	0.463	1.34	0.344	1.00	1.00	0.344	No
255	16.78	0.95	0.24	0.70	0.96	0.464	1.34	0.345	1.00	1.00	0.345	No
256	16.83	0.95	0.24	0.71	0.96	0.464	1.34	0.345	1.00	1.00	0.345	No
257	16.87	0.95	0.25	0.71	0.96	0.465	1.34	0.345	1.00	1.00	0.345	No
258	16.93	0.96	0.25	0.71	0.96	0.465	1.34	0.346	1.00	1.00	0.346	No
259	17.01	0.96	0.25	0.71	0.96	0.466	1.34	0.347	1.00	1.00	0.347	No
260	17.09	0.96	0.25	0.71	0.96	0.467	1.34	0.347	1.00	1.00	0.347	No
261	17.15	0.97	0.25	0.71	0.96	0.467	1.34	0.348	1.00	1.00	0.348	No
262	17.20	0.97	0.26	0.72	0.96	0.468	1.34	0.348	1.00	1.00	0.348	No
263	17.27	0.97	0.26	0.72	0.96	0.468	1.34	0.348	1.00	1.00	0.348	No
264	17.35	0.98	0.26	0.72	0.96	0.469	1.34	0.349	1.00	1.00	0.349	No
265	17.40	0.98	0.26	0.72	0.96	0.470	1.34	0.349	1.00	1.00	0.349	No
266	17.45	0.98	0.26	0.72	0.96	0.470	1.34	0.350	1.00	1.00	0.350	No
267	17.55	0.99	0.27	0.72	0.96	0.471	1.34	0.350	1.00	1.00	0.350	No
268	17.59	0.99	0.27	0.72	0.96	0.471	1.34	0.351	1.00	1.00	0.351	No
269	17.65	1.00	0.27	0.73	0.96	0.472	1.34	0.351	1.00	1.00	0.351	No
270	17.75	1.00	0.27	0.73	0.96	0.473	1.34	0.352	1.00	1.00	0.352	No
271	17.79	1.00	0.27	0.73	0.96	0.473	1.34	0.352	1.00	1.00	0.352	No
272	17.87	1.01	0.28	0.73	0.96	0.474	1.34	0.353	1.00	1.00	0.353	No
273	17.94	1.01	0.28	0.73	0.96	0.475	1.34	0.353	1.00	1.00	0.353	No
274	17.98	1.01	0.28	0.73	0.96	0.475	1.34	0.353	1.00	1.00	0.353	No
275	18.05	1.02	0.28	0.74	0.96	0.476	1.34	0.354	1.00	1.00	0.354	No
276	18.14	1.02	0.29	0.74	0.96	0.477	1.34	0.354	1.00	1.00	0.354	No
277	18.18	1.03	0.29	0.74	0.96	0.477	1.34	0.355	1.00	1.00	0.355	No
278	18.24	1.03	0.29	0.74	0.96	0.477	1.34	0.355	1.00	1.00	0.355	No
279	18.34	1.03	0.29	0.74	0.96	0.478	1.34	0.356	1.00	1.00	0.356	No
280	18.39	1.04	0.29	0.74	0.96	0.479	1.34	0.356	1.00	1.00	0.356	No
281	18.44	1.04	0.29	0.75	0.96	0.479	1.34	0.356	1.00	1.00	0.356	No
282	18.54	1.05	0.30	0.75	0.96	0.480	1.34	0.357	1.00	1.00	0.357	No
283	18.59	1.05	0.30	0.75	0.96	0.480	1.34	0.357	1.00	1.00	0.357	No
284	18.64	1.05	0.30	0.75	0.96	0.481	1.34	0.358	1.00	1.00	0.358	No
285	18.74	1.06	0.30	0.75	0.96	0.482	1.34	0.358	1.00	1.00	0.358	No
286	18.79	1.06	0.31	0.75	0.96	0.482	1.34	0.359	1.00	1.00	0.359	No
287	18.84	1.06	0.31	0.76	0.96	0.483	1.34	0.359	1.00	1.00	0.359	No
288	18.92	1.07	0.31	0.76	0.96	0.483	1.34	0.359	1.00	1.00	0.359	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
289	18.97	1.07	0.31	0.76	0.96	0.484	1.34	0.360	1.00	1.00	0.360	No
290	19.04	1.07	0.31	0.76	0.96	0.484	1.34	0.360	1.00	1.00	0.360	No
291	19.14	1.08	0.32	0.76	0.96	0.485	1.34	0.361	1.00	1.00	0.361	No
292	19.17	1.08	0.32	0.76	0.96	0.485	1.34	0.361	1.00	1.00	0.361	No
293	19.24	1.08	0.32	0.77	0.96	0.486	1.34	0.361	1.00	1.00	0.361	No
294	19.34	1.09	0.32	0.77	0.96	0.487	1.34	0.362	1.00	1.00	0.362	No
295	19.39	1.09	0.32	0.77	0.96	0.487	1.34	0.362	1.00	1.00	0.362	No
296	19.43	1.10	0.33	0.77	0.96	0.487	1.34	0.363	1.00	1.00	0.363	No
297	19.52	1.10	0.33	0.77	0.96	0.488	1.34	0.363	1.00	1.00	0.363	No
298	19.56	1.10	0.33	0.77	0.96	0.489	1.34	0.363	1.00	1.00	0.363	No
299	19.63	1.11	0.33	0.77	0.96	0.489	1.34	0.364	1.00	1.00	0.364	No
300	19.73	1.11	0.33	0.78	0.96	0.490	1.34	0.364	1.00	1.00	0.364	No
301	19.78	1.11	0.34	0.78	0.96	0.490	1.34	0.365	1.00	1.00	0.365	No
302	19.83	1.12	0.34	0.78	0.96	0.491	1.34	0.365	1.00	1.00	0.365	No
303	19.90	1.12	0.34	0.78	0.96	0.491	1.34	0.365	1.00	1.00	0.365	No
304	19.96	1.12	0.34	0.78	0.96	0.492	1.34	0.366	1.00	1.00	0.366	No
305	20.03	1.13	0.34	0.78	0.96	0.492	1.34	0.366	1.00	1.00	0.366	No
306	20.09	1.13	0.35	0.79	0.96	0.493	1.34	0.366	1.00	1.00	0.366	No
307	20.16	1.14	0.35	0.79	0.96	0.493	1.34	0.367	1.00	1.00	0.367	No
308	20.23	1.14	0.35	0.79	0.96	0.494	1.34	0.367	1.00	1.00	0.367	No
309	20.31	1.14	0.35	0.79	0.96	0.494	1.34	0.368	1.00	1.00	0.368	No
310	20.35	1.15	0.35	0.79	0.96	0.495	1.34	0.368	1.00	1.00	0.368	No
311	20.42	1.15	0.36	0.79	0.96	0.495	1.34	0.368	1.00	1.00	0.368	No
312	20.50	1.15	0.36	0.80	0.96	0.496	1.34	0.369	1.00	1.00	0.369	No
313	20.55	1.16	0.36	0.80	0.96	0.496	1.34	0.369	1.00	1.00	0.369	No
314	20.62	1.16	0.36	0.80	0.96	0.497	1.34	0.369	1.00	1.00	0.369	No
315	20.70	1.17	0.37	0.80	0.96	0.497	1.34	0.370	1.00	1.00	0.370	No
316	20.75	1.17	0.37	0.80	0.95	0.497	1.34	0.370	1.00	1.00	0.370	No
317	20.82	1.17	0.37	0.80	0.95	0.498	1.34	0.370	1.00	1.00	0.370	No
318	20.90	1.18	0.37	0.81	0.95	0.498	1.34	0.371	1.00	1.00	0.371	No
319	20.96	1.18	0.37	0.81	0.95	0.499	1.34	0.371	1.00	1.00	0.371	No
320	21.01	1.18	0.37	0.81	0.95	0.499	1.34	0.371	1.00	1.00	0.371	No
321	21.11	1.19	0.38	0.81	0.95	0.500	1.34	0.372	1.00	1.00	0.372	No
322	21.15	1.19	0.38	0.81	0.95	0.500	1.34	0.372	1.00	1.00	0.372	No
323	21.21	1.19	0.38	0.81	0.95	0.501	1.34	0.372	1.00	1.00	0.372	No
324	21.27	1.20	0.38	0.82	0.95	0.501	1.34	0.373	1.00	1.00	0.373	No
325	21.36	1.20	0.39	0.82	0.95	0.502	1.34	0.373	1.00	1.00	0.373	No
326	21.40	1.21	0.39	0.82	0.95	0.502	1.34	0.373	1.00	1.00	0.373	No
327	21.51	1.21	0.39	0.82	0.95	0.503	1.34	0.374	1.00	1.00	0.374	No
328	21.55	1.21	0.39	0.82	0.95	0.503	1.34	0.374	1.00	1.00	0.374	No
329	21.60	1.22	0.39	0.82	0.95	0.503	1.34	0.374	1.00	1.00	0.374	No
330	21.69	1.22	0.40	0.83	0.95	0.504	1.34	0.375	1.00	1.00	0.375	No
331	21.75	1.23	0.40	0.83	0.95	0.504	1.34	0.375	1.00	1.00	0.375	No
332	21.80	1.23	0.40	0.83	0.95	0.504	1.34	0.375	1.00	1.00	0.375	No
333	21.90	1.23	0.40	0.83	0.95	0.505	1.34	0.376	1.00	1.00	0.376	No
334	21.95	1.24	0.40	0.83	0.95	0.505	1.34	0.376	1.00	1.00	0.376	No
335	22.00	1.24	0.41	0.83	0.95	0.505	1.34	0.376	1.00	1.00	0.376	No
336	22.09	1.25	0.41	0.84	0.95	0.506	1.34	0.376	1.00	1.00	0.376	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
337	22.11	1.25	0.41	0.84	0.95	0.506	1.34	0.376	1.00	1.00	0.376	No
338	22.19	1.25	0.41	0.84	0.95	0.507	1.34	0.377	1.00	1.00	0.377	No
339	22.26	1.26	0.41	0.84	0.95	0.507	1.34	0.377	1.00	1.00	0.377	No
340	22.35	1.26	0.42	0.84	0.95	0.507	1.34	0.377	1.00	1.00	0.377	No
341	22.39	1.26	0.42	0.84	0.95	0.508	1.34	0.378	1.00	1.00	0.378	No
342	22.44	1.27	0.42	0.85	0.95	0.508	1.34	0.378	1.00	1.00	0.378	No
343	22.55	1.27	0.42	0.85	0.95	0.509	1.34	0.378	1.00	1.00	0.378	No
344	22.58	1.27	0.42	0.85	0.95	0.509	1.34	0.378	1.00	1.00	0.378	No
345	22.65	1.28	0.43	0.85	0.95	0.509	1.34	0.379	1.00	1.00	0.379	No
346	22.74	1.28	0.43	0.85	0.95	0.510	1.34	0.379	1.00	1.00	0.379	No
347	22.83	1.29	0.43	0.86	0.95	0.510	1.34	0.380	1.00	1.00	0.380	No
348	22.85	1.29	0.43	0.86	0.95	0.510	1.34	0.380	1.00	1.00	0.380	No
349	22.94	1.29	0.43	0.86	0.95	0.511	1.34	0.380	1.00	1.00	0.380	No
350	23.00	1.30	0.44	0.86	0.95	0.511	1.34	0.380	1.00	1.00	0.380	No
351	23.05	1.30	0.44	0.86	0.95	0.512	1.34	0.381	1.00	1.00	0.381	No
352	23.10	1.30	0.44	0.86	0.95	0.512	1.34	0.381	1.00	1.00	0.381	No
353	23.18	1.31	0.44	0.86	0.95	0.512	1.34	0.381	1.00	1.00	0.381	No
354	23.25	1.31	0.44	0.87	0.95	0.513	1.34	0.381	1.00	1.00	0.381	No
355	23.30	1.31	0.45	0.87	0.95	0.513	1.34	0.382	1.00	1.00	0.382	No
356	23.38	1.32	0.45	0.87	0.95	0.514	1.34	0.382	1.00	1.00	0.382	No
357	23.45	1.32	0.45	0.87	0.95	0.514	1.34	0.382	1.00	1.00	0.382	No
358	23.50	1.32	0.45	0.87	0.95	0.514	1.34	0.383	1.00	1.00	0.383	No
359	23.60	1.33	0.46	0.87	0.95	0.515	1.34	0.383	1.00	1.00	0.383	No
360	23.65	1.33	0.46	0.87	0.95	0.515	1.34	0.383	1.00	1.00	0.383	No
361	23.70	1.33	0.46	0.87	0.95	0.516	1.34	0.384	1.00	1.00	0.384	No
362	23.76	1.34	0.46	0.88	0.95	0.516	1.34	0.384	1.00	1.00	0.384	No
363	23.84	1.34	0.46	0.88	0.95	0.517	1.34	0.384	1.00	1.00	0.384	No
364	23.89	1.34	0.46	0.88	0.95	0.517	1.34	0.384	1.00	1.00	0.384	No
365	23.99	1.35	0.47	0.88	0.95	0.517	1.34	0.385	1.00	1.00	0.385	No
366	24.03	1.35	0.47	0.88	0.95	0.518	1.34	0.385	1.00	1.00	0.385	No
367	24.09	1.35	0.47	0.88	0.94	0.518	1.34	0.385	1.00	1.00	0.385	No
368	24.19	1.36	0.47	0.88	0.94	0.519	1.34	0.386	1.00	1.00	0.386	No
369	24.24	1.36	0.48	0.89	0.94	0.519	1.34	0.386	1.00	1.00	0.386	No
370	24.30	1.36	0.48	0.89	0.94	0.519	1.34	0.386	1.00	1.00	0.386	No
371	24.34	1.37	0.48	0.89	0.94	0.519	1.34	0.386	1.00	1.00	0.386	No
372	24.44	1.37	0.48	0.89	0.94	0.520	1.34	0.387	1.00	1.00	0.387	No
373	24.50	1.38	0.48	0.89	0.94	0.520	1.34	0.387	1.00	1.00	0.387	No
374	24.58	1.38	0.49	0.89	0.94	0.521	1.34	0.387	1.00	1.00	0.387	No
375	24.65	1.38	0.49	0.90	0.94	0.521	1.34	0.387	1.00	1.00	0.387	No
376	24.69	1.39	0.49	0.90	0.94	0.521	1.34	0.388	1.00	1.00	0.388	No
377	24.74	1.39	0.49	0.90	0.94	0.521	1.34	0.388	1.00	1.00	0.388	No
378	24.84	1.39	0.49	0.90	0.94	0.522	1.34	0.388	1.00	1.00	0.388	No
379	24.89	1.40	0.50	0.90	0.94	0.522	1.34	0.388	1.00	1.00	0.388	No
380	24.95	1.40	0.50	0.90	0.94	0.522	1.34	0.388	1.00	1.00	0.388	No
381	25.04	1.41	0.50	0.91	0.94	0.523	1.34	0.389	1.00	1.00	0.389	No
382	25.08	1.41	0.50	0.91	0.94	0.523	1.34	0.389	1.00	1.00	0.389	No
383	25.19	1.41	0.51	0.91	0.94	0.523	1.34	0.389	1.00	1.00	0.389	No
384	25.24	1.42	0.51	0.91	0.94	0.524	1.34	0.389	1.00	1.00	0.389	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
385	25.28	1.42	0.51	0.91	0.94	0.524	1.34	0.390	1.00	1.00	0.390	No
386	25.35	1.42	0.51	0.91	0.94	0.524	1.34	0.390	1.00	1.00	0.390	No
387	25.43	1.43	0.51	0.92	0.94	0.524	1.34	0.390	1.00	1.00	0.390	No
388	25.48	1.43	0.51	0.92	0.94	0.525	1.34	0.390	1.00	1.00	0.390	No
389	25.53	1.43	0.52	0.92	0.94	0.525	1.34	0.390	1.00	1.00	0.390	No
390	25.63	1.44	0.52	0.92	0.94	0.525	1.34	0.391	1.00	1.00	0.391	No
391	25.68	1.44	0.52	0.92	0.94	0.525	1.34	0.391	1.00	1.00	0.391	No
392	25.74	1.45	0.52	0.92	0.94	0.526	1.34	0.391	1.00	1.00	0.391	No
393	25.79	1.45	0.52	0.92	0.94	0.526	1.34	0.391	1.00	1.00	0.391	No
394	25.88	1.45	0.53	0.93	0.94	0.526	1.34	0.391	1.00	1.00	0.391	No
395	25.92	1.46	0.53	0.93	0.94	0.526	1.34	0.391	1.00	1.00	0.391	No
396	25.99	1.46	0.53	0.93	0.94	0.527	1.34	0.392	1.00	1.00	0.392	No
397	26.05	1.46	0.53	0.93	0.94	0.527	1.34	0.392	1.00	1.00	0.392	No
398	26.13	1.47	0.53	0.93	0.94	0.527	1.34	0.392	1.00	1.00	0.392	No
399	26.20	1.47	0.54	0.94	0.94	0.527	1.34	0.392	1.00	1.00	0.392	No
400	26.26	1.48	0.54	0.94	0.94	0.528	1.34	0.392	1.00	1.00	0.392	No
401	26.31	1.48	0.54	0.94	0.94	0.528	1.34	0.393	1.00	1.00	0.393	No
402	26.40	1.48	0.54	0.94	0.94	0.528	1.34	0.393	1.00	1.00	0.393	No
403	26.45	1.49	0.54	0.94	0.94	0.528	1.34	0.393	1.00	1.00	0.393	No
404	26.54	1.49	0.55	0.94	0.94	0.529	1.34	0.393	1.00	1.00	0.393	No
405	26.59	1.49	0.55	0.95	0.94	0.529	1.34	0.393	1.00	1.00	0.393	No
406	26.65	1.50	0.55	0.95	0.94	0.529	1.34	0.393	1.00	1.00	0.393	No
407	26.74	1.50	0.55	0.95	0.94	0.529	1.34	0.394	1.00	1.00	0.394	No
408	26.78	1.51	0.55	0.95	0.94	0.529	1.34	0.394	1.00	1.00	0.394	No
409	26.84	1.51	0.56	0.95	0.93	0.530	1.34	0.394	1.00	1.00	0.394	No
410	26.94	1.51	0.56	0.95	0.93	0.530	1.34	0.394	1.00	1.00	0.394	No
411	26.99	1.52	0.56	0.96	0.93	0.530	1.34	0.394	1.00	1.00	0.394	No
412	27.04	1.52	0.56	0.96	0.93	0.530	1.34	0.394	1.00	1.00	0.394	No
413	27.13	1.52	0.57	0.96	0.93	0.531	1.34	0.395	1.00	1.00	0.395	No
414	27.18	1.53	0.57	0.96	0.93	0.531	1.34	0.395	1.00	1.00	0.395	No
415	27.24	1.53	0.57	0.96	0.93	0.531	1.34	0.395	1.00	1.00	0.395	No
416	27.34	1.54	0.57	0.96	0.93	0.531	1.34	0.395	1.00	1.00	0.395	No
417	27.40	1.54	0.57	0.97	0.93	0.532	1.34	0.395	1.00	1.00	0.395	No
418	27.44	1.54	0.58	0.97	0.93	0.532	1.34	0.395	1.00	1.00	0.395	No
419	27.53	1.55	0.58	0.97	0.93	0.532	1.34	0.396	1.00	1.00	0.396	No
420	27.57	1.55	0.58	0.97	0.93	0.532	1.34	0.396	1.00	1.00	0.396	No
421	27.64	1.55	0.58	0.97	0.93	0.532	1.34	0.396	1.00	1.00	0.396	No
422	27.72	1.56	0.58	0.97	0.93	0.533	1.34	0.396	1.00	1.00	0.396	No
423	27.79	1.56	0.59	0.98	0.93	0.533	1.34	0.396	1.00	1.00	0.396	No
424	27.83	1.56	0.59	0.98	0.93	0.533	1.34	0.396	1.00	1.00	0.396	No
425	27.90	1.57	0.59	0.98	0.93	0.533	1.34	0.397	1.00	1.00	0.397	No
426	27.98	1.57	0.59	0.98	0.93	0.533	1.34	0.397	1.00	1.00	0.397	No
427	28.03	1.58	0.59	0.98	0.93	0.534	1.34	0.397	1.00	1.00	0.397	No
428	28.09	1.58	0.60	0.98	0.93	0.534	1.34	0.397	1.00	1.00	0.397	No
429	28.18	1.58	0.60	0.99	0.93	0.534	1.34	0.397	1.00	1.00	0.397	No
430	28.22	1.59	0.60	0.99	0.93	0.534	1.34	0.397	1.00	1.00	0.397	No
431	28.28	1.59	0.60	0.99	0.93	0.534	1.34	0.397	1.00	1.00	0.397	No
432	28.38	1.59	0.60	0.99	0.93	0.535	1.34	0.398	1.00	1.00	0.398	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
433	28.43	1.60	0.61	0.99	0.93	0.535	1.34	0.398	1.00	1.00	0.398	No
434	28.48	1.60	0.61	0.99	0.93	0.535	1.34	0.398	1.00	1.00	0.398	No
435	28.58	1.61	0.61	1.00	0.93	0.535	1.34	0.398	1.00	1.00	0.398	No
436	28.62	1.61	0.61	1.00	0.93	0.535	1.34	0.398	1.00	1.00	0.398	No
437	28.69	1.61	0.61	1.00	0.93	0.535	1.34	0.398	1.00	1.00	0.398	No
438	28.77	1.62	0.62	1.00	0.93	0.536	1.34	0.398	1.00	1.00	0.398	No
439	28.82	1.62	0.62	1.00	0.93	0.536	1.34	0.398	1.00	1.00	0.398	No
440	28.88	1.62	0.62	1.00	0.93	0.536	1.34	0.398	1.00	1.00	0.398	No
441	28.97	1.63	0.62	1.01	0.93	0.536	1.34	0.399	1.00	1.00	0.399	No
442	29.01	1.63	0.62	1.01	0.93	0.536	1.34	0.399	1.00	1.00	0.399	No
443	29.07	1.63	0.63	1.01	0.93	0.536	1.34	0.399	1.00	1.00	0.399	No
444	29.15	1.64	0.63	1.01	0.92	0.536	1.34	0.399	1.00	1.00	0.399	No
445	29.21	1.64	0.63	1.01	0.92	0.536	1.34	0.399	1.00	1.00	0.399	No
446	29.30	1.65	0.63	1.01	0.92	0.537	1.34	0.399	1.00	1.00	0.399	No
447	29.33	1.65	0.63	1.02	0.92	0.537	1.34	0.399	1.00	1.00	0.399	No
448	29.41	1.65	0.64	1.02	0.92	0.537	1.34	0.399	1.00	1.00	0.399	No
449	29.50	1.66	0.64	1.02	0.92	0.537	1.34	0.399	1.00	1.00	0.399	No
450	29.53	1.66	0.64	1.02	0.92	0.537	1.34	0.399	1.00	1.00	0.399	No
451	29.61	1.67	0.64	1.02	0.92	0.537	1.34	0.399	1.00	1.00	0.399	No
452	29.70	1.67	0.65	1.03	0.92	0.537	1.34	0.400	1.00	1.00	0.400	No
453	29.74	1.67	0.65	1.03	0.92	0.537	1.34	0.400	1.00	1.00	0.400	No
454	29.80	1.68	0.65	1.03	0.92	0.537	1.34	0.400	1.00	1.00	0.400	No
455	29.90	1.68	0.65	1.03	0.92	0.538	1.34	0.400	1.00	1.00	0.400	No
456	29.93	1.68	0.65	1.03	0.92	0.538	1.34	0.400	1.00	1.00	0.400	No
457	30.00	1.69	0.66	1.03	0.92	0.538	1.34	0.400	1.00	1.00	0.400	No
458	30.09	1.69	0.66	1.04	0.92	0.538	1.34	0.400	1.00	1.00	0.400	No
459	30.15	1.70	0.66	1.04	0.92	0.538	1.34	0.400	1.00	1.00	0.400	No
460	30.19	1.70	0.66	1.04	0.92	0.538	1.34	0.400	1.00	1.00	0.400	No
461	30.30	1.71	0.66	1.04	0.92	0.538	1.34	0.400	1.00	1.00	0.400	No
462	30.33	1.71	0.67	1.04	0.92	0.538	1.34	0.400	1.00	1.00	0.400	No
463	30.40	1.71	0.67	1.04	0.92	0.538	1.34	0.400	1.00	1.00	0.400	No
464	30.49	1.72	0.67	1.05	0.92	0.539	1.34	0.401	1.00	1.00	0.401	No
465	30.54	1.72	0.67	1.05	0.92	0.539	1.34	0.401	1.00	1.00	0.401	No
466	30.59	1.72	0.67	1.05	0.92	0.539	1.34	0.401	1.00	1.00	0.401	No
467	30.64	1.73	0.68	1.05	0.92	0.539	1.34	0.401	1.00	1.00	0.401	No
468	30.72	1.73	0.68	1.05	0.92	0.539	1.34	0.401	1.00	1.00	0.401	No
469	30.80	1.73	0.68	1.05	0.92	0.539	1.34	0.401	1.00	1.00	0.401	No
470	30.88	1.74	0.68	1.06	0.92	0.539	1.34	0.401	1.00	1.00	0.401	No
471	30.93	1.74	0.68	1.06	0.92	0.539	1.34	0.401	1.00	1.00	0.401	No
472	31.00	1.75	0.69	1.06	0.92	0.539	1.34	0.401	1.00	1.00	0.401	No
473	31.04	1.75	0.69	1.06	0.92	0.539	1.34	0.401	1.00	1.00	0.401	No
474	31.13	1.75	0.69	1.06	0.91	0.539	1.34	0.401	1.00	1.00	0.402	No
475	31.20	1.76	0.69	1.07	0.91	0.539	1.34	0.401	1.00	1.00	0.402	No
476	31.29	1.76	0.70	1.07	0.91	0.539	1.34	0.401	1.00	1.00	0.402	No
477	31.34	1.77	0.70	1.07	0.91	0.539	1.34	0.401	1.00	1.00	0.402	No
478	31.38	1.77	0.70	1.07	0.91	0.539	1.34	0.401	1.00	1.00	0.402	No
479	31.43	1.77	0.70	1.07	0.91	0.540	1.34	0.401	1.00	1.00	0.402	No
480	31.51	1.78	0.70	1.07	0.91	0.540	1.34	0.401	1.00	1.00	0.403	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
481	31.58	1.78	0.70	1.08	0.91	0.540	1.34	0.401	1.00	1.00	0.403	No
482	31.63	1.78	0.71	1.08	0.91	0.540	1.34	0.401	1.00	1.00	0.403	No
483	31.71	1.79	0.71	1.08	0.91	0.540	1.34	0.401	1.00	1.00	0.403	No
484	31.78	1.79	0.71	1.08	0.91	0.540	1.34	0.401	1.00	1.00	0.403	No
485	31.83	1.79	0.71	1.08	0.91	0.540	1.34	0.401	0.99	1.00	0.404	No
486	31.90	1.80	0.71	1.08	0.91	0.540	1.34	0.402	0.99	1.00	0.404	No
487	31.98	1.80	0.72	1.09	0.91	0.540	1.34	0.402	0.99	1.00	0.404	No
488	32.03	1.81	0.72	1.09	0.91	0.540	1.34	0.402	0.99	1.00	0.404	No
489	32.09	1.81	0.72	1.09	0.91	0.540	1.34	0.402	0.99	1.00	0.404	No
490	32.16	1.81	0.72	1.09	0.91	0.540	1.34	0.402	0.99	1.00	0.405	No
491	32.22	1.82	0.72	1.09	0.91	0.540	1.34	0.402	0.99	1.00	0.405	No
492	32.30	1.82	0.73	1.09	0.91	0.540	1.34	0.402	0.99	1.00	0.405	No
493	32.38	1.83	0.73	1.10	0.91	0.540	1.34	0.402	0.99	1.00	0.405	No
494	32.42	1.83	0.73	1.10	0.91	0.540	1.34	0.402	0.99	1.00	0.405	No
495	32.50	1.83	0.73	1.10	0.91	0.540	1.34	0.402	0.99	1.00	0.405	No
496	32.56	1.84	0.74	1.10	0.91	0.540	1.34	0.402	0.99	1.00	0.406	No
497	32.62	1.84	0.74	1.10	0.91	0.541	1.34	0.402	0.99	1.00	0.406	No
498	32.72	1.84	0.74	1.10	0.91	0.541	1.34	0.402	0.99	1.00	0.406	No
499	32.77	1.85	0.74	1.11	0.91	0.541	1.34	0.402	0.99	1.00	0.406	No
500	32.82	1.85	0.74	1.11	0.90	0.541	1.34	0.402	0.99	1.00	0.406	No
501	32.91	1.86	0.75	1.11	0.90	0.541	1.34	0.402	0.99	1.00	0.407	No
502	32.97	1.86	0.75	1.11	0.90	0.541	1.34	0.402	0.99	1.00	0.407	No
503	33.02	1.86	0.75	1.11	0.90	0.541	1.34	0.402	0.99	1.00	0.407	No
504	33.11	1.87	0.75	1.11	0.90	0.541	1.34	0.402	0.99	1.00	0.407	No
505	33.16	1.87	0.75	1.12	0.90	0.541	1.34	0.402	0.99	1.00	0.407	No
506	33.22	1.87	0.76	1.12	0.90	0.541	1.34	0.402	0.99	1.00	0.407	No
507	33.29	1.88	0.76	1.12	0.90	0.541	1.34	0.402	0.99	1.00	0.407	No
508	33.37	1.88	0.76	1.12	0.90	0.541	1.34	0.402	0.99	1.00	0.408	No
509	33.41	1.88	0.76	1.12	0.90	0.541	1.34	0.402	0.99	1.00	0.408	No
510	33.47	1.89	0.76	1.12	0.90	0.541	1.34	0.402	0.99	1.00	0.408	No
511	33.57	1.89	0.77	1.13	0.90	0.541	1.34	0.402	0.99	1.00	0.408	No
512	33.60	1.89	0.77	1.13	0.90	0.541	1.34	0.402	0.99	1.00	0.408	No
513	33.67	1.90	0.77	1.13	0.90	0.541	1.34	0.402	0.99	1.00	0.408	No
514	33.76	1.90	0.77	1.13	0.90	0.541	1.34	0.402	0.98	1.00	0.408	No
515	33.80	1.91	0.77	1.13	0.90	0.541	1.34	0.402	0.98	1.00	0.409	No
516	33.86	1.91	0.78	1.13	0.90	0.541	1.34	0.402	0.98	1.00	0.409	No
517	33.96	1.92	0.78	1.14	0.90	0.541	1.34	0.402	0.98	1.00	0.409	No
518	34.00	1.92	0.78	1.14	0.90	0.541	1.34	0.402	0.98	1.00	0.409	No
519	34.06	1.92	0.78	1.14	0.90	0.541	1.34	0.402	0.98	1.00	0.409	No
520	34.16	1.93	0.78	1.14	0.90	0.541	1.34	0.402	0.98	1.00	0.409	No
521	34.20	1.93	0.79	1.14	0.90	0.541	1.34	0.402	0.98	1.00	0.409	No
522	34.26	1.93	0.79	1.15	0.90	0.540	1.34	0.402	0.98	1.00	0.409	No
523	34.36	1.94	0.79	1.15	0.89	0.540	1.34	0.402	0.98	1.00	0.410	No
524	34.39	1.94	0.79	1.15	0.89	0.540	1.34	0.402	0.98	1.00	0.410	No
525	34.46	1.95	0.79	1.15	0.89	0.540	1.34	0.402	0.98	1.00	0.410	No
526	34.56	1.95	0.80	1.15	0.89	0.540	1.34	0.402	0.98	1.00	0.410	No
527	34.60	1.95	0.80	1.16	0.89	0.540	1.34	0.402	0.98	1.00	0.410	No
528	34.65	1.96	0.80	1.16	0.89	0.540	1.34	0.402	0.98	1.00	0.410	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
529	34.75	1.96	0.80	1.16	0.89	0.540	1.34	0.402	0.98	1.00	0.410	No
530	34.80	1.97	0.80	1.16	0.89	0.540	1.34	0.402	0.98	1.00	0.410	No
531	34.86	1.97	0.81	1.16	0.89	0.540	1.34	0.402	0.98	1.00	0.410	No
532	34.95	1.97	0.81	1.16	0.89	0.540	1.34	0.402	0.98	1.00	0.411	No
533	34.99	1.98	0.81	1.17	0.89	0.540	1.34	0.402	0.98	1.00	0.411	No
534	35.06	1.98	0.81	1.17	0.89	0.540	1.34	0.402	0.98	1.00	0.411	No
535	35.11	1.98	0.81	1.17	0.89	0.540	1.34	0.401	0.98	1.00	0.411	No
536	35.19	1.99	0.82	1.17	0.89	0.540	1.34	0.401	0.98	1.00	0.411	No
537	35.25	1.99	0.82	1.17	0.89	0.540	1.34	0.401	0.98	1.00	0.411	No
538	35.31	2.00	0.82	1.17	0.89	0.540	1.34	0.401	0.98	1.00	0.411	No
539	35.39	2.00	0.82	1.18	0.89	0.540	1.34	0.401	0.98	1.00	0.411	No
540	35.49	2.01	0.83	1.18	0.89	0.539	1.34	0.401	0.98	1.00	0.411	No
541	35.53	2.01	0.83	1.18	0.89	0.539	1.34	0.401	0.98	1.00	0.411	No
542	35.60	2.01	0.83	1.18	0.89	0.539	1.34	0.401	0.97	1.00	0.411	No
543	35.63	2.01	0.83	1.18	0.89	0.539	1.34	0.401	0.97	1.00	0.412	No
544	35.70	2.02	0.83	1.18	0.89	0.539	1.34	0.401	0.97	1.00	0.412	No
545	35.78	2.02	0.84	1.19	0.89	0.539	1.34	0.401	0.97	1.00	0.412	No
546	35.84	2.03	0.84	1.19	0.88	0.539	1.34	0.401	0.97	1.00	0.412	No
547	35.90	2.03	0.84	1.19	0.88	0.539	1.34	0.401	0.97	1.00	0.412	No
548	35.98	2.03	0.84	1.19	0.88	0.539	1.34	0.401	0.97	1.00	0.412	No
549	36.06	2.04	0.84	1.19	0.88	0.539	1.34	0.401	0.97	1.00	0.412	No
550	36.09	2.04	0.85	1.20	0.88	0.539	1.34	0.401	0.97	1.00	0.412	No
551	36.18	2.05	0.85	1.20	0.88	0.539	1.34	0.401	0.97	1.00	0.412	No
552	36.23	2.05	0.85	1.20	0.88	0.538	1.34	0.400	0.97	1.00	0.412	No
553	36.29	2.05	0.85	1.20	0.88	0.538	1.34	0.400	0.97	1.00	0.412	No
554	36.38	2.06	0.85	1.20	0.88	0.538	1.34	0.400	0.97	1.00	0.412	No
555	36.42	2.06	0.86	1.20	0.88	0.538	1.34	0.400	0.97	1.00	0.412	No
556	36.49	2.06	0.86	1.21	0.88	0.538	1.34	0.400	0.97	1.00	0.412	No
557	36.58	2.07	0.86	1.21	0.88	0.538	1.34	0.400	0.97	1.00	2.000	Yes
558	36.62	2.07	0.86	1.21	0.88	0.538	1.34	0.400	0.97	1.00	2.000	Yes
559	36.68	2.08	0.86	1.21	0.88	0.538	1.34	0.400	0.97	1.00	2.000	Yes
560	36.77	2.08	0.87	1.22	0.88	0.538	1.34	0.400	0.97	1.00	2.000	Yes
561	36.83	2.09	0.87	1.22	0.88	0.537	1.34	0.400	0.97	1.00	2.000	Yes
562	36.88	2.09	0.87	1.22	0.88	0.537	1.34	0.400	0.97	1.00	2.000	Yes
563	36.97	2.09	0.87	1.22	0.88	0.537	1.34	0.399	0.97	1.00	2.000	Yes
564	37.02	2.10	0.87	1.22	0.88	0.537	1.34	0.399	0.97	1.00	2.000	Yes
565	37.08	2.10	0.88	1.22	0.88	0.537	1.34	0.399	0.97	1.00	2.000	Yes
566	37.17	2.11	0.88	1.23	0.87	0.536	1.34	0.399	0.97	1.00	0.413	No
567	37.22	2.11	0.88	1.23	0.87	0.536	1.34	0.399	0.97	1.00	0.413	No
568	37.27	2.11	0.88	1.23	0.87	0.536	1.34	0.399	0.97	1.00	0.413	No
569	37.37	2.12	0.89	1.23	0.87	0.536	1.34	0.399	0.97	1.00	0.413	No
570	37.41	2.12	0.89	1.24	0.87	0.536	1.34	0.398	0.96	1.00	0.413	No
571	37.47	2.13	0.89	1.24	0.87	0.536	1.34	0.398	0.96	1.00	0.413	No
572	37.57	2.13	0.89	1.24	0.87	0.535	1.34	0.398	0.96	1.00	0.413	No
573	37.61	2.14	0.89	1.24	0.87	0.535	1.34	0.398	0.96	1.00	0.413	No
574	37.67	2.14	0.89	1.24	0.87	0.535	1.34	0.398	0.96	1.00	0.413	No
575	37.76	2.15	0.90	1.25	0.87	0.535	1.34	0.398	0.96	1.00	0.413	No
576	37.81	2.15	0.90	1.25	0.87	0.534	1.34	0.398	0.96	1.00	0.413	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
577	37.87	2.15	0.90	1.25	0.87	0.534	1.34	0.397	0.96	1.00	0.413	No
578	37.97	2.16	0.90	1.26	0.87	0.534	1.34	0.397	0.96	1.00	0.413	No
579	38.02	2.16	0.91	1.26	0.87	0.534	1.34	0.397	0.96	1.00	0.413	No
580	38.07	2.17	0.91	1.26	0.87	0.534	1.34	0.397	0.96	1.00	0.413	No
581	38.17	2.17	0.91	1.26	0.87	0.533	1.34	0.397	0.96	1.00	0.413	No
582	38.20	2.17	0.91	1.26	0.87	0.533	1.34	0.397	0.96	1.00	0.413	No
583	38.27	2.18	0.91	1.27	0.87	0.533	1.34	0.396	0.96	1.00	0.413	No
584	38.33	2.18	0.92	1.27	0.87	0.533	1.34	0.396	0.96	1.00	0.413	No
585	38.42	2.19	0.92	1.27	0.86	0.532	1.34	0.396	0.96	1.00	0.413	No
586	38.46	2.19	0.92	1.27	0.86	0.532	1.34	0.396	0.96	1.00	0.413	No
587	38.53	2.20	0.92	1.27	0.86	0.532	1.34	0.396	0.96	1.00	0.413	No
588	38.62	2.20	0.92	1.28	0.86	0.532	1.34	0.395	0.96	1.00	0.413	No
589	38.66	2.20	0.93	1.28	0.86	0.531	1.34	0.395	0.96	1.00	0.413	No
590	38.73	2.21	0.93	1.28	0.86	0.531	1.34	0.395	0.96	1.00	0.413	No
591	38.81	2.22	0.93	1.29	0.86	0.531	1.34	0.395	0.96	1.00	0.413	No
592	38.86	2.22	0.93	1.29	0.86	0.531	1.34	0.395	0.96	1.00	0.413	No
593	38.93	2.22	0.93	1.29	0.86	0.530	1.34	0.394	0.96	1.00	0.413	No
594	39.02	2.23	0.94	1.29	0.86	0.530	1.34	0.394	0.95	1.00	0.413	No
595	39.05	2.23	0.94	1.29	0.86	0.530	1.34	0.394	0.95	1.00	0.413	No
596	39.12	2.24	0.94	1.30	0.86	0.529	1.34	0.394	0.95	1.00	0.413	No
597	39.18	2.24	0.94	1.30	0.86	0.529	1.34	0.394	0.95	1.00	0.413	No
598	39.27	2.25	0.94	1.30	0.86	0.529	1.34	0.393	0.95	1.00	0.413	No
599	39.31	2.25	0.95	1.30	0.86	0.529	1.34	0.393	0.95	1.00	0.413	No
600	39.37	2.25	0.95	1.31	0.86	0.528	1.34	0.393	0.95	1.00	0.413	No
601	39.44	2.26	0.95	1.31	0.86	0.528	1.34	0.393	0.95	1.00	0.412	No
602	39.50	2.26	0.95	1.31	0.86	0.528	1.34	0.393	0.95	1.00	0.412	No
603	39.59	2.27	0.95	1.31	0.85	0.528	1.34	0.392	0.95	1.00	0.412	No
604	39.65	2.27	0.96	1.32	0.85	0.527	1.34	0.392	0.95	1.00	0.412	No
605	39.71	2.28	0.96	1.32	0.85	0.527	1.34	0.392	0.95	1.00	0.412	No
606	39.77	2.28	0.96	1.32	0.85	0.527	1.34	0.392	0.95	1.00	0.412	No
607	39.84	2.28	0.96	1.32	0.85	0.527	1.34	0.392	0.95	1.00	0.412	No
608	39.91	2.29	0.96	1.32	0.85	0.526	1.34	0.391	0.95	1.00	0.412	No
609	39.97	2.29	0.97	1.33	0.85	0.526	1.34	0.391	0.95	1.00	0.412	No
610	40.03	2.30	0.97	1.33	0.85	0.526	1.34	0.391	0.95	1.00	0.412	No
611	40.11	2.30	0.97	1.33	0.85	0.525	1.34	0.391	0.95	1.00	0.412	No
612	40.17	2.31	0.97	1.33	0.85	0.525	1.34	0.391	0.95	1.00	0.412	No
613	40.26	2.31	0.98	1.34	0.85	0.525	1.34	0.390	0.95	1.00	0.412	No
614	40.30	2.31	0.98	1.34	0.85	0.525	1.34	0.390	0.95	1.00	0.412	No
615	40.36	2.32	0.98	1.34	0.85	0.524	1.34	0.390	0.95	1.00	0.412	No
616	40.45	2.32	0.98	1.34	0.85	0.524	1.34	0.390	0.95	1.00	0.412	No
617	40.49	2.33	0.98	1.34	0.85	0.524	1.34	0.390	0.95	1.00	0.412	No
618	40.57	2.33	0.98	1.35	0.85	0.524	1.34	0.389	0.95	1.00	0.412	No
619	40.62	2.33	0.99	1.35	0.85	0.523	1.34	0.389	0.95	1.00	0.412	No
620	40.70	2.34	0.99	1.35	0.84	0.523	1.34	0.389	0.95	1.00	0.412	No
621	40.76	2.34	0.99	1.35	0.84	0.523	1.34	0.389	0.95	1.00	0.412	No
622	40.86	2.35	0.99	1.36	0.84	0.523	1.34	0.389	0.94	1.00	0.411	No
623	40.89	2.35	0.99	1.36	0.84	0.522	1.34	0.389	0.94	1.00	0.411	No
624	40.95	2.36	1.00	1.36	0.84	0.522	1.34	0.388	0.94	1.00	0.411	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
625	41.03	2.36	1.00	1.36	0.84	0.522	1.34	0.388	0.94	1.00	0.411	No
626	41.11	2.37	1.00	1.36	0.84	0.522	1.34	0.388	0.94	1.00	0.411	No
627	41.16	2.37	1.00	1.37	0.84	0.521	1.34	0.388	0.94	1.00	0.411	No
628	41.23	2.37	1.01	1.37	0.84	0.521	1.34	0.388	0.94	1.00	0.411	No
629	41.29	2.38	1.01	1.37	0.84	0.521	1.34	0.387	0.94	1.00	0.411	No
630	41.35	2.38	1.01	1.37	0.84	0.521	1.34	0.387	0.94	1.00	0.411	No
631	41.41	2.38	1.01	1.37	0.84	0.520	1.34	0.387	0.94	1.00	0.411	No
632	41.49	2.39	1.01	1.38	0.84	0.520	1.34	0.387	0.94	1.00	0.411	No
633	41.56	2.39	1.02	1.38	0.84	0.520	1.34	0.387	0.94	1.00	0.411	No
634	41.64	2.40	1.02	1.38	0.84	0.519	1.34	0.386	0.94	1.00	0.411	No
635	41.69	2.40	1.02	1.38	0.84	0.519	1.34	0.386	0.94	1.00	0.411	No
636	41.73	2.41	1.02	1.38	0.84	0.519	1.34	0.386	0.94	1.00	0.411	No
637	41.84	2.41	1.02	1.39	0.83	0.519	1.34	0.386	0.94	1.00	0.410	No
638	41.89	2.42	1.03	1.39	0.83	0.518	1.34	0.385	0.94	1.00	0.410	No
639	41.98	2.42	1.03	1.39	0.83	0.518	1.34	0.385	0.94	1.00	0.410	No
640	42.04	2.43	1.03	1.39	0.83	0.518	1.34	0.385	0.94	1.00	0.410	No
641	42.09	2.43	1.03	1.40	0.83	0.517	1.34	0.385	0.94	1.00	0.410	No
642	42.16	2.43	1.03	1.40	0.83	0.517	1.34	0.385	0.94	1.00	0.410	No
643	42.24	2.44	1.04	1.40	0.83	0.517	1.34	0.384	0.94	1.00	0.410	No
644	42.28	2.44	1.04	1.40	0.83	0.517	1.34	0.384	0.94	1.00	0.410	No
645	42.33	2.44	1.04	1.40	0.83	0.516	1.34	0.384	0.94	1.00	0.410	No
646	42.39	2.45	1.04	1.41	0.83	0.516	1.34	0.384	0.94	1.00	0.410	No
647	42.47	2.45	1.04	1.41	0.83	0.516	1.34	0.384	0.94	1.00	0.410	No
648	42.53	2.46	1.05	1.41	0.83	0.515	1.34	0.383	0.94	1.00	0.410	No
649	42.59	2.46	1.05	1.41	0.83	0.515	1.34	0.383	0.94	1.00	0.409	No
650	42.66	2.47	1.05	1.42	0.83	0.515	1.34	0.383	0.94	1.00	0.409	No
651	42.73	2.47	1.05	1.42	0.83	0.514	1.34	0.383	0.93	1.00	2.000	Yes
652	42.83	2.48	1.06	1.42	0.82	0.514	1.34	0.382	0.93	1.00	2.000	Yes
653	42.88	2.48	1.06	1.42	0.82	0.514	1.34	0.382	0.93	1.00	2.000	Yes
654	42.93	2.48	1.06	1.42	0.82	0.514	1.34	0.382	0.93	1.00	2.000	Yes
655	42.99	2.49	1.06	1.43	0.82	0.513	1.34	0.382	0.93	1.00	2.000	Yes
656	43.07	2.49	1.06	1.43	0.82	0.513	1.34	0.381	0.93	1.00	2.000	Yes
657	43.14	2.50	1.07	1.43	0.82	0.513	1.34	0.381	0.93	1.00	2.000	Yes
658	43.19	2.50	1.07	1.43	0.82	0.512	1.34	0.381	0.93	1.00	2.000	Yes
659	43.25	2.50	1.07	1.44	0.82	0.512	1.34	0.381	0.93	1.00	2.000	Yes
660	43.34	2.51	1.07	1.44	0.82	0.512	1.34	0.380	0.93	1.00	2.000	Yes
661	43.39	2.51	1.07	1.44	0.82	0.511	1.34	0.380	0.93	1.00	2.000	Yes
662	43.45	2.52	1.07	1.44	0.82	0.511	1.34	0.380	0.93	1.00	0.408	No
663	43.54	2.52	1.08	1.44	0.82	0.511	1.34	0.380	0.93	1.00	0.408	No
664	43.59	2.53	1.08	1.45	0.82	0.510	1.34	0.380	0.93	1.00	0.408	No
665	43.64	2.53	1.08	1.45	0.82	0.510	1.34	0.379	0.93	1.00	0.408	No
666	43.74	2.54	1.08	1.45	0.82	0.510	1.34	0.379	0.93	1.00	0.408	No
667	43.78	2.54	1.09	1.45	0.82	0.510	1.34	0.379	0.93	1.00	0.408	No
668	43.83	2.54	1.09	1.45	0.82	0.509	1.34	0.379	0.93	1.00	0.407	No
669	43.94	2.55	1.09	1.46	0.81	0.509	1.34	0.378	0.93	1.00	0.407	No
670	43.98	2.55	1.09	1.46	0.81	0.509	1.34	0.378	0.93	1.00	0.407	No
671	44.04	2.55	1.09	1.46	0.81	0.508	1.34	0.378	0.93	1.00	0.407	No
672	44.14	2.56	1.10	1.46	0.81	0.508	1.34	0.378	0.93	1.00	0.407	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
673	44.17	2.56	1.10	1.46	0.81	0.508	1.34	0.378	0.93	1.00	0.407	No
674	44.23	2.56	1.10	1.47	0.81	0.508	1.34	0.378	0.93	1.00	0.407	No
675	44.33	2.57	1.10	1.47	0.81	0.507	1.34	0.377	0.93	1.00	0.407	No
676	44.37	2.57	1.10	1.47	0.81	0.507	1.34	0.377	0.93	1.00	0.407	No
677	44.44	2.58	1.11	1.47	0.81	0.507	1.34	0.377	0.93	1.00	0.407	No
678	44.53	2.58	1.11	1.47	0.81	0.506	1.34	0.377	0.93	1.00	0.406	No
679	44.58	2.58	1.11	1.47	0.81	0.506	1.34	0.376	0.93	1.00	0.406	No
680	44.64	2.59	1.11	1.48	0.81	0.506	1.34	0.376	0.93	1.00	0.406	No
681	44.73	2.59	1.11	1.48	0.81	0.506	1.34	0.376	0.93	1.00	0.406	No
682	44.78	2.60	1.12	1.48	0.81	0.505	1.34	0.376	0.93	1.00	0.406	No
683	44.82	2.60	1.12	1.48	0.81	0.505	1.34	0.376	0.93	1.00	0.406	No
684	44.90	2.60	1.12	1.48	0.80	0.505	1.34	0.375	0.93	1.00	0.406	No
685	44.97	2.61	1.12	1.49	0.80	0.504	1.34	0.375	0.92	1.00	0.406	No
686	45.03	2.61	1.12	1.49	0.80	0.504	1.34	0.375	0.92	1.00	0.406	No
687	45.09	2.62	1.13	1.49	0.80	0.504	1.34	0.375	0.92	1.00	0.405	No
688	45.17	2.62	1.13	1.49	0.80	0.503	1.34	0.374	0.92	1.00	0.405	No
689	45.22	2.62	1.13	1.49	0.80	0.503	1.34	0.374	0.92	1.00	0.405	No
690	45.29	2.63	1.13	1.50	0.80	0.503	1.34	0.374	0.92	1.00	0.405	No
691	45.38	2.63	1.14	1.50	0.80	0.502	1.34	0.374	0.92	1.00	0.405	No
692	45.42	2.64	1.14	1.50	0.80	0.502	1.34	0.374	0.92	1.00	0.405	No
693	45.50	2.64	1.14	1.50	0.80	0.502	1.34	0.373	0.92	1.00	0.405	No
694	45.57	2.65	1.14	1.50	0.80	0.502	1.34	0.373	0.92	1.00	0.404	No
695	45.62	2.65	1.14	1.51	0.80	0.501	1.34	0.373	0.92	1.00	0.404	No
696	45.69	2.65	1.14	1.51	0.80	0.501	1.34	0.373	0.92	1.00	0.404	No
697	45.77	2.66	1.15	1.51	0.80	0.501	1.34	0.372	0.92	1.00	0.404	No
698	45.82	2.66	1.15	1.51	0.80	0.500	1.34	0.372	0.92	1.00	0.404	No
699	45.88	2.67	1.15	1.51	0.79	0.500	1.34	0.372	0.92	1.00	0.404	No
700	45.97	2.67	1.15	1.52	0.79	0.499	1.34	0.372	0.92	1.00	0.404	No
701	46.02	2.67	1.16	1.52	0.79	0.499	1.34	0.371	0.92	1.00	0.404	No
702	46.10	2.68	1.16	1.52	0.79	0.499	1.34	0.371	0.92	1.00	0.403	No
703	46.17	2.68	1.16	1.52	0.79	0.498	1.34	0.371	0.92	1.00	0.403	No
704	46.21	2.69	1.16	1.53	0.79	0.498	1.34	0.371	0.92	1.00	0.403	No
705	46.27	2.69	1.16	1.53	0.79	0.498	1.34	0.370	0.92	1.00	0.403	No
706	46.36	2.70	1.17	1.53	0.79	0.498	1.34	0.370	0.92	1.00	0.403	No
707	46.42	2.70	1.17	1.53	0.79	0.497	1.34	0.370	0.92	1.00	0.403	No
708	46.46	2.70	1.17	1.53	0.79	0.497	1.34	0.370	0.92	1.00	0.403	No
709	46.56	2.71	1.17	1.54	0.79	0.497	1.34	0.369	0.92	1.00	0.402	No
710	46.61	2.71	1.17	1.54	0.79	0.496	1.34	0.369	0.92	1.00	0.402	No
711	46.66	2.71	1.17	1.54	0.79	0.496	1.34	0.369	0.92	1.00	0.402	No
712	46.74	2.72	1.18	1.54	0.79	0.496	1.34	0.369	0.92	1.00	0.402	No
713	46.81	2.72	1.18	1.54	0.79	0.495	1.34	0.368	0.92	1.00	0.402	No
714	46.87	2.73	1.18	1.55	0.78	0.495	1.34	0.368	0.92	1.00	0.402	No
715	46.94	2.73	1.18	1.55	0.78	0.495	1.34	0.368	0.92	1.00	0.402	No
716	47.01	2.74	1.19	1.55	0.78	0.494	1.34	0.368	0.92	1.00	0.401	No
717	47.06	2.74	1.19	1.55	0.78	0.494	1.34	0.367	0.92	1.00	0.401	No
718	47.12	2.74	1.19	1.55	0.78	0.494	1.34	0.367	0.92	1.00	0.401	No
719	47.19	2.75	1.19	1.56	0.78	0.493	1.34	0.367	0.92	1.00	0.401	No
720	47.25	2.75	1.19	1.56	0.78	0.493	1.34	0.367	0.92	1.00	0.401	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
721	47.34	2.76	1.20	1.56	0.78	0.493	1.34	0.366	0.91	1.00	0.401	No
722	47.39	2.76	1.20	1.56	0.78	0.492	1.34	0.366	0.91	1.00	0.401	No
723	47.44	2.76	1.20	1.56	0.78	0.492	1.34	0.366	0.91	1.00	0.400	No
724	47.54	2.77	1.20	1.57	0.78	0.492	1.34	0.366	0.91	1.00	0.400	No
725	47.59	2.77	1.20	1.57	0.78	0.491	1.34	0.366	0.91	1.00	0.400	No
726	47.65	2.77	1.21	1.57	0.78	0.491	1.34	0.365	0.91	1.00	0.400	No
727	47.74	2.78	1.21	1.57	0.78	0.491	1.34	0.365	0.91	1.00	0.400	No
728	47.81	2.78	1.21	1.57	0.78	0.490	1.34	0.365	0.91	1.00	0.400	No
729	47.85	2.79	1.21	1.57	0.77	0.490	1.34	0.365	0.91	1.00	0.399	No
730	47.94	2.79	1.21	1.58	0.77	0.490	1.34	0.364	0.91	1.00	0.399	No
731	47.98	2.79	1.22	1.58	0.77	0.489	1.34	0.364	0.91	1.00	0.399	No
732	48.04	2.80	1.22	1.58	0.77	0.489	1.34	0.364	0.91	1.00	0.399	No
733	48.13	2.80	1.22	1.58	0.77	0.489	1.34	0.363	0.91	1.00	0.399	No
734	48.17	2.81	1.22	1.58	0.77	0.488	1.34	0.363	0.91	1.00	0.399	No
735	48.24	2.81	1.22	1.59	0.77	0.488	1.34	0.363	0.91	1.00	0.399	No
736	48.32	2.82	1.23	1.59	0.77	0.488	1.34	0.363	0.91	1.00	0.398	No
737	48.37	2.82	1.23	1.59	0.77	0.487	1.34	0.363	0.91	1.00	0.398	No
738	48.44	2.82	1.23	1.59	0.77	0.487	1.34	0.362	0.91	1.00	2.000	Yes
739	48.53	2.83	1.23	1.60	0.77	0.487	1.34	0.362	0.91	1.00	2.000	Yes
740	48.56	2.83	1.23	1.60	0.77	0.486	1.34	0.362	0.91	1.00	2.000	Yes
741	48.64	2.84	1.24	1.60	0.77	0.486	1.34	0.361	0.91	1.00	2.000	Yes
742	48.72	2.84	1.24	1.60	0.77	0.486	1.34	0.361	0.91	1.00	2.000	Yes
743	48.78	2.84	1.24	1.60	0.77	0.485	1.34	0.361	0.91	1.00	2.000	Yes
744	48.83	2.85	1.24	1.61	0.76	0.485	1.34	0.361	0.91	1.00	2.000	Yes
745	48.90	2.85	1.24	1.61	0.76	0.485	1.34	0.360	0.91	1.00	2.000	Yes
746	48.97	2.86	1.25	1.61	0.76	0.484	1.34	0.360	0.91	1.00	2.000	Yes
747	49.03	2.86	1.25	1.61	0.76	0.484	1.34	0.360	0.91	1.00	2.000	Yes
748	49.12	2.87	1.25	1.61	0.76	0.483	1.34	0.360	0.91	1.00	0.396	No
749	49.16	2.87	1.25	1.62	0.76	0.483	1.34	0.359	0.91	1.00	0.396	No
750	49.23	2.87	1.26	1.62	0.76	0.483	1.34	0.359	0.91	1.00	0.396	No
751	49.31	2.88	1.26	1.62	0.76	0.482	1.34	0.359	0.91	1.00	0.396	No
752	49.36	2.88	1.26	1.62	0.76	0.482	1.34	0.358	0.91	1.00	0.396	No
753	49.43	2.89	1.26	1.63	0.76	0.482	1.34	0.358	0.91	1.00	0.395	No
754	49.52	2.89	1.26	1.63	0.76	0.481	1.34	0.358	0.91	1.00	0.395	No
755	49.58	2.90	1.27	1.63	0.76	0.481	1.34	0.358	0.91	1.00	0.395	No
756	49.62	2.90	1.27	1.63	0.76	0.481	1.34	0.357	0.91	1.00	0.395	No
757	49.71	2.91	1.27	1.64	0.76	0.480	1.34	0.357	0.90	1.00	0.395	No
758	49.78	2.91	1.27	1.64	0.75	0.480	1.34	0.357	0.90	1.00	0.394	No
759	49.81	2.91	1.27	1.64	0.75	0.479	1.34	0.357	0.90	1.00	0.394	No
760	49.88	2.92	1.28	1.64	0.75	0.479	1.34	0.356	0.90	1.00	0.394	No
761	49.97	2.92	1.28	1.64	0.75	0.478	1.34	0.356	0.90	1.00	0.394	No
762	50.00	2.92	1.28	1.65	0.75	0.478	1.34	0.356	0.90	1.00	0.394	No
763	50.07	2.93	1.28	1.65	0.75	0.478	1.34	0.355	0.90	1.00	2.000	No
764	50.14	2.93	1.28	1.65	0.75	0.478	1.34	0.355	0.90	1.00	2.000	No
765	50.22	2.94	1.29	1.65	0.75	0.477	1.34	0.355	0.90	1.00	2.000	Yes
766	50.27	2.94	1.29	1.65	0.75	0.477	1.34	0.355	0.90	1.00	2.000	Yes
767	50.35	2.95	1.29	1.66	0.75	0.476	1.34	0.354	0.90	1.00	2.000	Yes
768	50.40	2.95	1.29	1.66	0.75	0.476	1.34	0.354	0.90	1.00	2.000	Yes

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
769	50.47	2.96	1.29	1.66	0.75	0.476	1.34	0.354	0.90	1.00	2.000	Yes
770	50.55	2.96	1.30	1.66	0.75	0.475	1.34	0.353	0.90	1.00	2.000	Yes
771	50.59	2.96	1.30	1.67	0.75	0.475	1.34	0.353	0.90	1.00	2.000	Yes
772	50.66	2.97	1.30	1.67	0.75	0.475	1.34	0.353	0.90	1.00	2.000	Yes
773	50.75	2.97	1.30	1.67	0.75	0.474	1.34	0.353	0.90	1.00	2.000	Yes
774	50.79	2.98	1.30	1.67	0.74	0.474	1.34	0.352	0.90	1.00	2.000	Yes
775	50.86	2.98	1.31	1.67	0.74	0.473	1.34	0.352	0.90	1.00	2.000	Yes
776	50.94	2.99	1.31	1.68	0.74	0.473	1.34	0.352	0.90	1.00	2.000	Yes
777	50.99	2.99	1.31	1.68	0.74	0.473	1.34	0.352	0.90	1.00	2.000	Yes
778	51.05	2.99	1.31	1.68	0.74	0.472	1.34	0.351	0.90	1.00	2.000	Yes
779	51.14	3.00	1.31	1.68	0.74	0.472	1.34	0.351	0.90	1.00	2.000	Yes
780	51.18	3.00	1.32	1.68	0.74	0.472	1.34	0.351	0.90	1.00	2.000	Yes
781	51.25	3.00	1.32	1.69	0.74	0.471	1.34	0.351	0.90	1.00	2.000	Yes
782	51.34	3.01	1.32	1.69	0.74	0.471	1.34	0.350	0.90	1.00	2.000	Yes
783	51.41	3.01	1.32	1.69	0.74	0.471	1.34	0.350	0.90	1.00	2.000	No
784	51.44	3.02	1.32	1.69	0.74	0.470	1.34	0.350	0.90	1.00	2.000	No
785	51.52	3.02	1.33	1.69	0.74	0.470	1.34	0.350	0.90	1.00	2.000	No
786	51.67	3.03	1.33	1.70	0.74	0.469	1.34	0.349	0.90	1.00	2.000	No
787	51.70	3.03	1.33	1.70	0.74	0.469	1.34	0.349	0.90	1.00	2.000	No
788	51.75	3.03	1.33	1.70	0.74	0.469	1.34	0.349	0.90	1.00	2.000	No
789	51.78	3.04	1.33	1.70	0.73	0.469	1.34	0.349	0.90	1.00	2.000	No
790	51.88	3.04	1.34	1.70	0.73	0.468	1.34	0.348	0.90	1.00	2.000	No
791	51.92	3.04	1.34	1.71	0.73	0.468	1.34	0.348	0.90	1.00	2.000	No
792	51.99	3.05	1.34	1.71	0.73	0.468	1.34	0.348	0.90	1.00	2.000	No
793	52.04	3.05	1.34	1.71	0.73	0.467	1.34	0.348	0.90	1.00	2.000	No
794	52.14	3.06	1.35	1.71	0.73	0.467	1.34	0.347	0.90	1.00	2.000	No
795	52.19	3.06	1.35	1.71	0.73	0.467	1.34	0.347	0.90	1.00	2.000	No
796	52.26	3.06	1.35	1.71	0.73	0.466	1.34	0.347	0.89	1.00	2.000	No
797	52.33	3.07	1.35	1.72	0.73	0.466	1.34	0.347	0.89	1.00	2.000	No
798	52.38	3.07	1.35	1.72	0.73	0.466	1.34	0.346	0.89	1.00	2.000	No
799	52.43	3.07	1.36	1.72	0.73	0.466	1.34	0.346	0.89	1.00	2.000	No
800	52.51	3.08	1.36	1.72	0.73	0.465	1.34	0.346	0.89	1.00	2.000	No
801	52.58	3.08	1.36	1.72	0.73	0.465	1.34	0.346	0.89	1.00	2.000	No
802	52.63	3.08	1.36	1.72	0.73	0.465	1.34	0.346	0.89	1.00	2.000	No
803	52.69	3.09	1.36	1.73	0.73	0.464	1.34	0.345	0.89	1.00	2.000	No
804	52.77	3.09	1.37	1.73	0.72	0.464	1.34	0.345	0.89	1.00	2.000	No
805	52.83	3.10	1.37	1.73	0.72	0.464	1.34	0.345	0.89	1.00	2.000	No
806	52.90	3.10	1.37	1.73	0.72	0.463	1.34	0.345	0.89	1.00	2.000	No
807	52.99	3.10	1.37	1.73	0.72	0.463	1.34	0.344	0.89	1.00	2.000	No
808	53.05	3.11	1.37	1.73	0.72	0.463	1.34	0.344	0.89	1.00	2.000	No
809	53.10	3.11	1.38	1.74	0.72	0.463	1.34	0.344	0.89	1.00	2.000	No
810	53.16	3.11	1.38	1.74	0.72	0.462	1.34	0.344	0.89	1.00	2.000	No
811	53.25	3.12	1.38	1.74	0.72	0.462	1.34	0.344	0.89	1.00	2.000	No
812	53.29	3.12	1.38	1.74	0.72	0.462	1.34	0.343	0.89	1.00	2.000	No
813	53.38	3.13	1.38	1.74	0.72	0.461	1.34	0.343	0.89	1.00	2.000	No
814	53.44	3.13	1.39	1.74	0.72	0.461	1.34	0.343	0.89	1.00	2.000	No
815	53.50	3.13	1.39	1.74	0.72	0.461	1.34	0.343	0.89	1.00	2.000	No
816	53.55	3.14	1.39	1.75	0.72	0.461	1.34	0.343	0.89	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
817	53.64	3.14	1.39	1.75	0.72	0.460	1.34	0.342	0.89	1.00	2.000	No
818	53.72	3.14	1.40	1.75	0.72	0.460	1.34	0.342	0.89	1.00	2.000	No
819	53.74	3.15	1.40	1.75	0.72	0.460	1.34	0.342	0.89	1.00	2.000	No
820	53.82	3.15	1.40	1.75	0.71	0.459	1.34	0.342	0.89	1.00	2.000	No
821	53.90	3.15	1.40	1.75	0.71	0.459	1.34	0.341	0.89	1.00	2.000	No
822	53.94	3.16	1.40	1.75	0.71	0.459	1.34	0.341	0.89	1.00	2.000	No
823	54.01	3.16	1.40	1.76	0.71	0.459	1.34	0.341	0.89	1.00	2.000	No
824	54.09	3.16	1.41	1.76	0.71	0.458	1.34	0.341	0.89	1.00	2.000	No
825	54.19	3.17	1.41	1.76	0.71	0.458	1.34	0.340	0.89	1.00	2.000	No
826	54.24	3.17	1.41	1.76	0.71	0.458	1.34	0.340	0.89	1.00	2.000	No
827	54.29	3.18	1.41	1.76	0.71	0.457	1.34	0.340	0.89	1.00	2.000	No
828	54.35	3.18	1.41	1.76	0.71	0.457	1.34	0.340	0.89	1.00	2.000	No
829	54.44	3.18	1.42	1.77	0.71	0.457	1.34	0.340	0.89	1.00	2.000	No
830	54.49	3.19	1.42	1.77	0.71	0.457	1.34	0.340	0.89	1.00	2.000	No
831	54.53	3.19	1.42	1.77	0.71	0.456	1.34	0.339	0.89	1.00	2.000	No
832	54.63	3.19	1.42	1.77	0.71	0.456	1.34	0.339	0.89	1.00	2.000	No
833	54.68	3.20	1.43	1.77	0.71	0.456	1.34	0.339	0.89	1.00	2.000	No
834	54.74	3.20	1.43	1.77	0.71	0.455	1.34	0.339	0.89	1.00	2.000	No
835	54.83	3.20	1.43	1.77	0.70	0.455	1.34	0.338	0.89	1.00	2.000	No
836	54.88	3.21	1.43	1.78	0.70	0.455	1.34	0.338	0.89	1.00	2.000	No
837	54.94	3.21	1.43	1.78	0.70	0.455	1.34	0.338	0.89	1.00	2.000	No
838	55.03	3.22	1.44	1.78	0.70	0.454	1.34	0.338	0.89	1.00	2.000	No
839	55.07	3.22	1.44	1.78	0.70	0.454	1.34	0.338	0.89	1.00	2.000	No
840	55.13	3.22	1.44	1.78	0.70	0.454	1.34	0.337	0.89	1.00	2.000	No
841	55.23	3.23	1.44	1.78	0.70	0.453	1.34	0.337	0.89	1.00	2.000	No
842	55.28	3.23	1.44	1.79	0.70	0.453	1.34	0.337	0.89	1.00	2.000	No
843	55.32	3.23	1.45	1.79	0.70	0.453	1.34	0.337	0.89	1.00	2.000	No
844	55.42	3.24	1.45	1.79	0.70	0.452	1.34	0.337	0.89	1.00	2.000	No
845	55.50	3.24	1.45	1.79	0.70	0.452	1.34	0.336	0.89	1.00	2.000	No
846	55.53	3.24	1.45	1.79	0.70	0.452	1.34	0.336	0.89	1.00	2.000	No
847	55.58	3.25	1.45	1.79	0.70	0.452	1.34	0.336	0.89	1.00	2.000	No
848	55.66	3.25	1.46	1.79	0.70	0.451	1.34	0.336	0.89	1.00	2.000	No
849	55.73	3.25	1.46	1.80	0.70	0.451	1.34	0.336	0.89	1.00	2.000	No
850	55.78	3.26	1.46	1.80	0.70	0.451	1.34	0.335	0.89	1.00	2.000	No
851	55.86	3.26	1.46	1.80	0.70	0.451	1.34	0.335	0.89	1.00	2.000	No
852	55.93	3.26	1.46	1.80	0.69	0.450	1.34	0.335	0.88	1.00	2.000	Yes
853	55.97	3.27	1.47	1.80	0.69	0.450	1.34	0.335	0.88	1.00	2.000	Yes
854	56.08	3.27	1.47	1.80	0.69	0.450	1.34	0.334	0.88	1.00	2.000	Yes
855	56.12	3.28	1.47	1.81	0.69	0.449	1.34	0.334	0.88	1.00	2.000	Yes
856	56.17	3.28	1.47	1.81	0.69	0.449	1.34	0.334	0.88	1.00	2.000	Yes
857	56.28	3.29	1.48	1.81	0.69	0.449	1.34	0.334	0.88	1.00	2.000	Yes
858	56.32	3.29	1.48	1.81	0.69	0.448	1.34	0.334	0.88	1.00	2.000	Yes
859	56.37	3.29	1.48	1.81	0.69	0.448	1.34	0.333	0.88	1.00	2.000	Yes
860	56.47	3.30	1.48	1.82	0.69	0.448	1.34	0.333	0.88	1.00	2.000	Yes
861	56.52	3.30	1.48	1.82	0.69	0.447	1.34	0.333	0.88	1.00	2.000	Yes
862	56.57	3.30	1.48	1.82	0.69	0.447	1.34	0.333	0.88	1.00	2.000	Yes
863	56.67	3.31	1.49	1.82	0.69	0.447	1.34	0.332	0.88	1.00	2.000	No
864	56.72	3.31	1.49	1.82	0.69	0.446	1.34	0.332	0.88	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
865	56.78	3.32	1.49	1.83	0.69	0.446	1.34	0.332	0.88	1.00	2.000	Yes
866	56.87	3.32	1.49	1.83	0.69	0.446	1.34	0.331	0.88	1.00	2.000	Yes
867	56.91	3.32	1.49	1.83	0.69	0.445	1.34	0.331	0.88	1.00	2.000	Yes
868	56.97	3.33	1.50	1.83	0.69	0.445	1.34	0.331	0.88	1.00	2.000	Yes
869	57.03	3.33	1.50	1.83	0.68	0.445	1.34	0.331	0.88	1.00	2.000	Yes
870	57.11	3.34	1.50	1.84	0.68	0.444	1.34	0.330	0.88	1.00	2.000	Yes
871	57.17	3.34	1.50	1.84	0.68	0.444	1.34	0.330	0.88	1.00	2.000	Yes
872	57.26	3.35	1.51	1.84	0.68	0.444	1.34	0.330	0.88	1.00	2.000	Yes
873	57.32	3.35	1.51	1.84	0.68	0.443	1.34	0.330	0.88	1.00	2.000	Yes
874	57.35	3.35	1.51	1.84	0.68	0.443	1.34	0.330	0.88	1.00	2.000	Yes
875	57.42	3.36	1.51	1.85	0.68	0.443	1.34	0.329	0.88	1.00	2.000	Yes
876	57.51	3.36	1.51	1.85	0.68	0.442	1.34	0.329	0.88	1.00	2.000	Yes
877	57.55	3.36	1.51	1.85	0.68	0.442	1.34	0.329	0.88	1.00	2.000	Yes
878	57.62	3.37	1.52	1.85	0.68	0.442	1.34	0.329	0.88	1.00	2.000	No
879	57.71	3.37	1.52	1.85	0.68	0.441	1.34	0.328	0.88	1.00	2.000	No
880	57.78	3.38	1.52	1.86	0.68	0.441	1.34	0.328	0.88	1.00	2.000	No
881	57.82	3.38	1.52	1.86	0.68	0.441	1.34	0.328	0.88	1.00	2.000	No
882	57.90	3.39	1.53	1.86	0.68	0.440	1.34	0.328	0.88	1.00	2.000	No
883	57.96	3.39	1.53	1.86	0.68	0.440	1.34	0.327	0.88	1.00	2.000	No
884	58.01	3.39	1.53	1.86	0.68	0.440	1.34	0.327	0.88	1.00	2.000	No
885	58.11	3.40	1.53	1.87	0.68	0.440	1.34	0.327	0.88	1.00	2.000	No
886	58.15	3.40	1.53	1.87	0.67	0.439	1.34	0.327	0.88	1.00	2.000	No
887	58.21	3.40	1.54	1.87	0.67	0.439	1.34	0.327	0.88	1.00	2.000	No
888	58.31	3.41	1.54	1.87	0.67	0.439	1.34	0.326	0.88	1.00	2.000	No
889	58.35	3.41	1.54	1.87	0.67	0.439	1.34	0.326	0.88	1.00	2.000	No
890	58.42	3.42	1.54	1.87	0.67	0.438	1.34	0.326	0.88	1.00	2.000	No
891	58.50	3.42	1.54	1.88	0.67	0.438	1.34	0.326	0.88	1.00	2.000	No
892	58.55	3.42	1.55	1.88	0.67	0.438	1.34	0.326	0.88	1.00	2.000	No
893	58.61	3.43	1.55	1.88	0.67	0.437	1.34	0.325	0.88	1.00	2.000	No
894	58.70	3.43	1.55	1.88	0.67	0.437	1.34	0.325	0.88	1.00	2.000	No
895	58.75	3.43	1.55	1.88	0.67	0.437	1.34	0.325	0.88	1.00	2.000	No
896	58.81	3.44	1.55	1.88	0.67	0.437	1.34	0.325	0.88	1.00	2.000	No
897	58.89	3.44	1.56	1.89	0.67	0.436	1.34	0.324	0.88	1.00	2.000	No
898	58.95	3.45	1.56	1.89	0.67	0.436	1.34	0.324	0.88	1.00	2.000	No
899	59.00	3.45	1.56	1.89	0.67	0.436	1.34	0.324	0.88	1.00	2.000	No
900	59.10	3.45	1.56	1.89	0.67	0.435	1.34	0.324	0.88	1.00	2.000	No
901	59.15	3.46	1.56	1.89	0.67	0.435	1.34	0.324	0.87	1.00	2.000	No
902	59.20	3.46	1.57	1.89	0.67	0.435	1.34	0.324	0.87	1.00	2.000	No
903	59.28	3.46	1.57	1.89	0.67	0.435	1.34	0.323	0.87	1.00	2.000	No
904	59.35	3.47	1.57	1.90	0.66	0.434	1.34	0.323	0.87	1.00	2.000	No
905	59.38	3.47	1.57	1.90	0.66	0.434	1.34	0.323	0.87	1.00	2.000	No
906	59.46	3.47	1.57	1.90	0.66	0.434	1.34	0.323	0.87	1.00	2.000	No
907	59.53	3.48	1.58	1.90	0.66	0.434	1.34	0.323	0.87	1.00	2.000	No
908	59.59	3.48	1.58	1.90	0.66	0.433	1.34	0.322	0.87	1.00	2.000	No
909	59.67	3.49	1.58	1.90	0.66	0.433	1.34	0.322	0.87	1.00	2.000	No
910	59.73	3.49	1.58	1.91	0.66	0.433	1.34	0.322	0.87	1.00	2.000	No
911	59.79	3.49	1.58	1.91	0.66	0.433	1.34	0.322	0.87	1.00	2.000	No
912	59.89	3.50	1.59	1.91	0.66	0.432	1.34	0.321	0.87	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
913	59.94	3.50	1.59	1.91	0.66	0.432	1.34	0.321	0.87	1.00	2.000	No
914	59.99	3.50	1.59	1.91	0.66	0.432	1.34	0.321	0.87	1.00	2.000	Yes
915	60.07	3.51	1.59	1.91	0.66	0.431	1.34	0.321	0.87	1.00	2.000	Yes
916	60.12	3.51	1.59	1.92	0.66	0.431	1.34	0.321	0.87	1.00	2.000	Yes
917	60.19	3.51	1.60	1.92	0.66	0.431	1.34	0.321	0.87	1.00	2.000	Yes
918	60.25	3.52	1.60	1.92	0.66	0.431	1.34	0.320	0.87	1.00	2.000	Yes
919	60.33	3.52	1.60	1.92	0.66	0.430	1.34	0.320	0.87	1.00	2.000	Yes
920	60.38	3.52	1.60	1.92	0.66	0.430	1.34	0.320	0.87	1.00	2.000	Yes
921	60.48	3.53	1.61	1.92	0.66	0.430	1.34	0.320	0.87	1.00	2.000	Yes
922	60.53	3.53	1.61	1.93	0.65	0.430	1.34	0.320	0.87	1.00	2.000	Yes
923	60.61	3.54	1.61	1.93	0.65	0.429	1.34	0.319	0.87	1.00	2.000	No
924	60.63	3.54	1.61	1.93	0.65	0.429	1.34	0.319	0.87	1.00	2.000	No

Abbreviations

Depth: Depth from free surface, at which CPT was performed (ft)
σ_v: Total overburden pressure at test point (tsf)
u_0: Water pressure at test point (tsf)
σ_v': Effective overburden pressure based on GWT during earthquake (tsf)
r_d: Nonlinear shear mass factor
CSR: Cyclic Stress Ratio
MSF: Magnitude Scaling Factor
CSR_{eq}: CSR adjusted for M=7.5
K_σ: Effective overburden stress factor
CSR^*: CSR fully adjusted

:: Cyclic Resistance Ratio (CRR) calculation data ::

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
1	0.08	9.60	2.68	1.56	0.90	15.42	3.88	59.90	4.000	Yes	Yes	2.00
2	0.15	12.30	2.59	1.52	0.86	19.75	3.25	64.14	4.000	Yes	No	2.00
3	0.23	15.73	2.49	1.46	0.82	25.25	2.71	68.51	4.000	Yes	No	2.00
4	0.30	19.25	2.41	1.45	0.80	30.90	2.37	73.28	4.000	Yes	No	2.00
5	0.35	22.73	2.36	1.49	0.78	36.49	2.17	79.06	4.000	Yes	No	2.00
6	0.43	27.09	2.32	1.58	0.76	43.49	2.00	87.15	4.000	Yes	No	2.00
7	0.50	31.20	2.28	1.67	0.75	50.08	1.90	95.08	4.000	Yes	No	2.00
8	0.55	34.99	2.26	1.79	0.74	56.17	1.84	103.30	4.000	Yes	No	2.00
9	0.61	38.30	2.26	1.94	0.74	61.48	1.82	111.93	4.000	No	No	2.00
10	0.70	41.27	2.26	2.09	0.73	66.25	1.82	120.26	4.000	No	No	2.00
11	0.73	43.17	2.26	2.24	0.74	69.29	1.84	127.26	4.000	No	No	2.00
12	0.80	43.66	2.28	2.39	0.74	70.07	1.88	132.08	4.000	No	No	2.00
13	0.89	43.46	2.30	2.55	0.75	69.74	1.95	135.95	4.000	No	No	2.00
14	0.93	42.22	2.33	2.71	0.76	67.74	2.04	138.27	4.000	No	No	2.00
15	1.01	40.68	2.35	2.82	0.77	65.27	2.12	138.64	4.000	No	No	2.00
16	1.09	39.02	2.37	2.89	0.78	62.58	2.20	137.77	4.000	No	No	2.00
17	1.13	37.30	2.39	2.90	0.78	59.82	2.26	135.26	4.000	No	No	2.00
18	1.19	35.82	2.39	2.83	0.79	57.45	2.28	131.07	4.000	No	No	2.00
19	1.29	34.39	2.39	2.73	0.79	55.14	2.29	126.20	4.000	No	No	2.00
20	1.34	33.05	2.39	2.61	0.79	52.98	2.28	120.97	4.000	No	No	2.00
21	1.39	32.13	2.39	2.49	0.78	51.49	2.26	116.52	4.000	No	No	2.00
22	1.45	30.90	2.39	2.40	0.79	49.51	2.27	112.45	4.000	No	No	2.00
23	1.54	30.65	2.37	2.25	0.78	49.10	2.21	108.60	4.000	No	No	2.00
24	1.59	30.22	2.37	2.15	0.78	48.41	2.18	105.51	4.000	No	No	2.00
25	1.67	29.56	2.36	2.09	0.78	47.34	2.17	102.95	4.000	No	No	2.00
26	1.72	28.85	2.37	2.06	0.78	46.20	2.19	101.08	4.000	No	No	2.00
27	1.79	27.91	2.38	2.03	0.78	44.68	2.22	99.05	4.000	No	No	2.00
28	1.85	26.72	2.39	2.01	0.78	42.76	2.26	96.74	4.000	No	No	2.00
29	1.94	25.40	2.40	2.00	0.79	40.63	2.33	94.54	4.000	Yes	No	2.00
30	1.98	23.66	2.43	2.03	0.80	37.83	2.45	92.65	4.000	Yes	No	2.00
31	2.04	22.23	2.46	2.05	0.81	35.53	2.56	90.86	4.000	Yes	No	2.00
32	2.13	20.14	2.51	2.18	0.83	32.16	2.80	89.96	4.000	Yes	No	2.00
33	2.17	18.38	2.55	2.31	0.85	29.33	3.05	89.57	4.000	Yes	No	2.00
34	2.24	16.92	2.61	2.52	0.87	26.97	3.36	90.61	4.000	Yes	Yes	2.00
35	2.32	15.55	2.66	2.80	0.89	24.76	3.74	92.51	4.000	Yes	Yes	2.00
36	2.39	14.33	2.72	3.18	0.91	22.81	4.18	95.38	4.000	Yes	Yes	2.00
37	2.43	13.41	2.78	3.57	0.93	21.32	4.61	98.35	4.000	Yes	Yes	2.00
38	2.52	12.71	2.83	3.94	0.95	20.20	5.00	101.07	4.000	Yes	Yes	2.00
39	2.58	12.27	2.86	4.25	0.96	19.47	5.31	103.33	4.000	Yes	Yes	2.00
40	2.63	11.94	2.89	4.52	0.97	18.94	5.56	105.23	4.000	Yes	Yes	2.00
41	2.72	11.69	2.91	4.76	0.98	18.54	5.76	106.84	4.000	No	Yes	2.00
42	2.78	11.47	2.93	4.97	0.99	18.18	5.95	108.19	4.000	No	Yes	2.00
43	2.83	11.30	2.94	5.09	0.99	17.90	6.07	108.67	4.000	No	Yes	2.00
44	2.89	11.12	2.95	5.16	1.00	17.61	6.17	108.63	4.000	No	Yes	2.00
45	2.98	10.92	2.96	5.23	1.00	17.28	6.27	108.39	4.000	No	Yes	2.00
46	3.03	10.65	2.97	5.34	1.00	16.84	6.43	108.26	4.000	No	Yes	2.00
47	3.09	10.34	2.99	5.49	1.00	16.33	6.62	108.12	4.000	No	Yes	2.00
48	3.18	10.03	3.01	5.63	1.00	15.82	6.82	107.86	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
49	3.22	9.73	3.02	5.75	1.00	15.34	7.00	107.37	4.000	No	Yes	2.00
50	3.32	9.47	3.04	5.83	1.00	14.92	7.15	106.66	4.000	No	Yes	2.00
51	3.37	9.26	3.05	5.87	1.00	14.57	7.27	105.83	4.000	No	Yes	2.00
52	3.42	9.09	3.05	5.88	1.00	14.29	7.35	105.00	4.000	No	Yes	2.00
53	3.52	8.99	3.05	5.85	1.00	14.13	7.37	104.17	4.000	No	Yes	2.00
54	3.57	8.93	3.05	5.78	1.00	14.01	7.37	103.23	4.000	No	Yes	2.00
55	3.61	8.95	3.05	5.65	1.00	14.05	7.28	102.30	4.000	No	Yes	2.00
56	3.68	8.99	3.04	5.53	1.00	14.10	7.19	101.46	4.000	No	Yes	2.00
57	3.77	9.05	3.03	5.43	1.00	14.19	7.11	100.93	4.000	No	Yes	2.00
58	3.83	9.13	3.03	5.37	1.00	14.32	7.04	100.83	4.000	No	Yes	2.00
59	3.91	9.21	3.02	5.31	1.00	14.44	6.97	100.72	4.000	No	Yes	2.00
60	3.95	9.30	3.02	5.30	1.00	14.58	6.93	101.04	4.000	No	Yes	2.00
61	4.02	9.38	3.01	5.33	1.00	14.71	6.91	101.68	4.000	No	Yes	2.00
62	4.12	9.44	3.02	5.41	1.00	14.79	6.94	102.63	4.000	No	Yes	2.00
63	4.14	9.48	3.02	5.49	1.00	14.85	6.97	103.57	4.000	No	Yes	2.00
64	4.22	9.49	3.02	5.52	1.00	14.87	6.99	103.89	4.000	No	Yes	2.00
65	4.27	9.45	3.03	5.65	1.00	14.80	7.08	104.71	4.000	No	Yes	2.00
66	4.37	9.36	3.04	5.77	1.00	14.64	7.19	105.22	4.000	No	Yes	2.00
67	4.42	9.19	3.05	5.89	1.00	14.37	7.33	105.31	4.000	No	Yes	2.00
68	4.46	9.00	3.06	6.02	1.00	14.05	7.49	105.28	4.000	No	Yes	2.00
69	4.57	8.66	3.09	6.23	1.00	13.50	7.77	104.88	4.000	No	Yes	2.00
70	4.61	8.38	3.10	6.36	1.00	13.05	7.98	104.17	4.000	No	Yes	2.00
71	4.67	8.12	3.12	6.46	1.00	12.63	8.18	103.24	4.000	No	Yes	2.00
72	4.76	7.86	3.14	6.57	1.00	12.20	8.39	102.28	4.000	No	Yes	2.00
73	4.81	7.60	3.16	6.76	1.00	11.77	8.65	101.79	4.000	No	Yes	2.00
74	4.90	7.39	3.17	6.81	1.00	11.44	8.80	100.62	4.000	No	Yes	2.00
75	4.96	7.20	3.18	6.82	1.00	11.12	8.94	99.34	4.000	No	Yes	2.00
76	5.00	7.06	3.18	6.82	1.00	10.89	9.03	98.30	4.000	No	Yes	2.00
77	5.05	6.97	3.19	6.79	1.00	10.75	9.07	97.51	4.000	No	Yes	2.00
78	5.14	7.06	3.18	6.61	1.00	10.88	8.91	96.98	4.000	No	Yes	2.00
79	5.20	7.09	3.17	6.49	1.00	10.92	8.83	96.38	4.000	No	Yes	2.00
80	5.30	7.10	3.16	6.40	1.00	10.94	8.77	95.87	4.000	No	Yes	2.00
81	5.35	7.13	3.16	6.32	1.00	10.98	8.71	95.58	4.000	No	Yes	2.00
82	5.39	7.16	3.16	6.28	1.00	11.02	8.66	95.50	4.000	No	Yes	2.00
83	5.48	7.22	3.15	6.23	1.00	11.11	8.60	95.54	4.000	No	Yes	2.00
84	5.55	7.34	3.14	6.17	1.00	11.29	8.49	95.84	4.000	No	Yes	2.00
85	5.59	7.46	3.13	6.09	1.00	11.49	8.37	96.14	4.000	No	Yes	2.00
86	5.64	7.63	3.12	5.97	1.00	11.76	8.19	96.34	4.000	No	Yes	2.00
87	5.74	7.81	3.11	5.83	1.00	12.04	8.01	96.43	4.000	No	Yes	2.00
88	5.79	8.05	3.09	5.65	1.00	12.42	7.77	96.53	4.000	No	Yes	2.00
89	5.84	8.32	3.07	5.52	1.00	12.85	7.55	97.05	4.000	No	Yes	2.00
90	5.94	8.60	3.05	5.43	1.00	13.29	7.36	97.86	4.000	No	Yes	2.00
91	5.97	8.86	3.04	5.35	1.00	13.70	7.20	98.66	4.000	No	Yes	2.00
92	6.05	9.05	3.03	5.34	1.00	14.00	7.11	99.53	4.000	No	Yes	2.00
93	6.14	9.20	3.03	5.37	1.00	14.23	7.06	100.50	4.000	No	Yes	2.00
94	6.19	9.32	3.03	5.42	1.00	14.42	7.05	101.57	4.000	No	Yes	2.00
95	6.24	9.37	3.03	5.51	1.00	14.49	7.07	102.52	4.000	No	Yes	2.00
96	6.33	9.38	3.03	5.59	1.00	14.50	7.12	103.26	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
97	6.38	9.33	3.04	5.70	1.00	14.41	7.21	103.88	4.000	No	Yes	2.00
98	6.44	9.28	3.05	5.76	1.00	14.33	7.26	104.08	4.000	No	Yes	2.00
99	6.52	9.24	3.05	5.78	1.00	14.26	7.30	104.07	4.000	No	Yes	2.00
100	6.59	9.21	3.05	5.79	1.00	14.21	7.32	103.97	4.000	No	Yes	2.00
101	6.64	9.22	3.05	5.76	1.00	14.22	7.30	103.76	4.000	No	Yes	2.00
102	6.70	9.21	3.05	5.73	1.00	14.20	7.29	103.45	4.000	No	Yes	2.00
103	6.78	9.24	3.04	5.67	1.00	14.24	7.24	103.04	4.000	No	Yes	2.00
104	6.83	9.24	3.04	5.66	1.00	14.24	7.23	102.93	4.000	No	Yes	2.00
105	6.89	9.27	3.04	5.66	1.00	14.28	7.22	103.14	4.000	No	Yes	2.00
106	6.98	9.30	3.04	5.70	1.00	14.32	7.23	103.56	4.000	No	Yes	2.00
107	7.03	9.35	3.04	5.74	1.00	14.39	7.24	104.19	4.000	No	Yes	2.00
108	7.09	9.39	3.04	5.79	1.00	14.45	7.25	104.80	4.000	No	Yes	2.00
109	7.18	9.43	3.05	5.86	1.00	14.51	7.27	105.52	4.000	No	Yes	2.00
110	7.23	9.47	3.05	5.92	1.00	14.57	7.29	106.24	4.000	No	Yes	2.00
111	7.29	9.51	3.05	5.93	1.00	14.63	7.28	106.54	4.000	No	Yes	2.00
112	7.38	9.51	3.05	5.92	1.00	14.62	7.28	106.44	4.000	No	Yes	2.00
113	7.42	9.52	3.05	5.91	1.00	14.63	7.27	106.34	4.000	No	Yes	2.00
114	7.48	9.51	3.05	5.90	1.00	14.61	7.27	106.24	4.000	No	Yes	2.00
115	7.58	9.49	3.05	5.89	1.00	14.57	7.28	106.03	4.000	No	Yes	2.00
116	7.62	9.43	3.05	5.86	1.00	14.47	7.28	105.42	4.000	No	Yes	2.00
117	7.68	9.37	3.05	5.79	1.00	14.36	7.28	104.49	4.000	No	Yes	2.00
118	7.78	9.31	3.04	5.71	1.00	14.25	7.26	103.45	4.000	No	Yes	2.00
119	7.81	9.25	3.04	5.60	1.00	14.16	7.22	102.20	4.000	No	Yes	2.00
120	7.88	9.22	3.04	5.53	1.00	14.10	7.19	101.46	4.000	No	Yes	2.00
121	7.97	9.19	3.04	5.49	1.00	14.05	7.18	100.93	4.000	No	Yes	2.00
122	8.01	9.17	3.03	5.40	1.00	14.02	7.14	100.07	4.000	No	Yes	2.00
123	8.11	9.14	3.03	5.29	1.00	13.96	7.09	98.99	4.000	No	Yes	2.00
124	8.14	9.10	3.03	5.19	1.00	13.89	7.05	97.90	4.000	No	Yes	2.00
125	8.22	9.05	3.02	5.11	1.00	13.81	7.02	96.90	4.000	No	Yes	2.00
126	8.31	8.96	3.03	5.06	1.00	13.66	7.03	96.01	4.000	No	Yes	2.00
127	8.35	8.84	3.03	5.02	1.00	13.45	7.06	95.00	4.000	No	Yes	2.00
128	8.41	8.65	3.04	5.00	1.00	13.14	7.14	93.85	4.000	No	Yes	2.00
129	8.50	8.44	3.04	4.95	1.00	12.80	7.21	92.34	4.000	No	Yes	2.00
130	8.56	8.22	3.05	4.91	1.00	12.45	7.30	90.80	4.000	No	Yes	2.00
131	8.61	8.02	3.05	4.84	1.00	12.11	7.36	89.12	4.000	No	Yes	2.00
132	8.68	7.81	3.06	4.76	1.00	11.77	7.43	87.40	4.000	No	Yes	2.00
133	8.75	7.62	3.06	4.64	1.00	11.46	7.45	85.41	4.000	No	Yes	2.00
134	8.80	7.46	3.06	4.51	1.00	11.19	7.46	83.50	4.000	No	Yes	2.00
135	8.89	7.34	3.06	4.37	1.00	10.99	7.43	81.68	4.000	No	Yes	2.00
136	8.94	7.28	3.05	4.19	1.00	10.89	7.34	79.97	4.000	No	Yes	2.00
137	9.00	7.30	3.04	4.00	1.00	10.92	7.19	78.50	4.000	No	Yes	2.00
138	9.08	7.36	3.02	3.81	1.00	11.01	7.00	77.13	4.000	No	Yes	2.00
139	9.15	7.44	3.01	3.64	1.00	11.14	6.82	76.02	4.000	No	Yes	2.00
140	9.20	7.49	3.00	3.50	1.00	11.22	6.69	75.01	4.000	No	Yes	2.00
141	9.28	7.51	2.99	3.40	1.00	11.24	6.60	74.14	4.000	No	Yes	2.00
142	9.35	7.52	2.98	3.35	1.00	11.25	6.55	73.70	4.000	No	Yes	2.00
143	9.40	7.54	2.98	3.34	1.00	11.28	6.53	73.70	4.000	No	Yes	2.00
144	9.45	7.59	2.98	3.36	1.00	11.36	6.53	74.13	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
145	9.55	7.66	2.98	3.44	1.00	11.46	6.56	75.15	4.000	No	Yes	2.00
146	9.59	7.88	2.98	3.55	1.00	11.81	6.53	77.12	4.000	No	Yes	2.00
147	9.69	8.26	2.98	3.76	1.00	12.41	6.50	80.66	4.000	No	Yes	2.00
148	9.74	8.85	2.96	3.93	1.00	13.35	6.36	84.90	4.000	No	Yes	2.00
149	9.79	9.71	2.95	4.18	1.00	14.73	6.18	91.03	4.000	No	Yes	2.00
150	9.84	10.70	2.93	4.40	0.99	16.32	5.97	97.37	4.000	No	Yes	2.00
151	9.94	11.82	2.90	4.60	0.98	18.10	5.74	103.99	4.000	No	Yes	2.00
152	10.00	13.13	2.88	4.73	0.97	20.20	5.47	110.57	4.000	No	Yes	2.00
153	10.09	14.51	2.85	4.84	0.96	22.41	5.22	117.08	4.000	No	Yes	2.00
154	10.13	15.87	2.83	4.93	0.95	24.60	5.00	123.02	4.000	No	Yes	2.00
155	10.18	17.10	2.81	5.02	0.94	26.57	4.83	128.46	4.000	No	Yes	2.00
156	10.24	18.19	2.79	5.09	0.94	28.31	4.70	133.07	4.000	No	Yes	2.00
157	10.33	19.08	2.78	5.16	0.93	29.73	4.61	137.04	4.000	No	Yes	2.00
158	10.37	19.75	2.77	5.12	0.93	30.80	4.50	138.53	4.000	No	Yes	2.00
159	10.43	20.34	2.75	5.06	0.92	31.75	4.39	139.54	4.000	No	Yes	2.00
160	10.52	20.84	2.74	4.99	0.92	32.54	4.30	140.02	4.000	No	Yes	2.00
161	10.59	21.08	2.73	4.95	0.92	32.92	4.26	140.09	4.000	No	Yes	2.00
162	10.64	21.13	2.73	4.91	0.92	32.99	4.23	139.63	4.000	No	Yes	2.00
163	10.70	20.97	2.73	4.91	0.92	32.65	4.26	139.01	4.000	No	Yes	2.00
164	10.78	20.88	2.74	4.88	0.92	32.28	4.27	137.82	4.000	No	Yes	2.00
165	10.83	20.80	2.74	4.83	0.92	32.00	4.27	136.50	4.000	No	Yes	2.00
166	10.94	20.72	2.74	4.78	0.92	31.57	4.28	134.99	4.000	No	Yes	2.00
167	10.99	20.74	2.74	4.79	0.92	31.46	4.28	134.82	4.000	No	Yes	2.00
168	11.03	21.20	2.73	4.70	0.91	31.99	4.20	134.49	4.000	No	Yes	2.00
169	11.09	21.83	2.71	4.59	0.91	32.70	4.10	134.07	4.000	No	Yes	2.00
170	11.17	22.79	2.69	4.46	0.90	33.81	3.96	133.84	4.000	No	Yes	2.00
171	11.24	23.92	2.67	4.34	0.89	35.18	3.81	134.18	4.000	No	Yes	2.00
172	11.33	25.05	2.66	4.25	0.89	36.47	3.69	134.60	4.000	No	Yes	2.00
173	11.37	25.77	2.65	4.25	0.88	37.35	3.64	136.05	4.000	No	Yes	2.00
174	11.44	26.22	2.65	4.29	0.88	37.80	3.63	137.34	4.000	No	Yes	2.00
175	11.52	26.58	2.65	4.32	0.88	38.07	3.64	138.41	4.000	No	Yes	2.00
176	11.57	26.65	2.65	4.38	0.89	38.03	3.66	139.31	4.000	No	Yes	2.00
177	11.63	26.16	2.67	4.48	0.89	37.23	3.76	139.89	4.000	No	Yes	2.00
178	11.72	25.38	2.69	4.63	0.90	35.96	3.90	140.36	4.000	No	Yes	2.00
179	11.76	24.28	2.71	4.77	0.91	34.38	4.07	139.96	4.000	No	Yes	2.00
180	11.83	23.04	2.73	4.87	0.92	32.52	4.25	138.03	4.000	No	Yes	2.00
181	11.92	21.96	2.75	4.90	0.92	30.82	4.39	135.33	4.000	No	Yes	2.00
182	11.94	21.21	2.76	4.82	0.93	29.72	4.44	132.01	4.000	No	Yes	2.00
183	12.02	20.75	2.76	4.68	0.93	28.89	4.44	128.38	4.000	No	Yes	2.00
184	12.11	20.42	2.76	4.52	0.93	28.28	4.42	124.87	4.000	No	Yes	2.00
185	12.16	20.40	2.74	4.32	0.92	28.14	4.32	121.60	4.000	No	Yes	2.00
186	12.22	20.54	2.73	4.14	0.92	28.21	4.22	119.09	4.000	No	Yes	2.00
187	12.31	20.81	2.72	3.98	0.91	28.44	4.11	117.01	4.000	No	Yes	2.00
188	12.36	21.16	2.71	3.92	0.91	28.83	4.05	116.71	4.000	No	Yes	2.00
189	12.42	21.60	2.70	3.93	0.91	29.35	4.01	117.81	4.000	No	Yes	2.00
190	12.50	22.12	2.70	3.97	0.90	29.98	3.99	119.47	4.000	No	Yes	2.00
191	12.56	22.63	2.70	4.03	0.90	30.60	3.97	121.49	4.000	No	Yes	2.00
192	12.62	23.07	2.70	4.14	0.90	31.16	3.98	124.10	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
193	12.70	23.50	2.70	4.25	0.90	31.67	4.00	126.72	4.000	No	Yes	2.00
194	12.77	23.80	2.71	4.39	0.91	32.03	4.05	129.56	4.000	No	Yes	2.00
195	12.81	23.99	2.71	4.51	0.91	32.28	4.09	132.01	4.000	No	Yes	2.00
196	12.91	24.10	2.72	4.60	0.91	32.33	4.13	133.52	4.000	No	Yes	2.00
197	12.96	24.23	2.72	4.63	0.91	32.45	4.13	134.17	4.000	No	Yes	2.00
198	13.01	24.25	2.72	4.64	0.91	32.42	4.14	134.28	4.000	No	Yes	2.00
199	13.06	24.27	2.72	4.59	0.91	32.37	4.12	133.47	4.000	No	Yes	2.00
200	13.16	24.35	2.71	4.51	0.91	32.33	4.09	132.12	4.000	No	Yes	2.00
201	13.21	24.41	2.70	4.39	0.91	32.31	4.03	130.18	4.000	No	Yes	2.00
202	13.26	24.42	2.70	4.26	0.90	32.22	3.97	127.80	4.000	No	Yes	2.00
203	13.36	24.44	2.69	4.11	0.90	32.08	3.90	125.14	4.000	No	Yes	2.00
204	13.40	24.45	2.68	4.04	0.90	32.02	3.87	123.86	4.000	No	Yes	2.00
205	13.46	24.56	2.68	4.00	0.90	32.08	3.84	123.35	4.000	No	Yes	2.00
206	13.55	24.66	2.68	3.99	0.90	32.11	3.84	123.20	4.000	No	Yes	2.00
207	13.60	24.84	2.68	3.99	0.90	32.28	3.83	123.53	4.000	No	Yes	2.00
208	13.67	24.92	2.68	4.06	0.90	32.33	3.86	124.78	4.000	No	Yes	2.00
209	13.75	24.93	2.69	4.16	0.90	32.28	3.91	126.36	4.000	No	Yes	2.00
210	13.80	25.07	2.69	4.24	0.90	32.43	3.95	127.94	4.000	No	Yes	2.00
211	13.86	25.25	2.70	4.33	0.90	32.61	3.97	129.61	4.000	No	Yes	2.00
212	13.95	25.36	2.70	4.42	0.91	32.67	4.02	131.18	4.000	No	Yes	2.00
213	13.99	25.41	2.70	4.43	0.91	32.69	4.02	131.45	4.000	No	Yes	2.00
214	14.06	25.37	2.70	4.41	0.91	32.55	4.02	130.82	4.000	No	Yes	2.00
215	14.15	25.16	2.71	4.38	0.91	32.18	4.03	129.77	4.000	No	Yes	2.00
216	14.19	24.83	2.71	4.35	0.91	31.70	4.05	128.37	4.000	No	Yes	2.00
217	14.26	24.43	2.71	4.29	0.91	31.11	4.07	126.50	4.000	No	Yes	2.00
218	14.35	24.01	2.71	4.24	0.91	30.46	4.09	124.52	4.000	No	Yes	2.00
219	14.40	23.37	2.72	4.20	0.91	29.60	4.14	122.43	4.000	No	Yes	2.00
220	14.45	22.69	2.73	4.16	0.91	28.67	4.19	120.19	4.000	No	Yes	2.00
221	14.55	22.01	2.73	4.12	0.92	27.72	4.25	117.90	4.000	No	Yes	2.00
222	14.58	21.36	2.74	4.08	0.92	26.87	4.31	115.74	4.000	No	Yes	2.00
223	14.65	20.73	2.75	4.06	0.92	26.00	4.38	113.97	4.000	No	Yes	2.00
224	14.74	20.12	2.76	4.06	0.93	25.16	4.47	112.38	4.000	No	Yes	2.00
225	14.77	19.60	2.77	4.06	0.93	24.48	4.54	111.04	4.000	No	Yes	2.00
226	14.84	19.12	2.78	4.05	0.93	23.82	4.60	109.67	4.000	No	Yes	2.00
227	14.94	18.65	2.79	4.02	0.94	23.15	4.67	108.06	4.000	No	Yes	2.00
228	15.00	18.25	2.79	4.02	0.94	22.61	4.73	106.87	4.000	No	Yes	2.00
229	15.03	17.87	2.80	4.02	0.94	22.10	4.79	105.97	4.000	No	Yes	2.00
230	15.11	17.43	2.81	4.02	0.95	21.50	4.87	104.76	4.000	No	Yes	2.00
231	15.19	17.06	2.82	4.03	0.95	20.99	4.95	103.84	4.000	No	Yes	2.00
232	15.24	16.70	2.83	4.03	0.95	20.50	5.01	102.77	4.000	No	Yes	2.00
233	15.29	16.35	2.83	4.00	0.95	20.02	5.06	101.39	4.000	No	Yes	2.00
234	15.39	15.99	2.84	3.97	0.96	19.51	5.12	99.95	4.000	No	Yes	2.00
235	15.42	15.64	2.84	3.93	0.96	19.05	5.17	98.56	4.000	No	Yes	2.00
236	15.49	15.29	2.85	3.89	0.96	18.56	5.23	97.01	4.000	No	Yes	2.00
237	15.59	14.91	2.86	3.85	0.96	18.03	5.29	95.32	4.000	No	Yes	2.00
238	15.63	14.59	2.86	3.78	0.96	17.60	5.32	93.63	4.000	No	Yes	2.00
239	15.69	14.34	2.86	3.73	0.97	17.24	5.35	92.15	4.000	No	Yes	2.00
240	15.78	14.10	2.86	3.65	0.97	16.88	5.36	90.51	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
241	15.84	13.90	2.87	3.58	0.97	16.60	5.37	89.04	4.000	No	Yes	2.00
242	15.89	13.80	2.86	3.51	0.97	16.44	5.35	87.93	4.000	No	Yes	2.00
243	15.95	13.74	2.86	3.46	0.97	16.32	5.33	87.08	4.000	No	Yes	2.00
244	16.04	13.72	2.86	3.43	0.97	16.25	5.33	86.58	4.000	No	Yes	2.00
245	16.08	13.81	2.86	3.43	0.96	16.34	5.31	86.70	4.000	No	Yes	2.00
246	16.18	13.99	2.86	3.42	0.96	16.50	5.27	87.01	4.000	No	Yes	2.00
247	16.24	14.14	2.85	3.45	0.96	16.65	5.27	87.68	4.000	No	Yes	2.00
248	16.28	14.42	2.85	3.46	0.96	16.97	5.21	88.39	4.000	No	Yes	2.00
249	16.36	14.72	2.84	3.47	0.96	17.29	5.16	89.23	4.000	No	Yes	2.00
250	16.43	15.02	2.84	3.49	0.96	17.62	5.12	90.16	4.000	No	Yes	2.00
251	16.47	15.27	2.84	3.53	0.96	17.90	5.10	91.24	4.000	No	Yes	2.00
252	16.54	15.56	2.83	3.53	0.95	18.21	5.04	91.86	4.000	No	Yes	2.00
253	16.63	15.86	2.82	3.50	0.95	18.51	4.97	92.06	4.000	No	Yes	2.00
254	16.68	16.03	2.82	3.45	0.95	18.68	4.91	91.80	4.000	No	Yes	2.00
255	16.78	16.10	2.81	3.40	0.95	18.69	4.88	91.18	4.000	No	Yes	2.00
256	16.83	16.13	2.81	3.35	0.94	18.68	4.84	90.44	4.000	No	Yes	2.00
257	16.87	16.04	2.81	3.31	0.94	18.55	4.84	89.77	4.000	No	Yes	2.00
258	16.93	15.94	2.81	3.27	0.94	18.39	4.83	88.90	4.000	No	Yes	2.00
259	17.01	15.83	2.81	3.22	0.94	18.21	4.83	87.90	4.000	No	Yes	2.00
260	17.09	15.76	2.80	3.16	0.94	18.07	4.81	86.88	4.000	No	Yes	2.00
261	17.15	15.65	2.80	3.13	0.94	17.90	4.81	86.10	4.000	No	Yes	2.00
262	17.20	15.51	2.81	3.12	0.94	17.70	4.84	85.64	4.000	No	Yes	2.00
263	17.27	15.51	2.81	3.10	0.94	17.67	4.83	85.37	4.000	No	Yes	2.00
264	17.35	15.60	2.80	3.08	0.94	17.73	4.81	85.24	4.000	No	Yes	2.00
265	17.40	15.80	2.80	3.04	0.94	17.93	4.75	85.08	4.000	No	Yes	2.00
266	17.45	15.97	2.79	3.01	0.94	18.09	4.69	84.93	4.000	No	Yes	2.00
267	17.55	16.10	2.79	2.99	0.94	18.19	4.67	84.87	4.000	No	Yes	2.00
268	17.59	16.19	2.78	2.98	0.94	18.27	4.65	84.88	4.000	No	Yes	2.00
269	17.65	16.20	2.78	2.97	0.94	18.24	4.64	84.72	4.000	No	Yes	2.00
270	17.75	16.19	2.78	2.97	0.94	18.18	4.65	84.55	4.000	No	Yes	2.00
271	17.79	16.19	2.78	2.96	0.94	18.15	4.64	84.31	4.000	No	Yes	2.00
272	17.87	16.11	2.79	2.96	0.94	18.02	4.67	84.19	4.000	No	Yes	2.00
273	17.94	16.00	2.79	2.99	0.94	17.86	4.72	84.20	4.000	No	Yes	2.00
274	17.98	15.82	2.80	3.04	0.94	17.64	4.79	84.47	4.000	No	Yes	2.00
275	18.05	15.69	2.81	3.09	0.95	17.45	4.86	84.79	4.000	No	Yes	2.00
276	18.14	15.56	2.82	3.14	0.95	17.26	4.93	85.08	4.000	No	Yes	2.00
277	18.18	15.48	2.82	3.18	0.95	17.15	4.98	85.39	4.000	No	Yes	2.00
278	18.24	15.47	2.83	3.22	0.95	17.11	5.02	85.83	4.000	No	Yes	2.00
279	18.34	15.47	2.83	3.27	0.95	17.07	5.06	86.33	4.000	No	Yes	2.00
280	18.39	15.46	2.84	3.32	0.96	17.03	5.10	86.87	4.000	No	Yes	2.00
281	18.44	15.44	2.84	3.36	0.96	16.99	5.13	87.21	4.000	No	Yes	2.00
282	18.54	15.40	2.85	3.40	0.96	16.90	5.18	87.53	4.000	No	Yes	2.00
283	18.59	15.35	2.85	3.43	0.96	16.82	5.22	87.79	4.000	No	Yes	2.00
284	18.64	15.27	2.85	3.46	0.96	16.71	5.26	87.88	4.000	No	Yes	2.00
285	18.74	15.17	2.86	3.49	0.96	16.55	5.31	87.93	4.000	No	Yes	2.00
286	18.79	15.04	2.87	3.54	0.97	16.38	5.38	88.05	4.000	No	Yes	2.00
287	18.84	14.91	2.87	3.56	0.97	16.20	5.43	87.97	4.000	No	Yes	2.00
288	18.92	14.77	2.88	3.58	0.97	16.00	5.49	87.78	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
289	18.97	14.58	2.89	3.61	0.97	15.76	5.55	87.54	4.000	No	Yes	2.00
290	19.04	14.35	2.89	3.63	0.98	15.47	5.63	87.11	4.000	No	Yes	2.00
291	19.14	14.06	2.90	3.65	0.98	15.10	5.73	86.48	4.000	No	Yes	2.00
292	19.17	13.75	2.91	3.67	0.98	14.73	5.82	85.74	4.000	No	Yes	2.00
293	19.24	13.40	2.92	3.68	0.99	14.31	5.93	84.86	4.000	No	Yes	2.00
294	19.34	13.05	2.94	3.70	0.99	13.87	6.05	83.94	4.000	No	Yes	2.00
295	19.39	12.70	2.94	3.68	1.00	13.45	6.14	82.65	4.000	No	Yes	2.00
296	19.43	12.35	2.95	3.64	1.00	13.03	6.24	81.26	4.000	No	Yes	2.00
297	19.52	12.01	2.96	3.62	1.00	12.60	6.34	79.86	4.000	No	Yes	2.00
298	19.56	11.73	2.97	3.59	1.00	12.27	6.41	78.68	4.000	No	Yes	2.00
299	19.63	11.53	2.97	3.54	1.00	12.01	6.46	77.54	4.000	No	Yes	2.00
300	19.73	11.42	2.98	3.49	1.00	11.85	6.47	76.65	4.000	No	Yes	2.00
301	19.78	11.34	2.97	3.43	1.00	11.73	6.46	75.80	4.000	No	Yes	2.00
302	19.83	11.31	2.97	3.41	1.00	11.68	6.46	75.46	4.000	No	Yes	2.00
303	19.90	11.46	2.97	3.39	1.00	11.82	6.39	75.59	4.000	No	Yes	2.00
304	19.96	11.82	2.96	3.41	1.00	12.21	6.29	76.82	4.000	No	Yes	2.00
305	20.03	12.32	2.95	3.48	1.00	12.76	6.19	78.97	4.000	No	Yes	2.00
306	20.09	13.07	2.93	3.50	0.99	13.56	5.98	81.14	4.000	No	Yes	2.00
307	20.16	14.08	2.90	3.47	0.98	14.65	5.69	83.40	4.000	No	Yes	2.00
308	20.23	15.17	2.88	3.52	0.97	15.83	5.47	86.60	4.000	No	Yes	2.00
309	20.31	16.28	2.86	3.56	0.96	17.00	5.28	89.70	4.000	No	Yes	2.00
310	20.35	17.41	2.83	3.60	0.96	18.23	5.09	92.74	4.000	No	Yes	2.00
311	20.42	18.42	2.82	3.60	0.95	19.29	4.92	94.85	4.000	No	Yes	2.00
312	20.50	19.26	2.80	3.58	0.94	20.16	4.78	96.30	4.000	No	Yes	2.00
313	20.55	19.56	2.80	3.61	0.94	20.45	4.76	97.31	4.000	No	Yes	2.00
314	20.62	19.65	2.79	3.60	0.94	20.52	4.74	97.27	4.000	No	Yes	2.00
315	20.70	19.50	2.80	3.59	0.94	20.30	4.77	96.78	4.000	No	Yes	2.00
316	20.75	19.06	2.81	3.60	0.94	19.79	4.84	95.83	4.000	No	Yes	2.00
317	20.82	18.40	2.82	3.56	0.95	19.04	4.93	93.87	4.000	No	Yes	2.00
318	20.90	17.71	2.83	3.50	0.95	18.24	5.02	91.54	4.000	No	Yes	2.00
319	20.96	17.00	2.84	3.44	0.96	17.44	5.11	89.17	4.000	No	Yes	2.00
320	21.01	16.41	2.85	3.41	0.96	16.77	5.21	87.47	4.000	No	Yes	2.00
321	21.11	15.83	2.87	3.46	0.97	16.10	5.38	86.58	4.000	No	Yes	2.00
322	21.15	15.60	2.87	3.46	0.97	15.83	5.43	85.93	4.000	No	Yes	2.00
323	21.21	15.85	2.86	3.43	0.97	16.08	5.36	86.21	4.000	No	Yes	2.00
324	21.27	16.33	2.85	3.41	0.96	16.56	5.25	87.01	4.000	No	Yes	2.00
325	21.36	16.99	2.84	3.40	0.96	17.22	5.12	88.21	4.000	No	Yes	2.00
326	21.40	18.20	2.81	3.33	0.95	18.49	4.86	89.82	4.000	No	Yes	2.00
327	21.51	19.79	2.77	3.23	0.93	20.11	4.55	91.52	4.000	No	Yes	2.00
328	21.55	21.52	2.74	3.15	0.92	21.91	4.27	93.52	4.000	No	Yes	2.00
329	21.60	23.59	2.70	3.06	0.90	24.06	3.97	95.55	4.000	No	Yes	2.00
330	21.69	25.70	2.66	2.95	0.89	26.20	3.70	96.90	4.000	No	Yes	2.00
331	21.75	27.76	2.62	2.85	0.87	28.31	3.47	98.12	4.000	No	Yes	2.00
332	21.80	29.14	2.60	2.80	0.87	29.71	3.34	99.15	4.000	No	Yes	2.00
333	21.90	30.20	2.59	2.78	0.86	30.73	3.26	100.14	0.173	No	No	0.46
334	21.95	30.81	2.58	2.80	0.86	31.32	3.23	101.22	0.176	No	No	0.47
335	22.00	30.93	2.59	2.84	0.86	31.42	3.25	102.10	0.179	No	No	0.48
336	22.09	30.62	2.60	2.89	0.86	31.03	3.30	102.52	0.180	No	No	0.48

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
337	22.11	30.03	2.61	2.95	0.87	30.40	3.38	102.71	4.000	No	Yes	2.00
338	22.19	28.96	2.63	3.02	0.88	29.24	3.50	102.32	4.000	No	Yes	2.00
339	22.26	27.41	2.66	3.11	0.89	27.58	3.68	101.61	4.000	No	Yes	2.00
340	22.35	25.79	2.69	3.22	0.90	25.84	3.90	100.78	4.000	No	Yes	2.00
341	22.39	24.24	2.71	3.27	0.91	24.21	4.09	99.12	4.000	No	Yes	2.00
342	22.44	22.59	2.73	3.23	0.92	22.47	4.25	95.60	4.000	No	Yes	2.00
343	22.55	21.10	2.75	3.17	0.92	20.85	4.41	92.02	4.000	No	Yes	2.00
344	22.58	19.55	2.78	3.12	0.93	19.22	4.60	88.43	4.000	No	Yes	2.00
345	22.65	18.00	2.81	3.09	0.94	17.58	4.84	85.03	4.000	No	Yes	2.00
346	22.74	16.57	2.83	3.04	0.95	16.05	5.07	81.44	4.000	No	Yes	2.00
347	22.83	15.26	2.86	2.97	0.96	14.66	5.31	77.84	4.000	No	Yes	2.00
348	22.85	14.33	2.87	2.85	0.97	13.68	5.44	74.41	4.000	No	Yes	2.00
349	22.94	13.44	2.89	2.71	0.97	12.73	5.56	70.71	4.000	No	Yes	2.00
350	23.00	12.59	2.90	2.61	0.98	11.82	5.72	67.64	4.000	No	Yes	2.00
351	23.05	11.82	2.94	2.70	0.99	11.01	6.07	66.82	4.000	No	Yes	2.00
352	23.10	11.10	2.97	2.74	1.00	10.25	6.37	65.35	4.000	No	Yes	2.00
353	23.18	10.27	3.01	2.81	1.00	9.36	6.80	63.65	4.000	No	Yes	2.00
354	23.25	9.47	3.04	2.87	1.00	8.51	7.25	61.72	4.000	No	Yes	2.00
355	23.30	8.60	3.10	2.99	1.00	7.59	7.87	59.72	4.000	No	Yes	2.00
356	23.38	7.73	3.16	3.17	1.00	6.67	8.65	57.73	4.000	No	Yes	2.00
357	23.45	6.95	3.22	3.41	1.00	5.85	9.56	55.88	4.000	No	Yes	2.00
358	23.50	6.22	3.30	3.75	1.00	5.07	10.65	54.03	4.000	No	Yes	2.00
359	23.60	5.81	3.34	3.97	1.00	4.64	11.37	52.74	4.000	No	Yes	2.00
360	23.65	5.62	3.36	4.07	1.00	4.43	11.73	52.02	4.000	No	Yes	2.00
361	23.70	5.85	3.34	3.94	1.00	4.66	11.31	52.75	4.000	No	Yes	2.00
362	23.76	6.35	3.28	3.63	1.00	5.18	10.42	53.96	4.000	No	Yes	2.00
363	23.84	6.95	3.22	3.37	1.00	5.78	9.57	55.32	4.000	No	Yes	2.00
364	23.89	7.83	3.16	3.17	1.00	6.67	8.65	57.73	4.000	No	Yes	2.00
365	23.99	8.80	3.09	3.01	1.00	7.65	7.86	60.10	4.000	No	Yes	2.00
366	24.03	9.88	3.04	2.89	1.00	8.75	7.15	62.59	4.000	No	Yes	2.00
367	24.09	11.03	2.98	2.81	1.00	9.91	6.57	65.13	4.000	No	Yes	2.00
368	24.19	12.04	2.95	2.82	1.00	10.91	6.21	67.75	4.000	No	Yes	2.00
369	24.24	13.00	2.92	2.84	0.99	11.87	5.92	70.30	4.000	No	Yes	2.00
370	24.30	13.63	2.91	2.92	0.98	12.48	5.81	72.49	4.000	No	Yes	2.00
371	24.34	14.08	2.91	3.02	0.98	12.93	5.77	74.64	4.000	No	Yes	2.00
372	24.44	14.45	2.91	3.13	0.98	13.27	5.77	76.52	4.000	No	Yes	2.00
373	24.50	14.62	2.91	3.19	0.98	13.42	5.78	77.53	4.000	No	Yes	2.00
374	24.58	14.65	2.91	3.25	0.98	13.42	5.83	78.18	4.000	No	Yes	2.00
375	24.65	14.57	2.92	3.29	0.99	13.32	5.88	78.33	4.000	No	Yes	2.00
376	24.69	14.53	2.92	3.28	0.99	13.26	5.89	78.13	4.000	No	Yes	2.00
377	24.74	14.55	2.92	3.24	0.99	13.26	5.86	77.73	4.000	No	Yes	2.00
378	24.84	14.55	2.91	3.19	0.99	13.22	5.83	77.12	4.000	No	Yes	2.00
379	24.89	14.64	2.91	3.17	0.98	13.30	5.80	77.06	4.000	No	Yes	2.00
380	24.95	14.90	2.90	3.14	0.98	13.53	5.71	77.31	4.000	No	Yes	2.00
381	25.04	15.26	2.89	3.14	0.98	13.85	5.63	77.95	4.000	No	Yes	2.00
382	25.08	15.75	2.88	3.15	0.97	14.32	5.52	79.10	4.000	No	Yes	2.00
383	25.19	16.34	2.88	3.23	0.97	14.87	5.46	81.25	4.000	No	Yes	2.00
384	25.24	16.95	2.87	3.36	0.97	15.45	5.43	83.94	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
385	25.28	17.47	2.87	3.52	0.97	15.95	5.45	86.89	4.000	No	Yes	2.00
386	25.35	17.89	2.88	3.71	0.97	16.34	5.51	89.97	4.000	No	Yes	2.00
387	25.43	18.28	2.88	3.86	0.97	16.69	5.54	92.42	4.000	No	Yes	2.00
388	25.48	18.60	2.88	3.93	0.97	16.98	5.53	93.96	4.000	No	Yes	2.00
389	25.53	18.87	2.88	3.99	0.97	17.22	5.53	95.14	4.000	No	Yes	2.00
390	25.63	19.11	2.88	4.06	0.97	17.40	5.53	96.33	4.000	No	Yes	2.00
391	25.68	19.22	2.89	4.12	0.97	17.50	5.56	97.23	4.000	No	Yes	2.00
392	25.74	19.27	2.89	4.13	0.97	17.52	5.56	97.37	4.000	No	Yes	2.00
393	25.79	19.09	2.89	4.16	0.98	17.32	5.61	97.23	4.000	No	Yes	2.00
394	25.88	19.09	2.89	4.13	0.98	17.27	5.60	96.79	4.000	No	Yes	2.00
395	25.92	19.22	2.88	4.03	0.97	17.38	5.52	96.00	4.000	No	Yes	2.00
396	25.99	19.41	2.88	3.97	0.97	17.53	5.46	95.66	4.000	No	Yes	2.00
397	26.05	19.60	2.87	3.94	0.97	17.68	5.41	95.60	4.000	No	Yes	2.00
398	26.13	19.72	2.87	3.92	0.97	17.75	5.38	95.56	4.000	No	Yes	2.00
399	26.20	19.75	2.86	3.88	0.97	17.75	5.36	95.05	4.000	No	Yes	2.00
400	26.26	19.73	2.86	3.84	0.97	17.70	5.34	94.50	4.000	No	Yes	2.00
401	26.31	19.63	2.86	3.82	0.97	17.58	5.35	93.99	4.000	No	Yes	2.00
402	26.40	19.66	2.86	3.76	0.96	17.57	5.31	93.32	4.000	No	Yes	2.00
403	26.45	19.42	2.86	3.74	0.97	17.30	5.35	92.49	4.000	No	Yes	2.00
404	26.54	19.03	2.87	3.74	0.97	16.89	5.42	91.59	4.000	No	Yes	2.00
405	26.59	18.55	2.88	3.76	0.97	16.41	5.53	90.67	4.000	No	Yes	2.00
406	26.65	18.00	2.90	3.78	0.98	15.86	5.65	89.59	4.000	No	Yes	2.00
407	26.74	17.48	2.91	3.79	0.98	15.31	5.78	88.46	4.000	No	Yes	2.00
408	26.78	16.97	2.92	3.81	0.99	14.81	5.90	87.42	4.000	No	Yes	2.00
409	26.84	16.52	2.93	3.78	0.99	14.36	5.99	86.03	4.000	No	Yes	2.00
410	26.94	16.15	2.94	3.73	0.99	13.97	6.05	84.56	4.000	No	Yes	2.00
411	26.99	15.95	2.93	3.65	0.99	13.75	6.05	83.16	4.000	No	Yes	2.00
412	27.04	15.92	2.93	3.56	0.99	13.70	5.99	82.10	4.000	No	Yes	2.00
413	27.13	15.95	2.92	3.47	0.99	13.70	5.93	81.22	4.000	No	Yes	2.00
414	27.18	16.05	2.91	3.39	0.99	13.77	5.85	80.52	4.000	No	Yes	2.00
415	27.24	16.28	2.90	3.32	0.98	13.97	5.75	80.26	4.000	No	Yes	2.00
416	27.34	16.55	2.89	3.26	0.98	14.19	5.64	80.12	4.000	No	Yes	2.00
417	27.40	16.87	2.88	3.22	0.97	14.47	5.54	80.24	4.000	No	Yes	2.00
418	27.44	17.16	2.88	3.22	0.97	14.73	5.49	80.86	4.000	No	Yes	2.00
419	27.53	17.39	2.87	3.23	0.97	14.91	5.45	81.30	4.000	No	Yes	2.00
420	27.57	17.54	2.87	3.25	0.97	15.03	5.44	81.78	4.000	No	Yes	2.00
421	27.64	17.59	2.87	3.27	0.97	15.05	5.46	82.11	4.000	No	Yes	2.00
422	27.72	17.57	2.88	3.27	0.97	15.00	5.47	81.98	4.000	No	Yes	2.00
423	27.79	17.52	2.88	3.25	0.97	14.93	5.47	81.63	4.000	No	Yes	2.00
424	27.83	17.42	2.88	3.22	0.97	14.82	5.47	80.99	4.000	No	Yes	2.00
425	27.90	17.32	2.87	3.17	0.97	14.70	5.45	80.17	4.000	No	Yes	2.00
426	27.98	17.21	2.87	3.11	0.97	14.57	5.44	79.17	4.000	No	Yes	2.00
427	28.03	17.13	2.87	3.04	0.97	14.48	5.40	78.18	4.000	No	Yes	2.00
428	28.09	17.12	2.86	2.97	0.97	14.44	5.36	77.40	4.000	No	Yes	2.00
429	28.18	17.17	2.86	2.91	0.96	14.46	5.30	76.66	4.000	No	Yes	2.00
430	28.22	17.35	2.85	2.84	0.96	14.61	5.21	76.16	4.000	No	Yes	2.00
431	28.28	17.70	2.84	2.81	0.96	14.91	5.13	76.45	4.000	No	Yes	2.00
432	28.38	18.14	2.83	2.79	0.95	15.29	5.03	76.91	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
433	28.43	18.79	2.82	2.81	0.95	15.87	4.93	78.24	4.000	No	Yes	2.00
434	28.48	19.60	2.80	2.81	0.94	16.60	4.79	79.56	4.000	No	Yes	2.00
435	28.58	20.45	2.79	2.85	0.94	17.34	4.70	81.50	4.000	No	Yes	2.00
436	28.62	21.32	2.79	2.98	0.94	18.13	4.67	84.61	4.000	No	Yes	2.00
437	28.69	22.17	2.79	3.14	0.94	18.87	4.66	88.01	4.000	No	Yes	2.00
438	28.77	22.93	2.79	3.30	0.94	19.53	4.68	91.42	4.000	No	Yes	2.00
439	28.82	23.56	2.79	3.47	0.94	20.08	4.72	94.77	4.000	No	Yes	2.00
440	28.88	24.03	2.80	3.65	0.94	20.48	4.78	97.92	4.000	No	Yes	2.00
441	28.97	24.41	2.81	3.84	0.95	20.77	4.86	100.91	4.000	No	Yes	2.00
442	29.01	24.63	2.82	3.99	0.95	20.95	4.93	103.16	4.000	No	Yes	2.00
443	29.07	24.64	2.83	4.16	0.95	20.92	5.04	105.36	4.000	No	Yes	2.00
444	29.15	24.58	2.84	4.30	0.96	20.82	5.13	106.80	4.000	No	Yes	2.00
445	29.21	24.40	2.85	4.36	0.96	20.62	5.19	107.09	4.000	No	Yes	2.00
446	29.30	24.21	2.85	4.38	0.96	20.39	5.24	106.94	4.000	No	Yes	2.00
447	29.33	23.98	2.86	4.39	0.96	20.17	5.28	106.50	4.000	No	Yes	2.00
448	29.41	23.70	2.86	4.36	0.96	19.87	5.31	105.43	4.000	No	Yes	2.00
449	29.50	23.37	2.86	4.30	0.97	19.52	5.33	104.05	4.000	No	Yes	2.00
450	29.53	23.04	2.86	4.23	0.97	19.21	5.33	102.41	4.000	No	Yes	2.00
451	29.61	22.66	2.86	4.14	0.97	18.83	5.34	100.59	4.000	No	Yes	2.00
452	29.70	22.38	2.86	4.03	0.96	18.54	5.32	98.65	4.000	No	Yes	2.00
453	29.74	22.16	2.85	3.90	0.96	18.32	5.27	96.58	4.000	No	Yes	2.00
454	29.80	22.07	2.85	3.74	0.96	18.22	5.18	94.41	4.000	No	Yes	2.00
455	29.90	22.00	2.84	3.58	0.96	18.11	5.09	92.22	4.000	No	Yes	2.00
456	29.93	22.08	2.82	3.42	0.95	18.18	4.97	90.35	4.000	No	Yes	2.00
457	30.00	22.43	2.80	3.25	0.94	18.47	4.81	88.80	4.000	No	Yes	2.00
458	30.09	23.10	2.78	3.06	0.93	19.03	4.58	87.25	4.000	No	Yes	2.00
459	30.15	23.44	2.76	2.94	0.93	19.31	4.46	86.11	4.000	No	Yes	2.00
460	30.19	23.51	2.76	2.89	0.92	19.36	4.42	85.48	4.000	No	Yes	2.00
461	30.30	23.75	2.75	2.84	0.92	19.53	4.35	85.04	4.000	No	Yes	2.00
462	30.33	23.80	2.75	2.85	0.92	19.56	4.36	85.29	4.000	No	Yes	2.00
463	30.40	23.99	2.75	2.88	0.92	19.69	4.36	85.88	4.000	No	Yes	2.00
464	30.49	24.26	2.75	2.89	0.92	19.89	4.34	86.36	4.000	No	Yes	2.00
465	30.54	24.43	2.74	2.90	0.92	20.02	4.33	86.75	4.000	No	Yes	2.00
466	30.59	24.35	2.75	2.93	0.92	19.92	4.37	87.03	4.000	No	Yes	2.00
467	30.64	23.97	2.76	2.99	0.93	19.56	4.46	87.26	4.000	No	Yes	2.00
468	30.72	23.92	2.77	3.03	0.93	19.47	4.50	87.64	4.000	No	Yes	2.00
469	30.80	24.13	2.76	3.02	0.93	19.62	4.47	87.72	4.000	No	Yes	2.00
470	30.88	24.07	2.77	3.07	0.93	19.53	4.52	88.30	4.000	No	Yes	2.00
471	30.93	24.43	2.77	3.10	0.93	19.82	4.51	89.29	4.000	No	Yes	2.00
472	31.00	25.09	2.76	3.13	0.93	20.36	4.45	90.55	4.000	No	Yes	2.00
473	31.04	25.89	2.75	3.14	0.92	21.05	4.36	91.89	4.000	No	Yes	2.00
474	31.13	26.92	2.73	3.13	0.92	21.91	4.25	93.21	4.000	No	Yes	2.00
475	31.20	27.99	2.72	3.13	0.91	22.82	4.15	94.69	4.000	No	Yes	2.00
476	31.29	28.87	2.71	3.14	0.91	23.54	4.08	96.05	4.000	No	Yes	2.00
477	31.34	29.38	2.71	3.17	0.91	23.95	4.05	97.07	4.000	No	Yes	2.00
478	31.38	29.75	2.71	3.20	0.91	24.26	4.04	98.00	4.000	No	Yes	2.00
479	31.43	29.95	2.70	3.18	0.90	24.40	4.02	98.01	4.000	No	Yes	2.00
480	31.51	29.81	2.70	3.12	0.90	24.24	3.99	96.77	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
481	31.58	29.15	2.70	3.05	0.90	23.63	4.01	94.73	4.000	No	Yes	2.00
482	31.63	28.20	2.71	2.98	0.91	22.78	4.05	92.32	4.000	No	Yes	2.00
483	31.71	26.91	2.72	2.92	0.91	21.61	4.15	89.67	4.000	No	Yes	2.00
484	31.78	25.56	2.74	2.87	0.92	20.41	4.26	86.95	4.000	No	Yes	2.00
485	31.83	24.29	2.75	2.82	0.92	19.28	4.37	84.32	4.000	No	Yes	2.00
486	31.90	23.14	2.76	2.75	0.93	18.26	4.48	81.74	4.000	No	Yes	2.00
487	31.98	22.27	2.77	2.66	0.93	17.48	4.52	79.05	4.000	No	Yes	2.00
488	32.03	21.54	2.77	2.56	0.93	16.84	4.55	76.69	4.000	No	Yes	2.00
489	32.09	20.84	2.78	2.51	0.93	16.21	4.62	74.93	4.000	No	Yes	2.00
490	32.16	20.13	2.79	2.50	0.94	15.57	4.73	73.67	4.000	No	Yes	2.00
491	32.22	19.49	2.81	2.51	0.94	15.00	4.85	72.78	4.000	No	Yes	2.00
492	32.30	19.02	2.82	2.52	0.95	14.56	4.95	72.13	4.000	No	Yes	2.00
493	32.38	18.67	2.83	2.53	0.95	14.24	5.03	71.60	4.000	No	Yes	2.00
494	32.42	18.64	2.83	2.52	0.95	14.20	5.03	71.43	4.000	No	Yes	2.00
495	32.50	18.90	2.82	2.49	0.95	14.39	4.97	71.49	4.000	No	Yes	2.00
496	32.56	19.05	2.82	2.51	0.95	14.50	4.96	71.91	4.000	No	Yes	2.00
497	32.62	19.22	2.82	2.57	0.95	14.62	4.98	72.88	4.000	No	Yes	2.00
498	32.72	19.47	2.82	2.63	0.95	14.80	5.00	74.02	4.000	No	Yes	2.00
499	32.77	19.78	2.83	2.70	0.95	15.05	5.01	75.31	4.000	No	Yes	2.00
500	32.82	20.17	2.82	2.77	0.95	15.35	5.00	76.77	4.000	No	Yes	2.00
501	32.91	20.58	2.82	2.84	0.95	15.66	4.99	78.18	4.000	No	Yes	2.00
502	32.97	20.98	2.82	2.90	0.95	15.98	4.98	79.57	4.000	No	Yes	2.00
503	33.02	21.23	2.83	2.97	0.95	16.16	5.00	80.83	4.000	No	Yes	2.00
504	33.11	21.45	2.83	3.05	0.95	16.32	5.03	82.05	4.000	No	Yes	2.00
505	33.16	21.63	2.83	3.11	0.95	16.44	5.06	83.15	4.000	No	Yes	2.00
506	33.22	21.81	2.83	3.16	0.95	16.57	5.07	83.95	4.000	No	Yes	2.00
507	33.29	21.97	2.83	3.20	0.95	16.67	5.08	84.67	4.000	No	Yes	2.00
508	33.37	22.11	2.84	3.24	0.96	16.76	5.09	85.32	4.000	No	Yes	2.00
509	33.41	22.18	2.84	3.29	0.96	16.79	5.12	86.01	4.000	No	Yes	2.00
510	33.47	22.32	2.84	3.36	0.96	16.88	5.16	87.04	4.000	No	Yes	2.00
511	33.57	22.42	2.85	3.45	0.96	16.92	5.21	88.17	4.000	No	Yes	2.00
512	33.60	22.79	2.85	3.51	0.96	17.21	5.20	89.47	4.000	No	Yes	2.00
513	33.67	23.28	2.85	3.58	0.96	17.59	5.18	91.17	4.000	No	Yes	2.00
514	33.76	23.80	2.85	3.67	0.96	17.98	5.18	93.12	4.000	No	Yes	2.00
515	33.80	24.36	2.84	3.79	0.96	18.42	5.18	95.41	4.000	No	Yes	2.00
516	33.86	24.91	2.85	3.91	0.96	18.84	5.19	97.86	4.000	No	Yes	2.00
517	33.96	25.43	2.85	4.04	0.96	19.22	5.21	100.16	4.000	No	Yes	2.00
518	34.00	25.94	2.85	4.13	0.96	19.62	5.21	102.23	4.000	No	Yes	2.00
519	34.06	26.36	2.85	4.20	0.96	19.93	5.20	103.72	4.000	No	Yes	2.00
520	34.16	26.76	2.85	4.25	0.96	20.21	5.19	104.93	4.000	No	Yes	2.00
521	34.20	26.82	2.85	4.32	0.96	20.23	5.23	105.84	4.000	No	Yes	2.00
522	34.26	26.68	2.86	4.36	0.96	20.09	5.28	105.97	4.000	No	Yes	2.00
523	34.36	26.55	2.86	4.37	0.96	19.93	5.31	105.74	4.000	No	Yes	2.00
524	34.39	26.36	2.86	4.35	0.97	19.76	5.32	105.17	4.000	No	Yes	2.00
525	34.46	26.14	2.86	4.32	0.97	19.55	5.33	104.24	4.000	No	Yes	2.00
526	34.56	25.91	2.86	4.28	0.97	19.31	5.34	103.23	4.000	No	Yes	2.00
527	34.60	25.62	2.86	4.24	0.97	19.06	5.36	102.22	4.000	No	Yes	2.00
528	34.65	25.33	2.87	4.21	0.97	18.80	5.39	101.26	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
529	34.75	25.05	2.87	4.17	0.97	18.52	5.41	100.23	4.000	No	Yes	2.00
530	34.80	24.81	2.87	4.13	0.97	18.31	5.42	99.30	4.000	No	Yes	2.00
531	34.86	24.61	2.87	4.11	0.97	18.12	5.44	98.56	4.000	No	Yes	2.00
532	34.95	24.38	2.87	4.08	0.97	17.90	5.46	97.68	4.000	No	Yes	2.00
533	34.99	24.19	2.88	4.03	0.97	17.73	5.46	96.78	4.000	No	Yes	2.00
534	35.06	24.08	2.87	3.98	0.97	17.61	5.45	95.90	4.000	No	Yes	2.00
535	35.11	23.94	2.87	3.93	0.97	17.48	5.44	95.02	4.000	No	Yes	2.00
536	35.19	23.83	2.87	3.87	0.97	17.36	5.42	94.06	4.000	No	Yes	2.00
537	35.25	23.70	2.87	3.81	0.97	17.24	5.40	93.16	4.000	No	Yes	2.00
538	35.31	23.56	2.87	3.75	0.97	17.10	5.39	92.15	4.000	No	Yes	2.00
539	35.39	23.40	2.87	3.70	0.97	16.95	5.38	91.17	4.000	No	Yes	2.00
540	35.49	23.26	2.87	3.64	0.97	16.80	5.37	90.16	4.000	No	Yes	2.00
541	35.53	23.14	2.87	3.61	0.97	16.69	5.37	89.62	4.000	No	Yes	2.00
542	35.60	23.03	2.87	3.61	0.97	16.57	5.39	89.34	4.000	No	Yes	2.00
543	35.63	22.98	2.87	3.64	0.97	16.52	5.42	89.51	4.000	No	Yes	2.00
544	35.70	23.28	2.87	3.65	0.97	16.73	5.39	90.12	4.000	No	Yes	2.00
545	35.78	23.79	2.86	3.68	0.97	17.11	5.34	91.39	4.000	No	Yes	2.00
546	35.84	24.40	2.86	3.74	0.96	17.57	5.29	93.03	4.000	No	Yes	2.00
547	35.90	25.23	2.85	3.82	0.96	18.20	5.24	95.32	4.000	No	Yes	2.00
548	35.98	26.27	2.84	3.85	0.96	19.00	5.13	97.44	4.000	No	Yes	2.00
549	36.06	27.66	2.81	3.75	0.95	20.09	4.90	98.43	4.000	No	Yes	2.00
550	36.09	29.05	2.78	3.57	0.93	21.22	4.63	98.16	4.000	No	Yes	2.00
551	36.18	30.33	2.75	3.38	0.92	22.24	4.38	97.40	4.000	No	Yes	2.00
552	36.23	31.16	2.73	3.24	0.92	22.90	4.22	96.52	4.000	No	Yes	2.00
553	36.29	31.53	2.72	3.19	0.91	23.17	4.15	96.09	4.000	No	Yes	2.00
554	36.38	31.68	2.72	3.15	0.91	23.26	4.11	95.64	4.000	No	Yes	2.00
555	36.42	32.10	2.71	3.13	0.91	23.58	4.07	95.94	4.000	No	Yes	2.00
556	36.49	33.06	2.70	3.13	0.90	24.32	3.99	97.04	4.000	No	Yes	2.00
557	36.58	34.30	2.69	3.15	0.90	25.26	3.91	98.78	4.000	Yes	Yes	2.00
558	36.62	36.32	2.67	3.19	0.89	26.86	3.79	101.91	4.000	Yes	Yes	2.00
559	36.68	39.95	2.65	3.27	0.88	29.72	3.62	107.49	4.000	Yes	Yes	2.00
560	36.77	44.99	2.61	3.31	0.87	33.72	3.38	113.80	4.000	Yes	Yes	2.00
561	36.83	52.72	2.54	3.21	0.84	39.94	3.00	119.98	4.000	Yes	No	2.00
562	36.88	62.36	2.47	3.08	0.82	47.77	2.64	126.28	4.000	Yes	No	2.00
563	36.97	72.24	2.42	2.97	0.80	55.77	2.38	132.66	4.000	Yes	No	2.00
564	37.02	81.77	2.37	2.90	0.78	63.53	2.19	138.89	4.000	Yes	No	2.00
565	37.08	89.81	2.33	2.86	0.76	70.05	2.07	144.68	4.000	Yes	No	2.00
566	37.17	96.99	2.31	2.85	0.76	75.82	1.98	150.13	0.395	No	No	0.96
567	37.22	102.33	2.30	2.88	0.75	80.09	1.94	155.26	0.428	No	No	1.04
568	37.27	105.76	2.29	2.92	0.75	82.79	1.92	158.89	0.453	No	No	1.10
569	37.37	108.07	2.29	2.95	0.75	84.49	1.91	161.53	0.472	No	No	1.14
570	37.41	108.62	2.29	3.01	0.75	84.82	1.93	163.58	0.487	No	No	1.18
571	37.47	108.08	2.30	3.06	0.75	84.24	1.95	164.56	0.494	No	No	1.20
572	37.57	107.73	2.31	3.10	0.75	83.75	1.97	165.17	0.499	No	No	1.21
573	37.61	107.99	2.31	3.09	0.75	83.91	1.97	164.91	0.497	No	No	1.20
574	37.67	110.10	2.29	3.03	0.75	85.56	1.93	164.87	0.497	No	No	1.20
575	37.76	112.74	2.28	2.95	0.74	87.63	1.88	164.62	0.495	No	No	1.20
576	37.81	116.12	2.26	2.83	0.73	90.39	1.81	163.96	0.490	No	No	1.19

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
577	37.87	119.49	2.24	2.79	0.73	93.08	1.78	165.30	0.500	No	No	1.21
578	37.97	123.02	2.23	2.76	0.73	95.80	1.74	167.09	0.514	No	No	1.24
579	38.02	126.08	2.22	2.76	0.72	98.19	1.73	169.55	0.533	No	No	1.29
580	38.07	128.60	2.22	2.81	0.72	100.10	1.73	172.82	0.560	No	No	1.36
581	38.17	130.76	2.23	2.92	0.73	101.53	1.75	177.46	0.600	No	No	1.45
582	38.20	133.02	2.24	3.06	0.73	103.16	1.78	183.33	0.653	No	No	1.58
583	38.27	136.19	2.25	3.18	0.73	105.44	1.80	189.57	0.714	No	No	1.73
584	38.33	141.08	2.25	3.29	0.73	109.15	1.80	196.53	0.786	No	No	1.90
585	38.42	146.42	2.25	3.39	0.73	113.13	1.80	203.92	4.000	No	No	2.00
586	38.46	152.19	2.24	3.43	0.73	117.65	1.78	209.76	4.000	No	No	2.00
587	38.53	157.18	2.24	3.47	0.73	121.44	1.77	215.00	4.000	No	No	2.00
588	38.62	161.63	2.24	3.50	0.73	124.77	1.76	219.36	4.000	No	No	2.00
589	38.66	165.38	2.23	3.51	0.73	127.66	1.75	222.81	4.000	No	No	2.00
590	38.73	169.32	2.22	3.46	0.72	130.70	1.72	224.42	4.000	No	No	2.00
591	38.81	173.12	2.21	3.40	0.72	133.62	1.69	225.39	4.000	No	No	2.00
592	38.86	175.78	2.20	3.33	0.71	135.72	1.66	225.22	4.000	No	No	2.00
593	38.93	177.38	2.19	3.27	0.71	136.92	1.64	224.21	4.000	No	No	2.00
594	39.02	179.58	2.17	3.18	0.70	138.58	1.61	222.75	4.000	No	No	2.00
595	39.05	181.60	2.16	3.09	0.70	140.28	1.58	221.31	4.000	No	No	2.00
596	39.12	182.85	2.15	3.01	0.69	141.22	1.56	219.61	4.000	No	No	2.00
597	39.18	183.12	2.14	2.95	0.69	141.38	1.54	217.70	4.000	No	No	2.00
598	39.27	183.29	2.14	2.89	0.69	141.39	1.53	215.65	4.000	No	No	2.00
599	39.31	184.01	2.13	2.83	0.69	141.97	1.51	214.11	4.000	No	No	2.00
600	39.37	182.93	2.12	2.78	0.68	141.02	1.50	211.74	4.000	No	No	2.00
601	39.44	182.32	2.12	2.73	0.68	140.45	1.49	209.45	4.000	No	No	2.00
602	39.50	182.24	2.11	2.67	0.68	140.34	1.48	207.34	4.000	No	No	2.00
603	39.59	181.64	2.11	2.62	0.68	139.74	1.47	205.04	4.000	No	No	2.00
604	39.65	180.71	2.10	2.56	0.68	138.96	1.46	202.25	4.000	No	No	2.00
605	39.71	179.11	2.09	2.48	0.67	137.69	1.44	198.38	0.806	No	No	1.96
606	39.77	177.03	2.08	2.38	0.67	136.09	1.42	193.62	0.755	No	No	1.83
607	39.84	174.31	2.07	2.26	0.66	134.01	1.40	187.78	0.696	No	No	1.69
608	39.91	169.90	2.06	2.15	0.66	130.56	1.39	181.00	0.631	No	No	1.53
609	39.97	167.59	2.04	2.00	0.65	128.92	1.36	174.76	0.576	No	No	1.40
610	40.03	163.25	2.03	1.87	0.65	125.60	1.34	167.87	0.520	No	No	1.26
611	40.11	158.20	2.01	1.75	0.64	121.67	1.32	160.59	0.465	No	No	1.13
612	40.17	153.76	2.00	1.63	0.64	118.29	1.30	153.83	0.419	No	No	1.02
613	40.26	150.03	1.99	1.51	0.63	115.42	1.28	147.85	0.381	No	No	0.92
614	40.30	148.43	1.96	1.40	0.62	114.38	1.26	143.56	0.355	No	No	0.86
615	40.36	148.43	1.94	1.29	0.61	114.61	1.23	140.76	0.339	No	No	0.82
616	40.45	149.44	1.92	1.21	0.61	115.54	1.21	139.38	0.332	No	No	0.81
617	40.49	150.84	1.90	1.15	0.60	116.84	1.19	138.73	0.328	No	No	0.80
618	40.57	151.01	1.89	1.10	0.59	117.01	1.18	137.62	0.322	No	No	0.78
619	40.62	151.62	1.87	1.06	0.59	117.60	1.16	136.87	0.318	No	No	0.77
620	40.70	151.46	1.87	1.03	0.59	117.45	1.16	136.06	0.314	No	No	0.76
621	40.76	150.02	1.87	1.03	0.59	116.16	1.16	134.96	0.309	No	No	0.75
622	40.86	148.25	1.88	1.05	0.59	114.50	1.17	133.87	0.303	No	No	0.74
623	40.89	146.27	1.89	1.07	0.60	112.74	1.18	133.07	0.299	No	No	0.73
624	40.95	144.41	1.91	1.11	0.60	110.99	1.19	132.55	0.297	No	No	0.72

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
625	41.03	143.07	1.92	1.15	0.61	109.63	1.21	132.49	0.296	No	No	0.72
626	41.11	142.22	1.93	1.20	0.61	108.67	1.22	132.84	0.298	No	No	0.72
627	41.16	141.92	1.95	1.25	0.62	108.15	1.24	134.04	0.304	No	No	0.74
628	41.23	141.98	1.97	1.32	0.62	107.87	1.26	135.72	0.312	No	No	0.76
629	41.29	142.10	1.98	1.38	0.63	107.69	1.27	137.23	0.320	No	No	0.78
630	41.35	142.20	1.99	1.43	0.63	107.53	1.29	138.47	0.327	No	No	0.80
631	41.41	142.21	2.00	1.48	0.64	107.30	1.30	139.67	0.333	No	No	0.81
632	41.49	142.08	2.01	1.54	0.64	106.91	1.32	140.92	0.340	No	No	0.83
633	41.56	141.57	2.03	1.62	0.65	106.15	1.35	142.81	0.351	No	No	0.85
634	41.64	140.45	2.06	1.73	0.66	104.86	1.38	144.72	0.362	No	No	0.88
635	41.69	138.39	2.08	1.86	0.67	102.85	1.43	146.71	0.374	No	No	0.91
636	41.73	135.34	2.12	2.01	0.68	100.06	1.49	148.72	0.386	No	No	0.94
637	41.84	131.91	2.15	2.17	0.69	96.89	1.55	150.57	0.397	No	No	0.97
638	41.89	128.64	2.18	2.34	0.71	93.97	1.63	152.81	0.412	No	No	1.00
639	41.98	126.30	2.21	2.48	0.72	91.79	1.69	154.98	0.426	No	No	1.04
640	42.04	124.44	2.23	2.60	0.72	90.08	1.74	156.76	0.438	No	No	1.07
641	42.09	123.04	2.24	2.68	0.73	88.81	1.78	157.96	0.447	No	No	1.09
642	42.16	122.85	2.24	2.68	0.73	88.56	1.78	157.62	0.444	No	No	1.08
643	42.24	123.41	2.24	2.62	0.73	88.94	1.76	156.37	0.436	No	No	1.06
644	42.28	124.88	2.22	2.52	0.72	90.15	1.71	154.54	0.423	No	No	1.03
645	42.33	127.01	2.20	2.39	0.71	91.92	1.66	152.37	0.409	No	No	1.00
646	42.39	129.14	2.17	2.26	0.70	93.69	1.60	150.19	0.395	No	No	0.96
647	42.47	130.67	2.15	2.14	0.70	94.96	1.56	147.85	0.381	No	No	0.93
648	42.53	130.88	2.14	2.07	0.69	95.17	1.53	145.93	0.369	No	No	0.90
649	42.59	130.36	2.14	2.05	0.69	94.72	1.53	144.89	0.363	No	No	0.89
650	42.66	128.15	2.15	2.08	0.69	92.84	1.55	144.24	0.359	No	No	0.88
651	42.73	125.51	2.17	2.16	0.70	90.55	1.60	144.49	4.000	Yes	No	2.00
652	42.83	121.32	2.20	2.31	0.71	86.92	1.67	145.58	4.000	Yes	No	2.00
653	42.88	116.08	2.25	2.54	0.73	82.53	1.79	147.81	4.000	Yes	No	2.00
654	42.93	110.69	2.30	2.80	0.75	78.01	1.93	150.89	4.000	Yes	No	2.00
655	42.99	105.22	2.35	3.10	0.77	73.48	2.10	154.56	4.000	Yes	No	2.00
656	43.07	100.21	2.39	3.41	0.79	69.35	2.28	158.34	4.000	Yes	No	2.00
657	43.14	95.63	2.44	3.70	0.80	65.62	2.46	161.52	4.000	Yes	No	2.00
658	43.19	90.87	2.47	3.95	0.82	61.88	2.64	163.11	4.000	Yes	No	2.00
659	43.25	86.68	2.50	4.09	0.83	58.66	2.77	162.37	4.000	Yes	No	2.00
660	43.34	81.82	2.53	4.20	0.84	54.96	2.91	160.19	4.000	Yes	No	2.00
661	43.39	77.67	2.55	4.23	0.85	51.89	3.02	156.69	4.000	Yes	No	2.00
662	43.45	73.11	2.57	4.20	0.85	48.56	3.12	151.56	0.404	No	No	0.99
663	43.54	68.41	2.58	4.15	0.86	45.14	3.22	145.56	0.367	No	No	0.90
664	43.59	63.67	2.60	4.04	0.87	41.76	3.32	138.68	0.328	No	No	0.80
665	43.64	58.08	2.62	3.93	0.87	37.78	3.46	130.82	4.000	No	Yes	2.00
666	43.74	52.40	2.65	3.80	0.88	33.73	3.63	122.45	4.000	No	Yes	2.00
667	43.78	46.98	2.68	3.66	0.89	29.92	3.82	114.29	4.000	No	Yes	2.00
668	43.83	42.15	2.71	3.58	0.91	26.52	4.06	107.56	4.000	No	Yes	2.00
669	43.94	37.81	2.75	3.54	0.92	23.43	4.34	101.74	4.000	No	Yes	2.00
670	43.98	34.06	2.78	3.50	0.94	20.82	4.64	96.56	4.000	No	Yes	2.00
671	44.04	31.95	2.80	3.39	0.94	19.35	4.77	92.25	4.000	No	Yes	2.00
672	44.14	30.33	2.81	3.24	0.94	18.23	4.84	88.21	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
673	44.17	29.10	2.81	3.09	0.95	17.40	4.87	84.75	4.000	No	Yes	2.00
674	44.23	28.76	2.81	3.00	0.94	17.17	4.84	83.14	4.000	No	Yes	2.00
675	44.33	28.68	2.80	2.95	0.94	17.09	4.82	82.35	4.000	No	Yes	2.00
676	44.37	29.02	2.80	2.91	0.94	17.32	4.74	82.18	4.000	No	Yes	2.00
677	44.44	29.52	2.79	2.97	0.94	17.63	4.74	83.55	4.000	No	Yes	2.00
678	44.53	30.09	2.80	3.09	0.94	17.96	4.77	85.75	4.000	No	Yes	2.00
679	44.58	30.72	2.81	3.25	0.94	18.34	4.83	88.54	4.000	No	Yes	2.00
680	44.64	31.59	2.81	3.43	0.95	18.87	4.87	91.92	4.000	No	Yes	2.00
681	44.73	33.07	2.81	3.59	0.94	19.81	4.84	95.80	4.000	No	Yes	2.00
682	44.78	34.76	2.80	3.75	0.94	20.91	4.78	100.00	4.000	No	Yes	2.00
683	44.82	36.82	2.79	3.87	0.94	22.27	4.68	104.27	4.000	No	Yes	2.00
684	44.90	39.32	2.77	3.97	0.93	23.92	4.55	108.78	4.000	No	Yes	2.00
685	44.97	41.98	2.76	4.07	0.93	25.69	4.42	113.46	4.000	No	Yes	2.00
686	45.03	45.07	2.73	4.08	0.92	27.77	4.22	117.33	4.000	No	Yes	2.00
687	45.09	48.02	2.71	4.07	0.91	29.77	4.05	120.66	4.000	No	Yes	2.00
688	45.17	50.82	2.69	4.05	0.90	31.66	3.90	123.53	4.000	No	Yes	2.00
689	45.22	53.50	2.67	4.04	0.89	33.49	3.77	126.23	4.000	No	Yes	2.00
690	45.29	55.93	2.65	4.02	0.89	35.13	3.66	128.50	4.000	No	Yes	2.00
691	45.38	58.32	2.63	3.98	0.88	36.73	3.55	130.31	4.000	No	Yes	2.00
692	45.42	60.57	2.62	3.92	0.87	38.30	3.43	131.40	4.000	No	Yes	2.00
693	45.50	62.33	2.60	3.85	0.87	39.50	3.34	131.76	4.000	No	Yes	2.00
694	45.57	63.62	2.59	3.79	0.86	40.38	3.27	131.88	0.293	No	No	0.73
695	45.62	64.35	2.58	3.75	0.86	40.86	3.23	131.80	0.293	No	No	0.72
696	45.69	64.79	2.58	3.71	0.86	41.14	3.19	131.34	0.291	No	No	0.72
697	45.77	65.03	2.57	3.67	0.86	41.27	3.17	130.71	0.288	No	No	0.71
698	45.82	64.64	2.57	3.63	0.86	40.97	3.17	129.68	0.283	No	No	0.70
699	45.88	63.43	2.58	3.63	0.86	40.09	3.20	128.34	0.277	No	No	0.68
700	45.97	61.81	2.59	3.63	0.86	38.90	3.26	126.83	0.270	No	No	0.67
701	46.02	59.45	2.61	3.68	0.87	37.20	3.37	125.35	4.000	No	Yes	2.00
702	46.10	56.51	2.63	3.78	0.88	35.08	3.54	124.07	4.000	No	Yes	2.00
703	46.17	53.60	2.66	3.88	0.89	32.99	3.72	122.72	4.000	No	Yes	2.00
704	46.21	50.91	2.69	3.98	0.90	31.09	3.90	121.40	4.000	No	Yes	2.00
705	46.27	48.55	2.71	4.06	0.91	29.43	4.07	119.86	4.000	No	Yes	2.00
706	46.36	46.40	2.73	4.12	0.92	27.90	4.24	118.19	4.000	No	Yes	2.00
707	46.42	44.50	2.75	4.17	0.92	26.58	4.39	116.57	4.000	No	Yes	2.00
708	46.46	42.82	2.77	4.22	0.93	25.41	4.53	115.16	4.000	No	Yes	2.00
709	46.56	41.38	2.79	4.27	0.94	24.39	4.67	113.82	4.000	No	Yes	2.00
710	46.61	40.40	2.80	4.30	0.94	23.70	4.76	112.81	4.000	No	Yes	2.00
711	46.66	39.90	2.80	4.29	0.94	23.35	4.80	112.07	4.000	No	Yes	2.00
712	46.74	39.54	2.81	4.31	0.94	23.07	4.85	111.78	4.000	No	Yes	2.00
713	46.81	39.12	2.82	4.37	0.95	22.74	4.92	111.81	4.000	No	Yes	2.00
714	46.87	38.64	2.83	4.46	0.95	22.38	5.02	112.27	4.000	No	Yes	2.00
715	46.94	38.63	2.83	4.51	0.95	22.33	5.05	112.77	4.000	No	Yes	2.00
716	47.01	38.71	2.83	4.56	0.95	22.33	5.08	113.37	4.000	No	Yes	2.00
717	47.06	38.83	2.84	4.60	0.96	22.38	5.10	114.02	4.000	No	Yes	2.00
718	47.12	39.01	2.84	4.63	0.96	22.46	5.10	114.54	4.000	No	Yes	2.00
719	47.19	39.29	2.83	4.61	0.95	22.62	5.07	114.67	4.000	No	Yes	2.00
720	47.25	39.58	2.83	4.57	0.95	22.79	5.02	114.47	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
721	47.34	39.73	2.82	4.51	0.95	22.86	4.98	113.86	4.000	No	Yes	2.00
722	47.39	39.72	2.82	4.45	0.95	22.85	4.95	113.08	4.000	No	Yes	2.00
723	47.44	39.77	2.81	4.38	0.95	22.88	4.90	112.17	4.000	No	Yes	2.00
724	47.54	39.28	2.82	4.35	0.95	22.52	4.93	111.05	4.000	No	Yes	2.00
725	47.59	38.71	2.82	4.33	0.95	22.13	4.97	110.09	4.000	No	Yes	2.00
726	47.65	38.41	2.82	4.31	0.95	21.91	4.99	109.31	4.000	No	Yes	2.00
727	47.74	37.95	2.83	4.32	0.95	21.57	5.04	108.75	4.000	No	Yes	2.00
728	47.81	37.56	2.84	4.35	0.96	21.28	5.10	108.54	4.000	No	Yes	2.00
729	47.85	37.47	2.84	4.37	0.96	21.20	5.12	108.59	4.000	No	Yes	2.00
730	47.94	37.60	2.84	4.37	0.96	21.25	5.12	108.69	4.000	No	Yes	2.00
731	47.98	37.97	2.84	4.39	0.96	21.46	5.09	109.34	4.000	No	Yes	2.00
732	48.04	38.79	2.83	4.39	0.95	21.97	5.03	110.49	4.000	No	Yes	2.00
733	48.13	39.93	2.82	4.40	0.95	22.66	4.94	112.01	4.000	No	Yes	2.00
734	48.17	41.38	2.81	4.39	0.94	23.58	4.83	113.87	4.000	No	Yes	2.00
735	48.24	42.73	2.80	4.43	0.94	24.42	4.75	116.08	4.000	No	Yes	2.00
736	48.32	44.25	2.79	4.46	0.94	25.35	4.67	118.31	4.000	No	Yes	2.00
737	48.37	46.09	2.77	4.47	0.93	26.53	4.55	120.75	4.000	No	Yes	2.00
738	48.44	48.52	2.75	4.43	0.92	28.08	4.39	123.16	4.000	Yes	Yes	2.00
739	48.53	51.56	2.72	4.34	0.91	30.04	4.17	125.39	4.000	Yes	Yes	2.00
740	48.56	54.96	2.69	4.21	0.90	32.30	3.94	127.24	4.000	Yes	Yes	2.00
741	48.64	59.29	2.65	4.03	0.89	35.19	3.66	128.73	4.000	Yes	Yes	2.00
742	48.72	64.04	2.61	3.85	0.87	38.37	3.40	130.28	4.000	Yes	Yes	2.00
743	48.78	69.67	2.57	3.65	0.85	42.21	3.12	131.70	4.000	Yes	No	2.00
744	48.83	76.00	2.52	3.45	0.83	46.56	2.86	133.11	4.000	Yes	No	2.00
745	48.90	82.27	2.48	3.29	0.82	50.88	2.65	134.67	4.000	Yes	No	2.00
746	48.97	87.90	2.44	3.20	0.81	54.74	2.50	136.96	4.000	Yes	No	2.00
747	49.03	93.07	2.42	3.15	0.80	58.27	2.40	139.62	4.000	Yes	No	2.00
748	49.12	97.81	2.40	3.13	0.79	61.45	2.32	142.53	0.349	No	No	0.88
749	49.16	102.84	2.38	3.10	0.78	64.88	2.24	145.62	0.367	No	No	0.93
750	49.23	107.68	2.37	3.08	0.78	68.15	2.18	148.54	0.385	No	No	0.97
751	49.31	113.16	2.35	3.04	0.77	71.90	2.10	151.31	0.402	No	No	1.02
752	49.36	118.20	2.33	3.00	0.76	75.37	2.04	153.88	0.419	No	No	1.06
753	49.43	123.66	2.31	2.95	0.75	79.14	1.97	156.19	0.434	No	No	1.10
754	49.52	130.09	2.28	2.87	0.75	83.63	1.90	158.50	0.450	No	No	1.14
755	49.58	137.03	2.25	2.77	0.73	88.58	1.81	160.30	0.463	No	No	1.17
756	49.62	143.61	2.23	2.65	0.72	93.36	1.73	161.63	0.473	No	No	1.20
757	49.71	149.84	2.19	2.48	0.71	98.02	1.64	160.96	0.468	No	No	1.19
758	49.78	155.24	2.15	2.31	0.70	102.19	1.56	159.69	0.459	No	No	1.16
759	49.81	159.41	2.13	2.18	0.69	105.51	1.50	158.62	0.451	No	No	1.14
760	49.88	162.01	2.11	2.08	0.68	107.57	1.46	157.54	0.444	No	No	1.13
761	49.97	163.35	2.09	2.02	0.67	108.59	1.44	156.61	0.437	No	No	1.11
762	50.00	161.66	2.09	2.00	0.67	107.39	1.44	155.04	0.427	No	No	1.08
763	50.07	160.26	2.10	2.00	0.67	106.28	1.45	153.97	4.000	No	No	2.00
764	50.14	158.20	2.10	2.02	0.68	104.64	1.46	153.02	4.000	No	No	2.00
765	50.22	154.55	2.12	2.06	0.68	101.76	1.49	151.80	4.000	Yes	No	2.00
766	50.27	149.22	2.15	2.20	0.70	97.52	1.56	151.87	4.000	Yes	No	2.00
767	50.35	143.10	2.19	2.37	0.71	92.63	1.65	152.47	4.000	Yes	No	2.00
768	50.40	135.60	2.23	2.55	0.73	86.89	1.76	152.50	4.000	Yes	No	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
769	50.47	127.45	2.28	2.72	0.74	80.82	1.87	151.35	4.000	Yes	No	2.00
770	50.55	119.71	2.31	2.84	0.76	75.19	1.98	149.24	4.000	Yes	No	2.00
771	50.59	114.02	2.33	2.90	0.76	71.17	2.06	146.72	4.000	Yes	No	2.00
772	50.66	106.49	2.37	2.98	0.78	65.86	2.18	143.35	4.000	Yes	No	2.00
773	50.75	98.69	2.40	3.05	0.79	60.41	2.31	139.61	4.000	Yes	No	2.00
774	50.79	91.04	2.44	3.13	0.80	55.16	2.46	135.79	4.000	Yes	No	2.00
775	50.86	83.73	2.47	3.19	0.82	50.19	2.62	131.58	4.000	Yes	No	2.00
776	50.94	76.84	2.51	3.24	0.83	45.52	2.79	127.20	4.000	Yes	No	2.00
777	50.99	70.78	2.54	3.26	0.84	41.49	2.96	122.83	4.000	Yes	No	2.00
778	51.05	65.41	2.57	3.27	0.85	37.95	3.12	118.60	4.000	Yes	No	2.00
779	51.14	60.12	2.60	3.28	0.87	34.47	3.31	114.18	4.000	Yes	No	2.00
780	51.18	54.60	2.64	3.31	0.88	30.89	3.55	109.70	4.000	Yes	Yes	2.00
781	51.25	49.39	2.67	3.28	0.89	27.54	3.79	104.45	4.000	Yes	Yes	2.00
782	51.34	44.37	2.71	3.21	0.91	24.36	4.04	98.37	4.000	Yes	Yes	2.00
783	51.41	40.71	2.72	3.02	0.91	22.11	4.16	91.95	4.000	No	Yes	2.00
784	51.44	38.40	2.72	2.76	0.91	20.75	4.14	85.82	4.000	No	Yes	2.00
785	51.52	36.49	2.71	2.46	0.91	19.65	4.05	79.66	4.000	No	Yes	2.00
786	51.67	35.22	2.69	2.16	0.90	18.94	3.91	74.02	4.000	No	Yes	2.00
787	51.70	34.13	2.68	1.96	0.90	18.33	3.82	70.04	4.000	No	Yes	2.00
788	51.75	33.21	2.67	1.86	0.89	17.79	3.81	67.69	4.000	No	Yes	2.00
789	51.78	32.42	2.68	1.80	0.90	17.30	3.82	66.11	4.000	No	Yes	2.00
790	51.88	32.20	2.68	1.81	0.90	17.13	3.85	65.99	4.000	No	Yes	2.00
791	51.92	32.47	2.69	1.87	0.90	17.26	3.89	67.16	4.000	No	Yes	2.00
792	51.99	32.74	2.69	1.95	0.90	17.38	3.94	68.52	4.000	No	Yes	2.00
793	52.04	32.85	2.71	2.05	0.91	17.38	4.04	70.20	4.000	No	Yes	2.00
794	52.14	32.83	2.72	2.17	0.91	17.29	4.15	71.79	4.000	No	Yes	2.00
795	52.19	32.56	2.74	2.28	0.92	17.06	4.29	73.12	4.000	No	Yes	2.00
796	52.26	31.97	2.76	2.38	0.93	16.63	4.44	73.88	4.000	No	Yes	2.00
797	52.33	31.02	2.78	2.45	0.93	16.00	4.61	73.79	4.000	No	Yes	2.00
798	52.38	29.91	2.80	2.51	0.94	15.28	4.80	73.35	4.000	No	Yes	2.00
799	52.43	28.33	2.83	2.58	0.95	14.28	5.07	72.33	4.000	No	Yes	2.00
800	52.51	26.65	2.86	2.62	0.97	13.23	5.35	70.78	4.000	No	Yes	2.00
801	52.58	25.06	2.89	2.63	0.98	12.25	5.62	68.88	4.000	No	Yes	2.00
802	52.63	23.61	2.91	2.59	0.99	11.38	5.85	66.51	4.000	No	Yes	2.00
803	52.69	22.29	2.93	2.53	0.99	10.60	6.04	64.03	4.000	No	Yes	2.00
804	52.77	21.16	2.95	2.44	1.00	9.93	6.20	61.57	4.000	No	Yes	2.00
805	52.83	20.40	2.96	2.34	1.00	9.49	6.27	59.49	4.000	No	Yes	2.00
806	52.90	19.92	2.96	2.25	1.00	9.22	6.29	57.98	4.000	No	Yes	2.00
807	52.99	19.57	2.96	2.16	1.00	9.02	6.27	56.56	4.000	No	Yes	2.00
808	53.05	19.39	2.95	2.07	1.00	8.91	6.22	55.38	4.000	No	Yes	2.00
809	53.10	19.24	2.95	2.01	1.00	8.82	6.19	54.61	4.000	No	Yes	2.00
810	53.16	19.09	2.95	1.97	1.00	8.74	6.18	53.96	4.000	No	Yes	2.00
811	53.25	18.99	2.95	1.94	1.00	8.67	6.17	53.51	4.000	No	Yes	2.00
812	53.29	18.94	2.95	1.92	1.00	8.64	6.16	53.22	4.000	No	Yes	2.00
813	53.38	18.91	2.94	1.88	1.00	8.62	6.12	52.77	4.000	No	Yes	2.00
814	53.44	18.88	2.94	1.85	1.00	8.60	6.09	52.39	4.000	No	Yes	2.00
815	53.50	18.85	2.94	1.82	0.99	8.58	6.07	52.09	4.000	No	Yes	2.00
816	53.55	18.80	2.94	1.81	0.99	8.54	6.07	51.85	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
817	53.64	18.73	2.94	1.80	1.00	8.49	6.09	51.68	4.000	No	Yes	2.00
818	53.72	18.66	2.94	1.80	1.00	8.44	6.10	51.50	4.000	No	Yes	2.00
819	53.74	18.66	2.94	1.79	1.00	8.44	6.09	51.43	4.000	No	Yes	2.00
820	53.82	18.74	2.94	1.78	0.99	8.47	6.07	51.42	4.000	No	Yes	2.00
821	53.90	18.83	2.94	1.79	0.99	8.51	6.06	51.55	4.000	No	Yes	2.00
822	53.94	18.95	2.94	1.81	0.99	8.58	6.05	51.92	4.000	No	Yes	2.00
823	54.01	19.10	2.94	1.83	0.99	8.65	6.05	52.34	4.000	No	Yes	2.00
824	54.09	19.25	2.94	1.86	0.99	8.72	6.05	52.76	4.000	No	Yes	2.00
825	54.19	19.41	2.93	1.87	0.99	8.79	6.04	53.10	4.000	No	Yes	2.00
826	54.24	19.57	2.93	1.88	0.99	8.88	6.01	53.39	4.000	No	Yes	2.00
827	54.29	19.71	2.93	1.89	0.99	8.95	5.99	53.60	4.000	No	Yes	2.00
828	54.35	19.78	2.93	1.88	0.99	8.98	5.97	53.59	4.000	No	Yes	2.00
829	54.44	19.79	2.92	1.86	0.99	8.98	5.94	53.36	4.000	No	Yes	2.00
830	54.49	19.78	2.92	1.83	0.99	8.98	5.90	53.01	4.000	No	Yes	2.00
831	54.53	19.74	2.92	1.79	0.99	8.96	5.87	52.57	4.000	No	Yes	2.00
832	54.63	19.69	2.91	1.75	0.99	8.92	5.83	52.05	4.000	No	Yes	2.00
833	54.68	19.64	2.91	1.71	0.98	8.90	5.79	51.53	4.000	No	Yes	2.00
834	54.74	19.58	2.91	1.68	0.98	8.86	5.76	51.08	4.000	No	Yes	2.00
835	54.83	19.56	2.90	1.64	0.98	8.85	5.73	50.69	4.000	No	Yes	2.00
836	54.88	19.53	2.90	1.63	0.98	8.82	5.73	50.52	4.000	No	Yes	2.00
837	54.94	19.53	2.91	1.66	0.98	8.81	5.77	50.80	4.000	No	Yes	2.00
838	55.03	19.54	2.91	1.70	0.99	8.79	5.83	51.22	4.000	No	Yes	2.00
839	55.07	19.56	2.92	1.75	0.99	8.78	5.89	51.71	4.000	No	Yes	2.00
840	55.13	19.56	2.93	1.80	0.99	8.76	5.97	52.25	4.000	No	Yes	2.00
841	55.23	19.57	2.93	1.86	0.99	8.74	6.04	52.78	4.000	No	Yes	2.00
842	55.28	19.59	2.94	1.91	1.00	8.73	6.11	53.32	4.000	No	Yes	2.00
843	55.32	19.63	2.95	1.96	1.00	8.73	6.17	53.85	4.000	No	Yes	2.00
844	55.42	19.66	2.95	1.99	1.00	8.72	6.21	54.15	4.000	No	Yes	2.00
845	55.50	19.75	2.95	1.99	1.00	8.77	6.19	54.28	4.000	No	Yes	2.00
846	55.53	19.81	2.94	1.97	1.00	8.80	6.15	54.15	4.000	No	Yes	2.00
847	55.58	19.82	2.94	1.96	1.00	8.80	6.14	54.07	4.000	No	Yes	2.00
848	55.66	19.80	2.94	1.95	1.00	8.78	6.13	53.84	4.000	No	Yes	2.00
849	55.73	19.80	2.93	1.87	0.99	8.79	6.03	53.02	4.000	No	Yes	2.00
850	55.78	19.97	2.94	1.96	1.00	8.86	6.11	54.17	4.000	No	Yes	2.00
851	55.86	20.32	2.95	2.12	1.00	9.02	6.23	56.19	4.000	No	Yes	2.00
852	55.93	20.98	2.96	2.31	1.00	9.35	6.30	58.91	4.000	Yes	Yes	2.00
853	55.97	22.90	2.94	2.56	1.00	10.37	6.15	63.82	4.000	Yes	Yes	2.00
854	56.08	26.02	2.90	2.72	0.98	12.11	5.74	69.47	4.000	Yes	Yes	2.00
855	56.12	30.92	2.83	2.72	0.95	14.96	5.04	75.34	4.000	Yes	Yes	2.00
856	56.17	39.52	2.70	2.50	0.91	20.15	4.02	81.08	4.000	Yes	Yes	2.00
857	56.28	48.92	2.60	2.35	0.87	25.93	3.32	86.19	4.000	Yes	No	2.00
858	56.32	59.00	2.51	2.24	0.83	32.27	2.83	91.38	4.000	Yes	No	2.00
859	56.37	69.47	2.43	2.10	0.80	39.03	2.44	95.22	4.000	Yes	No	2.00
860	56.47	79.91	2.36	1.98	0.77	45.84	2.16	98.82	4.000	Yes	No	2.00
861	56.52	90.20	2.30	1.87	0.75	52.68	1.95	102.49	4.000	Yes	No	2.00
862	56.57	98.80	2.25	1.81	0.73	58.43	1.81	105.88	4.000	Yes	No	2.00
863	56.67	105.68	2.23	1.78	0.72	62.98	1.73	109.00	4.000	No	No	2.00
864	56.72	109.54	2.22	1.80	0.72	65.45	1.71	111.70	4.000	No	No	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
865	56.78	108.92	2.23	1.88	0.73	64.78	1.75	113.30	4.000	Yes	No	2.00
866	56.87	106.09	2.26	1.99	0.74	62.58	1.83	114.28	4.000	Yes	No	2.00
867	56.91	101.69	2.30	2.12	0.75	59.38	1.94	114.91	4.000	Yes	No	2.00
868	56.97	94.90	2.35	2.32	0.77	54.58	2.11	115.36	4.000	Yes	No	2.00
869	57.03	87.46	2.41	2.55	0.79	49.42	2.35	116.07	4.000	Yes	No	2.00
870	57.11	79.60	2.48	2.85	0.82	44.05	2.66	117.05	4.000	Yes	No	2.00
871	57.17	72.07	2.54	3.12	0.84	39.08	3.00	117.09	4.000	Yes	No	2.00
872	57.26	64.98	2.61	3.38	0.87	34.48	3.36	115.99	4.000	Yes	Yes	2.00
873	57.32	58.98	2.66	3.58	0.89	30.71	3.71	114.08	4.000	Yes	Yes	2.00
874	57.35	53.23	2.71	3.76	0.91	27.19	4.10	111.44	4.000	Yes	Yes	2.00
875	57.42	48.56	2.76	3.89	0.93	24.36	4.45	108.40	4.000	Yes	Yes	2.00
876	57.51	44.62	2.80	3.97	0.94	22.00	4.78	105.07	4.000	Yes	Yes	2.00
877	57.55	42.37	2.81	3.90	0.95	20.71	4.91	101.63	4.000	Yes	Yes	2.00
878	57.62	40.27	2.82	3.78	0.95	19.53	5.00	97.64	4.000	No	Yes	2.00
879	57.71	38.27	2.83	3.62	0.95	18.41	5.07	93.40	4.000	No	Yes	2.00
880	57.78	36.28	2.84	3.50	0.96	17.29	5.18	89.53	4.000	No	Yes	2.00
881	57.82	34.25	2.86	3.40	0.97	16.16	5.32	86.01	4.000	No	Yes	2.00
882	57.90	32.33	2.88	3.30	0.97	15.08	5.47	82.51	4.000	No	Yes	2.00
883	57.96	30.91	2.88	3.15	0.97	14.30	5.53	79.14	4.000	No	Yes	2.00
884	58.01	29.77	2.88	2.98	0.97	13.70	5.54	75.90	4.000	No	Yes	2.00
885	58.11	28.76	2.88	2.82	0.97	13.15	5.54	72.86	4.000	No	Yes	2.00
886	58.15	27.83	2.88	2.66	0.97	12.67	5.53	70.01	4.000	No	Yes	2.00
887	58.21	27.11	2.88	2.51	0.97	12.29	5.50	67.59	4.000	No	Yes	2.00
888	58.31	26.42	2.88	2.37	0.97	11.92	5.46	65.17	4.000	No	Yes	2.00
889	58.35	25.74	2.87	2.22	0.97	11.58	5.43	62.82	4.000	No	Yes	2.00
890	58.42	25.07	2.87	2.13	0.97	11.21	5.45	61.05	4.000	No	Yes	2.00
891	58.50	24.42	2.88	2.05	0.97	10.86	5.47	59.40	4.000	No	Yes	2.00
892	58.55	23.79	2.88	2.00	0.97	10.51	5.53	58.05	4.000	No	Yes	2.00
893	58.61	23.23	2.89	1.95	0.98	10.19	5.58	56.92	4.000	No	Yes	2.00
894	58.70	22.64	2.90	1.93	0.98	9.86	5.67	55.93	4.000	No	Yes	2.00
895	58.75	22.12	2.91	1.93	0.98	9.56	5.79	55.31	4.000	No	Yes	2.00
896	58.81	21.76	2.92	1.94	0.99	9.34	5.89	55.01	4.000	No	Yes	2.00
897	58.89	21.58	2.93	1.95	0.99	9.22	5.95	54.89	4.000	No	Yes	2.00
898	58.95	21.52	2.93	1.97	0.99	9.18	5.99	54.99	4.000	No	Yes	2.00
899	59.00	21.65	2.93	1.99	0.99	9.23	5.99	55.30	4.000	No	Yes	2.00
900	59.10	21.83	2.93	2.00	0.99	9.32	5.97	55.60	4.000	No	Yes	2.00
901	59.15	22.01	2.92	2.01	0.99	9.40	5.95	55.91	4.000	No	Yes	2.00
902	59.20	22.17	2.92	2.03	0.99	9.48	5.94	56.28	4.000	No	Yes	2.00
903	59.28	22.35	2.92	2.05	0.99	9.57	5.92	56.65	4.000	No	Yes	2.00
904	59.35	22.51	2.93	2.10	0.99	9.62	5.96	57.35	4.000	No	Yes	2.00
905	59.38	22.75	2.93	2.16	0.99	9.74	5.98	58.18	4.000	No	Yes	2.00
906	59.46	23.08	2.92	2.18	0.99	9.90	5.94	58.82	4.000	No	Yes	2.00
907	59.53	23.71	2.91	2.15	0.98	10.25	5.78	59.22	4.000	No	Yes	2.00
908	59.59	24.44	2.88	2.05	0.97	10.68	5.53	59.03	4.000	No	Yes	2.00
909	59.67	25.08	2.86	1.98	0.97	11.05	5.33	58.93	4.000	No	Yes	2.00
910	59.73	25.65	2.84	1.93	0.96	11.38	5.17	58.87	4.000	No	Yes	2.00
911	59.79	26.13	2.83	1.91	0.96	11.64	5.08	59.15	4.000	No	Yes	2.00
912	59.89	26.74	2.82	1.91	0.95	11.97	4.99	59.70	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
913	59.94	27.35	2.82	1.93	0.95	12.30	4.93	60.60	4.000	No	Yes	2.00
914	59.99	28.37	2.81	1.99	0.95	12.84	4.85	62.31	4.000	Yes	Yes	2.00
915	60.07	30.97	2.71	1.61	0.91	14.49	4.10	59.42	4.000	Yes	Yes	2.00
916	60.12	34.29	2.61	1.27	0.87	16.66	3.39	56.43	4.000	Yes	Yes	2.00
917	60.19	40.56	2.46	0.95	0.81	20.76	2.59	53.74	4.000	Yes	No	2.00
918	60.25	48.38	2.31	0.69	0.76	26.09	1.98	51.69	4.000	Yes	No	2.00
919	60.33	55.12	2.19	0.51	0.71	30.89	1.64	50.62	4.000	Yes	No	2.00
920	60.38	61.17	2.08	0.37	0.67	35.45	1.00	35.45	4.000	Yes	No	2.00
921	60.48	67.60	1.96	0.25	0.62	40.50	1.00	40.50	4.000	Yes	No	2.00
922	60.53	77.07	1.81	0.12	0.57	48.20	1.00	48.20	4.000	Yes	No	2.00
923	60.61	80.93	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
924	60.63	82.24	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00

Abbreviations

Depth: Depth from free surface, at which CPT was performed (ft)
q_t: Total cone resistance
I_c: Soil behavior type index
Fr: Normalized friction ratio (%)
n: Stress exponent
Q_{tn}: Normalized cone resistance
K_c: Cone resistance correction factor due to fines
$Q_{tn,cs}$: Normalized and adjusted cone resistance
$CRR_{7.5}$: Cyclic resistance ratio for M_w=7.5
FS: Factor of safety against soil liquefaction

:: Liquefaction Potential Index calculation data ::

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
0.08	2.00	0.00	0.00	0.02	0.00	0.15	2.00	0.00	0.00	0.02	0.00
0.23	2.00	0.00	0.00	0.02	0.00	0.30	2.00	0.00	0.00	0.02	0.00
0.35	2.00	0.00	0.00	0.02	0.00	0.43	2.00	0.00	0.00	0.02	0.00
0.50	2.00	0.00	0.00	0.02	0.00	0.55	2.00	0.00	0.00	0.02	0.00
0.61	2.00	0.00	0.00	0.02	0.00	0.70	2.00	0.00	0.00	0.03	0.00
0.73	2.00	0.00	0.00	0.01	0.00	0.80	2.00	0.00	0.00	0.02	0.00
0.89	2.00	0.00	0.00	0.03	0.00	0.93	2.00	0.00	0.00	0.01	0.00
1.01	2.00	0.00	0.00	0.02	0.00	1.09	2.00	0.00	0.00	0.02	0.00
1.13	2.00	0.00	0.00	0.01	0.00	1.19	2.00	0.00	0.00	0.02	0.00
1.29	2.00	0.00	0.00	0.03	0.00	1.34	2.00	0.00	0.00	0.02	0.00
1.39	2.00	0.00	0.00	0.02	0.00	1.45	2.00	0.00	0.00	0.02	0.00
1.54	2.00	0.00	0.00	0.03	0.00	1.59	2.00	0.00	0.00	0.02	0.00
1.67	2.00	0.00	0.00	0.02	0.00	1.72	2.00	0.00	0.00	0.02	0.00
1.79	2.00	0.00	0.00	0.02	0.00	1.85	2.00	0.00	0.00	0.02	0.00
1.94	2.00	0.00	0.00	0.03	0.00	1.98	2.00	0.00	0.00	0.01	0.00
2.04	2.00	0.00	0.00	0.02	0.00	2.13	2.00	0.00	0.00	0.03	0.00
2.17	2.00	0.00	0.00	0.01	0.00	2.24	2.00	0.00	0.00	0.02	0.00
2.32	2.00	0.00	0.00	0.02	0.00	2.39	2.00	0.00	0.00	0.02	0.00
2.43	2.00	0.00	0.00	0.01	0.00	2.52	2.00	0.00	0.00	0.03	0.00
2.58	2.00	0.00	0.00	0.02	0.00	2.63	2.00	0.00	0.00	0.02	0.00
2.72	2.00	0.00	0.00	0.03	0.00	2.78	2.00	0.00	0.00	0.02	0.00
2.83	2.00	0.00	0.00	0.02	0.00	2.89	2.00	0.00	0.00	0.02	0.00
2.98	2.00	0.00	0.00	0.03	0.00	3.03	2.00	0.00	0.00	0.02	0.00
3.09	2.00	0.00	0.00	0.02	0.00	3.18	2.00	0.00	0.00	0.03	0.00
3.22	2.00	0.00	0.00	0.01	0.00	3.32	2.00	0.00	0.00	0.03	0.00
3.37	2.00	0.00	0.00	0.02	0.00	3.42	2.00	0.00	0.00	0.02	0.00
3.52	2.00	0.00	0.00	0.03	0.00	3.57	2.00	0.00	0.00	0.02	0.00
3.61	2.00	0.00	0.00	0.01	0.00	3.68	2.00	0.00	0.00	0.02	0.00
3.77	2.00	0.00	0.00	0.03	0.00	3.83	2.00	0.00	0.00	0.02	0.00
3.91	2.00	0.00	0.00	0.02	0.00	3.95	2.00	0.00	0.00	0.01	0.00
4.02	2.00	0.00	0.00	0.02	0.00	4.12	2.00	0.00	0.00	0.03	0.00
4.14	2.00	0.00	0.00	0.01	0.00	4.22	2.00	0.00	0.00	0.02	0.00
4.27	2.00	0.00	0.00	0.02	0.00	4.37	2.00	0.00	0.00	0.03	0.00
4.42	2.00	0.00	0.00	0.02	0.00	4.46	2.00	0.00	0.00	0.01	0.00
4.57	2.00	0.00	0.00	0.03	0.00	4.61	2.00	0.00	0.00	0.01	0.00
4.67	2.00	0.00	0.00	0.02	0.00	4.76	2.00	0.00	0.00	0.03	0.00
4.81	2.00	0.00	0.00	0.02	0.00	4.90	2.00	0.00	0.00	0.03	0.00
4.96	2.00	0.00	0.00	0.02	0.00	5.00	2.00	0.00	0.00	0.01	0.00
5.05	2.00	0.00	0.00	0.02	0.00	5.14	2.00	0.00	0.00	0.03	0.00
5.20	2.00	0.00	0.00	0.02	0.00	5.30	2.00	0.00	0.00	0.03	0.00
5.35	2.00	0.00	0.00	0.02	0.00	5.39	2.00	0.00	0.00	0.01	0.00
5.48	2.00	0.00	0.00	0.03	0.00	5.55	2.00	0.00	0.00	0.02	0.00
5.59	2.00	0.00	0.00	0.01	0.00	5.64	2.00	0.00	0.00	0.02	0.00
5.74	2.00	0.00	0.00	0.03	0.00	5.79	2.00	0.00	0.00	0.02	0.00
5.84	2.00	0.00	0.00	0.02	0.00	5.94	2.00	0.00	0.00	0.03	0.00
5.97	2.00	0.00	0.00	0.01	0.00	6.05	2.00	0.00	0.00	0.02	0.00
6.14	2.00	0.00	0.00	0.03	0.00	6.19	2.00	0.00	0.00	0.02	0.00
6.24	2.00	0.00	0.00	0.02	0.00	6.33	2.00	0.00	0.00	0.03	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
6.38	2.00	0.00	0.00	0.02	0.00	6.44	2.00	0.00	0.00	0.02	0.00
6.52	2.00	0.00	0.00	0.02	0.00	6.59	2.00	0.00	0.00	0.02	0.00
6.64	2.00	0.00	0.00	0.02	0.00	6.70	2.00	0.00	0.00	0.02	0.00
6.78	2.00	0.00	0.00	0.02	0.00	6.83	2.00	0.00	0.00	0.02	0.00
6.89	2.00	0.00	0.00	0.02	0.00	6.98	2.00	0.00	0.00	0.03	0.00
7.03	2.00	0.00	0.00	0.02	0.00	7.09	2.00	0.00	0.00	0.02	0.00
7.18	2.00	0.00	0.00	0.03	0.00	7.23	2.00	0.00	0.00	0.02	0.00
7.29	2.00	0.00	0.00	0.02	0.00	7.38	2.00	0.00	0.00	0.03	0.00
7.42	2.00	0.00	0.00	0.01	0.00	7.48	2.00	0.00	0.00	0.02	0.00
7.58	2.00	0.00	0.00	0.03	0.00	7.62	2.00	0.00	0.00	0.01	0.00
7.68	2.00	0.00	0.00	0.02	0.00	7.78	2.00	0.00	0.00	0.03	0.00
7.81	2.00	0.00	0.00	0.01	0.00	7.88	2.00	0.00	0.00	0.02	0.00
7.97	2.00	0.00	0.00	0.03	0.00	8.01	2.00	0.00	0.00	0.01	0.00
8.11	2.00	0.00	0.00	0.03	0.00	8.14	2.00	0.00	0.00	0.01	0.00
8.22	2.00	0.00	0.00	0.02	0.00	8.31	2.00	0.00	0.00	0.03	0.00
8.35	2.00	0.00	0.00	0.01	0.00	8.41	2.00	0.00	0.00	0.02	0.00
8.50	2.00	0.00	0.00	0.03	0.00	8.56	2.00	0.00	0.00	0.02	0.00
8.61	2.00	0.00	0.00	0.02	0.00	8.68	2.00	0.00	0.00	0.02	0.00
8.75	2.00	0.00	0.00	0.02	0.00	8.80	2.00	0.00	0.00	0.02	0.00
8.89	2.00	0.00	0.00	0.03	0.00	8.94	2.00	0.00	0.00	0.02	0.00
9.00	2.00	0.00	0.00	0.02	0.00	9.08	2.00	0.00	0.00	0.02	0.00
9.15	2.00	0.00	0.00	0.02	0.00	9.20	2.00	0.00	0.00	0.02	0.00
9.28	2.00	0.00	0.00	0.02	0.00	9.35	2.00	0.00	0.00	0.02	0.00
9.40	2.00	0.00	0.00	0.02	0.00	9.45	2.00	0.00	0.00	0.02	0.00
9.55	2.00	0.00	0.00	0.03	0.00	9.59	2.00	0.00	0.00	0.01	0.00
9.69	2.00	0.00	0.00	0.03	0.00	9.74	2.00	0.00	0.00	0.02	0.00
9.79	2.00	0.00	0.00	0.02	0.00	9.84	2.00	0.00	0.00	0.02	0.00
9.94	2.00	0.00	0.00	0.03	0.00	10.00	2.00	0.00	0.00	0.02	0.00
10.09	2.00	0.00	0.00	0.03	0.00	10.13	2.00	0.00	0.00	0.01	0.00
10.18	2.00	0.00	0.00	0.02	0.00	10.24	2.00	0.00	0.00	0.02	0.00
10.33	2.00	0.00	0.00	0.03	0.00	10.37	2.00	0.00	0.00	0.01	0.00
10.43	2.00	0.00	0.00	0.02	0.00	10.52	2.00	0.00	0.00	0.03	0.00
10.59	2.00	0.00	0.00	0.02	0.00	10.64	2.00	0.00	0.00	0.02	0.00
10.70	2.00	0.00	0.00	0.02	0.00	10.78	2.00	0.00	0.00	0.02	0.00
10.83	2.00	0.00	0.00	0.02	0.00	10.94	2.00	0.00	0.00	0.03	0.00
10.99	2.00	0.00	0.00	0.02	0.00	11.03	2.00	0.00	0.00	0.01	0.00
11.09	2.00	0.00	0.00	0.02	0.00	11.17	2.00	0.00	0.00	0.02	0.00
11.24	2.00	0.00	0.00	0.02	0.00	11.33	2.00	0.00	0.00	0.03	0.00
11.37	2.00	0.00	0.00	0.01	0.00	11.44	2.00	0.00	0.00	0.02	0.00
11.52	2.00	0.00	0.00	0.02	0.00	11.57	2.00	0.00	0.00	0.02	0.00
11.63	2.00	0.00	0.00	0.02	0.00	11.72	2.00	0.00	0.00	0.03	0.00
11.76	2.00	0.00	0.00	0.01	0.00	11.83	2.00	0.00	0.00	0.02	0.00
11.92	2.00	0.00	0.00	0.03	0.00	11.94	2.00	0.00	0.00	0.01	0.00
12.02	2.00	0.00	0.00	0.02	0.00	12.11	2.00	0.00	0.00	0.03	0.00
12.16	2.00	0.00	0.00	0.02	0.00	12.22	2.00	0.00	0.00	0.02	0.00
12.31	2.00	0.00	0.00	0.03	0.00	12.36	2.00	0.00	0.00	0.02	0.00
12.42	2.00	0.00	0.00	0.02	0.00	12.50	2.00	0.00	0.00	0.02	0.00
12.56	2.00	0.00	0.00	0.02	0.00	12.62	2.00	0.00	0.00	0.02	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
12.70	2.00	0.00	0.00	0.02	0.00	12.77	2.00	0.00	0.00	0.02	0.00
12.81	2.00	0.00	0.00	0.01	0.00	12.91	2.00	0.00	0.00	0.03	0.00
12.96	2.00	0.00	0.00	0.02	0.00	13.01	2.00	0.00	0.00	0.02	0.00
13.06	2.00	0.00	0.00	0.02	0.00	13.16	2.00	0.00	0.00	0.03	0.00
13.21	2.00	0.00	0.00	0.02	0.00	13.26	2.00	0.00	0.00	0.02	0.00
13.36	2.00	0.00	0.00	0.03	0.00	13.40	2.00	0.00	0.00	0.01	0.00
13.46	2.00	0.00	0.00	0.02	0.00	13.55	2.00	0.00	0.00	0.03	0.00
13.60	2.00	0.00	0.00	0.02	0.00	13.67	2.00	0.00	0.00	0.02	0.00
13.75	2.00	0.00	0.00	0.02	0.00	13.80	2.00	0.00	0.00	0.02	0.00
13.86	2.00	0.00	0.00	0.02	0.00	13.95	2.00	0.00	0.00	0.03	0.00
13.99	2.00	0.00	0.00	0.01	0.00	14.06	2.00	0.00	0.00	0.02	0.00
14.15	2.00	0.00	0.00	0.03	0.00	14.19	2.00	0.00	0.00	0.01	0.00
14.26	2.00	0.00	0.00	0.02	0.00	14.35	2.00	0.00	0.00	0.03	0.00
14.40	2.00	0.00	0.00	0.02	0.00	14.45	2.00	0.00	0.00	0.02	0.00
14.55	2.00	0.00	0.00	0.03	0.00	14.58	2.00	0.00	0.00	0.01	0.00
14.65	2.00	0.00	0.00	0.02	0.00	14.74	2.00	0.00	0.00	0.03	0.00
14.77	2.00	0.00	0.00	0.01	0.00	14.84	2.00	0.00	0.00	0.02	0.00
14.94	2.00	0.00	0.00	0.03	0.00	15.00	2.00	0.00	0.00	0.02	0.00
15.03	2.00	0.00	0.00	0.01	0.00	15.11	2.00	0.00	0.00	0.02	0.00
15.19	2.00	0.00	0.00	0.02	0.00	15.24	2.00	0.00	0.00	0.02	0.00
15.29	2.00	0.00	0.00	0.02	0.00	15.39	2.00	0.00	0.00	0.03	0.00
15.42	2.00	0.00	0.00	0.01	0.00	15.49	2.00	0.00	0.00	0.02	0.00
15.59	2.00	0.00	0.00	0.03	0.00	15.63	2.00	0.00	0.00	0.01	0.00
15.69	2.00	0.00	0.00	0.02	0.00	15.78	2.00	0.00	0.00	0.03	0.00
15.84	2.00	0.00	0.00	0.02	0.00	15.89	2.00	0.00	0.00	0.02	0.00
15.95	2.00	0.00	0.00	0.02	0.00	16.04	2.00	0.00	0.00	0.03	0.00
16.08	2.00	0.00	0.00	0.01	0.00	16.18	2.00	0.00	0.00	0.03	0.00
16.24	2.00	0.00	0.00	0.02	0.00	16.28	2.00	0.00	0.00	0.01	0.00
16.36	2.00	0.00	0.00	0.02	0.00	16.43	2.00	0.00	0.00	0.02	0.00
16.47	2.00	0.00	0.00	0.01	0.00	16.54	2.00	0.00	0.00	0.02	0.00
16.63	2.00	0.00	0.00	0.03	0.00	16.68	2.00	0.00	0.00	0.02	0.00
16.78	2.00	0.00	0.00	0.03	0.00	16.83	2.00	0.00	0.00	0.02	0.00
16.87	2.00	0.00	0.00	0.01	0.00	16.93	2.00	0.00	0.00	0.02	0.00
17.01	2.00	0.00	0.00	0.02	0.00	17.09	2.00	0.00	0.00	0.02	0.00
17.15	2.00	0.00	0.00	0.02	0.00	17.20	2.00	0.00	0.00	0.02	0.00
17.27	2.00	0.00	0.00	0.02	0.00	17.35	2.00	0.00	0.00	0.02	0.00
17.40	2.00	0.00	0.00	0.02	0.00	17.45	2.00	0.00	0.00	0.02	0.00
17.55	2.00	0.00	0.00	0.03	0.00	17.59	2.00	0.00	0.00	0.01	0.00
17.65	2.00	0.00	0.00	0.02	0.00	17.75	2.00	0.00	0.00	0.03	0.00
17.79	2.00	0.00	0.00	0.01	0.00	17.87	2.00	0.00	0.00	0.02	0.00
17.94	2.00	0.00	0.00	0.02	0.00	17.98	2.00	0.00	0.00	0.01	0.00
18.05	2.00	0.00	0.00	0.02	0.00	18.14	2.00	0.00	0.00	0.03	0.00
18.18	2.00	0.00	0.00	0.01	0.00	18.24	2.00	0.00	0.00	0.02	0.00
18.34	2.00	0.00	0.00	0.03	0.00	18.39	2.00	0.00	0.00	0.02	0.00
18.44	2.00	0.00	0.00	0.02	0.00	18.54	2.00	0.00	0.00	0.03	0.00
18.59	2.00	0.00	0.00	0.02	0.00	18.64	2.00	0.00	0.00	0.02	0.00
18.74	2.00	0.00	0.00	0.03	0.00	18.79	2.00	0.00	0.00	0.02	0.00
18.84	2.00	0.00	0.00	0.02	0.00	18.92	2.00	0.00	0.00	0.02	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
18.97	2.00	0.00	0.00	0.02	0.00	19.04	2.00	0.00	0.00	0.02	0.00
19.14	2.00	0.00	0.00	0.03	0.00	19.17	2.00	0.00	0.00	0.01	0.00
19.24	2.00	0.00	0.00	0.02	0.00	19.34	2.00	0.00	0.00	0.03	0.00
19.39	2.00	0.00	0.00	0.02	0.00	19.43	2.00	0.00	0.00	0.01	0.00
19.52	2.00	0.00	0.00	0.03	0.00	19.56	2.00	0.00	0.00	0.01	0.00
19.63	2.00	0.00	0.00	0.02	0.00	19.73	2.00	0.00	0.00	0.03	0.00
19.78	2.00	0.00	0.00	0.02	0.00	19.83	2.00	0.00	0.00	0.02	0.00
19.90	2.00	0.00	0.00	0.02	0.00	19.96	2.00	0.00	0.00	0.02	0.00
20.03	2.00	0.00	0.00	0.02	0.00	20.09	2.00	0.00	0.00	0.02	0.00
20.16	2.00	0.00	0.00	0.02	0.00	20.23	2.00	0.00	0.00	0.02	0.00
20.31	2.00	0.00	0.00	0.02	0.00	20.35	2.00	0.00	0.00	0.01	0.00
20.42	2.00	0.00	0.00	0.02	0.00	20.50	2.00	0.00	0.00	0.02	0.00
20.55	2.00	0.00	0.00	0.02	0.00	20.62	2.00	0.00	0.00	0.02	0.00
20.70	2.00	0.00	0.00	0.02	0.00	20.75	2.00	0.00	0.00	0.02	0.00
20.82	2.00	0.00	0.00	0.02	0.00	20.90	2.00	0.00	0.00	0.02	0.00
20.96	2.00	0.00	0.00	0.02	0.00	21.01	2.00	0.00	0.00	0.02	0.00
21.11	2.00	0.00	0.00	0.03	0.00	21.15	2.00	0.00	0.00	0.01	0.00
21.21	2.00	0.00	0.00	0.02	0.00	21.27	2.00	0.00	0.00	0.02	0.00
21.36	2.00	0.00	0.00	0.03	0.00	21.40	2.00	0.00	0.00	0.01	0.00
21.51	2.00	0.00	0.00	0.03	0.00	21.55	2.00	0.00	0.00	0.01	0.00
21.60	2.00	0.00	0.00	0.02	0.00	21.69	2.00	0.00	0.00	0.03	0.00
21.75	2.00	0.00	0.00	0.02	0.00	21.80	2.00	0.00	0.00	0.02	0.00
21.90	0.46	0.00	0.00	0.03	0.11	21.95	0.47	0.00	0.00	0.02	0.05
22.00	0.48	0.00	0.00	0.02	0.05	22.09	0.48	0.00	0.00	0.03	0.09
22.11	2.00	0.00	0.00	0.01	0.00	22.19	2.00	0.00	0.00	0.02	0.00
22.26	2.00	0.00	0.00	0.02	0.00	22.35	2.00	0.00	0.00	0.03	0.00
22.39	2.00	0.00	0.00	0.01	0.00	22.44	2.00	0.00	0.00	0.02	0.00
22.55	2.00	0.00	0.00	0.03	0.00	22.58	2.00	0.00	0.00	0.01	0.00
22.65	2.00	0.00	0.00	0.02	0.00	22.74	2.00	0.00	0.00	0.03	0.00
22.83	2.00	0.00	0.00	0.03	0.00	22.85	2.00	0.00	0.00	0.01	0.00
22.94	2.00	0.00	0.00	0.03	0.00	23.00	2.00	0.00	0.00	0.02	0.00
23.05	2.00	0.00	0.00	0.02	0.00	23.10	2.00	0.00	0.00	0.02	0.00
23.18	2.00	0.00	0.00	0.02	0.00	23.25	2.00	0.00	0.00	0.02	0.00
23.30	2.00	0.00	0.00	0.02	0.00	23.38	2.00	0.00	0.00	0.02	0.00
23.45	2.00	0.00	0.00	0.02	0.00	23.50	2.00	0.00	0.00	0.02	0.00
23.60	2.00	0.00	0.00	0.03	0.00	23.65	2.00	0.00	0.00	0.02	0.00
23.70	2.00	0.00	0.00	0.02	0.00	23.76	2.00	0.00	0.00	0.02	0.00
23.84	2.00	0.00	0.00	0.02	0.00	23.89	2.00	0.00	0.00	0.02	0.00
23.99	2.00	0.00	0.00	0.03	0.00	24.03	2.00	0.00	0.00	0.01	0.00
24.09	2.00	0.00	0.00	0.02	0.00	24.19	2.00	0.00	0.00	0.03	0.00
24.24	2.00	0.00	0.00	0.02	0.00	24.30	2.00	0.00	0.00	0.02	0.00
24.34	2.00	0.00	0.00	0.01	0.00	24.44	2.00	0.00	0.00	0.03	0.00
24.50	2.00	0.00	0.00	0.02	0.00	24.58	2.00	0.00	0.00	0.02	0.00
24.65	2.00	0.00	0.00	0.02	0.00	24.69	2.00	0.00	0.00	0.01	0.00
24.74	2.00	0.00	0.00	0.02	0.00	24.84	2.00	0.00	0.00	0.03	0.00
24.89	2.00	0.00	0.00	0.02	0.00	24.95	2.00	0.00	0.00	0.02	0.00
25.04	2.00	0.00	0.00	0.03	0.00	25.08	2.00	0.00	0.00	0.01	0.00
25.19	2.00	0.00	0.00	0.03	0.00	25.24	2.00	0.00	0.00	0.02	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
25.28	2.00	0.00	0.00	0.01	0.00	25.35	2.00	0.00	0.00	0.02	0.00
25.43	2.00	0.00	0.00	0.02	0.00	25.48	2.00	0.00	0.00	0.02	0.00
25.53	2.00	0.00	0.00	0.02	0.00	25.63	2.00	0.00	0.00	0.03	0.00
25.68	2.00	0.00	0.00	0.02	0.00	25.74	2.00	0.00	0.00	0.02	0.00
25.79	2.00	0.00	0.00	0.02	0.00	25.88	2.00	0.00	0.00	0.03	0.00
25.92	2.00	0.00	0.00	0.01	0.00	25.99	2.00	0.00	0.00	0.02	0.00
26.05	2.00	0.00	0.00	0.02	0.00	26.13	2.00	0.00	0.00	0.02	0.00
26.20	2.00	0.00	0.00	0.02	0.00	26.26	2.00	0.00	0.00	0.02	0.00
26.31	2.00	0.00	0.00	0.02	0.00	26.40	2.00	0.00	0.00	0.03	0.00
26.45	2.00	0.00	0.00	0.02	0.00	26.54	2.00	0.00	0.00	0.03	0.00
26.59	2.00	0.00	0.00	0.02	0.00	26.65	2.00	0.00	0.00	0.02	0.00
26.74	2.00	0.00	0.00	0.03	0.00	26.78	2.00	0.00	0.00	0.01	0.00
26.84	2.00	0.00	0.00	0.02	0.00	26.94	2.00	0.00	0.00	0.03	0.00
26.99	2.00	0.00	0.00	0.02	0.00	27.04	2.00	0.00	0.00	0.02	0.00
27.13	2.00	0.00	0.00	0.03	0.00	27.18	2.00	0.00	0.00	0.02	0.00
27.24	2.00	0.00	0.00	0.02	0.00	27.34	2.00	0.00	0.00	0.03	0.00
27.40	2.00	0.00	0.00	0.02	0.00	27.44	2.00	0.00	0.00	0.01	0.00
27.53	2.00	0.00	0.00	0.03	0.00	27.57	2.00	0.00	0.00	0.01	0.00
27.64	2.00	0.00	0.00	0.02	0.00	27.72	2.00	0.00	0.00	0.02	0.00
27.79	2.00	0.00	0.00	0.02	0.00	27.83	2.00	0.00	0.00	0.01	0.00
27.90	2.00	0.00	0.00	0.02	0.00	27.98	2.00	0.00	0.00	0.02	0.00
28.03	2.00	0.00	0.00	0.02	0.00	28.09	2.00	0.00	0.00	0.02	0.00
28.18	2.00	0.00	0.00	0.03	0.00	28.22	2.00	0.00	0.00	0.01	0.00
28.28	2.00	0.00	0.00	0.02	0.00	28.38	2.00	0.00	0.00	0.03	0.00
28.43	2.00	0.00	0.00	0.02	0.00	28.48	2.00	0.00	0.00	0.02	0.00
28.58	2.00	0.00	0.00	0.03	0.00	28.62	2.00	0.00	0.00	0.01	0.00
28.69	2.00	0.00	0.00	0.02	0.00	28.77	2.00	0.00	0.00	0.02	0.00
28.82	2.00	0.00	0.00	0.02	0.00	28.88	2.00	0.00	0.00	0.02	0.00
28.97	2.00	0.00	0.00	0.03	0.00	29.01	2.00	0.00	0.00	0.01	0.00
29.07	2.00	0.00	0.00	0.02	0.00	29.15	2.00	0.00	0.00	0.02	0.00
29.21	2.00	0.00	0.00	0.02	0.00	29.30	2.00	0.00	0.00	0.03	0.00
29.33	2.00	0.00	0.00	0.01	0.00	29.41	2.00	0.00	0.00	0.02	0.00
29.50	2.00	0.00	0.00	0.03	0.00	29.53	2.00	0.00	0.00	0.01	0.00
29.61	2.00	0.00	0.00	0.02	0.00	29.70	2.00	0.00	0.00	0.03	0.00
29.74	2.00	0.00	0.00	0.01	0.00	29.80	2.00	0.00	0.00	0.02	0.00
29.90	2.00	0.00	0.00	0.03	0.00	29.93	2.00	0.00	0.00	0.01	0.00
30.00	2.00	0.00	0.00	0.02	0.00	30.09	2.00	0.00	0.00	0.03	0.00
30.15	2.00	0.00	0.00	0.02	0.00	30.19	2.00	0.00	0.00	0.01	0.00
30.30	2.00	0.00	0.00	0.03	0.00	30.33	2.00	0.00	0.00	0.01	0.00
30.40	2.00	0.00	0.00	0.02	0.00	30.49	2.00	0.00	0.00	0.03	0.00
30.54	2.00	0.00	0.00	0.02	0.00	30.59	2.00	0.00	0.00	0.02	0.00
30.64	2.00	0.00	0.00	0.02	0.00	30.72	2.00	0.00	0.00	0.02	0.00
30.80	2.00	0.00	0.00	0.02	0.00	30.88	2.00	0.00	0.00	0.02	0.00
30.93	2.00	0.00	0.00	0.02	0.00	31.00	2.00	0.00	0.00	0.02	0.00
31.04	2.00	0.00	0.00	0.01	0.00	31.13	2.00	0.00	0.00	0.03	0.00
31.20	2.00	0.00	0.00	0.02	0.00	31.29	2.00	0.00	0.00	0.03	0.00
31.34	2.00	0.00	0.00	0.02	0.00	31.38	2.00	0.00	0.00	0.01	0.00
31.43	2.00	0.00	0.00	0.02	0.00	31.51	2.00	0.00	0.00	0.02	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
31.58	2.00	0.00	0.00	0.02	0.00	31.63	2.00	0.00	0.00	0.02	0.00
31.71	2.00	0.00	0.00	0.02	0.00	31.78	2.00	0.00	0.00	0.02	0.00
31.83	2.00	0.00	0.00	0.02	0.00	31.90	2.00	0.00	0.00	0.02	0.00
31.98	2.00	0.00	0.00	0.02	0.00	32.03	2.00	0.00	0.00	0.02	0.00
32.09	2.00	0.00	0.00	0.02	0.00	32.16	2.00	0.00	0.00	0.02	0.00
32.22	2.00	0.00	0.00	0.02	0.00	32.30	2.00	0.00	0.00	0.02	0.00
32.38	2.00	0.00	0.00	0.02	0.00	32.42	2.00	0.00	0.00	0.01	0.00
32.50	2.00	0.00	0.00	0.02	0.00	32.56	2.00	0.00	0.00	0.02	0.00
32.62	2.00	0.00	0.00	0.02	0.00	32.72	2.00	0.00	0.00	0.03	0.00
32.77	2.00	0.00	0.00	0.02	0.00	32.82	2.00	0.00	0.00	0.02	0.00
32.91	2.00	0.00	0.00	0.03	0.00	32.97	2.00	0.00	0.00	0.02	0.00
33.02	2.00	0.00	0.00	0.02	0.00	33.11	2.00	0.00	0.00	0.03	0.00
33.16	2.00	0.00	0.00	0.02	0.00	33.22	2.00	0.00	0.00	0.02	0.00
33.29	2.00	0.00	0.00	0.02	0.00	33.37	2.00	0.00	0.00	0.02	0.00
33.41	2.00	0.00	0.00	0.01	0.00	33.47	2.00	0.00	0.00	0.02	0.00
33.57	2.00	0.00	0.00	0.03	0.00	33.60	2.00	0.00	0.00	0.01	0.00
33.67	2.00	0.00	0.00	0.02	0.00	33.76	2.00	0.00	0.00	0.03	0.00
33.80	2.00	0.00	0.00	0.01	0.00	33.86	2.00	0.00	0.00	0.02	0.00
33.96	2.00	0.00	0.00	0.03	0.00	34.00	2.00	0.00	0.00	0.01	0.00
34.06	2.00	0.00	0.00	0.02	0.00	34.16	2.00	0.00	0.00	0.03	0.00
34.20	2.00	0.00	0.00	0.01	0.00	34.26	2.00	0.00	0.00	0.02	0.00
34.36	2.00	0.00	0.00	0.03	0.00	34.39	2.00	0.00	0.00	0.01	0.00
34.46	2.00	0.00	0.00	0.02	0.00	34.56	2.00	0.00	0.00	0.03	0.00
34.60	2.00	0.00	0.00	0.01	0.00	34.65	2.00	0.00	0.00	0.02	0.00
34.75	2.00	0.00	0.00	0.03	0.00	34.80	2.00	0.00	0.00	0.02	0.00
34.86	2.00	0.00	0.00	0.02	0.00	34.95	2.00	0.00	0.00	0.03	0.00
34.99	2.00	0.00	0.00	0.01	0.00	35.06	2.00	0.00	0.00	0.02	0.00
35.11	2.00	0.00	0.00	0.02	0.00	35.19	2.00	0.00	0.00	0.02	0.00
35.25	2.00	0.00	0.00	0.02	0.00	35.31	2.00	0.00	0.00	0.02	0.00
35.39	2.00	0.00	0.00	0.02	0.00	35.49	2.00	0.00	0.00	0.03	0.00
35.53	2.00	0.00	0.00	0.01	0.00	35.60	2.00	0.00	0.00	0.02	0.00
35.63	2.00	0.00	0.00	0.01	0.00	35.70	2.00	0.00	0.00	0.02	0.00
35.78	2.00	0.00	0.00	0.02	0.00	35.84	2.00	0.00	0.00	0.02	0.00
35.90	2.00	0.00	0.00	0.02	0.00	35.98	2.00	0.00	0.00	0.02	0.00
36.06	2.00	0.00	0.00	0.02	0.00	36.09	2.00	0.00	0.00	0.01	0.00
36.18	2.00	0.00	0.00	0.03	0.00	36.23	2.00	0.00	0.00	0.02	0.00
36.29	2.00	0.00	0.00	0.02	0.00	36.38	2.00	0.00	0.00	0.03	0.00
36.42	2.00	0.00	0.00	0.01	0.00	36.49	2.00	0.00	0.00	0.02	0.00
36.58	2.00	0.00	0.00	0.03	0.00	36.62	2.00	0.00	0.00	0.01	0.00
36.68	2.00	0.00	0.00	0.02	0.00	36.77	2.00	0.00	0.00	0.03	0.00
36.83	2.00	0.00	0.00	0.02	0.00	36.88	2.00	0.00	0.00	0.02	0.00
36.97	2.00	0.00	0.00	0.03	0.00	37.02	2.00	0.00	0.00	0.02	0.00
37.08	2.00	0.00	0.00	0.02	0.00	37.17	0.96	0.00	0.00	0.03	0.01
37.22	1.04	0.00	0.00	0.02	0.00	37.27	1.10	0.00	0.00	0.02	0.00
37.37	1.14	0.00	0.00	0.03	0.00	37.41	1.18	0.00	0.00	0.01	0.00
37.47	1.20	0.00	0.00	0.02	0.00	37.57	1.21	0.00	0.00	0.03	0.00
37.61	1.20	0.00	0.00	0.01	0.00	37.67	1.20	0.00	0.00	0.02	0.00
37.76	1.20	0.00	0.00	0.03	0.00	37.81	1.19	0.00	0.00	0.02	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
37.87	1.21	0.00	0.00	0.02	0.00	37.97	1.24	0.00	0.00	0.03	0.00
38.02	1.29	0.00	0.00	0.02	0.00	38.07	1.36	0.00	0.00	0.02	0.00
38.17	1.45	0.00	0.00	0.03	0.00	38.20	1.58	0.00	0.00	0.01	0.00
38.27	1.73	0.00	0.00	0.02	0.00	38.33	1.90	0.00	0.00	0.02	0.00
38.42	2.00	0.00	0.00	0.03	0.00	38.46	2.00	0.00	0.00	0.01	0.00
38.53	2.00	0.00	0.00	0.02	0.00	38.62	2.00	0.00	0.00	0.03	0.00
38.66	2.00	0.00	0.00	0.01	0.00	38.73	2.00	0.00	0.00	0.02	0.00
38.81	2.00	0.00	0.00	0.02	0.00	38.86	2.00	0.00	0.00	0.02	0.00
38.93	2.00	0.00	0.00	0.02	0.00	39.02	2.00	0.00	0.00	0.03	0.00
39.05	2.00	0.00	0.00	0.01	0.00	39.12	2.00	0.00	0.00	0.02	0.00
39.18	2.00	0.00	0.00	0.02	0.00	39.27	2.00	0.00	0.00	0.03	0.00
39.31	2.00	0.00	0.00	0.01	0.00	39.37	2.00	0.00	0.00	0.02	0.00
39.44	2.00	0.00	0.00	0.02	0.00	39.50	2.00	0.00	0.00	0.02	0.00
39.59	2.00	0.00	0.00	0.03	0.00	39.65	2.00	0.00	0.00	0.02	0.00
39.71	1.96	0.00	0.00	0.02	0.00	39.77	1.83	0.00	0.00	0.02	0.00
39.84	1.69	0.00	0.00	0.02	0.00	39.91	1.53	0.00	0.00	0.02	0.00
39.97	1.40	0.00	0.00	0.02	0.00	40.03	1.26	0.00	0.00	0.02	0.00
40.11	1.13	0.00	0.00	0.02	0.00	40.17	1.02	0.00	0.00	0.02	0.00
40.26	0.92	0.00	0.00	0.03	0.01	40.30	0.86	0.00	0.00	0.01	0.01
40.36	0.82	0.00	0.00	0.02	0.01	40.45	0.81	0.00	0.00	0.03	0.02
40.49	0.80	0.00	0.00	0.01	0.01	40.57	0.78	0.00	0.00	0.02	0.02
40.62	0.77	0.00	0.00	0.02	0.01	40.70	0.76	0.00	0.00	0.02	0.02
40.76	0.75	0.00	0.00	0.02	0.02	40.86	0.74	0.00	0.00	0.03	0.03
40.89	0.73	0.00	0.00	0.01	0.01	40.95	0.72	0.00	0.00	0.02	0.02
41.03	0.72	0.00	0.00	0.02	0.03	41.11	0.72	0.00	0.00	0.02	0.03
41.16	0.74	0.00	0.00	0.02	0.01	41.23	0.76	0.00	0.00	0.02	0.02
41.29	0.78	0.00	0.00	0.02	0.01	41.35	0.80	0.00	0.00	0.02	0.01
41.41	0.81	0.00	0.00	0.02	0.01	41.49	0.83	0.00	0.00	0.02	0.02
41.56	0.85	0.00	0.00	0.02	0.01	41.64	0.88	0.00	0.00	0.02	0.01
41.69	0.91	0.00	0.00	0.02	0.00	41.73	0.94	0.00	0.00	0.01	0.00
41.84	0.97	0.00	0.00	0.03	0.00	41.89	1.00	0.00	0.00	0.02	0.00
41.98	1.04	0.00	0.00	0.03	0.00	42.04	1.07	0.00	0.00	0.02	0.00
42.09	1.09	0.00	0.00	0.02	0.00	42.16	1.08	0.00	0.00	0.02	0.00
42.24	1.06	0.00	0.00	0.02	0.00	42.28	1.03	0.00	0.00	0.01	0.00
42.33	1.00	0.00	0.00	0.02	0.00	42.39	0.96	0.00	0.00	0.02	0.00
42.47	0.93	0.00	0.00	0.02	0.01	42.53	0.90	0.00	0.00	0.02	0.01
42.59	0.89	0.00	0.00	0.02	0.01	42.66	0.88	0.00	0.00	0.02	0.01
42.73	2.00	0.00	0.00	0.02	0.00	42.83	2.00	0.00	0.00	0.03	0.00
42.88	2.00	0.00	0.00	0.02	0.00	42.93	2.00	0.00	0.00	0.02	0.00
42.99	2.00	0.00	0.00	0.02	0.00	43.07	2.00	0.00	0.00	0.02	0.00
43.14	2.00	0.00	0.00	0.02	0.00	43.19	2.00	0.00	0.00	0.02	0.00
43.25	2.00	0.00	0.00	0.02	0.00	43.34	2.00	0.00	0.00	0.03	0.00
43.39	2.00	0.00	0.00	0.02	0.00	43.45	0.99	0.00	0.00	0.02	0.00
43.54	0.90	0.00	0.00	0.03	0.01	43.59	0.80	0.00	0.00	0.02	0.01
43.64	2.00	0.00	0.00	0.02	0.00	43.74	2.00	0.00	0.00	0.03	0.00
43.78	2.00	0.00	0.00	0.01	0.00	43.83	2.00	0.00	0.00	0.02	0.00
43.94	2.00	0.00	0.00	0.03	0.00	43.98	2.00	0.00	0.00	0.01	0.00
44.04	2.00	0.00	0.00	0.02	0.00	44.14	2.00	0.00	0.00	0.03	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
44.17	2.00	0.00	0.00	0.01	0.00	44.23	2.00	0.00	0.00	0.02	0.00
44.33	2.00	0.00	0.00	0.03	0.00	44.37	2.00	0.00	0.00	0.01	0.00
44.44	2.00	0.00	0.00	0.02	0.00	44.53	2.00	0.00	0.00	0.03	0.00
44.58	2.00	0.00	0.00	0.02	0.00	44.64	2.00	0.00	0.00	0.02	0.00
44.73	2.00	0.00	0.00	0.03	0.00	44.78	2.00	0.00	0.00	0.02	0.00
44.82	2.00	0.00	0.00	0.01	0.00	44.90	2.00	0.00	0.00	0.02	0.00
44.97	2.00	0.00	0.00	0.02	0.00	45.03	2.00	0.00	0.00	0.02	0.00
45.09	2.00	0.00	0.00	0.02	0.00	45.17	2.00	0.00	0.00	0.02	0.00
45.22	2.00	0.00	0.00	0.02	0.00	45.29	2.00	0.00	0.00	0.02	0.00
45.38	2.00	0.00	0.00	0.03	0.00	45.42	2.00	0.00	0.00	0.01	0.00
45.50	2.00	0.00	0.00	0.02	0.00	45.57	0.73	0.00	0.00	0.02	0.02
45.62	0.72	0.00	0.00	0.02	0.01	45.69	0.72	0.00	0.00	0.02	0.02
45.77	0.71	0.00	0.00	0.02	0.02	45.82	0.70	0.00	0.00	0.02	0.01
45.88	0.68	0.00	0.00	0.02	0.02	45.97	0.67	0.00	0.00	0.03	0.03
46.02	2.00	0.00	0.00	0.02	0.00	46.10	2.00	0.00	0.00	0.02	0.00
46.17	2.00	0.00	0.00	0.02	0.00	46.21	2.00	0.00	0.00	0.01	0.00
46.27	2.00	0.00	0.00	0.02	0.00	46.36	2.00	0.00	0.00	0.03	0.00
46.42	2.00	0.00	0.00	0.02	0.00	46.46	2.00	0.00	0.00	0.01	0.00
46.56	2.00	0.00	0.00	0.03	0.00	46.61	2.00	0.00	0.00	0.02	0.00
46.66	2.00	0.00	0.00	0.02	0.00	46.74	2.00	0.00	0.00	0.02	0.00
46.81	2.00	0.00	0.00	0.02	0.00	46.87	2.00	0.00	0.00	0.02	0.00
46.94	2.00	0.00	0.00	0.02	0.00	47.01	2.00	0.00	0.00	0.02	0.00
47.06	2.00	0.00	0.00	0.02	0.00	47.12	2.00	0.00	0.00	0.02	0.00
47.19	2.00	0.00	0.00	0.02	0.00	47.25	2.00	0.00	0.00	0.02	0.00
47.34	2.00	0.00	0.00	0.03	0.00	47.39	2.00	0.00	0.00	0.02	0.00
47.44	2.00	0.00	0.00	0.02	0.00	47.54	2.00	0.00	0.00	0.03	0.00
47.59	2.00	0.00	0.00	0.02	0.00	47.65	2.00	0.00	0.00	0.02	0.00
47.74	2.00	0.00	0.00	0.03	0.00	47.81	2.00	0.00	0.00	0.02	0.00
47.85	2.00	0.00	0.00	0.01	0.00	47.94	2.00	0.00	0.00	0.03	0.00
47.98	2.00	0.00	0.00	0.01	0.00	48.04	2.00	0.00	0.00	0.02	0.00
48.13	2.00	0.00	0.00	0.03	0.00	48.17	2.00	0.00	0.00	0.01	0.00
48.24	2.00	0.00	0.00	0.02	0.00	48.32	2.00	0.00	0.00	0.02	0.00
48.37	2.00	0.00	0.00	0.02	0.00	48.44	2.00	0.00	0.00	0.02	0.00
48.53	2.00	0.00	0.00	0.03	0.00	48.56	2.00	0.00	0.00	0.01	0.00
48.64	2.00	0.00	0.00	0.02	0.00	48.72	2.00	0.00	0.00	0.02	0.00
48.78	2.00	0.00	0.00	0.02	0.00	48.83	2.00	0.00	0.00	0.02	0.00
48.90	2.00	0.00	0.00	0.02	0.00	48.97	2.00	0.00	0.00	0.02	0.00
49.03	2.00	0.00	0.00	0.02	0.00	49.12	0.88	0.00	0.00	0.03	0.01
49.16	0.93	0.00	0.00	0.01	0.00	49.23	0.97	0.00	0.00	0.02	0.00
49.31	1.02	0.00	0.00	0.02	0.00	49.36	1.06	0.00	0.00	0.02	0.00
49.43	1.10	0.00	0.00	0.02	0.00	49.52	1.14	0.00	0.00	0.03	0.00
49.58	1.17	0.00	0.00	0.02	0.00	49.62	1.20	0.00	0.00	0.01	0.00
49.71	1.19	0.00	0.00	0.03	0.00	49.78	1.16	0.00	0.00	0.02	0.00
49.81	1.14	0.00	0.00	0.01	0.00	49.88	1.13	0.00	0.00	0.02	0.00
49.97	1.11	0.00	0.00	0.03	0.00	50.00	1.08	0.00	0.00	0.01	0.00
50.07	2.00	0.00	0.00	0.02	0.00	50.14	2.00	0.00	0.00	0.02	0.00
50.22	2.00	0.00	0.00	0.02	0.00	50.27	2.00	0.00	0.00	0.02	0.00
50.35	2.00	0.00	0.00	0.02	0.00	50.40	2.00	0.00	0.00	0.02	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
50.47	2.00	0.00	0.00	0.02	0.00	50.55	2.00	0.00	0.00	0.02	0.00
50.59	2.00	0.00	0.00	0.01	0.00	50.66	2.00	0.00	0.00	0.02	0.00
50.75	2.00	0.00	0.00	0.03	0.00	50.79	2.00	0.00	0.00	0.01	0.00
50.86	2.00	0.00	0.00	0.02	0.00	50.94	2.00	0.00	0.00	0.02	0.00
50.99	2.00	0.00	0.00	0.02	0.00	51.05	2.00	0.00	0.00	0.02	0.00
51.14	2.00	0.00	0.00	0.03	0.00	51.18	2.00	0.00	0.00	0.01	0.00
51.25	2.00	0.00	0.00	0.02	0.00	51.34	2.00	0.00	0.00	0.03	0.00
51.41	2.00	0.00	0.00	0.02	0.00	51.44	2.00	0.00	0.00	0.01	0.00
51.52	2.00	0.00	0.00	0.02	0.00	51.67	2.00	0.00	0.00	0.05	0.00
51.70	2.00	0.00	0.00	0.01	0.00	51.75	2.00	0.00	0.00	0.02	0.00
51.78	2.00	0.00	0.00	0.01	0.00	51.88	2.00	0.00	0.00	0.03	0.00
51.92	2.00	0.00	0.00	0.01	0.00	51.99	2.00	0.00	0.00	0.02	0.00
52.04	2.00	0.00	0.00	0.02	0.00	52.14	2.00	0.00	0.00	0.03	0.00
52.19	2.00	0.00	0.00	0.02	0.00	52.26	2.00	0.00	0.00	0.02	0.00
52.33	2.00	0.00	0.00	0.02	0.00	52.38	2.00	0.00	0.00	0.02	0.00
52.43	2.00	0.00	0.00	0.02	0.00	52.51	2.00	0.00	0.00	0.02	0.00
52.58	2.00	0.00	0.00	0.02	0.00	52.63	2.00	0.00	0.00	0.02	0.00
52.69	2.00	0.00	0.00	0.02	0.00	52.77	2.00	0.00	0.00	0.02	0.00
52.83	2.00	0.00	0.00	0.02	0.00	52.90	2.00	0.00	0.00	0.02	0.00
52.99	2.00	0.00	0.00	0.03	0.00	53.05	2.00	0.00	0.00	0.02	0.00
53.10	2.00	0.00	0.00	0.02	0.00	53.16	2.00	0.00	0.00	0.02	0.00
53.25	2.00	0.00	0.00	0.03	0.00	53.29	2.00	0.00	0.00	0.01	0.00
53.38	2.00	0.00	0.00	0.03	0.00	53.44	2.00	0.00	0.00	0.02	0.00
53.50	2.00	0.00	0.00	0.02	0.00	53.55	2.00	0.00	0.00	0.02	0.00
53.64	2.00	0.00	0.00	0.03	0.00	53.72	2.00	0.00	0.00	0.02	0.00
53.74	2.00	0.00	0.00	0.01	0.00	53.82	2.00	0.00	0.00	0.02	0.00
53.90	2.00	0.00	0.00	0.02	0.00	53.94	2.00	0.00	0.00	0.01	0.00
54.01	2.00	0.00	0.00	0.02	0.00	54.09	2.00	0.00	0.00	0.02	0.00
54.19	2.00	0.00	0.00	0.03	0.00	54.24	2.00	0.00	0.00	0.02	0.00
54.29	2.00	0.00	0.00	0.02	0.00	54.35	2.00	0.00	0.00	0.02	0.00
54.44	2.00	0.00	0.00	0.03	0.00	54.49	2.00	0.00	0.00	0.02	0.00
54.53	2.00	0.00	0.00	0.01	0.00	54.63	2.00	0.00	0.00	0.03	0.00
54.68	2.00	0.00	0.00	0.02	0.00	54.74	2.00	0.00	0.00	0.02	0.00
54.83	2.00	0.00	0.00	0.03	0.00	54.88	2.00	0.00	0.00	0.02	0.00
54.94	2.00	0.00	0.00	0.02	0.00	55.03	2.00	0.00	0.00	0.03	0.00
55.07	2.00	0.00	0.00	0.01	0.00	55.13	2.00	0.00	0.00	0.02	0.00
55.23	2.00	0.00	0.00	0.03	0.00	55.28	2.00	0.00	0.00	0.02	0.00
55.32	2.00	0.00	0.00	0.01	0.00	55.42	2.00	0.00	0.00	0.03	0.00
55.50	2.00	0.00	0.00	0.02	0.00	55.53	2.00	0.00	0.00	0.01	0.00
55.58	2.00	0.00	0.00	0.02	0.00	55.66	2.00	0.00	0.00	0.02	0.00
55.73	2.00	0.00	0.00	0.02	0.00	55.78	2.00	0.00	0.00	0.02	0.00
55.86	2.00	0.00	0.00	0.02	0.00	55.93	2.00	0.00	0.00	0.02	0.00
55.97	2.00	0.00	0.00	0.01	0.00	56.08	2.00	0.00	0.00	0.03	0.00
56.12	2.00	0.00	0.00	0.01	0.00	56.17	2.00	0.00	0.00	0.02	0.00
56.28	2.00	0.00	0.00	0.03	0.00	56.32	2.00	0.00	0.00	0.01	0.00
56.37	2.00	0.00	0.00	0.02	0.00	56.47	2.00	0.00	0.00	0.03	0.00
56.52	2.00	0.00	0.00	0.02	0.00	56.57	2.00	0.00	0.00	0.02	0.00
56.67	2.00	0.00	0.00	0.03	0.00	56.72	2.00	0.00	0.00	0.02	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
56.78	2.00	0.00	0.00	0.02	0.00	56.87	2.00	0.00	0.00	0.03	0.00
56.91	2.00	0.00	0.00	0.01	0.00	56.97	2.00	0.00	0.00	0.02	0.00
57.03	2.00	0.00	0.00	0.02	0.00	57.11	2.00	0.00	0.00	0.02	0.00
57.17	2.00	0.00	0.00	0.02	0.00	57.26	2.00	0.00	0.00	0.03	0.00
57.32	2.00	0.00	0.00	0.02	0.00	57.35	2.00	0.00	0.00	0.01	0.00
57.42	2.00	0.00	0.00	0.02	0.00	57.51	2.00	0.00	0.00	0.03	0.00
57.55	2.00	0.00	0.00	0.01	0.00	57.62	2.00	0.00	0.00	0.02	0.00
57.71	2.00	0.00	0.00	0.03	0.00	57.78	2.00	0.00	0.00	0.02	0.00
57.82	2.00	0.00	0.00	0.01	0.00	57.90	2.00	0.00	0.00	0.02	0.00
57.96	2.00	0.00	0.00	0.02	0.00	58.01	2.00	0.00	0.00	0.02	0.00
58.11	2.00	0.00	0.00	0.03	0.00	58.15	2.00	0.00	0.00	0.01	0.00
58.21	2.00	0.00	0.00	0.02	0.00	58.31	2.00	0.00	0.00	0.03	0.00
58.35	2.00	0.00	0.00	0.01	0.00	58.42	2.00	0.00	0.00	0.02	0.00
58.50	2.00	0.00	0.00	0.02	0.00	58.55	2.00	0.00	0.00	0.02	0.00
58.61	2.00	0.00	0.00	0.02	0.00	58.70	2.00	0.00	0.00	0.03	0.00
58.75	2.00	0.00	0.00	0.02	0.00	58.81	2.00	0.00	0.00	0.02	0.00
58.89	2.00	0.00	0.00	0.02	0.00	58.95	2.00	0.00	0.00	0.02	0.00
59.00	2.00	0.00	0.00	0.02	0.00	59.10	2.00	0.00	0.00	0.03	0.00
59.15	2.00	0.00	0.00	0.02	0.00	59.20	2.00	0.00	0.00	0.02	0.00
59.28	2.00	0.00	0.00	0.02	0.00	59.35	2.00	0.00	0.00	0.02	0.00
59.38	2.00	0.00	0.00	0.01	0.00	59.46	2.00	0.00	0.00	0.02	0.00
59.53	2.00	0.00	0.00	0.02	0.00	59.59	2.00	0.00	0.00	0.02	0.00
59.67	2.00	0.00	0.00	0.02	0.00	59.73	2.00	0.00	0.00	0.02	0.00
59.79	2.00	0.00	0.00	0.02	0.00	59.89	2.00	0.00	0.00	0.03	0.00
59.94	2.00	0.00	0.00	0.02	0.00	59.99	2.00	0.00	0.00	0.02	0.00
60.07	2.00	0.00	0.00	0.02	0.00	60.12	2.00	0.00	0.00	0.02	0.00
60.19	2.00	0.00	0.00	0.02	0.00	60.25	2.00	0.00	0.00	0.02	0.00
60.33	2.00	0.00	0.00	0.02	0.00	60.38	2.00	0.00	0.00	0.02	0.00
60.48	2.00	0.00	0.00	0.03	0.00	60.53	2.00	0.00	0.00	0.02	0.00
60.61	2.00	0.00	0.00	0.02	0.00	60.63	2.00	0.00	0.00	0.01	0.00

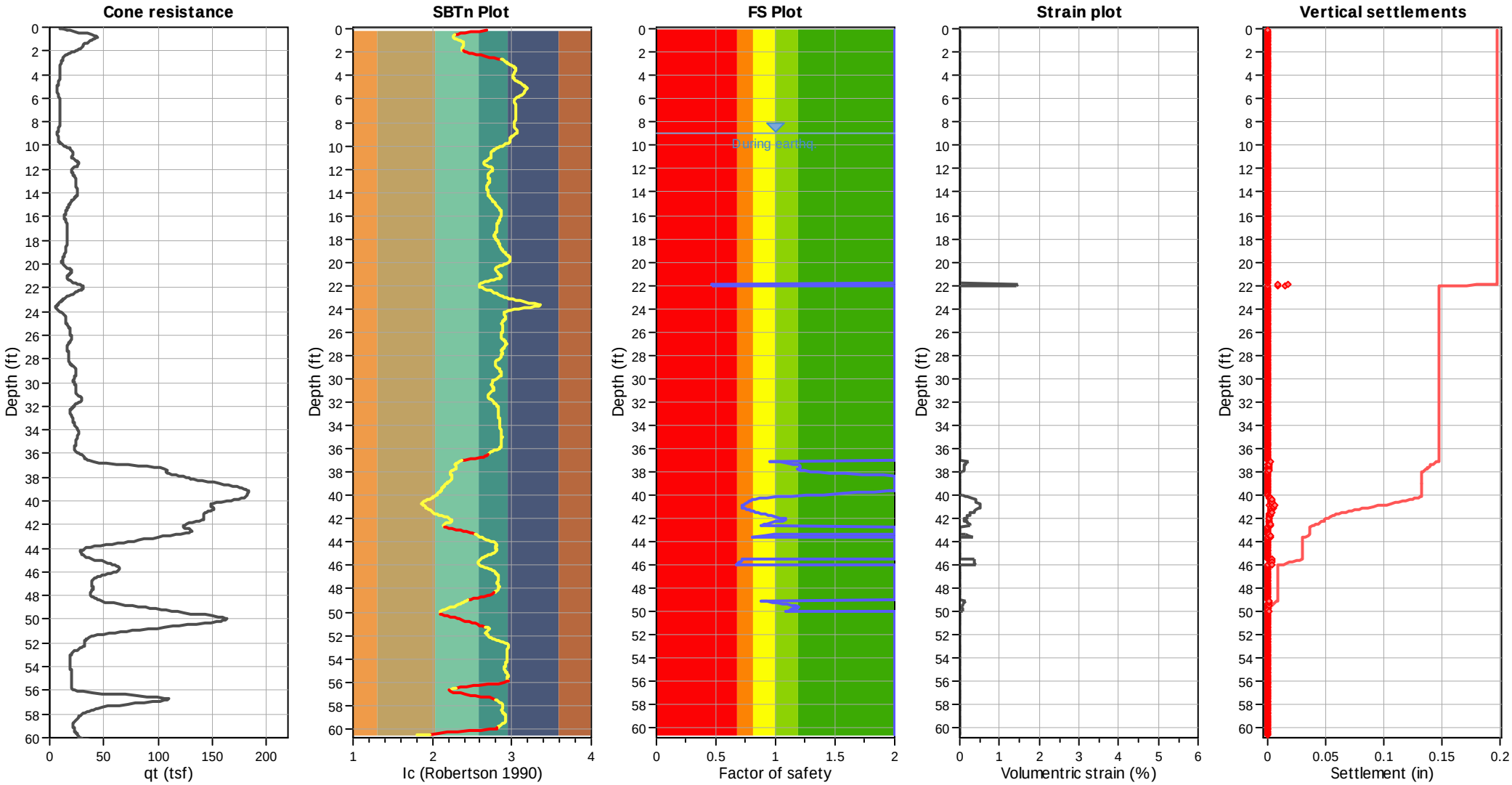
Overall liquefaction potential: 0.87

LPI = 0.00 - Liquefaction risk very low
LPI between 0.00 and 5.00 - Liquefaction risk low
LPI between 5.00 and 15.00 - Liquefaction risk high
LPI > 15.00 - Liquefaction risk very high

Abbreviations

FS: Calculated factor of safety for test point
F_L: 1 - FS
w_z: Function value of the extend of soil liquefaction according to depth
d_z: Layer thickness (ft)
LPI: Liquefaction potential index value for test point

Estimation of post-earthquake settlements



Abbreviations

q_t:	Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c:	Soil Behaviour Type Index
FS:	Calculated Factor of Safety against liquefaction
Volumentric strain:	Post-liquefaction volumentric strain

:: Lateral displacement index calculation ::

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
9.00	7.30	10.92	3.73	78.50	2.00	0.00	0.00	0.00
9.08	7.36	11.01	3.55	77.13	2.00	0.00	0.00	0.00
9.15	7.44	11.14	3.39	76.02	2.00	0.00	0.00	0.00
9.20	7.49	11.22	3.26	75.01	2.00	0.00	0.00	0.00
9.28	7.51	11.24	3.17	74.14	2.00	0.00	0.00	0.00
9.35	7.52	11.25	3.12	73.70	2.00	0.00	0.00	0.00
9.40	7.54	11.28	3.11	73.70	2.00	0.00	0.00	0.00
9.45	7.59	11.36	3.13	74.13	2.00	0.00	0.00	0.00
9.55	7.66	11.46	3.20	75.15	2.00	0.00	0.00	0.00
9.59	7.88	11.81	3.31	77.12	2.00	0.00	0.00	0.00
9.69	8.26	12.41	3.51	80.66	2.00	0.00	0.00	0.00
9.74	8.85	13.35	3.69	84.90	2.00	0.53	0.00	0.00
9.79	9.71	14.73	3.95	91.03	2.00	3.78	0.00	0.00
9.84	10.70	16.32	4.17	97.37	2.00	7.17	0.00	0.00
9.94	11.82	18.10	4.38	103.99	2.00	10.59	0.00	0.00
10.00	13.13	20.20	4.53	110.57	2.00	14.21	0.00	0.00
10.09	14.51	22.41	4.66	117.08	2.00	17.64	0.00	0.00
10.13	15.87	24.60	4.75	123.02	2.00	20.71	0.00	0.00
10.18	17.10	26.57	4.85	128.46	2.00	23.26	0.00	0.00
10.24	18.19	28.31	4.93	133.07	2.00	25.34	0.00	0.00
10.33	19.08	29.73	5.01	137.04	2.00	26.97	0.00	0.00
10.37	19.75	30.80	4.97	138.53	2.00	28.13	0.00	0.00
10.43	20.34	31.75	4.92	139.54	2.00	29.14	0.00	0.00
10.52	20.84	32.54	4.85	140.02	2.00	29.95	0.00	0.00
10.59	21.08	32.92	4.81	140.09	2.00	30.33	0.00	0.00
10.64	21.13	32.99	4.78	139.63	2.00	30.40	0.00	0.00
10.70	20.97	32.65	4.77	139.01	2.00	30.06	0.00	0.00
10.78	20.88	32.28	4.74	137.82	2.00	29.68	0.00	0.00
10.83	20.80	32.00	4.69	136.50	2.00	29.39	0.00	0.00
10.94	20.72	31.57	4.64	134.99	2.00	28.94	0.00	0.00
10.99	20.74	31.46	4.64	134.82	2.00	28.83	0.00	0.00
11.03	21.20	31.99	4.56	134.49	2.00	29.38	0.00	0.00
11.09	21.83	32.70	4.46	134.07	2.00	30.10	0.00	0.00
11.17	22.79	33.81	4.34	133.84	2.00	31.21	0.00	0.00
11.24	23.92	35.18	4.23	134.18	2.00	32.52	0.00	0.00
11.33	25.05	36.47	4.14	134.60	2.00	33.71	0.00	0.00
11.37	25.77	37.35	4.15	136.05	2.00	34.50	0.00	0.00
11.44	26.22	37.80	4.18	137.34	2.00	34.89	0.00	0.00
11.52	26.58	38.07	4.22	138.41	2.00	35.12	0.00	0.00
11.57	26.65	38.03	4.27	139.31	2.00	35.09	0.00	0.00
11.63	26.16	37.23	4.37	139.89	2.00	34.39	0.00	0.00
11.72	25.38	35.96	4.51	140.36	2.00	33.24	0.00	0.00
11.76	24.28	34.38	4.65	139.96	2.00	31.76	0.00	0.00
11.83	23.04	32.52	4.73	138.03	2.00	29.92	0.00	0.00
11.92	21.96	30.82	4.75	135.33	2.00	28.16	0.00	0.00
11.94	21.21	29.72	4.67	132.01	2.00	26.95	0.00	0.00
12.02	20.75	28.89	4.53	128.38	2.00	26.01	0.00	0.00
12.11	20.42	28.28	4.37	124.87	2.00	25.32	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
12.16	20.40	28.14	4.17	121.60	2.00	25.15	0.00	0.00
12.22	20.54	28.21	4.00	119.09	2.00	25.23	0.00	0.00
12.31	20.81	28.44	3.85	117.01	2.00	25.50	0.00	0.00
12.36	21.16	28.83	3.79	116.71	2.00	25.95	0.00	0.00
12.42	21.60	29.35	3.81	117.81	2.00	26.54	0.00	0.00
12.50	22.12	29.98	3.85	119.47	2.00	27.24	0.00	0.00
12.56	22.63	30.60	3.91	121.49	2.00	27.92	0.00	0.00
12.62	23.07	31.16	4.01	124.10	2.00	28.52	0.00	0.00
12.70	23.50	31.67	4.12	126.72	2.00	29.05	0.00	0.00
12.77	23.80	32.03	4.25	129.56	2.00	29.42	0.00	0.00
12.81	23.99	32.28	4.38	132.01	2.00	29.68	0.00	0.00
12.91	24.10	32.33	4.46	133.52	2.00	29.73	0.00	0.00
12.96	24.23	32.45	4.49	134.17	2.00	29.85	0.00	0.00
13.01	24.25	32.42	4.50	134.28	2.00	29.82	0.00	0.00
13.06	24.27	32.37	4.45	133.47	2.00	29.77	0.00	0.00
13.16	24.35	32.33	4.38	132.12	2.00	29.73	0.00	0.00
13.21	24.41	32.31	4.26	130.18	2.00	29.71	0.00	0.00
13.26	24.42	32.22	4.13	127.80	2.00	29.62	0.00	0.00
13.36	24.44	32.08	3.98	125.14	2.00	29.47	0.00	0.00
13.40	24.45	32.02	3.91	123.86	2.00	29.42	0.00	0.00
13.46	24.56	32.08	3.88	123.35	2.00	29.48	0.00	0.00
13.55	24.66	32.11	3.87	123.20	2.00	29.50	0.00	0.00
13.60	24.84	32.28	3.87	123.53	2.00	29.68	0.00	0.00
13.67	24.92	32.33	3.94	124.78	2.00	29.73	0.00	0.00
13.75	24.93	32.28	4.03	126.36	2.00	29.68	0.00	0.00
13.80	25.07	32.43	4.11	127.94	2.00	29.83	0.00	0.00
13.86	25.25	32.61	4.19	129.61	2.00	30.01	0.00	0.00
13.95	25.36	32.67	4.28	131.18	2.00	30.08	0.00	0.00
13.99	25.41	32.69	4.29	131.45	2.00	30.10	0.00	0.00
14.06	25.37	32.55	4.27	130.82	2.00	29.96	0.00	0.00
14.15	25.16	32.18	4.24	129.77	2.00	29.57	0.00	0.00
14.19	24.83	31.70	4.21	128.37	2.00	29.09	0.00	0.00
14.26	24.43	31.11	4.15	126.50	2.00	28.46	0.00	0.00
14.35	24.01	30.46	4.10	124.52	2.00	27.76	0.00	0.00
14.40	23.37	29.60	4.06	122.43	2.00	26.81	0.00	0.00
14.45	22.69	28.67	4.01	120.19	2.00	25.77	0.00	0.00
14.55	22.01	27.72	3.97	117.90	2.00	24.65	0.00	0.00
14.58	21.36	26.87	3.92	115.74	2.00	23.62	0.00	0.00
14.65	20.73	26.00	3.90	113.97	2.00	22.54	0.00	0.00
14.74	20.12	25.16	3.89	112.38	2.00	21.46	0.00	0.00
14.77	19.60	24.48	3.88	111.04	2.00	20.55	0.00	0.00
14.84	19.12	23.82	3.87	109.67	2.00	19.65	0.00	0.00
14.94	18.65	23.15	3.84	108.06	2.00	18.71	0.00	0.00
15.00	18.25	22.61	3.83	106.87	2.00	17.93	0.00	0.00
15.03	17.87	22.10	3.83	105.97	2.00	17.18	0.00	0.00
15.11	17.43	21.50	3.82	104.76	2.00	16.27	0.00	0.00
15.19	17.06	20.99	3.83	103.84	2.00	15.47	0.00	0.00
15.24	16.70	20.50	3.82	102.77	2.00	14.69	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
15.29	16.35	20.02	3.79	101.39	2.00	13.92	0.00	0.00
15.39	15.99	19.51	3.75	99.95	2.00	13.06	0.00	0.00
15.42	15.64	19.05	3.71	98.56	2.00	12.28	0.00	0.00
15.49	15.29	18.56	3.67	97.01	2.00	11.41	0.00	0.00
15.59	14.91	18.03	3.62	95.32	2.00	10.45	0.00	0.00
15.63	14.59	17.60	3.56	93.63	2.00	9.66	0.00	0.00
15.69	14.34	17.24	3.50	92.15	2.00	8.97	0.00	0.00
15.78	14.10	16.88	3.42	90.51	2.00	8.29	0.00	0.00
15.84	13.90	16.60	3.35	89.04	2.00	7.72	0.00	0.00
15.89	13.80	16.44	3.29	87.93	2.00	7.40	0.00	0.00
15.95	13.74	16.32	3.23	87.08	2.00	7.18	0.00	0.00
16.04	13.72	16.25	3.21	86.58	2.00	7.02	0.00	0.00
16.08	13.81	16.34	3.20	86.70	2.00	7.20	0.00	0.00
16.18	13.99	16.50	3.20	87.01	2.00	7.53	0.00	0.00
16.24	14.14	16.65	3.23	87.68	2.00	7.83	0.00	0.00
16.28	14.42	16.97	3.24	88.39	2.00	8.45	0.00	0.00
16.36	14.72	17.29	3.25	89.23	2.00	9.07	0.00	0.00
16.43	15.02	17.62	3.28	90.16	2.00	9.70	0.00	0.00
16.47	15.27	17.90	3.32	91.24	2.00	10.23	0.00	0.00
16.54	15.56	18.21	3.32	91.86	2.00	10.78	0.00	0.00
16.63	15.86	18.51	3.29	92.06	2.00	11.32	0.00	0.00
16.68	16.03	18.68	3.25	91.80	2.00	11.62	0.00	0.00
16.78	16.10	18.69	3.20	91.18	2.00	11.63	0.00	0.00
16.83	16.13	18.68	3.15	90.44	2.00	11.63	0.00	0.00
16.87	16.04	18.55	3.12	89.77	2.00	11.39	0.00	0.00
16.93	15.94	18.39	3.07	88.90	2.00	11.11	0.00	0.00
17.01	15.83	18.21	3.02	87.90	2.00	10.79	0.00	0.00
17.09	15.76	18.07	2.97	86.88	2.00	10.54	0.00	0.00
17.15	15.65	17.90	2.93	86.10	2.00	10.21	0.00	0.00
17.20	15.51	17.70	2.92	85.64	2.00	9.85	0.00	0.00
17.27	15.51	17.67	2.91	85.37	2.00	9.79	0.00	0.00
17.35	15.60	17.73	2.89	85.24	2.00	9.90	0.00	0.00
17.40	15.80	17.93	2.85	85.08	2.00	10.27	0.00	0.00
17.45	15.97	18.09	2.82	84.93	2.00	10.57	0.00	0.00
17.55	16.10	18.19	2.81	84.87	2.00	10.74	0.00	0.00
17.59	16.19	18.27	2.80	84.88	2.00	10.89	0.00	0.00
17.65	16.20	18.24	2.79	84.72	2.00	10.85	0.00	0.00
17.75	16.19	18.18	2.79	84.55	2.00	10.72	0.00	0.00
17.79	16.19	18.15	2.77	84.31	2.00	10.68	0.00	0.00
17.87	16.11	18.02	2.78	84.19	2.00	10.43	0.00	0.00
17.94	16.00	17.86	2.80	84.20	2.00	10.14	0.00	0.00
17.98	15.82	17.64	2.84	84.47	2.00	9.73	0.00	0.00
18.05	15.69	17.45	2.89	84.79	2.00	9.37	0.00	0.00
18.14	15.56	17.26	2.94	85.08	2.00	9.01	0.00	0.00
18.18	15.48	17.15	2.97	85.39	2.00	8.80	0.00	0.00
18.24	15.47	17.11	3.01	85.83	2.00	8.73	0.00	0.00
18.34	15.47	17.07	3.05	86.33	2.00	8.64	0.00	0.00
18.39	15.46	17.03	3.10	86.87	2.00	8.58	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
18.44	15.44	16.99	3.13	87.21	2.00	8.50	0.00	0.00
18.54	15.40	16.90	3.17	87.53	2.00	8.31	0.00	0.00
18.59	15.35	16.82	3.20	87.79	2.00	8.16	0.00	0.00
18.64	15.27	16.71	3.22	87.88	2.00	7.94	0.00	0.00
18.74	15.17	16.55	3.25	87.93	2.00	7.62	0.00	0.00
18.79	15.04	16.38	3.29	88.05	2.00	7.28	0.00	0.00
18.84	14.91	16.20	3.31	87.97	2.00	6.92	0.00	0.00
18.92	14.77	16.00	3.33	87.78	2.00	6.52	0.00	0.00
18.97	14.58	15.76	3.35	87.54	2.00	6.02	0.00	0.00
19.04	14.35	15.47	3.36	87.11	2.00	5.41	0.00	0.00
19.14	14.06	15.10	3.37	86.48	2.00	4.61	0.00	0.00
19.17	13.75	14.73	3.38	85.74	2.00	3.78	0.00	0.00
19.24	13.40	14.31	3.38	84.86	2.00	2.82	0.00	0.00
19.34	13.05	13.87	3.39	83.94	2.00	1.79	0.00	0.00
19.39	12.70	13.45	3.36	82.65	2.00	0.79	0.00	0.00
19.43	12.35	13.03	3.32	81.26	2.00	0.00	0.00	0.00
19.52	12.01	12.60	3.29	79.86	2.00	0.00	0.00	0.00
19.56	11.73	12.27	3.25	78.68	2.00	0.00	0.00	0.00
19.63	11.53	12.01	3.20	77.54	2.00	0.00	0.00	0.00
19.73	11.42	11.85	3.15	76.65	2.00	0.00	0.00	0.00
19.78	11.34	11.73	3.10	75.80	2.00	0.00	0.00	0.00
19.83	11.31	11.68	3.08	75.46	2.00	0.00	0.00	0.00
19.90	11.46	11.82	3.05	75.59	2.00	0.00	0.00	0.00
19.96	11.82	12.21	3.08	76.82	2.00	0.00	0.00	0.00
20.03	12.32	12.76	3.16	78.97	2.00	0.00	0.00	0.00
20.09	13.07	13.56	3.20	81.14	2.00	1.05	0.00	0.00
20.16	14.08	14.65	3.19	83.40	2.00	3.60	0.00	0.00
20.23	15.17	15.83	3.25	86.60	2.00	6.15	0.00	0.00
20.31	16.28	17.00	3.31	89.70	2.00	8.52	0.00	0.00
20.35	17.41	18.23	3.36	92.74	2.00	10.82	0.00	0.00
20.42	18.42	19.29	3.37	94.85	2.00	12.68	0.00	0.00
20.50	19.26	20.16	3.36	96.30	2.00	14.14	0.00	0.00
20.55	19.56	20.45	3.40	97.31	2.00	14.62	0.00	0.00
20.62	19.65	20.52	3.39	97.27	2.00	14.72	0.00	0.00
20.70	19.50	20.30	3.38	96.78	2.00	14.38	0.00	0.00
20.75	19.06	19.79	3.38	95.83	2.00	13.53	0.00	0.00
20.82	18.40	19.04	3.33	93.87	2.00	12.25	0.00	0.00
20.90	17.71	18.24	3.27	91.54	2.00	10.85	0.00	0.00
20.96	17.00	17.44	3.20	89.17	2.00	9.35	0.00	0.00
21.01	16.41	16.77	3.17	87.47	2.00	8.07	0.00	0.00
21.11	15.83	16.10	3.20	86.58	2.00	6.71	0.00	0.00
21.15	15.60	15.83	3.19	85.93	2.00	6.16	0.00	0.00
21.21	15.85	16.08	3.17	86.21	2.00	6.67	0.00	0.00
21.27	16.33	16.56	3.16	87.01	2.00	7.65	0.00	0.00
21.36	16.99	17.22	3.16	88.21	2.00	8.93	0.00	0.00
21.40	18.20	18.49	3.11	89.82	2.00	11.28	0.00	0.00
21.51	19.79	20.11	3.03	91.52	2.00	14.05	0.00	0.00
21.55	21.52	21.91	2.97	93.52	2.00	16.89	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
21.60	23.59	24.06	2.90	95.55	2.00	19.98	0.00	0.00
21.69	25.70	26.20	2.81	96.90	2.00	22.79	0.00	0.00
21.75	27.76	28.31	2.72	98.12	2.00	25.35	0.00	0.00
21.80	29.14	29.71	2.68	99.15	2.00	26.94	0.00	0.00
21.90	30.20	30.73	2.67	100.14	0.46	28.06	51.20	0.74
21.95	30.81	31.32	2.69	101.22	0.47	28.69	51.20	0.37
22.00	30.93	31.42	2.73	102.10	0.48	28.79	51.20	0.37
22.09	30.62	31.03	2.78	102.52	0.48	28.37	51.20	0.66
22.11	30.03	30.40	2.83	102.71	2.00	27.70	0.00	0.00
22.19	28.96	29.24	2.88	102.32	2.00	26.41	0.00	0.00
22.26	27.41	27.58	2.97	101.61	2.00	24.49	0.00	0.00
22.35	25.79	25.84	3.06	100.78	2.00	22.34	0.00	0.00
22.39	24.24	24.21	3.10	99.12	2.00	20.18	0.00	0.00
22.44	22.59	22.47	3.05	95.60	2.00	17.72	0.00	0.00
22.55	21.10	20.85	2.98	92.02	2.00	15.25	0.00	0.00
22.58	19.55	19.22	2.92	88.43	2.00	12.57	0.00	0.00
22.65	18.00	17.58	2.87	85.03	2.00	9.62	0.00	0.00
22.74	16.57	16.05	2.80	81.44	2.00	6.61	0.00	0.00
22.83	15.26	14.66	2.72	77.84	2.00	3.63	0.00	0.00
22.85	14.33	13.68	2.60	74.41	2.00	1.34	0.00	0.00
22.94	13.44	12.73	2.45	70.71	2.00	0.00	0.00	0.00
23.00	12.59	11.82	2.34	67.64	2.00	0.00	0.00	0.00
23.05	11.82	11.01	2.41	66.82	2.00	0.00	0.00	0.00
23.10	11.10	10.25	2.42	65.35	2.00	0.00	0.00	0.00
23.18	10.27	9.36	2.46	63.65	2.00	0.00	0.00	0.00
23.25	9.47	8.51	2.48	61.72	2.00	0.00	0.00	0.00
23.30	8.60	7.59	2.53	59.72	2.00	0.00	0.00	0.00
23.38	7.73	6.67	2.63	57.73	2.00	0.00	0.00	0.00
23.45	6.95	5.85	2.77	55.88	2.00	0.00	0.00	0.00
23.50	6.22	5.07	2.95	54.03	2.00	0.00	0.00	0.00
23.60	5.81	4.64	3.06	52.74	2.00	0.00	0.00	0.00
23.65	5.62	4.43	3.10	52.02	2.00	0.00	0.00	0.00
23.70	5.85	4.66	3.04	52.75	2.00	0.00	0.00	0.00
23.76	6.35	5.18	2.87	53.96	2.00	0.00	0.00	0.00
23.84	6.95	5.78	2.72	55.32	2.00	0.00	0.00	0.00
23.89	7.83	6.67	2.63	57.73	2.00	0.00	0.00	0.00
23.99	8.80	7.65	2.55	60.10	2.00	0.00	0.00	0.00
24.03	9.88	8.75	2.50	62.59	2.00	0.00	0.00	0.00
24.09	11.03	9.91	2.47	65.13	2.00	0.00	0.00	0.00
24.19	12.04	10.91	2.50	67.75	2.00	0.00	0.00	0.00
24.24	13.00	11.87	2.55	70.30	2.00	0.00	0.00	0.00
24.30	13.63	12.48	2.63	72.49	2.00	0.00	0.00	0.00
24.34	14.08	12.93	2.73	74.64	2.00	0.00	0.00	0.00
24.44	14.45	13.27	2.83	76.52	2.00	0.34	0.00	0.00
24.50	14.62	13.42	2.89	77.53	2.00	0.71	0.00	0.00
24.58	14.65	13.42	2.94	78.18	2.00	0.71	0.00	0.00
24.65	14.57	13.32	2.97	78.33	2.00	0.45	0.00	0.00
24.69	14.53	13.26	2.97	78.13	2.00	0.32	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
24.74	14.55	13.26	2.93	77.73	2.00	0.32	0.00	0.00
24.84	14.55	13.22	2.89	77.12	2.00	0.23	0.00	0.00
24.89	14.64	13.30	2.87	77.06	2.00	0.40	0.00	0.00
24.95	14.90	13.53	2.85	77.31	2.00	0.98	0.00	0.00
25.04	15.26	13.85	2.85	77.95	2.00	1.75	0.00	0.00
25.08	15.75	14.32	2.87	79.10	2.00	2.85	0.00	0.00
25.19	16.34	14.87	2.95	81.25	2.00	4.09	0.00	0.00
25.24	16.95	15.45	3.07	83.94	2.00	5.36	0.00	0.00
25.28	17.47	15.95	3.23	86.89	2.00	6.40	0.00	0.00
25.35	17.89	16.34	3.42	89.97	2.00	7.21	0.00	0.00
25.43	18.28	16.69	3.56	92.42	2.00	7.90	0.00	0.00
25.48	18.60	16.98	3.63	93.96	2.00	8.47	0.00	0.00
25.53	18.87	17.22	3.69	95.14	2.00	8.94	0.00	0.00
25.63	19.11	17.40	3.75	96.33	2.00	9.29	0.00	0.00
25.68	19.22	17.50	3.81	97.23	2.00	9.47	0.00	0.00
25.74	19.27	17.52	3.82	97.37	2.00	9.50	0.00	0.00
25.79	19.09	17.32	3.84	97.23	2.00	9.12	0.00	0.00
25.88	19.09	17.27	3.81	96.79	2.00	9.04	0.00	0.00
25.92	19.22	17.38	3.73	96.00	2.00	9.24	0.00	0.00
25.99	19.41	17.53	3.67	95.66	2.00	9.52	0.00	0.00
26.05	19.60	17.68	3.64	95.60	2.00	9.81	0.00	0.00
26.13	19.72	17.75	3.63	95.56	2.00	9.95	0.00	0.00
26.20	19.75	17.75	3.59	95.05	2.00	9.94	0.00	0.00
26.26	19.73	17.70	3.55	94.50	2.00	9.85	0.00	0.00
26.31	19.63	17.58	3.53	93.99	2.00	9.62	0.00	0.00
26.40	19.66	17.57	3.48	93.32	2.00	9.60	0.00	0.00
26.45	19.42	17.30	3.46	92.49	2.00	9.10	0.00	0.00
26.54	19.03	16.89	3.45	91.59	2.00	8.30	0.00	0.00
26.59	18.55	16.41	3.46	90.67	2.00	7.34	0.00	0.00
26.65	18.00	15.86	3.46	89.59	2.00	6.21	0.00	0.00
26.74	17.48	15.31	3.46	88.46	2.00	5.06	0.00	0.00
26.78	16.97	14.81	3.47	87.42	2.00	3.97	0.00	0.00
26.84	16.52	14.36	3.44	86.03	2.00	2.94	0.00	0.00
26.94	16.15	13.97	3.38	84.56	2.00	2.03	0.00	0.00
26.99	15.95	13.75	3.30	83.16	2.00	1.51	0.00	0.00
27.04	15.92	13.70	3.22	82.10	2.00	1.40	0.00	0.00
27.13	15.95	13.70	3.14	81.22	2.00	1.39	0.00	0.00
27.18	16.05	13.77	3.07	80.52	2.00	1.57	0.00	0.00
27.24	16.28	13.97	3.01	80.26	2.00	2.03	0.00	0.00
27.34	16.55	14.19	2.96	80.12	2.00	2.56	0.00	0.00
27.40	16.87	14.47	2.92	80.24	2.00	3.20	0.00	0.00
27.44	17.16	14.73	2.93	80.86	2.00	3.78	0.00	0.00
27.53	17.39	14.91	2.94	81.30	2.00	4.18	0.00	0.00
27.57	17.54	15.03	2.96	81.78	2.00	4.45	0.00	0.00
27.64	17.59	15.05	2.98	82.11	2.00	4.50	0.00	0.00
27.72	17.57	15.00	2.98	81.98	2.00	4.39	0.00	0.00
27.79	17.52	14.93	2.96	81.63	2.00	4.22	0.00	0.00
27.83	17.42	14.82	2.93	80.99	2.00	3.98	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
27.90	17.32	14.70	2.88	80.17	2.00	3.71	0.00	0.00
27.98	17.21	14.57	2.82	79.17	2.00	3.42	0.00	0.00
28.03	17.13	14.48	2.76	78.18	2.00	3.21	0.00	0.00
28.09	17.12	14.44	2.70	77.40	2.00	3.14	0.00	0.00
28.18	17.17	14.46	2.64	76.66	2.00	3.17	0.00	0.00
28.22	17.35	14.61	2.58	76.16	2.00	3.51	0.00	0.00
28.28	17.70	14.91	2.56	76.45	2.00	4.19	0.00	0.00
28.38	18.14	15.29	2.55	76.91	2.00	5.01	0.00	0.00
28.43	18.79	15.87	2.57	78.24	2.00	6.24	0.00	0.00
28.48	19.60	16.60	2.58	79.56	2.00	7.73	0.00	0.00
28.58	20.45	17.34	2.63	81.50	2.00	9.16	0.00	0.00
28.62	21.32	18.13	2.76	84.61	2.00	10.63	0.00	0.00
28.69	22.17	18.87	2.91	88.01	2.00	11.96	0.00	0.00
28.77	22.93	19.53	3.07	91.42	2.00	13.09	0.00	0.00
28.82	23.56	20.08	3.24	94.77	2.00	14.00	0.00	0.00
28.88	24.03	20.48	3.41	97.92	2.00	14.66	0.00	0.00
28.97	24.41	20.77	3.58	100.91	2.00	15.13	0.00	0.00
29.01	24.63	20.95	3.72	103.16	2.00	15.40	0.00	0.00
29.07	24.64	20.92	3.89	105.36	2.00	15.36	0.00	0.00
29.15	24.58	20.82	4.01	106.80	2.00	15.20	0.00	0.00
29.21	24.40	20.62	4.06	107.09	2.00	14.88	0.00	0.00
29.30	24.21	20.39	4.08	106.94	2.00	14.52	0.00	0.00
29.33	23.98	20.17	4.09	106.50	2.00	14.16	0.00	0.00
29.41	23.70	19.87	4.05	105.43	2.00	13.66	0.00	0.00
29.50	23.37	19.52	4.00	104.05	2.00	13.08	0.00	0.00
29.53	23.04	19.21	3.92	102.41	2.00	12.56	0.00	0.00
29.61	22.66	18.83	3.84	100.59	2.00	11.90	0.00	0.00
29.70	22.38	18.54	3.73	98.65	2.00	11.38	0.00	0.00
29.74	22.16	18.32	3.61	96.58	2.00	10.99	0.00	0.00
29.80	22.07	18.22	3.45	94.41	2.00	10.80	0.00	0.00
29.90	22.00	18.11	3.30	92.22	2.00	10.61	0.00	0.00
29.93	22.08	18.18	3.16	90.35	2.00	10.72	0.00	0.00
30.00	22.43	18.47	3.01	88.80	2.00	11.25	0.00	0.00
30.09	23.10	19.03	2.83	87.25	2.00	12.24	0.00	0.00
30.15	23.44	19.31	2.73	86.11	2.00	12.73	0.00	0.00
30.19	23.51	19.36	2.68	85.48	2.00	12.80	0.00	0.00
30.30	23.75	19.53	2.63	85.04	2.00	13.09	0.00	0.00
30.33	23.80	19.56	2.65	85.29	2.00	13.14	0.00	0.00
30.40	23.99	19.69	2.67	85.88	2.00	13.36	0.00	0.00
30.49	24.26	19.89	2.68	86.36	2.00	13.69	0.00	0.00
30.54	24.43	20.02	2.70	86.75	2.00	13.91	0.00	0.00
30.59	24.35	19.92	2.72	87.03	2.00	13.75	0.00	0.00
30.64	23.97	19.56	2.78	87.26	2.00	13.14	0.00	0.00
30.72	23.92	19.47	2.81	87.64	2.00	12.99	0.00	0.00
30.80	24.13	19.62	2.80	87.72	2.00	13.25	0.00	0.00
30.88	24.07	19.53	2.85	88.30	2.00	13.09	0.00	0.00
30.93	24.43	19.82	2.88	89.29	2.00	13.58	0.00	0.00
31.00	25.09	20.36	2.91	90.55	2.00	14.48	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
31.04	25.89	21.05	2.93	91.89	2.00	15.57	0.00	0.00
31.13	26.92	21.91	2.93	93.21	2.00	16.89	0.00	0.00
31.20	27.99	22.82	2.93	94.69	2.00	18.23	0.00	0.00
31.29	28.87	23.54	2.95	96.05	2.00	19.26	0.00	0.00
31.34	29.38	23.95	2.98	97.07	2.00	19.83	0.00	0.00
31.38	29.75	24.26	3.01	98.00	2.00	20.25	0.00	0.00
31.43	29.95	24.40	2.99	98.01	2.00	20.45	0.00	0.00
31.51	29.81	24.24	2.93	96.77	2.00	20.22	0.00	0.00
31.58	29.15	23.63	2.86	94.73	2.00	19.39	0.00	0.00
31.63	28.20	22.78	2.79	92.32	2.00	18.17	0.00	0.00
31.71	26.91	21.61	2.73	89.67	2.00	16.44	0.00	0.00
31.78	25.56	20.41	2.67	86.95	2.00	14.54	0.00	0.00
31.83	24.29	19.28	2.61	84.32	2.00	12.67	0.00	0.00
31.90	23.14	18.26	2.54	81.74	2.00	10.88	0.00	0.00
31.98	22.27	17.48	2.44	79.05	2.00	9.43	0.00	0.00
32.03	21.54	16.84	2.35	76.69	2.00	8.19	0.00	0.00
32.09	20.84	16.21	2.29	74.93	2.00	6.93	0.00	0.00
32.16	20.13	15.57	2.27	73.67	2.00	5.62	0.00	0.00
32.22	19.49	15.00	2.27	72.78	2.00	4.39	0.00	0.00
32.30	19.02	14.56	2.28	72.13	2.00	3.40	0.00	0.00
32.38	18.67	14.24	2.28	71.60	2.00	2.66	0.00	0.00
32.42	18.64	14.20	2.27	71.43	2.00	2.57	0.00	0.00
32.50	18.90	14.39	2.25	71.49	2.00	3.02	0.00	0.00
32.56	19.05	14.50	2.27	71.91	2.00	3.27	0.00	0.00
32.62	19.22	14.62	2.32	72.88	2.00	3.54	0.00	0.00
32.72	19.47	14.80	2.38	74.02	2.00	3.95	0.00	0.00
32.77	19.78	15.05	2.45	75.31	2.00	4.48	0.00	0.00
32.82	20.17	15.35	2.52	76.77	2.00	5.15	0.00	0.00
32.91	20.58	15.66	2.58	78.18	2.00	5.81	0.00	0.00
32.97	20.98	15.98	2.64	79.57	2.00	6.46	0.00	0.00
33.02	21.23	16.16	2.71	80.83	2.00	6.85	0.00	0.00
33.11	21.45	16.32	2.78	82.05	2.00	7.16	0.00	0.00
33.16	21.63	16.44	2.85	83.15	2.00	7.42	0.00	0.00
33.22	21.81	16.57	2.89	83.95	2.00	7.67	0.00	0.00
33.29	21.97	16.67	2.93	84.67	2.00	7.87	0.00	0.00
33.37	22.11	16.76	2.96	85.32	2.00	8.04	0.00	0.00
33.41	22.18	16.79	3.01	86.01	2.00	8.11	0.00	0.00
33.47	22.32	16.88	3.08	87.04	2.00	8.28	0.00	0.00
33.57	22.42	16.92	3.16	88.17	2.00	8.35	0.00	0.00
33.60	22.79	17.21	3.21	89.47	2.00	8.92	0.00	0.00
33.67	23.28	17.59	3.29	91.17	2.00	9.64	0.00	0.00
33.76	23.80	17.98	3.38	93.12	2.00	10.36	0.00	0.00
33.80	24.36	18.42	3.49	95.41	2.00	11.17	0.00	0.00
33.86	24.91	18.84	3.61	97.86	2.00	11.91	0.00	0.00
33.96	25.43	19.22	3.73	100.16	2.00	12.56	0.00	0.00
34.00	25.94	19.62	3.83	102.23	2.00	13.25	0.00	0.00
34.06	26.36	19.93	3.89	103.72	2.00	13.77	0.00	0.00
34.16	26.76	20.21	3.94	104.93	2.00	14.22	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
34.20	26.82	20.23	4.01	105.84	2.00	14.26	0.00	0.00
34.26	26.68	20.09	4.04	105.97	2.00	14.02	0.00	0.00
34.36	26.55	19.93	4.05	105.74	2.00	13.76	0.00	0.00
34.39	26.36	19.76	4.03	105.17	2.00	13.48	0.00	0.00
34.46	26.14	19.55	4.00	104.24	2.00	13.12	0.00	0.00
34.56	25.91	19.31	3.95	103.23	2.00	12.73	0.00	0.00
34.60	25.62	19.06	3.92	102.22	2.00	12.29	0.00	0.00
34.65	25.33	18.80	3.88	101.26	2.00	11.83	0.00	0.00
34.75	25.05	18.52	3.85	100.23	2.00	11.35	0.00	0.00
34.80	24.81	18.31	3.81	99.30	2.00	10.96	0.00	0.00
34.86	24.61	18.12	3.78	98.56	2.00	10.62	0.00	0.00
34.95	24.38	17.90	3.75	97.68	2.00	10.22	0.00	0.00
34.99	24.19	17.73	3.70	96.78	2.00	9.90	0.00	0.00
35.06	24.08	17.61	3.65	95.90	2.00	9.68	0.00	0.00
35.11	23.94	17.48	3.60	95.02	2.00	9.43	0.00	0.00
35.19	23.83	17.36	3.54	94.06	2.00	9.21	0.00	0.00
35.25	23.70	17.24	3.49	93.16	2.00	8.97	0.00	0.00
35.31	23.56	17.10	3.43	92.15	2.00	8.72	0.00	0.00
35.39	23.40	16.95	3.38	91.17	2.00	8.41	0.00	0.00
35.49	23.26	16.80	3.32	90.16	2.00	8.12	0.00	0.00
35.53	23.14	16.69	3.30	89.62	2.00	7.91	0.00	0.00
35.60	23.03	16.57	3.30	89.34	2.00	7.67	0.00	0.00
35.63	22.98	16.52	3.32	89.51	2.00	7.57	0.00	0.00
35.70	23.28	16.73	3.33	90.12	2.00	7.99	0.00	0.00
35.78	23.79	17.11	3.37	91.39	2.00	8.73	0.00	0.00
35.84	24.40	17.57	3.43	93.03	2.00	9.60	0.00	0.00
35.90	25.23	18.20	3.51	95.32	2.00	10.77	0.00	0.00
35.98	26.27	19.00	3.55	97.44	2.00	12.19	0.00	0.00
36.06	27.66	20.09	3.47	98.43	2.00	14.03	0.00	0.00
36.09	29.05	21.22	3.32	98.16	2.00	15.83	0.00	0.00
36.18	30.33	22.24	3.15	97.40	2.00	17.38	0.00	0.00
36.23	31.16	22.90	3.03	96.52	2.00	18.34	0.00	0.00
36.29	31.53	23.17	2.98	96.09	2.00	18.73	0.00	0.00
36.38	31.68	23.26	2.94	95.64	2.00	18.86	0.00	0.00
36.42	32.10	23.58	2.93	95.94	2.00	19.31	0.00	0.00
36.49	33.06	24.32	2.93	97.04	2.00	20.33	0.00	0.00
36.58	34.30	25.26	2.96	98.78	2.00	21.58	0.00	0.00
36.62	36.32	26.86	3.01	101.91	2.00	23.61	0.00	0.00
36.68	39.95	29.72	3.10	107.49	2.00	26.96	0.00	0.00
36.77	44.99	33.72	3.16	113.80	2.00	31.11	0.00	0.00
36.83	52.72	39.94	3.09	119.98	2.00	36.71	0.00	0.00
36.88	62.36	47.77	2.97	126.28	2.00	42.61	0.00	0.00
36.97	72.24	55.77	2.89	132.66	2.00	47.73	0.00	0.00
37.02	81.77	63.53	2.82	138.89	2.00	52.03	0.00	0.00
37.08	89.81	70.05	2.80	144.68	2.00	55.25	0.00	0.00
37.17	96.99	75.82	2.79	150.13	0.96	57.86	4.37	0.00
37.22	102.33	80.09	2.82	155.26	1.04	59.67	3.05	0.00
37.27	105.76	82.79	2.86	158.89	1.10	60.77	2.38	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
37.37	108.07	84.49	2.89	161.53	1.14	61.44	1.98	0.00
37.41	108.62	84.82	2.95	163.58	1.18	61.57	1.73	0.00
37.47	108.08	84.24	3.00	164.56	1.20	61.34	1.61	0.00
37.57	107.73	83.75	3.04	165.17	1.21	61.15	1.55	0.00
37.61	107.99	83.91	3.03	164.91	1.20	61.21	1.58	0.00
37.67	110.10	85.56	2.97	164.87	1.20	61.85	1.58	0.00
37.76	112.74	87.63	2.89	164.62	1.20	62.64	1.61	0.00
37.81	116.12	90.39	2.78	163.96	1.19	63.67	1.68	0.00
37.87	119.49	93.08	2.74	165.30	1.21	64.63	1.54	0.00
37.97	123.02	95.80	2.71	167.09	1.24	65.58	1.70	0.00
38.02	126.08	98.19	2.72	169.55	1.29	66.40	1.53	0.00
38.07	128.60	100.10	2.76	172.82	1.36	67.03	1.33	0.00
38.17	130.76	101.53	2.87	177.46	1.45	67.50	1.09	0.00
38.20	133.02	103.16	3.01	183.33	1.58	68.03	0.85	0.00
38.27	136.19	105.44	3.13	189.57	1.73	68.75	0.66	0.00
38.33	141.08	109.15	3.23	196.53	1.90	69.89	0.50	0.00
38.42	146.42	113.13	3.34	203.92	2.00	71.07	0.00	0.00
38.46	152.19	117.65	3.38	209.76	2.00	72.36	0.00	0.00
38.53	157.18	121.44	3.42	215.00	2.00	73.41	0.00	0.00
38.62	161.63	124.77	3.45	219.36	2.00	74.30	0.00	0.00
38.66	165.38	127.66	3.46	222.81	2.00	75.06	0.00	0.00
38.73	169.32	130.70	3.42	224.42	2.00	75.84	0.00	0.00
38.81	173.12	133.62	3.36	225.39	2.00	76.57	0.00	0.00
38.86	175.78	135.72	3.29	225.22	2.00	77.08	0.00	0.00
38.93	177.38	136.92	3.23	224.21	2.00	77.37	0.00	0.00
39.02	179.58	138.58	3.14	222.75	2.00	77.77	0.00	0.00
39.05	181.60	140.28	3.05	221.31	2.00	78.17	0.00	0.00
39.12	182.85	141.22	2.97	219.61	2.00	78.39	0.00	0.00
39.18	183.12	141.38	2.91	217.70	2.00	78.43	0.00	0.00
39.27	183.29	141.39	2.85	215.65	2.00	78.43	0.00	0.00
39.31	184.01	141.97	2.79	214.11	2.00	78.57	0.00	0.00
39.37	182.93	141.02	2.75	211.74	2.00	78.35	0.00	0.00
39.44	182.32	140.45	2.70	209.45	2.00	78.21	0.00	0.00
39.50	182.24	140.34	2.64	207.34	2.00	78.19	0.00	0.00
39.59	181.64	139.74	2.59	205.04	2.00	78.04	0.00	0.00
39.65	180.71	138.96	2.53	202.25	2.00	77.86	0.00	0.00
39.71	179.11	137.69	2.45	198.38	1.96	77.56	0.80	0.00
39.77	177.03	136.09	2.35	193.62	1.83	77.17	0.91	0.00
39.84	174.31	134.01	2.23	187.78	1.69	76.66	1.08	0.00
39.91	169.90	130.56	2.12	181.00	1.53	75.80	1.33	0.00
39.97	167.59	128.92	1.97	174.76	1.40	75.39	1.60	0.00
40.03	163.25	125.60	1.85	167.87	1.26	74.52	1.63	0.00
40.11	158.20	121.67	1.73	160.59	1.13	73.47	2.25	0.00
40.17	153.76	118.29	1.60	153.83	1.02	72.54	3.06	0.00
40.26	150.03	115.42	1.49	147.85	0.92	71.73	4.02	0.00
40.30	148.43	114.38	1.37	143.56	0.86	71.44	4.91	0.00
40.36	148.43	114.61	1.27	140.76	0.82	71.50	5.60	0.00
40.45	149.44	115.54	1.19	139.38	0.81	71.77	5.97	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
40.49	150.84	116.84	1.13	138.73	0.80	72.14	6.16	0.00
40.57	151.01	117.01	1.08	137.62	0.78	72.19	6.49	0.00
40.62	151.62	117.60	1.04	136.87	0.77	72.35	6.72	0.00
40.70	151.46	117.45	1.02	136.06	0.76	72.31	6.98	0.00
40.76	150.02	116.16	1.02	134.96	0.75	71.95	7.35	0.00
40.86	148.25	114.50	1.03	133.87	0.74	71.47	7.74	0.00
40.89	146.27	112.74	1.06	133.07	0.73	70.96	8.04	0.00
40.95	144.41	110.99	1.09	132.55	0.72	70.44	8.24	0.00
41.03	143.07	109.63	1.13	132.49	0.72	70.03	8.26	0.00
41.11	142.22	108.67	1.18	132.84	0.72	69.74	8.11	0.00
41.16	141.92	108.15	1.23	134.04	0.74	69.59	7.66	0.00
41.23	141.98	107.87	1.30	135.72	0.76	69.50	7.07	0.00
41.29	142.10	107.69	1.36	137.23	0.78	69.45	6.58	0.00
41.35	142.20	107.53	1.41	138.47	0.80	69.40	6.20	0.00
41.41	142.21	107.30	1.46	139.67	0.81	69.33	5.86	0.00
41.49	142.08	106.91	1.51	140.92	0.83	69.21	5.52	0.00
41.56	141.57	106.15	1.60	142.81	0.85	68.97	5.05	0.00
41.64	140.45	104.86	1.70	144.72	0.88	68.57	4.61	0.00
41.69	138.39	102.85	1.83	146.71	0.91	67.93	4.20	0.00
41.73	135.34	100.06	1.98	148.72	0.94	67.02	3.83	0.00
41.84	131.91	96.89	2.13	150.57	0.97	65.96	3.51	0.00
41.89	128.64	93.97	2.29	152.81	1.00	64.95	3.52	0.00
41.98	126.30	91.79	2.43	154.98	1.04	64.17	3.02	0.00
42.04	124.44	90.08	2.55	156.76	1.07	63.55	2.67	0.00
42.09	123.04	88.81	2.63	157.96	1.09	63.08	2.46	0.00
42.16	122.85	88.56	2.62	157.62	1.08	62.99	2.51	0.00
42.24	123.41	88.94	2.57	156.37	1.06	63.13	2.74	0.00
42.28	124.88	90.15	2.47	154.54	1.03	63.58	3.11	0.00
42.33	127.01	91.92	2.34	152.37	1.00	64.22	3.61	0.00
42.39	129.14	93.69	2.22	150.19	0.96	64.85	4.21	0.00
42.47	130.67	94.96	2.10	147.85	0.93	65.29	3.96	0.00
42.53	130.88	95.17	2.03	145.93	0.90	65.37	4.33	0.00
42.59	130.36	94.72	2.01	144.89	0.89	65.21	4.54	0.00
42.66	128.15	92.84	2.04	144.24	0.88	64.55	6.39	0.00
42.73	125.51	90.55	2.12	144.49	2.00	63.72	0.00	0.00
42.83	121.32	86.92	2.27	145.58	2.00	62.37	0.00	0.00
42.88	116.08	82.53	2.48	147.81	2.00	60.66	0.00	0.00
42.93	110.69	78.01	2.74	150.89	2.00	58.81	0.00	0.00
42.99	105.22	73.48	3.03	154.56	2.00	56.83	0.00	0.00
43.07	100.21	69.35	3.33	158.34	2.00	54.92	0.00	0.00
43.14	95.63	65.62	3.60	161.52	2.00	53.10	0.00	0.00
43.19	90.87	61.88	3.84	163.11	2.00	51.16	0.00	0.00
43.25	86.68	58.66	3.97	162.37	2.00	49.39	0.00	0.00
43.34	81.82	54.96	4.07	160.19	2.00	47.24	0.00	0.00
43.39	77.67	51.89	4.09	156.69	2.00	45.35	0.00	0.00
43.45	73.11	48.56	4.06	151.56	0.99	43.16	6.17	0.00
43.54	68.41	45.14	3.99	145.56	0.90	40.75	28.70	0.00
43.59	63.67	41.76	3.88	138.68	0.80	38.17	51.20	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
43.64	58.08	37.78	3.76	130.82	2.00	34.87	0.00	0.00
43.74	52.40	33.73	3.61	122.45	2.00	31.13	0.00	0.00
43.78	46.98	29.92	3.46	114.29	2.00	27.17	0.00	0.00
43.83	42.15	26.52	3.36	107.56	2.00	23.19	0.00	0.00
43.94	37.81	23.43	3.30	101.74	2.00	19.11	0.00	0.00
43.98	34.06	20.82	3.24	96.56	2.00	15.20	0.00	0.00
44.04	31.95	19.35	3.12	92.25	2.00	12.79	0.00	0.00
44.14	30.33	18.23	2.97	88.21	2.00	10.82	0.00	0.00
44.17	29.10	17.40	2.82	84.75	2.00	9.29	0.00	0.00
44.23	28.76	17.17	2.74	83.14	2.00	8.84	0.00	0.00
44.33	28.68	17.09	2.69	82.35	2.00	8.69	0.00	0.00
44.37	29.02	17.32	2.65	82.18	2.00	9.14	0.00	0.00
44.44	29.52	17.63	2.71	83.55	2.00	9.72	0.00	0.00
44.53	30.09	17.96	2.82	85.75	2.00	10.33	0.00	0.00
44.58	30.72	18.34	2.98	88.54	2.00	11.01	0.00	0.00
44.64	31.59	18.87	3.15	91.92	2.00	11.96	0.00	0.00
44.73	33.07	19.81	3.31	95.80	2.00	13.57	0.00	0.00
44.78	34.76	20.91	3.47	100.00	2.00	15.35	0.00	0.00
44.82	36.82	22.27	3.60	104.27	2.00	17.43	0.00	0.00
44.90	39.32	23.92	3.71	108.78	2.00	19.79	0.00	0.00
44.97	41.98	25.69	3.82	113.46	2.00	22.14	0.00	0.00
45.03	45.07	27.77	3.84	117.33	2.00	24.72	0.00	0.00
45.09	48.02	29.77	3.85	120.66	2.00	27.01	0.00	0.00
45.17	50.82	31.66	3.84	123.53	2.00	29.04	0.00	0.00
45.22	53.50	33.49	3.84	126.23	2.00	30.89	0.00	0.00
45.29	55.93	35.13	3.83	128.50	2.00	32.47	0.00	0.00
45.38	58.32	36.73	3.80	130.31	2.00	33.95	0.00	0.00
45.42	60.57	38.30	3.75	131.40	2.00	35.33	0.00	0.00
45.50	62.33	39.50	3.68	131.76	2.00	36.34	0.00	0.00
45.57	63.62	40.38	3.63	131.88	0.73	37.06	51.20	0.00
45.62	64.35	40.86	3.59	131.80	0.72	37.46	51.20	0.00
45.69	64.79	41.14	3.56	131.34	0.72	37.68	51.20	0.00
45.77	65.03	41.27	3.52	130.71	0.71	37.79	51.20	0.00
45.82	64.64	40.97	3.48	129.68	0.70	37.55	51.20	0.00
45.88	63.43	40.09	3.47	128.34	0.68	36.83	51.20	0.00
45.97	61.81	38.90	3.47	126.83	0.67	35.83	51.20	0.00
46.02	59.45	37.20	3.51	125.35	2.00	34.36	0.00	0.00
46.10	56.51	35.08	3.60	124.07	2.00	32.42	0.00	0.00
46.17	53.60	32.99	3.68	122.72	2.00	30.40	0.00	0.00
46.21	50.91	31.09	3.77	121.40	2.00	28.44	0.00	0.00
46.27	48.55	29.43	3.83	119.86	2.00	26.63	0.00	0.00
46.36	46.40	27.90	3.88	118.19	2.00	24.87	0.00	0.00
46.42	44.50	26.58	3.92	116.57	2.00	23.26	0.00	0.00
46.46	42.82	25.41	3.96	115.16	2.00	21.78	0.00	0.00
46.56	41.38	24.39	3.99	113.82	2.00	20.43	0.00	0.00
46.61	40.40	23.70	4.01	112.81	2.00	19.48	0.00	0.00
46.66	39.90	23.35	4.00	112.07	2.00	18.99	0.00	0.00
46.74	39.54	23.07	4.02	111.78	2.00	18.59	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
46.81	39.12	22.74	4.06	111.81	2.00	18.12	0.00	0.00
46.87	38.64	22.38	4.15	112.27	2.00	17.58	0.00	0.00
46.94	38.63	22.33	4.19	112.77	2.00	17.51	0.00	0.00
47.01	38.71	22.33	4.24	113.37	2.00	17.52	0.00	0.00
47.06	38.83	22.38	4.28	114.02	2.00	17.59	0.00	0.00
47.12	39.01	22.46	4.30	114.54	2.00	17.71	0.00	0.00
47.19	39.29	22.62	4.29	114.67	2.00	17.94	0.00	0.00
47.25	39.58	22.79	4.25	114.47	2.00	18.19	0.00	0.00
47.34	39.73	22.86	4.20	113.86	2.00	18.29	0.00	0.00
47.39	39.72	22.85	4.14	113.08	2.00	18.27	0.00	0.00
47.44	39.77	22.88	4.07	112.17	2.00	18.31	0.00	0.00
47.54	39.28	22.52	4.04	111.05	2.00	17.79	0.00	0.00
47.59	38.71	22.13	4.02	110.09	2.00	17.22	0.00	0.00
47.65	38.41	21.91	4.00	109.31	2.00	16.89	0.00	0.00
47.74	37.95	21.57	4.01	108.75	2.00	16.37	0.00	0.00
47.81	37.56	21.28	4.03	108.54	2.00	15.93	0.00	0.00
47.85	37.47	21.20	4.05	108.59	2.00	15.80	0.00	0.00
47.94	37.60	21.25	4.05	108.69	2.00	15.87	0.00	0.00
47.98	37.97	21.46	4.06	109.34	2.00	16.21	0.00	0.00
48.04	38.79	21.97	4.08	110.49	2.00	16.98	0.00	0.00
48.13	39.93	22.66	4.09	112.01	2.00	18.00	0.00	0.00
48.17	41.38	23.58	4.10	113.87	2.00	19.32	0.00	0.00
48.24	42.73	24.42	4.14	116.08	2.00	20.46	0.00	0.00
48.32	44.25	25.35	4.17	118.31	2.00	21.71	0.00	0.00
48.37	46.09	26.53	4.19	120.75	2.00	23.20	0.00	0.00
48.44	48.52	28.08	4.17	123.16	2.00	25.07	0.00	0.00
48.53	51.56	30.04	4.10	125.39	2.00	27.31	0.00	0.00
48.56	54.96	32.30	4.00	127.24	2.00	29.70	0.00	0.00
48.64	59.29	35.19	3.84	128.73	2.00	32.53	0.00	0.00
48.72	64.04	38.37	3.68	130.28	2.00	35.39	0.00	0.00
48.78	69.67	42.21	3.50	131.70	2.00	38.53	0.00	0.00
48.83	76.00	46.56	3.32	133.11	2.00	41.77	0.00	0.00
48.90	82.27	50.88	3.18	134.67	2.00	44.70	0.00	0.00
48.97	87.90	54.74	3.09	136.96	2.00	47.11	0.00	0.00
49.03	93.07	58.27	3.05	139.62	2.00	49.17	0.00	0.00
49.12	97.81	61.45	3.03	142.53	0.88	50.93	9.44	0.00
49.16	102.84	64.88	3.02	145.62	0.93	52.72	6.85	0.00
49.23	107.68	68.15	3.00	148.54	0.97	54.35	5.06	0.00
49.31	113.16	71.90	2.96	151.31	1.02	56.11	3.33	0.00
49.36	118.20	75.37	2.93	153.88	1.06	57.67	2.78	0.00
49.43	123.66	79.14	2.88	156.19	1.10	59.28	2.36	0.00
49.52	130.09	83.63	2.81	158.50	1.14	61.10	2.01	0.00
49.58	137.03	88.58	2.71	160.30	1.17	63.00	1.77	0.00
49.62	143.61	93.36	2.60	161.63	1.20	64.73	1.62	0.00
49.71	149.84	98.02	2.44	160.96	1.19	66.34	1.96	0.00
49.78	155.24	102.19	2.27	159.69	1.16	67.71	2.07	0.00
49.81	159.41	105.51	2.14	158.62	1.14	68.77	2.17	0.00
49.88	162.01	107.57	2.04	157.54	1.13	69.41	2.27	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
49.97	163.35	108.59	1.98	156.61	1.11	69.72	2.37	0.00
50.00	161.66	107.39	1.96	155.04	1.08	69.35	2.54	0.00
50.07	160.26	106.28	1.96	153.97	2.00	69.01	0.00	0.00
50.14	158.20	104.64	1.98	153.02	2.00	68.50	0.00	0.00
50.22	154.55	101.76	2.02	151.80	2.00	67.58	0.00	0.00
50.27	149.22	97.52	2.15	151.87	2.00	66.17	0.00	0.00
50.35	143.10	92.63	2.32	152.47	2.00	64.47	0.00	0.00
50.40	135.60	86.89	2.50	152.50	2.00	62.36	0.00	0.00
50.47	127.45	80.82	2.66	151.35	2.00	59.97	0.00	0.00
50.55	119.71	75.19	2.77	149.24	2.00	57.59	0.00	0.00
50.59	114.02	71.17	2.82	146.72	2.00	55.77	0.00	0.00
50.66	106.49	65.86	2.89	143.35	2.00	53.22	0.00	0.00
50.75	98.69	60.41	2.96	139.61	2.00	50.36	0.00	0.00
50.79	91.04	55.16	3.03	135.79	2.00	47.37	0.00	0.00
50.86	83.73	50.19	3.07	131.58	2.00	44.25	0.00	0.00
50.94	76.84	45.52	3.11	127.20	2.00	41.02	0.00	0.00
50.99	70.78	41.49	3.12	122.83	2.00	37.97	0.00	0.00
51.05	65.41	37.95	3.12	118.60	2.00	35.02	0.00	0.00
51.14	60.12	34.47	3.12	114.18	2.00	31.84	0.00	0.00
51.18	54.60	30.89	3.12	109.70	2.00	28.22	0.00	0.00
51.25	49.39	27.54	3.08	104.45	2.00	24.44	0.00	0.00
51.34	44.37	24.36	2.99	98.37	2.00	20.38	0.00	0.00
51.41	40.71	22.11	2.80	91.95	2.00	17.18	0.00	0.00
51.44	38.40	20.75	2.54	85.82	2.00	15.10	0.00	0.00
51.52	36.49	19.65	2.26	79.66	2.00	13.30	0.00	0.00
51.67	35.22	18.94	1.97	74.02	2.00	12.08	0.00	0.00
51.70	34.13	18.33	1.79	70.04	2.00	11.00	0.00	0.00
51.75	33.21	17.79	1.69	67.69	2.00	10.01	0.00	0.00
51.78	32.42	17.30	1.63	66.11	2.00	9.10	0.00	0.00
51.88	32.20	17.13	1.64	65.99	2.00	8.77	0.00	0.00
51.92	32.47	17.26	1.69	67.16	2.00	9.02	0.00	0.00
51.99	32.74	17.38	1.76	68.52	2.00	9.24	0.00	0.00
52.04	32.85	17.38	1.86	70.20	2.00	9.24	0.00	0.00
52.14	32.83	17.29	1.97	71.79	2.00	9.07	0.00	0.00
52.19	32.56	17.06	2.07	73.12	2.00	8.63	0.00	0.00
52.26	31.97	16.63	2.15	73.88	2.00	7.80	0.00	0.00
52.33	31.02	16.00	2.21	73.79	2.00	6.51	0.00	0.00
52.38	29.91	15.28	2.26	73.35	2.00	4.99	0.00	0.00
52.43	28.33	14.28	2.30	72.33	2.00	2.76	0.00	0.00
52.51	26.65	13.23	2.32	70.78	2.00	0.23	0.00	0.00
52.58	25.06	12.25	2.31	68.88	2.00	0.00	0.00	0.00
52.63	23.61	11.38	2.25	66.51	2.00	0.00	0.00	0.00
52.69	22.29	10.60	2.18	64.03	2.00	0.00	0.00	0.00
52.77	21.16	9.93	2.08	61.57	2.00	0.00	0.00	0.00
52.83	20.40	9.49	1.98	59.49	2.00	0.00	0.00	0.00
52.90	19.92	9.22	1.90	57.98	2.00	0.00	0.00	0.00
52.99	19.57	9.02	1.82	56.56	2.00	0.00	0.00	0.00
53.05	19.39	8.91	1.74	55.38	2.00	0.00	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
53.10	19.24	8.82	1.69	54.61	2.00	0.00	0.00	0.00
53.16	19.09	8.74	1.65	53.96	2.00	0.00	0.00	0.00
53.25	18.99	8.67	1.62	53.51	2.00	0.00	0.00	0.00
53.29	18.94	8.64	1.60	53.22	2.00	0.00	0.00	0.00
53.38	18.91	8.62	1.57	52.77	2.00	0.00	0.00	0.00
53.44	18.88	8.60	1.54	52.39	2.00	0.00	0.00	0.00
53.50	18.85	8.58	1.52	52.09	2.00	0.00	0.00	0.00
53.55	18.80	8.54	1.51	51.85	2.00	0.00	0.00	0.00
53.64	18.73	8.49	1.50	51.68	2.00	0.00	0.00	0.00
53.72	18.66	8.44	1.49	51.50	2.00	0.00	0.00	0.00
53.74	18.66	8.44	1.49	51.43	2.00	0.00	0.00	0.00
53.82	18.74	8.47	1.48	51.42	2.00	0.00	0.00	0.00
53.90	18.83	8.51	1.49	51.55	2.00	0.00	0.00	0.00
53.94	18.95	8.58	1.51	51.92	2.00	0.00	0.00	0.00
54.01	19.10	8.65	1.53	52.34	2.00	0.00	0.00	0.00
54.09	19.25	8.72	1.55	52.76	2.00	0.00	0.00	0.00
54.19	19.41	8.79	1.57	53.10	2.00	0.00	0.00	0.00
54.24	19.57	8.88	1.58	53.39	2.00	0.00	0.00	0.00
54.29	19.71	8.95	1.58	53.60	2.00	0.00	0.00	0.00
54.35	19.78	8.98	1.58	53.59	2.00	0.00	0.00	0.00
54.44	19.79	8.98	1.56	53.36	2.00	0.00	0.00	0.00
54.49	19.78	8.98	1.53	53.01	2.00	0.00	0.00	0.00
54.53	19.74	8.96	1.50	52.57	2.00	0.00	0.00	0.00
54.63	19.69	8.92	1.47	52.05	2.00	0.00	0.00	0.00
54.68	19.64	8.90	1.43	51.53	2.00	0.00	0.00	0.00
54.74	19.58	8.86	1.40	51.08	2.00	0.00	0.00	0.00
54.83	19.56	8.85	1.37	50.69	2.00	0.00	0.00	0.00
54.88	19.53	8.82	1.37	50.52	2.00	0.00	0.00	0.00
54.94	19.53	8.81	1.39	50.80	2.00	0.00	0.00	0.00
55.03	19.54	8.79	1.42	51.22	2.00	0.00	0.00	0.00
55.07	19.56	8.78	1.46	51.71	2.00	0.00	0.00	0.00
55.13	19.56	8.76	1.51	52.25	2.00	0.00	0.00	0.00
55.23	19.57	8.74	1.55	52.78	2.00	0.00	0.00	0.00
55.28	19.59	8.73	1.59	53.32	2.00	0.00	0.00	0.00
55.32	19.63	8.73	1.64	53.85	2.00	0.00	0.00	0.00
55.42	19.66	8.72	1.66	54.15	2.00	0.00	0.00	0.00
55.50	19.75	8.77	1.67	54.28	2.00	0.00	0.00	0.00
55.53	19.81	8.80	1.65	54.15	2.00	0.00	0.00	0.00
55.58	19.82	8.80	1.64	54.07	2.00	0.00	0.00	0.00
55.66	19.80	8.78	1.63	53.84	2.00	0.00	0.00	0.00
55.73	19.80	8.79	1.56	53.02	2.00	0.00	0.00	0.00
55.78	19.97	8.86	1.64	54.17	2.00	0.00	0.00	0.00
55.86	20.32	9.02	1.78	56.19	2.00	0.00	0.00	0.00
55.93	20.98	9.35	1.95	58.91	2.00	0.00	0.00	0.00
55.97	22.90	10.37	2.19	63.82	2.00	0.00	0.00	0.00
56.08	26.02	12.11	2.37	69.47	2.00	0.00	0.00	0.00
56.12	30.92	14.96	2.43	75.34	2.00	4.29	0.00	0.00
56.17	39.52	20.15	2.30	81.08	2.00	14.13	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
56.28	48.92	25.93	2.19	86.19	2.00	22.45	0.00	0.00
56.32	59.00	32.27	2.11	91.38	2.00	29.67	0.00	0.00
56.37	69.47	39.03	2.00	95.22	2.00	35.94	0.00	0.00
56.47	79.91	45.84	1.89	98.82	2.00	41.25	0.00	0.00
56.52	90.20	52.68	1.81	102.49	2.00	45.84	0.00	0.00
56.57	98.80	58.43	1.75	105.88	2.00	49.27	0.00	0.00
56.67	105.68	62.98	1.72	109.00	2.00	51.74	0.00	0.00
56.72	109.54	65.45	1.74	111.70	2.00	53.01	0.00	0.00
56.78	108.92	64.78	1.82	113.30	2.00	52.67	0.00	0.00
56.87	106.09	62.58	1.93	114.28	2.00	51.53	0.00	0.00
56.91	101.69	59.38	2.05	114.91	2.00	49.80	0.00	0.00
56.97	94.90	54.58	2.24	115.36	2.00	47.01	0.00	0.00
57.03	87.46	49.42	2.46	116.07	2.00	43.74	0.00	0.00
57.11	79.60	44.05	2.73	117.05	2.00	39.94	0.00	0.00
57.17	72.07	39.08	2.98	117.09	2.00	35.98	0.00	0.00
57.26	64.98	34.48	3.20	115.99	2.00	31.86	0.00	0.00
57.32	58.98	30.71	3.37	114.08	2.00	28.04	0.00	0.00
57.35	53.23	27.19	3.52	111.44	2.00	24.02	0.00	0.00
57.42	48.56	24.36	3.62	108.40	2.00	20.39	0.00	0.00
57.51	44.62	22.00	3.67	105.07	2.00	17.03	0.00	0.00
57.55	42.37	20.71	3.59	101.63	2.00	15.04	0.00	0.00
57.62	40.27	19.53	3.46	97.64	2.00	13.09	0.00	0.00
57.71	38.27	18.41	3.30	93.40	2.00	11.15	0.00	0.00
57.78	36.28	17.29	3.17	89.53	2.00	9.08	0.00	0.00
57.82	34.25	16.16	3.07	86.01	2.00	6.83	0.00	0.00
57.90	32.33	15.08	2.96	82.51	2.00	4.55	0.00	0.00
57.96	30.91	14.30	2.81	79.14	2.00	2.81	0.00	0.00
58.01	29.77	13.70	2.64	75.90	2.00	1.38	0.00	0.00
58.11	28.76	13.15	2.48	72.86	2.00	0.04	0.00	0.00
58.15	27.83	12.67	2.33	70.01	2.00	0.00	0.00	0.00
58.21	27.11	12.29	2.20	67.59	2.00	0.00	0.00	0.00
58.31	26.42	11.92	2.06	65.17	2.00	0.00	0.00	0.00
58.35	25.74	11.58	1.93	62.82	2.00	0.00	0.00	0.00
58.42	25.07	11.21	1.84	61.05	2.00	0.00	0.00	0.00
58.50	24.42	10.86	1.77	59.40	2.00	0.00	0.00	0.00
58.55	23.79	10.51	1.71	58.05	2.00	0.00	0.00	0.00
58.61	23.23	10.19	1.66	56.92	2.00	0.00	0.00	0.00
58.70	22.64	9.86	1.63	55.93	2.00	0.00	0.00	0.00
58.75	22.12	9.56	1.63	55.31	2.00	0.00	0.00	0.00
58.81	21.76	9.34	1.63	55.01	2.00	0.00	0.00	0.00
58.89	21.58	9.22	1.64	54.89	2.00	0.00	0.00	0.00
58.95	21.52	9.18	1.66	54.99	2.00	0.00	0.00	0.00
59.00	21.65	9.23	1.67	55.30	2.00	0.00	0.00	0.00
59.10	21.83	9.32	1.68	55.60	2.00	0.00	0.00	0.00
59.15	22.01	9.40	1.70	55.91	2.00	0.00	0.00	0.00
59.20	22.17	9.48	1.71	56.28	2.00	0.00	0.00	0.00
59.28	22.35	9.57	1.73	56.65	2.00	0.00	0.00	0.00
59.35	22.51	9.62	1.78	57.35	2.00	0.00	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
59.38	22.75	9.74	1.83	58.18	2.00	0.00	0.00	0.00
59.46	23.08	9.90	1.85	58.82	2.00	0.00	0.00	0.00
59.53	23.71	10.25	1.83	59.22	2.00	0.00	0.00	0.00
59.59	24.44	10.68	1.76	59.03	2.00	0.00	0.00	0.00
59.67	25.08	11.05	1.71	58.93	2.00	0.00	0.00	0.00
59.73	25.65	11.38	1.66	58.87	2.00	0.00	0.00	0.00
59.79	26.13	11.64	1.65	59.15	2.00	0.00	0.00	0.00
59.89	26.74	11.97	1.66	59.70	2.00	0.00	0.00	0.00
59.94	27.35	12.30	1.69	60.60	2.00	0.00	0.00	0.00
59.99	28.37	12.84	1.75	62.31	2.00	0.00	0.00	0.00
60.07	30.97	14.49	1.43	59.42	2.00	3.24	0.00	0.00
60.12	34.29	16.66	1.14	56.43	2.00	7.84	0.00	0.00
60.19	40.56	20.76	0.87	53.74	2.00	15.12	0.00	0.00
60.25	48.38	26.09	0.64	51.69	2.00	22.65	0.00	0.00
60.33	55.12	30.89	0.48	50.62	2.00	28.23	0.00	0.00
60.38	61.17	35.45	0.35	35.45	2.00	32.77	0.00	0.00
60.48	67.60	40.50	0.24	40.50	2.00	37.17	0.00	0.00
60.53	77.07	48.20	0.12	48.20	2.00	42.91	0.00	0.00
60.61	80.93	N/A	0.00	-1.00	2.00	0.00	0.00	0.00
60.63	82.24	N/A	0.00	-1.00	2.00	0.00	0.00	0.00

Total estimated displacement: 2.13

Abbreviations

q_t: Total cone resistance
Q_{tn}: Adjusted cone resistance to an effective overburden stress of 1 atm
R_f: Friction ration
$Q_{tn,cs}$: Adjusted and corrected cone resistance due to fines
FS: Calculated factor of safety against liquefaction
D_r: Calculated relative density
$Gamma_{max}$: Calculated maximum cyclic shear strain
Lat. disp.: Lateral displacement

:: Strength loss calculation (Robertson (2009) ::

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
0.08	9.60	15.42	3.88	59.90	2.68	N/A	N/A
0.15	12.30	19.75	3.25	64.14	2.59	N/A	N/A
0.23	15.73	25.25	2.71	68.51	2.49	N/A	N/A
0.30	19.25	30.90	2.37	73.28	2.41	N/A	N/A
0.35	22.73	36.49	2.17	79.06	2.36	N/A	N/A
0.43	27.09	43.49	2.00	87.15	2.32	N/A	N/A
0.50	31.20	50.08	1.90	95.08	2.28	N/A	N/A
0.55	34.99	56.17	1.84	103.30	2.26	N/A	N/A
0.61	38.30	61.48	1.82	111.93	2.26	N/A	N/A
0.70	41.27	66.25	1.82	120.26	2.26	N/A	N/A
0.73	43.17	69.29	1.84	127.26	2.26	N/A	N/A
0.80	43.66	70.07	1.88	132.08	2.28	N/A	N/A
0.89	43.46	69.74	1.95	135.95	2.30	N/A	N/A
0.93	42.22	67.74	2.04	138.27	2.33	N/A	N/A
1.01	40.68	65.27	2.12	138.64	2.35	N/A	N/A
1.09	39.02	62.58	2.20	137.77	2.37	N/A	N/A
1.13	37.30	59.82	2.26	135.26	2.39	N/A	N/A
1.19	35.82	57.45	2.28	131.07	2.39	N/A	N/A
1.29	34.39	55.14	2.29	126.20	2.39	N/A	N/A
1.34	33.05	52.98	2.28	120.97	2.39	N/A	N/A
1.39	32.13	51.49	2.26	116.52	2.39	N/A	N/A
1.45	30.90	49.51	2.27	112.45	2.39	N/A	N/A
1.54	30.65	49.10	2.21	108.60	2.37	N/A	N/A
1.59	30.22	48.41	2.18	105.51	2.37	N/A	N/A
1.67	29.56	47.34	2.17	102.95	2.36	N/A	N/A
1.72	28.85	46.20	2.19	101.08	2.37	N/A	N/A
1.79	27.91	44.68	2.22	99.05	2.38	N/A	N/A
1.85	26.72	42.76	2.26	96.74	2.39	N/A	N/A
1.94	25.40	40.63	2.33	94.54	2.40	N/A	N/A
1.98	23.66	37.83	2.45	92.65	2.43	N/A	N/A
2.04	22.23	35.53	2.56	90.86	2.46	N/A	N/A
2.13	20.14	32.16	2.80	89.96	2.51	N/A	N/A
2.17	18.38	29.33	3.05	89.57	2.55	N/A	N/A
2.24	16.92	26.97	3.36	90.61	2.61	N/A	N/A
2.32	15.55	24.76	3.74	92.51	2.66	N/A	N/A
2.39	14.33	22.81	4.18	95.38	2.72	N/A	N/A
2.43	13.41	21.32	4.61	98.35	2.78	N/A	N/A
2.52	12.71	20.20	5.00	101.07	2.83	N/A	N/A
2.58	12.27	19.47	5.31	103.33	2.86	N/A	N/A
2.63	11.94	18.94	5.56	105.23	2.89	N/A	N/A
2.72	11.69	18.54	5.76	106.84	2.91	N/A	N/A
2.78	11.47	18.18	5.95	108.19	2.93	N/A	N/A
2.83	11.30	17.90	6.07	108.67	2.94	N/A	N/A
2.89	11.12	17.61	6.17	108.63	2.95	N/A	N/A
2.98	10.92	17.28	6.27	108.39	2.96	N/A	N/A
3.03	10.65	16.84	6.43	108.26	2.97	N/A	N/A
3.09	10.34	16.33	6.62	108.12	2.99	N/A	N/A
3.18	10.03	15.82	6.82	107.86	3.01	N/A	N/A

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
3.22	9.73	15.34	7.00	107.37	3.02	N/A	N/A
3.32	9.47	14.92	7.15	106.66	3.04	N/A	N/A
3.37	9.26	14.57	7.27	105.83	3.05	N/A	N/A
3.42	9.09	14.29	7.35	105.00	3.05	N/A	N/A
3.52	8.99	14.13	7.37	104.17	3.05	N/A	N/A
3.57	8.93	14.01	7.37	103.23	3.05	N/A	N/A
3.61	8.95	14.05	7.28	102.30	3.05	N/A	N/A
3.68	8.99	14.10	7.19	101.46	3.04	N/A	N/A
3.77	9.05	14.19	7.11	100.93	3.03	N/A	N/A
3.83	9.13	14.32	7.04	100.83	3.03	N/A	N/A
3.91	9.21	14.44	6.97	100.72	3.02	N/A	N/A
3.95	9.30	14.58	6.93	101.04	3.02	N/A	N/A
4.02	9.38	14.71	6.91	101.68	3.01	N/A	N/A
4.12	9.44	14.79	6.94	102.63	3.02	N/A	N/A
4.14	9.48	14.85	6.97	103.57	3.02	N/A	N/A
4.22	9.49	14.87	6.99	103.89	3.02	N/A	N/A
4.27	9.45	14.80	7.08	104.71	3.03	N/A	N/A
4.37	9.36	14.64	7.19	105.22	3.04	N/A	N/A
4.42	9.19	14.37	7.33	105.31	3.05	N/A	N/A
4.46	9.00	14.05	7.49	105.28	3.06	N/A	N/A
4.57	8.66	13.50	7.77	104.88	3.09	N/A	N/A
4.61	8.38	13.05	7.98	104.17	3.10	N/A	N/A
4.67	8.12	12.63	8.18	103.24	3.12	N/A	N/A
4.76	7.86	12.20	8.39	102.28	3.14	N/A	N/A
4.81	7.60	11.77	8.65	101.79	3.16	N/A	N/A
4.90	7.39	11.44	8.80	100.62	3.17	N/A	N/A
4.96	7.20	11.12	8.94	99.34	3.18	N/A	N/A
5.00	7.06	10.89	9.03	98.30	3.18	N/A	N/A
5.05	6.97	10.75	9.07	97.51	3.19	N/A	N/A
5.14	7.06	10.88	8.91	96.98	3.18	N/A	N/A
5.20	7.09	10.92	8.83	96.38	3.17	N/A	N/A
5.30	7.10	10.94	8.77	95.87	3.16	N/A	N/A
5.35	7.13	10.98	8.71	95.58	3.16	N/A	N/A
5.39	7.16	11.02	8.66	95.50	3.16	N/A	N/A
5.48	7.22	11.11	8.60	95.54	3.15	N/A	N/A
5.55	7.34	11.29	8.49	95.84	3.14	N/A	N/A
5.59	7.46	11.49	8.37	96.14	3.13	N/A	N/A
5.64	7.63	11.76	8.19	96.34	3.12	N/A	N/A
5.74	7.81	12.04	8.01	96.43	3.11	N/A	N/A
5.79	8.05	12.42	7.77	96.53	3.09	N/A	N/A
5.84	8.32	12.85	7.55	97.05	3.07	N/A	N/A
5.94	8.60	13.29	7.36	97.86	3.05	N/A	N/A
5.97	8.86	13.70	7.20	98.66	3.04	N/A	N/A
6.05	9.05	14.00	7.11	99.53	3.03	N/A	N/A
6.14	9.20	14.23	7.06	100.50	3.03	N/A	N/A
6.19	9.32	14.42	7.05	101.57	3.03	N/A	N/A
6.24	9.37	14.49	7.07	102.52	3.03	N/A	N/A
6.33	9.38	14.50	7.12	103.26	3.03	N/A	N/A

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
6.38	9.33	14.41	7.21	103.88	3.04	N/A	N/A
6.44	9.28	14.33	7.26	104.08	3.05	N/A	N/A
6.52	9.24	14.26	7.30	104.07	3.05	N/A	N/A
6.59	9.21	14.21	7.32	103.97	3.05	N/A	N/A
6.64	9.22	14.22	7.30	103.76	3.05	N/A	N/A
6.70	9.21	14.20	7.29	103.45	3.05	N/A	N/A
6.78	9.24	14.24	7.24	103.04	3.04	N/A	N/A
6.83	9.24	14.24	7.23	102.93	3.04	N/A	N/A
6.89	9.27	14.28	7.22	103.14	3.04	N/A	N/A
6.98	9.30	14.32	7.23	103.56	3.04	N/A	N/A
7.03	9.35	14.39	7.24	104.19	3.04	N/A	N/A
7.09	9.39	14.45	7.25	104.80	3.04	N/A	N/A
7.18	9.43	14.51	7.27	105.52	3.05	N/A	N/A
7.23	9.47	14.57	7.29	106.24	3.05	N/A	N/A
7.29	9.51	14.63	7.28	106.54	3.05	N/A	N/A
7.38	9.51	14.62	7.28	106.44	3.05	N/A	N/A
7.42	9.52	14.63	7.27	106.34	3.05	N/A	N/A
7.48	9.51	14.61	7.27	106.24	3.05	N/A	N/A
7.58	9.49	14.57	7.28	106.03	3.05	N/A	N/A
7.62	9.43	14.47	7.28	105.42	3.05	N/A	N/A
7.68	9.37	14.36	7.28	104.49	3.05	N/A	N/A
7.78	9.31	14.25	7.26	103.45	3.04	N/A	N/A
7.81	9.25	14.16	7.22	102.20	3.04	N/A	N/A
7.88	9.22	14.10	7.19	101.46	3.04	N/A	N/A
7.97	9.19	14.05	7.18	100.93	3.04	N/A	N/A
8.01	9.17	14.02	7.14	100.07	3.03	N/A	N/A
8.11	9.14	13.96	7.09	98.99	3.03	N/A	N/A
8.14	9.10	13.89	7.05	97.90	3.03	N/A	N/A
8.22	9.05	13.81	7.02	96.90	3.02	N/A	N/A
8.31	8.96	13.66	7.03	96.01	3.03	N/A	N/A
8.35	8.84	13.45	7.06	95.00	3.03	N/A	N/A
8.41	8.65	13.14	7.14	93.85	3.04	N/A	N/A
8.50	8.44	12.80	7.21	92.34	3.04	N/A	N/A
8.56	8.22	12.45	7.30	90.80	3.05	N/A	N/A
8.61	8.02	12.11	7.36	89.12	3.05	N/A	N/A
8.68	7.81	11.77	7.43	87.40	3.06	N/A	N/A
8.75	7.62	11.46	7.45	85.41	3.06	N/A	N/A
8.80	7.46	11.19	7.46	83.50	3.06	N/A	N/A
8.89	7.34	10.99	7.43	81.68	3.06	N/A	N/A
8.94	7.28	10.89	7.34	79.97	3.05	N/A	N/A
9.00	7.30	10.92	7.19	78.50	3.04	N/A	N/A
9.08	7.36	11.01	7.00	77.13	3.02	0.97	0.97
9.15	7.44	11.14	6.82	76.02	3.01	0.97	0.97
9.20	7.49	11.22	6.69	75.01	3.00	0.98	0.98
9.28	7.51	11.24	6.60	74.14	2.99	0.97	0.97
9.35	7.52	11.25	6.55	73.70	2.98	0.96	0.96
9.40	7.54	11.28	6.53	73.70	2.98	0.96	0.96
9.45	7.59	11.36	6.53	74.13	2.98	0.96	0.96

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
9.55	7.66	11.46	6.56	75.15	2.98	0.96	0.96
9.59	7.88	11.81	6.53	77.12	2.98	0.99	0.99
9.69	8.26	12.41	6.50	80.66	2.98	1.03	1.03
9.74	8.85	13.35	6.36	84.90	2.96	1.10	1.10
9.79	9.71	14.73	6.18	91.03	2.95	1.21	1.21
9.84	10.70	16.32	5.97	97.37	2.93	1.33	1.33
9.94	11.82	18.10	5.74	103.99	2.90	1.46	1.46
10.00	13.13	20.20	5.47	110.57	2.88	1.62	1.62
10.09	14.51	22.41	5.22	117.08	2.85	1.78	1.78
10.13	15.87	24.60	5.00	123.02	2.83	1.95	1.95
10.18	17.10	26.57	4.83	128.46	2.81	2.09	2.09
10.24	18.19	28.31	4.70	133.07	2.79	2.22	2.22
10.33	19.08	29.73	4.61	137.04	2.78	2.31	2.31
10.37	19.75	30.80	4.50	138.53	2.77	2.38	2.38
10.43	20.34	31.75	4.39	139.54	2.75	2.44	2.44
10.52	20.84	32.54	4.30	140.02	2.74	2.48	2.48
10.59	21.08	32.92	4.26	140.09	2.73	2.49	2.49
10.64	21.13	32.99	4.23	139.63	2.73	2.48	2.48
10.70	20.97	32.65	4.26	139.01	2.73	2.45	2.45
10.78	20.88	32.28	4.27	137.82	2.74	2.42	2.42
10.83	20.80	32.00	4.27	136.50	2.74	2.39	2.39
10.94	20.72	31.57	4.28	134.99	2.74	2.36	2.36
10.99	20.74	31.46	4.28	134.82	2.74	2.35	2.35
11.03	21.20	31.99	4.20	134.49	2.73	2.39	2.39
11.09	21.83	32.70	4.10	134.07	2.71	2.45	2.45
11.17	22.79	33.81	3.96	133.84	2.69	2.54	2.54
11.24	23.92	35.18	3.81	134.18	2.67	2.66	2.66
11.33	25.05	36.47	3.69	134.60	2.66	2.76	2.76
11.37	25.77	37.35	3.64	136.05	2.65	2.83	2.83
11.44	26.22	37.80	3.63	137.34	2.65	2.86	2.86
11.52	26.58	38.07	3.64	138.41	2.65	2.88	2.88
11.57	26.65	38.03	3.66	139.31	2.65	2.87	2.87
11.63	26.16	37.23	3.76	139.89	2.67	2.80	2.80
11.72	25.38	35.96	3.90	140.36	2.69	2.70	2.70
11.76	24.28	34.38	4.07	139.96	2.71	2.57	2.57
11.83	23.04	32.52	4.25	138.03	2.73	2.41	2.41
11.92	21.96	30.82	4.39	135.33	2.75	2.28	2.28
11.94	21.21	29.72	4.44	132.01	2.76	2.20	2.20
12.02	20.75	28.89	4.44	128.38	2.76	2.13	2.13
12.11	20.42	28.28	4.42	124.87	2.76	2.09	2.09
12.16	20.40	28.14	4.32	121.60	2.74	2.08	2.08
12.22	20.54	28.21	4.22	119.09	2.73	2.09	2.09
12.31	20.81	28.44	4.11	117.01	2.72	2.11	2.11
12.36	21.16	28.83	4.05	116.71	2.71	2.15	2.15
12.42	21.60	29.35	4.01	117.81	2.70	2.19	2.19
12.50	22.12	29.98	3.99	119.47	2.70	2.23	2.23
12.56	22.63	30.60	3.97	121.49	2.70	2.28	2.28
12.62	23.07	31.16	3.98	124.10	2.70	2.32	2.32

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
12.70	23.50	31.67	4.00	126.72	2.70	2.36	2.36
12.77	23.80	32.03	4.05	129.56	2.71	2.38	2.38
12.81	23.99	32.28	4.09	132.01	2.71	2.40	2.40
12.91	24.10	32.33	4.13	133.52	2.72	2.40	2.40
12.96	24.23	32.45	4.13	134.17	2.72	2.41	2.41
13.01	24.25	32.42	4.14	134.28	2.72	2.40	2.40
13.06	24.27	32.37	4.12	133.47	2.72	2.40	2.40
13.16	24.35	32.33	4.09	132.12	2.71	2.40	2.40
13.21	24.41	32.31	4.03	130.18	2.70	2.40	2.40
13.26	24.42	32.22	3.97	127.80	2.70	2.39	2.39
13.36	24.44	32.08	3.90	125.14	2.69	2.39	2.39
13.40	24.45	32.02	3.87	123.86	2.68	2.38	2.38
13.46	24.56	32.08	3.84	123.35	2.68	2.39	2.39
13.55	24.66	32.11	3.84	123.20	2.68	2.39	2.39
13.60	24.84	32.28	3.83	123.53	2.68	2.40	2.40
13.67	24.92	32.33	3.86	124.78	2.68	2.40	2.40
13.75	24.93	32.28	3.91	126.36	2.69	2.40	2.40
13.80	25.07	32.43	3.95	127.94	2.69	2.41	2.41
13.86	25.25	32.61	3.97	129.61	2.70	2.42	2.42
13.95	25.36	32.67	4.02	131.18	2.70	2.42	2.42
13.99	25.41	32.69	4.02	131.45	2.70	2.42	2.42
14.06	25.37	32.55	4.02	130.82	2.70	2.41	2.41
14.15	25.16	32.18	4.03	129.77	2.71	2.38	2.38
14.19	24.83	31.70	4.05	128.37	2.71	2.34	2.34
14.26	24.43	31.11	4.07	126.50	2.71	2.30	2.30
14.35	24.01	30.46	4.09	124.52	2.71	2.25	2.25
14.40	23.37	29.60	4.14	122.43	2.72	2.18	2.18
14.45	22.69	28.67	4.19	120.19	2.73	2.11	2.11
14.55	22.01	27.72	4.25	117.90	2.73	2.04	2.04
14.58	21.36	26.87	4.31	115.74	2.74	1.97	1.97
14.65	20.73	26.00	4.38	113.97	2.75	1.91	1.91
14.74	20.12	25.16	4.47	112.38	2.76	1.84	1.84
14.77	19.60	24.48	4.54	111.04	2.77	1.79	1.79
14.84	19.12	23.82	4.60	109.67	2.78	1.74	1.74
14.94	18.65	23.15	4.67	108.06	2.79	1.69	1.69
15.00	18.25	22.61	4.73	106.87	2.79	1.65	1.65
15.03	17.87	22.10	4.79	105.97	2.80	1.61	1.61
15.11	17.43	21.50	4.87	104.76	2.81	1.56	1.56
15.19	17.06	20.99	4.95	103.84	2.82	1.52	1.52
15.24	16.70	20.50	5.01	102.77	2.83	1.49	1.49
15.29	16.35	20.02	5.06	101.39	2.83	1.45	1.45
15.39	15.99	19.51	5.12	99.95	2.84	1.41	1.41
15.42	15.64	19.05	5.17	98.56	2.84	1.38	1.38
15.49	15.29	18.56	5.23	97.01	2.85	1.34	1.34
15.59	14.91	18.03	5.29	95.32	2.86	1.30	1.30
15.63	14.59	17.60	5.32	93.63	2.86	1.27	1.27
15.69	14.34	17.24	5.35	92.15	2.86	1.24	1.24
15.78	14.10	16.88	5.36	90.51	2.86	1.22	1.22

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
15.84	13.90	16.60	5.37	89.04	2.87	1.20	1.20
15.89	13.80	16.44	5.35	87.93	2.86	1.19	1.19
15.95	13.74	16.32	5.33	87.08	2.86	1.18	1.18
16.04	13.72	16.25	5.33	86.58	2.86	1.17	1.17
16.08	13.81	16.34	5.31	86.70	2.86	1.18	1.18
16.18	13.99	16.50	5.27	87.01	2.86	1.19	1.19
16.24	14.14	16.65	5.27	87.68	2.85	1.20	1.20
16.28	14.42	16.97	5.21	88.39	2.85	1.23	1.23
16.36	14.72	17.29	5.16	89.23	2.84	1.25	1.25
16.43	15.02	17.62	5.12	90.16	2.84	1.27	1.27
16.47	15.27	17.90	5.10	91.24	2.84	1.30	1.30
16.54	15.56	18.21	5.04	91.86	2.83	1.32	1.32
16.63	15.86	18.51	4.97	92.06	2.82	1.34	1.34
16.68	16.03	18.68	4.91	91.80	2.82	1.35	1.35
16.78	16.10	18.69	4.88	91.18	2.81	1.35	1.35
16.83	16.13	18.68	4.84	90.44	2.81	1.36	1.36
16.87	16.04	18.55	4.84	89.77	2.81	1.35	1.35
16.93	15.94	18.39	4.83	88.90	2.81	1.33	1.33
17.01	15.83	18.21	4.83	87.90	2.81	1.32	1.32
17.09	15.76	18.07	4.81	86.88	2.80	1.31	1.31
17.15	15.65	17.90	4.81	86.10	2.80	1.30	1.30
17.20	15.51	17.70	4.84	85.64	2.81	1.28	1.28
17.27	15.51	17.67	4.83	85.37	2.81	1.28	1.28
17.35	15.60	17.73	4.81	85.24	2.80	1.29	1.29
17.40	15.80	17.93	4.75	85.08	2.80	1.30	1.30
17.45	15.97	18.09	4.69	84.93	2.79	1.31	1.31
17.55	16.10	18.19	4.67	84.87	2.79	1.32	1.32
17.59	16.19	18.27	4.65	84.88	2.78	1.33	1.33
17.65	16.20	18.24	4.64	84.72	2.78	1.32	1.32
17.75	16.19	18.18	4.65	84.55	2.78	1.32	1.32
17.79	16.19	18.15	4.64	84.31	2.78	1.32	1.32
17.87	16.11	18.02	4.67	84.19	2.79	1.31	1.31
17.94	16.00	17.86	4.72	84.20	2.79	1.29	1.29
17.98	15.82	17.64	4.79	84.47	2.80	1.28	1.28
18.05	15.69	17.45	4.86	84.79	2.81	1.26	1.26
18.14	15.56	17.26	4.93	85.08	2.82	1.25	1.25
18.18	15.48	17.15	4.98	85.39	2.82	1.24	1.24
18.24	15.47	17.11	5.02	85.83	2.83	1.24	1.24
18.34	15.47	17.07	5.06	86.33	2.83	1.23	1.23
18.39	15.46	17.03	5.10	86.87	2.84	1.23	1.23
18.44	15.44	16.99	5.13	87.21	2.84	1.23	1.23
18.54	15.40	16.90	5.18	87.53	2.85	1.22	1.22
18.59	15.35	16.82	5.22	87.79	2.85	1.21	1.21
18.64	15.27	16.71	5.26	87.88	2.85	1.20	1.20
18.74	15.17	16.55	5.31	87.93	2.86	1.19	1.19
18.79	15.04	16.38	5.38	88.05	2.87	1.18	1.18
18.84	14.91	16.20	5.43	87.97	2.87	1.16	1.16
18.92	14.77	16.00	5.49	87.78	2.88	1.15	1.15

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
18.97	14.58	15.76	5.55	87.54	2.89	1.13	1.13
19.04	14.35	15.47	5.63	87.11	2.89	1.11	1.11
19.14	14.06	15.10	5.73	86.48	2.90	1.08	1.08
19.17	13.75	14.73	5.82	85.74	2.91	1.06	1.06
19.24	13.40	14.31	5.93	84.86	2.92	1.02	1.02
19.34	13.05	13.87	6.05	83.94	2.94	0.99	0.99
19.39	12.70	13.45	6.14	82.65	2.94	0.96	0.96
19.43	12.35	13.03	6.24	81.26	2.95	0.93	0.93
19.52	12.01	12.60	6.34	79.86	2.96	0.90	0.90
19.56	11.73	12.27	6.41	78.68	2.97	0.88	0.88
19.63	11.53	12.01	6.46	77.54	2.97	0.86	0.86
19.73	11.42	11.85	6.47	76.65	2.98	0.85	0.85
19.78	11.34	11.73	6.46	75.80	2.97	0.84	0.84
19.83	11.31	11.68	6.46	75.46	2.97	0.83	0.83
19.90	11.46	11.82	6.39	75.59	2.97	0.84	0.84
19.96	11.82	12.21	6.29	76.82	2.96	0.87	0.87
20.03	12.32	12.76	6.19	78.97	2.95	0.91	0.91
20.09	13.07	13.56	5.98	81.14	2.93	0.97	0.97
20.16	14.08	14.65	5.69	83.40	2.90	1.05	1.05
20.23	15.17	15.83	5.47	86.60	2.88	1.14	1.14
20.31	16.28	17.00	5.28	89.70	2.86	1.22	1.22
20.35	17.41	18.23	5.09	92.74	2.83	1.31	1.31
20.42	18.42	19.29	4.92	94.85	2.82	1.39	1.39
20.50	19.26	20.16	4.78	96.30	2.80	1.45	1.45
20.55	19.56	20.45	4.76	97.31	2.80	1.48	1.48
20.62	19.65	20.52	4.74	97.27	2.79	1.48	1.48
20.70	19.50	20.30	4.77	96.78	2.80	1.46	1.46
20.75	19.06	19.79	4.84	95.83	2.81	1.43	1.43
20.82	18.40	19.04	4.93	93.87	2.82	1.37	1.37
20.90	17.71	18.24	5.02	91.54	2.83	1.31	1.31
20.96	17.00	17.44	5.11	89.17	2.84	1.25	1.25
21.01	16.41	16.77	5.21	87.47	2.85	1.21	1.21
21.11	15.83	16.10	5.38	86.58	2.87	1.16	1.16
21.15	15.60	15.83	5.43	85.93	2.87	1.14	1.14
21.21	15.85	16.08	5.36	86.21	2.86	1.15	1.15
21.27	16.33	16.56	5.25	87.01	2.85	1.19	1.19
21.36	16.99	17.22	5.12	88.21	2.84	1.24	1.24
21.40	18.20	18.49	4.86	89.82	2.81	1.33	1.33
21.51	19.79	20.11	4.55	91.52	2.77	1.45	1.45
21.55	21.52	21.91	4.27	93.52	2.74	1.58	1.58
21.60	23.59	24.06	3.97	95.55	2.70	1.74	1.74
21.69	25.70	26.20	3.70	96.90	2.66	1.90	1.90
21.75	27.76	28.31	3.47	98.12	2.62	2.06	2.06
21.80	29.14	29.71	3.34	99.15	2.60	2.16	2.16
21.90	30.20	30.73	3.26	100.14	2.59	0.67	0.67
21.95	30.81	31.32	3.23	101.22	2.58	0.68	0.68
22.00	30.93	31.42	3.25	102.10	2.59	0.68	0.68
22.09	30.62	31.03	3.30	102.52	2.60	0.67	0.67

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
22.11	30.03	30.40	3.38	102.71	2.61	2.21	2.21
22.19	28.96	29.24	3.50	102.32	2.63	2.12	2.12
22.26	27.41	27.58	3.68	101.61	2.66	2.00	2.00
22.35	25.79	25.84	3.90	100.78	2.69	1.87	1.87
22.39	24.24	24.21	4.09	99.12	2.71	1.75	1.75
22.44	22.59	22.47	4.25	95.60	2.73	1.62	1.62
22.55	21.10	20.85	4.41	92.02	2.75	1.50	1.50
22.58	19.55	19.22	4.60	88.43	2.78	1.38	1.38
22.65	18.00	17.58	4.84	85.03	2.81	1.26	1.26
22.74	16.57	16.05	5.07	81.44	2.83	1.15	1.15
22.83	15.26	14.66	5.31	77.84	2.86	1.05	1.05
22.85	14.33	13.68	5.44	74.41	2.87	0.98	0.98
22.94	13.44	12.73	5.56	70.71	2.89	0.91	0.91
23.00	12.59	11.82	5.72	67.64	2.90	0.34	0.85
23.05	11.82	11.01	6.07	66.82	2.94	0.31	0.79
23.10	11.10	10.25	6.37	65.35	2.97	0.28	0.73
23.18	10.27	9.36	6.80	63.65	3.01	0.26	0.67
23.25	9.47	8.51	7.25	61.72	3.04	0.23	0.61
23.30	8.60	7.59	7.87	59.72	3.10	0.22	0.54
23.38	7.73	6.67	8.65	57.73	3.16	0.20	0.48
23.45	6.95	5.85	9.56	55.88	3.22	0.19	0.42
23.50	6.22	5.07	10.65	54.03	3.30	0.18	0.36
23.60	5.81	4.64	11.37	52.74	3.34	0.18	0.33
23.65	5.62	4.43	11.73	52.02	3.36	0.18	0.32
23.70	5.85	4.66	11.31	52.75	3.34	0.18	0.33
23.76	6.35	5.18	10.42	53.96	3.28	0.18	0.37
23.84	6.95	5.78	9.57	55.32	3.22	0.18	0.41
23.89	7.83	6.67	8.65	57.73	3.16	0.19	0.48
23.99	8.80	7.65	7.86	60.10	3.09	0.23	0.55
24.03	9.88	8.75	7.15	62.59	3.04	0.23	0.63
24.09	11.03	9.91	6.57	65.13	2.98	0.24	0.71
24.19	12.04	10.91	6.21	67.75	2.95	0.33	0.78
24.24	13.00	11.87	5.92	70.30	2.92	0.85	0.85
24.30	13.63	12.48	5.81	72.49	2.91	0.89	0.89
24.34	14.08	12.93	5.77	74.64	2.91	0.93	0.93
24.44	14.45	13.27	5.77	76.52	2.91	0.95	0.95
24.50	14.62	13.42	5.78	77.53	2.91	0.96	0.96
24.58	14.65	13.42	5.83	78.18	2.91	0.96	0.96
24.65	14.57	13.32	5.88	78.33	2.92	0.95	0.95
24.69	14.53	13.26	5.89	78.13	2.92	0.95	0.95
24.74	14.55	13.26	5.86	77.73	2.92	0.95	0.95
24.84	14.55	13.22	5.83	77.12	2.91	0.95	0.95
24.89	14.64	13.30	5.80	77.06	2.91	0.95	0.95
24.95	14.90	13.53	5.71	77.31	2.90	0.97	0.97
25.04	15.26	13.85	5.63	77.95	2.89	0.99	0.99
25.08	15.75	14.32	5.52	79.10	2.88	1.02	1.02
25.19	16.34	14.87	5.46	81.25	2.88	1.06	1.06
25.24	16.95	15.45	5.43	83.94	2.87	1.11	1.11

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
25.28	17.47	15.95	5.45	86.89	2.87	1.14	1.14
25.35	17.89	16.34	5.51	89.97	2.88	1.17	1.17
25.43	18.28	16.69	5.54	92.42	2.88	1.19	1.19
25.48	18.60	16.98	5.53	93.96	2.88	1.21	1.21
25.53	18.87	17.22	5.53	95.14	2.88	1.23	1.23
25.63	19.11	17.40	5.53	96.33	2.88	1.24	1.24
25.68	19.22	17.50	5.56	97.23	2.89	1.25	1.25
25.74	19.27	17.52	5.56	97.37	2.89	1.25	1.25
25.79	19.09	17.32	5.61	97.23	2.89	1.24	1.24
25.88	19.09	17.27	5.60	96.79	2.89	1.23	1.23
25.92	19.22	17.38	5.52	96.00	2.88	1.24	1.24
25.99	19.41	17.53	5.46	95.66	2.88	1.25	1.25
26.05	19.60	17.68	5.41	95.60	2.87	1.26	1.26
26.13	19.72	17.75	5.38	95.56	2.87	1.27	1.27
26.20	19.75	17.75	5.36	95.05	2.86	1.27	1.27
26.26	19.73	17.70	5.34	94.50	2.86	1.27	1.27
26.31	19.63	17.58	5.35	93.99	2.86	1.26	1.26
26.40	19.66	17.57	5.31	93.32	2.86	1.26	1.26
26.45	19.42	17.30	5.35	92.49	2.86	1.24	1.24
26.54	19.03	16.89	5.42	91.59	2.87	1.21	1.21
26.59	18.55	16.41	5.53	90.67	2.88	1.17	1.17
26.65	18.00	15.86	5.65	89.59	2.90	1.13	1.13
26.74	17.48	15.31	5.78	88.46	2.91	1.09	1.09
26.78	16.97	14.81	5.90	87.42	2.92	1.06	1.06
26.84	16.52	14.36	5.99	86.03	2.93	1.03	1.03
26.94	16.15	13.97	6.05	84.56	2.94	1.00	1.00
26.99	15.95	13.75	6.05	83.16	2.93	0.98	0.98
27.04	15.92	13.70	5.99	82.10	2.93	0.98	0.98
27.13	15.95	13.70	5.93	81.22	2.92	0.98	0.98
27.18	16.05	13.77	5.85	80.52	2.91	0.98	0.98
27.24	16.28	13.97	5.75	80.26	2.90	1.00	1.00
27.34	16.55	14.19	5.64	80.12	2.89	1.01	1.01
27.40	16.87	14.47	5.54	80.24	2.88	1.03	1.03
27.44	17.16	14.73	5.49	80.86	2.88	1.05	1.05
27.53	17.39	14.91	5.45	81.30	2.87	1.06	1.06
27.57	17.54	15.03	5.44	81.78	2.87	1.07	1.07
27.64	17.59	15.05	5.46	82.11	2.87	1.07	1.07
27.72	17.57	15.00	5.47	81.98	2.88	1.07	1.07
27.79	17.52	14.93	5.47	81.63	2.88	1.07	1.07
27.83	17.42	14.82	5.47	80.99	2.88	1.06	1.06
27.90	17.32	14.70	5.45	80.17	2.87	1.05	1.05
27.98	17.21	14.57	5.44	79.17	2.87	1.04	1.04
28.03	17.13	14.48	5.40	78.18	2.87	1.03	1.03
28.09	17.12	14.44	5.36	77.40	2.86	1.03	1.03
28.18	17.17	14.46	5.30	76.66	2.86	1.03	1.03
28.22	17.35	14.61	5.21	76.16	2.85	1.04	1.04
28.28	17.70	14.91	5.13	76.45	2.84	1.06	1.06
28.38	18.14	15.29	5.03	76.91	2.83	1.09	1.09

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
28.43	18.79	15.87	4.93	78.24	2.82	1.13	1.13
28.48	19.60	16.60	4.79	79.56	2.80	1.18	1.18
28.58	20.45	17.34	4.70	81.50	2.79	1.24	1.24
28.62	21.32	18.13	4.67	84.61	2.79	1.29	1.29
28.69	22.17	18.87	4.66	88.01	2.79	1.35	1.35
28.77	22.93	19.53	4.68	91.42	2.79	1.39	1.39
28.82	23.56	20.08	4.72	94.77	2.79	1.43	1.43
28.88	24.03	20.48	4.78	97.92	2.80	1.46	1.46
28.97	24.41	20.77	4.86	100.91	2.81	1.48	1.48
29.01	24.63	20.95	4.93	103.16	2.82	1.49	1.49
29.07	24.64	20.92	5.04	105.36	2.83	1.49	1.49
29.15	24.58	20.82	5.13	106.80	2.84	1.48	1.48
29.21	24.40	20.62	5.19	107.09	2.85	1.47	1.47
29.30	24.21	20.39	5.24	106.94	2.85	1.45	1.45
29.33	23.98	20.17	5.28	106.50	2.86	1.44	1.44
29.41	23.70	19.87	5.31	105.43	2.86	1.42	1.42
29.50	23.37	19.52	5.33	104.05	2.86	1.39	1.39
29.53	23.04	19.21	5.33	102.41	2.86	1.37	1.37
29.61	22.66	18.83	5.34	100.59	2.86	1.34	1.34
29.70	22.38	18.54	5.32	98.65	2.86	1.32	1.32
29.74	22.16	18.32	5.27	96.58	2.85	1.31	1.31
29.80	22.07	18.22	5.18	94.41	2.85	1.30	1.30
29.90	22.00	18.11	5.09	92.22	2.84	1.29	1.29
29.93	22.08	18.18	4.97	90.35	2.82	1.29	1.29
30.00	22.43	18.47	4.81	88.80	2.80	1.31	1.31
30.09	23.10	19.03	4.58	87.25	2.78	1.35	1.35
30.15	23.44	19.31	4.46	86.11	2.76	1.37	1.37
30.19	23.51	19.36	4.42	85.48	2.76	1.38	1.38
30.30	23.75	19.53	4.35	85.04	2.75	1.39	1.39
30.33	23.80	19.56	4.36	85.29	2.75	1.39	1.39
30.40	23.99	19.69	4.36	85.88	2.75	1.40	1.40
30.49	24.26	19.89	4.34	86.36	2.75	1.41	1.41
30.54	24.43	20.02	4.33	86.75	2.74	1.42	1.42
30.59	24.35	19.92	4.37	87.03	2.75	1.41	1.41
30.64	23.97	19.56	4.46	87.26	2.76	1.39	1.39
30.72	23.92	19.47	4.50	87.64	2.77	1.38	1.38
30.80	24.13	19.62	4.47	87.72	2.76	1.39	1.39
30.88	24.07	19.53	4.52	88.30	2.77	1.39	1.39
30.93	24.43	19.82	4.51	89.29	2.77	1.41	1.41
31.00	25.09	20.36	4.45	90.55	2.76	1.45	1.45
31.04	25.89	21.05	4.36	91.89	2.75	1.49	1.49
31.13	26.92	21.91	4.25	93.21	2.73	1.55	1.55
31.20	27.99	22.82	4.15	94.69	2.72	1.62	1.62
31.29	28.87	23.54	4.08	96.05	2.71	1.67	1.67
31.34	29.38	23.95	4.05	97.07	2.71	1.70	1.70
31.38	29.75	24.26	4.04	98.00	2.71	1.72	1.72
31.43	29.95	24.40	4.02	98.01	2.70	1.73	1.73
31.51	29.81	24.24	3.99	96.77	2.70	1.72	1.72

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
31.58	29.15	23.63	4.01	94.73	2.70	1.67	1.67
31.63	28.20	22.78	4.05	92.32	2.71	1.61	1.61
31.71	26.91	21.61	4.15	89.67	2.72	1.53	1.53
31.78	25.56	20.41	4.26	86.95	2.74	1.45	1.45
31.83	24.29	19.28	4.37	84.32	2.75	1.37	1.37
31.90	23.14	18.26	4.48	81.74	2.76	1.29	1.29
31.98	22.27	17.48	4.52	79.05	2.77	1.24	1.24
32.03	21.54	16.84	4.55	76.69	2.77	1.19	1.19
32.09	20.84	16.21	4.62	74.93	2.78	1.15	1.15
32.16	20.13	15.57	4.73	73.67	2.79	1.10	1.10
32.22	19.49	15.00	4.85	72.78	2.81	1.06	1.06
32.30	19.02	14.56	4.95	72.13	2.82	1.03	1.03
32.38	18.67	14.24	5.03	71.60	2.83	1.01	1.01
32.42	18.64	14.20	5.03	71.43	2.83	1.01	1.01
32.50	18.90	14.39	4.97	71.49	2.82	1.02	1.02
32.56	19.05	14.50	4.96	71.91	2.82	1.03	1.03
32.62	19.22	14.62	4.98	72.88	2.82	1.04	1.04
32.72	19.47	14.80	5.00	74.02	2.82	1.05	1.05
32.77	19.78	15.05	5.01	75.31	2.83	1.07	1.07
32.82	20.17	15.35	5.00	76.77	2.82	1.09	1.09
32.91	20.58	15.66	4.99	78.18	2.82	1.11	1.11
32.97	20.98	15.98	4.98	79.57	2.82	1.13	1.13
33.02	21.23	16.16	5.00	80.83	2.83	1.15	1.15
33.11	21.45	16.32	5.03	82.05	2.83	1.16	1.16
33.16	21.63	16.44	5.06	83.15	2.83	1.17	1.17
33.22	21.81	16.57	5.07	83.95	2.83	1.18	1.18
33.29	21.97	16.67	5.08	84.67	2.83	1.18	1.18
33.37	22.11	16.76	5.09	85.32	2.84	1.19	1.19
33.41	22.18	16.79	5.12	86.01	2.84	1.19	1.19
33.47	22.32	16.88	5.16	87.04	2.84	1.20	1.20
33.57	22.42	16.92	5.21	88.17	2.85	1.20	1.20
33.60	22.79	17.21	5.20	89.47	2.85	1.22	1.22
33.67	23.28	17.59	5.18	91.17	2.85	1.25	1.25
33.76	23.80	17.98	5.18	93.12	2.85	1.28	1.28
33.80	24.36	18.42	5.18	95.41	2.84	1.31	1.31
33.86	24.91	18.84	5.19	97.86	2.85	1.34	1.34
33.96	25.43	19.22	5.21	100.16	2.85	1.36	1.36
34.00	25.94	19.62	5.21	102.23	2.85	1.39	1.39
34.06	26.36	19.93	5.20	103.72	2.85	1.42	1.42
34.16	26.76	20.21	5.19	104.93	2.85	1.43	1.43
34.20	26.82	20.23	5.23	105.84	2.85	1.44	1.44
34.26	26.68	20.09	5.28	105.97	2.86	1.43	1.43
34.36	26.55	19.93	5.31	105.74	2.86	1.42	1.42
34.39	26.36	19.76	5.32	105.17	2.86	1.40	1.40
34.46	26.14	19.55	5.33	104.24	2.86	1.39	1.39
34.56	25.91	19.31	5.34	103.23	2.86	1.37	1.37
34.60	25.62	19.06	5.36	102.22	2.86	1.35	1.35
34.65	25.33	18.80	5.39	101.26	2.87	1.34	1.34

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
34.75	25.05	18.52	5.41	100.23	2.87	1.32	1.32
34.80	24.81	18.31	5.42	99.30	2.87	1.30	1.30
34.86	24.61	18.12	5.44	98.56	2.87	1.29	1.29
34.95	24.38	17.90	5.46	97.68	2.87	1.27	1.27
34.99	24.19	17.73	5.46	96.78	2.88	1.26	1.26
35.06	24.08	17.61	5.45	95.90	2.87	1.25	1.25
35.11	23.94	17.48	5.44	95.02	2.87	1.24	1.24
35.19	23.83	17.36	5.42	94.06	2.87	1.23	1.23
35.25	23.70	17.24	5.40	93.16	2.87	1.22	1.22
35.31	23.56	17.10	5.39	92.15	2.87	1.21	1.21
35.39	23.40	16.95	5.38	91.17	2.87	1.20	1.20
35.49	23.26	16.80	5.37	90.16	2.87	1.19	1.19
35.53	23.14	16.69	5.37	89.62	2.87	1.18	1.18
35.60	23.03	16.57	5.39	89.34	2.87	1.18	1.18
35.63	22.98	16.52	5.42	89.51	2.87	1.17	1.17
35.70	23.28	16.73	5.39	90.12	2.87	1.19	1.19
35.78	23.79	17.11	5.34	91.39	2.86	1.21	1.21
35.84	24.40	17.57	5.29	93.03	2.86	1.25	1.25
35.90	25.23	18.20	5.24	95.32	2.85	1.29	1.29
35.98	26.27	19.00	5.13	97.44	2.84	1.35	1.35
36.06	27.66	20.09	4.90	98.43	2.81	1.42	1.42
36.09	29.05	21.22	4.63	98.16	2.78	1.50	1.50
36.18	30.33	22.24	4.38	97.40	2.75	1.56	1.56
36.23	31.16	22.90	4.22	96.52	2.73	1.61	1.61
36.29	31.53	23.17	4.15	96.09	2.72	1.63	1.63
36.38	31.68	23.26	4.11	95.64	2.72	1.63	1.63
36.42	32.10	23.58	4.07	95.94	2.71	1.65	1.65
36.49	33.06	24.32	3.99	97.04	2.70	1.70	1.70
36.58	34.30	25.26	3.91	98.78	2.69	1.77	1.77
36.62	36.32	26.86	3.79	101.91	2.67	1.88	1.88
36.68	39.95	29.72	3.62	107.49	2.65	2.07	2.07
36.77	44.99	33.72	3.38	113.80	2.61	2.34	2.34
36.83	52.72	39.94	3.00	119.98	2.54	0.71	0.71
36.88	62.36	47.77	2.64	126.28	2.47	0.73	0.73
36.97	72.24	55.77	2.38	132.66	2.42	0.75	0.75
37.02	81.77	63.53	2.19	138.89	2.37	0.77	0.77
37.08	89.81	70.05	2.07	144.68	2.33	0.78	0.78
37.17	96.99	75.82	1.98	150.13	2.31	0.79	0.79
37.22	102.33	80.09	1.94	155.26	2.30	0.80	0.80
37.27	105.76	82.79	1.92	158.89	2.29	0.80	0.80
37.37	108.07	84.49	1.91	161.53	2.29	0.80	0.80
37.41	108.62	84.82	1.93	163.58	2.29	0.80	0.80
37.47	108.08	84.24	1.95	164.56	2.30	0.80	0.80
37.57	107.73	83.75	1.97	165.17	2.31	0.80	0.80
37.61	107.99	83.91	1.97	164.91	2.31	0.80	0.80
37.67	110.10	85.56	1.93	164.87	2.29	0.81	0.81
37.76	112.74	87.63	1.88	164.62	2.28	0.81	0.81
37.81	116.12	90.39	1.81	163.96	2.26	0.81	0.81

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
37.87	119.49	93.08	1.78	165.30	2.24	0.82	0.82
37.97	123.02	95.80	1.74	167.09	2.23	0.82	0.82
38.02	126.08	98.19	1.73	169.55	2.22	0.82	0.82
38.07	128.60	100.10	1.73	172.82	2.22	0.83	0.83
38.17	130.76	101.53	1.75	177.46	2.23	0.83	0.83
38.20	133.02	103.16	1.78	183.33	2.24	0.83	0.83
38.27	136.19	105.44	1.80	189.57	2.25	0.83	0.83
38.33	141.08	109.15	1.80	196.53	2.25	0.84	0.84
38.42	146.42	113.13	1.80	203.92	2.25	0.84	0.84
38.46	152.19	117.65	1.78	209.76	2.24	0.85	0.85
38.53	157.18	121.44	1.77	215.00	2.24	0.85	0.85
38.62	161.63	124.77	1.76	219.36	2.24	0.86	0.86
38.66	165.38	127.66	1.75	222.81	2.23	0.86	0.86
38.73	169.32	130.70	1.72	224.42	2.22	0.87	0.87
38.81	173.12	133.62	1.69	225.39	2.21	0.87	0.87
38.86	175.78	135.72	1.66	225.22	2.20	0.87	0.87
38.93	177.38	136.92	1.64	224.21	2.19	0.87	0.87
39.02	179.58	138.58	1.61	222.75	2.17	0.87	0.87
39.05	181.60	140.28	1.58	221.31	2.16	0.88	0.88
39.12	182.85	141.22	1.56	219.61	2.15	0.88	0.88
39.18	183.12	141.38	1.54	217.70	2.14	0.88	0.88
39.27	183.29	141.39	1.53	215.65	2.14	0.88	0.88
39.31	184.01	141.97	1.51	214.11	2.13	0.88	0.88
39.37	182.93	141.02	1.50	211.74	2.12	0.88	0.88
39.44	182.32	140.45	1.49	209.45	2.12	0.88	0.88
39.50	182.24	140.34	1.48	207.34	2.11	0.88	0.88
39.59	181.64	139.74	1.47	205.04	2.11	0.88	0.88
39.65	180.71	138.96	1.46	202.25	2.10	0.87	0.87
39.71	179.11	137.69	1.44	198.38	2.09	0.87	0.87
39.77	177.03	136.09	1.42	193.62	2.08	0.87	0.87
39.84	174.31	134.01	1.40	187.78	2.07	0.87	0.87
39.91	169.90	130.56	1.39	181.00	2.06	0.87	0.87
39.97	167.59	128.92	1.36	174.76	2.04	0.86	0.86
40.03	163.25	125.60	1.34	167.87	2.03	0.86	0.86
40.11	158.20	121.67	1.32	160.59	2.01	0.86	0.86
40.17	153.76	118.29	1.30	153.83	2.00	0.85	0.85
40.26	150.03	115.42	1.28	147.85	1.99	0.85	0.85
40.30	148.43	114.38	1.26	143.56	1.96	0.85	0.85
40.36	148.43	114.61	1.23	140.76	1.94	0.85	0.85
40.45	149.44	115.54	1.21	139.38	1.92	0.85	0.85
40.49	150.84	116.84	1.19	138.73	1.90	0.85	0.85
40.57	151.01	117.01	1.18	137.62	1.89	0.85	0.85
40.62	151.62	117.60	1.16	136.87	1.87	0.85	0.85
40.70	151.46	117.45	1.16	136.06	1.87	0.85	0.85
40.76	150.02	116.16	1.16	134.96	1.87	0.85	0.85
40.86	148.25	114.50	1.17	133.87	1.88	0.85	0.85
40.89	146.27	112.74	1.18	133.07	1.89	0.84	0.84
40.95	144.41	110.99	1.19	132.55	1.91	0.84	0.84

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
41.03	143.07	109.63	1.21	132.49	1.92	0.84	0.84
41.11	142.22	108.67	1.22	132.84	1.93	0.84	0.84
41.16	141.92	108.15	1.24	134.04	1.95	0.84	0.84
41.23	141.98	107.87	1.26	135.72	1.97	0.84	0.84
41.29	142.10	107.69	1.27	137.23	1.98	0.84	0.84
41.35	142.20	107.53	1.29	138.47	1.99	0.84	0.84
41.41	142.21	107.30	1.30	139.67	2.00	0.84	0.84
41.49	142.08	106.91	1.32	140.92	2.01	0.84	0.84
41.56	141.57	106.15	1.35	142.81	2.03	0.84	0.84
41.64	140.45	104.86	1.38	144.72	2.06	0.83	0.83
41.69	138.39	102.85	1.43	146.71	2.08	0.83	0.83
41.73	135.34	100.06	1.49	148.72	2.12	0.83	0.83
41.84	131.91	96.89	1.55	150.57	2.15	0.82	0.82
41.89	128.64	93.97	1.63	152.81	2.18	0.82	0.82
41.98	126.30	91.79	1.69	154.98	2.21	0.82	0.82
42.04	124.44	90.08	1.74	156.76	2.23	0.81	0.81
42.09	123.04	88.81	1.78	157.96	2.24	0.81	0.81
42.16	122.85	88.56	1.78	157.62	2.24	0.81	0.81
42.24	123.41	88.94	1.76	156.37	2.24	0.81	0.81
42.28	124.88	90.15	1.71	154.54	2.22	0.81	0.81
42.33	127.01	91.92	1.66	152.37	2.20	0.82	0.82
42.39	129.14	93.69	1.60	150.19	2.17	0.82	0.82
42.47	130.67	94.96	1.56	147.85	2.15	0.82	0.82
42.53	130.88	95.17	1.53	145.93	2.14	0.82	0.82
42.59	130.36	94.72	1.53	144.89	2.14	0.82	0.82
42.66	128.15	92.84	1.55	144.24	2.15	0.82	0.82
42.73	125.51	90.55	1.60	144.49	2.17	0.81	0.81
42.83	121.32	86.92	1.67	145.58	2.20	0.81	0.81
42.88	116.08	82.53	1.79	147.81	2.25	0.80	0.80
42.93	110.69	78.01	1.93	150.89	2.30	0.79	0.79
42.99	105.22	73.48	2.10	154.56	2.35	0.78	0.78
43.07	100.21	69.35	2.28	158.34	2.39	0.78	0.78
43.14	95.63	65.62	2.46	161.52	2.44	0.77	0.77
43.19	90.87	61.88	2.64	163.11	2.47	0.76	0.76
43.25	86.68	58.66	2.77	162.37	2.50	0.75	0.75
43.34	81.82	54.96	2.91	160.19	2.53	0.75	0.75
43.39	77.67	51.89	3.02	156.69	2.55	0.74	0.74
43.45	73.11	48.56	3.12	151.56	2.57	0.73	0.73
43.54	68.41	45.14	3.22	145.56	2.58	0.72	0.72
43.59	63.67	41.76	3.32	138.68	2.60	0.71	0.71
43.64	58.08	37.78	3.46	130.82	2.62	2.57	2.57
43.74	52.40	33.73	3.63	122.45	2.65	2.31	2.31
43.78	46.98	29.92	3.82	114.29	2.68	2.05	2.05
43.83	42.15	26.52	4.06	107.56	2.71	1.83	1.83
43.94	37.81	23.43	4.34	101.74	2.75	1.62	1.62
43.98	34.06	20.82	4.64	96.56	2.78	1.45	1.45
44.04	31.95	19.35	4.77	92.25	2.80	1.35	1.35
44.14	30.33	18.23	4.84	88.21	2.81	1.27	1.27

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
44.17	29.10	17.40	4.87	84.75	2.81	1.22	1.22
44.23	28.76	17.17	4.84	83.14	2.81	1.20	1.20
44.33	28.68	17.09	4.82	82.35	2.80	1.19	1.19
44.37	29.02	17.32	4.74	82.18	2.80	1.21	1.21
44.44	29.52	17.63	4.74	83.55	2.79	1.23	1.23
44.53	30.09	17.96	4.77	85.75	2.80	1.25	1.25
44.58	30.72	18.34	4.83	88.54	2.81	1.28	1.28
44.64	31.59	18.87	4.87	91.92	2.81	1.32	1.32
44.73	33.07	19.81	4.84	95.80	2.81	1.38	1.38
44.78	34.76	20.91	4.78	100.00	2.80	1.46	1.46
44.82	36.82	22.27	4.68	104.27	2.79	1.55	1.55
44.90	39.32	23.92	4.55	108.78	2.77	1.66	1.66
44.97	41.98	25.69	4.42	113.46	2.76	1.78	1.78
45.03	45.07	27.77	4.22	117.33	2.73	1.92	1.92
45.09	48.02	29.77	4.05	120.66	2.71	2.05	2.05
45.17	50.82	31.66	3.90	123.53	2.69	2.17	2.17
45.22	53.50	33.49	3.77	126.23	2.67	2.29	2.29
45.29	55.93	35.13	3.66	128.50	2.65	2.40	2.40
45.38	58.32	36.73	3.55	130.31	2.63	2.50	2.50
45.42	60.57	38.30	3.43	131.40	2.62	2.60	2.60
45.50	62.33	39.50	3.34	131.76	2.60	2.67	2.67
45.57	63.62	40.38	3.27	131.88	2.59	0.71	0.71
45.62	64.35	40.86	3.23	131.80	2.58	0.71	0.71
45.69	64.79	41.14	3.19	131.34	2.58	0.71	0.71
45.77	65.03	41.27	3.17	130.71	2.57	0.71	0.71
45.82	64.64	40.97	3.17	129.68	2.57	0.71	0.71
45.88	63.43	40.09	3.20	128.34	2.58	0.71	0.71
45.97	61.81	38.90	3.26	126.83	2.59	0.70	0.70
46.02	59.45	37.20	3.37	125.35	2.61	2.51	2.51
46.10	56.51	35.08	3.54	124.07	2.63	2.38	2.38
46.17	53.60	32.99	3.72	122.72	2.66	2.25	2.25
46.21	50.91	31.09	3.90	121.40	2.69	2.13	2.13
46.27	48.55	29.43	4.07	119.86	2.71	2.02	2.02
46.36	46.40	27.90	4.24	118.19	2.73	1.92	1.92
46.42	44.50	26.58	4.39	116.57	2.75	1.84	1.84
46.46	42.82	25.41	4.53	115.16	2.77	1.76	1.76
46.56	41.38	24.39	4.67	113.82	2.79	1.70	1.70
46.61	40.40	23.70	4.76	112.81	2.80	1.65	1.65
46.66	39.90	23.35	4.80	112.07	2.80	1.63	1.63
46.74	39.54	23.07	4.85	111.78	2.81	1.61	1.61
46.81	39.12	22.74	4.92	111.81	2.82	1.59	1.59
46.87	38.64	22.38	5.02	112.27	2.83	1.57	1.57
46.94	38.63	22.33	5.05	112.77	2.83	1.56	1.56
47.01	38.71	22.33	5.08	113.37	2.83	1.56	1.56
47.06	38.83	22.38	5.10	114.02	2.84	1.57	1.57
47.12	39.01	22.46	5.10	114.54	2.84	1.57	1.57
47.19	39.29	22.62	5.07	114.67	2.83	1.58	1.58
47.25	39.58	22.79	5.02	114.47	2.83	1.59	1.59

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
47.34	39.73	22.86	4.98	113.86	2.82	1.60	1.60
47.39	39.72	22.85	4.95	113.08	2.82	1.60	1.60
47.44	39.77	22.88	4.90	112.17	2.81	1.60	1.60
47.54	39.28	22.52	4.93	111.05	2.82	1.57	1.57
47.59	38.71	22.13	4.97	110.09	2.82	1.55	1.55
47.65	38.41	21.91	4.99	109.31	2.82	1.53	1.53
47.74	37.95	21.57	5.04	108.75	2.83	1.51	1.51
47.81	37.56	21.28	5.10	108.54	2.84	1.49	1.49
47.85	37.47	21.20	5.12	108.59	2.84	1.48	1.48
47.94	37.60	21.25	5.12	108.69	2.84	1.49	1.49
47.98	37.97	21.46	5.09	109.34	2.84	1.50	1.50
48.04	38.79	21.97	5.03	110.49	2.83	1.54	1.54
48.13	39.93	22.66	4.94	112.01	2.82	1.58	1.58
48.17	41.38	23.58	4.83	113.87	2.81	1.64	1.64
48.24	42.73	24.42	4.75	116.08	2.80	1.70	1.70
48.32	44.25	25.35	4.67	118.31	2.79	1.76	1.76
48.37	46.09	26.53	4.55	120.75	2.77	1.84	1.84
48.44	48.52	28.08	4.39	123.16	2.75	1.94	1.94
48.53	51.56	30.04	4.17	125.39	2.72	2.06	2.06
48.56	54.96	32.30	3.94	127.24	2.69	2.20	2.20
48.64	59.29	35.19	3.66	128.73	2.65	2.38	2.38
48.72	64.04	38.37	3.40	130.28	2.61	2.58	2.58
48.78	69.67	42.21	3.12	131.70	2.57	0.71	0.71
48.83	76.00	46.56	2.86	133.11	2.52	0.73	0.73
48.90	82.27	50.88	2.65	134.67	2.48	0.74	0.74
48.97	87.90	54.74	2.50	136.96	2.44	0.75	0.75
49.03	93.07	58.27	2.40	139.62	2.42	0.75	0.75
49.12	97.81	61.45	2.32	142.53	2.40	0.76	0.76
49.16	102.84	64.88	2.24	145.62	2.38	0.77	0.77
49.23	107.68	68.15	2.18	148.54	2.37	0.77	0.77
49.31	113.16	71.90	2.10	151.31	2.35	0.78	0.78
49.36	118.20	75.37	2.04	153.88	2.33	0.79	0.79
49.43	123.66	79.14	1.97	156.19	2.31	0.79	0.79
49.52	130.09	83.63	1.90	158.50	2.28	0.80	0.80
49.58	137.03	88.58	1.81	160.30	2.25	0.81	0.81
49.62	143.61	93.36	1.73	161.63	2.23	0.82	0.82
49.71	149.84	98.02	1.64	160.96	2.19	0.82	0.82
49.78	155.24	102.19	1.56	159.69	2.15	0.83	0.83
49.81	159.41	105.51	1.50	158.62	2.13	0.83	0.83
49.88	162.01	107.57	1.46	157.54	2.11	0.84	0.84
49.97	163.35	108.59	1.44	156.61	2.09	0.84	0.84
50.00	161.66	107.39	1.44	155.04	2.09	0.84	0.84
50.07	160.26	106.28	1.45	153.97	2.10	0.84	0.84
50.14	158.20	104.64	1.46	153.02	2.10	0.83	0.83
50.22	154.55	101.76	1.49	151.80	2.12	0.83	0.83
50.27	149.22	97.52	1.56	151.87	2.15	0.82	0.82
50.35	143.10	92.63	1.65	152.47	2.19	0.82	0.82
50.40	135.60	86.89	1.76	152.50	2.23	0.81	0.81

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
50.47	127.45	80.82	1.87	151.35	2.28	0.80	0.80
50.55	119.71	75.19	1.98	149.24	2.31	0.79	0.79
50.59	114.02	71.17	2.06	146.72	2.33	0.78	0.78
50.66	106.49	65.86	2.18	143.35	2.37	0.77	0.77
50.75	98.69	60.41	2.31	139.61	2.40	0.76	0.76
50.79	91.04	55.16	2.46	135.79	2.44	0.75	0.75
50.86	83.73	50.19	2.62	131.58	2.47	0.73	0.73
50.94	76.84	45.52	2.79	127.20	2.51	0.72	0.72
50.99	70.78	41.49	2.96	122.83	2.54	0.71	0.71
51.05	65.41	37.95	3.12	118.60	2.57	0.70	0.70
51.14	60.12	34.47	3.31	114.18	2.60	0.69	0.69
51.18	54.60	30.89	3.55	109.70	2.64	2.07	2.07
51.25	49.39	27.54	3.79	104.45	2.67	1.86	1.86
51.34	44.37	24.36	4.04	98.37	2.71	1.66	1.66
51.41	40.71	22.11	4.16	91.95	2.72	1.51	1.51
51.44	38.40	20.75	4.14	85.82	2.72	1.42	1.42
51.52	36.49	19.65	4.05	79.66	2.71	1.34	1.34
51.67	35.22	18.94	3.91	74.02	2.69	1.28	1.28
51.70	34.13	18.33	3.82	70.04	2.68	1.24	1.24
51.75	33.21	17.79	3.81	67.69	2.67	0.26	1.20
51.78	32.42	17.30	3.82	66.11	2.68	0.25	1.17
51.88	32.20	17.13	3.85	65.99	2.68	0.27	1.16
51.92	32.47	17.26	3.89	67.16	2.69	0.28	1.17
51.99	32.74	17.38	3.94	68.52	2.69	0.32	1.18
52.04	32.85	17.38	4.04	70.20	2.71	1.18	1.18
52.14	32.83	17.29	4.15	71.79	2.72	1.18	1.18
52.19	32.56	17.06	4.29	73.12	2.74	1.17	1.17
52.26	31.97	16.63	4.44	73.88	2.76	1.14	1.14
52.33	31.02	16.00	4.61	73.79	2.78	1.10	1.10
52.38	29.91	15.28	4.80	73.35	2.80	1.06	1.06
52.43	28.33	14.28	5.07	72.33	2.83	1.00	1.00
52.51	26.65	13.23	5.35	70.78	2.86	0.93	0.93
52.58	25.06	12.25	5.62	68.88	2.89	0.30	0.86
52.63	23.61	11.38	5.85	66.51	2.91	0.28	0.81
52.69	22.29	10.60	6.04	64.03	2.93	0.26	0.75
52.77	21.16	9.93	6.20	61.57	2.95	0.23	0.71
52.83	20.40	9.49	6.27	59.49	2.96	0.21	0.68
52.90	19.92	9.22	6.29	57.98	2.96	0.19	0.66
52.99	19.57	9.02	6.27	56.56	2.96	0.18	0.64
53.05	19.39	8.91	6.22	55.38	2.95	0.18	0.64
53.10	19.24	8.82	6.19	54.61	2.95	0.17	0.63
53.16	19.09	8.74	6.18	53.96	2.95	0.17	0.62
53.25	18.99	8.67	6.17	53.51	2.95	0.16	0.62
53.29	18.94	8.64	6.16	53.22	2.95	0.16	0.62
53.38	18.91	8.62	6.12	52.77	2.94	0.16	0.61
53.44	18.88	8.60	6.09	52.39	2.94	0.16	0.61
53.50	18.85	8.58	6.07	52.09	2.94	0.16	0.61
53.55	18.80	8.54	6.07	51.85	2.94	0.16	0.61

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
53.64	18.73	8.49	6.09	51.68	2.94	0.15	0.60
53.72	18.66	8.44	6.10	51.50	2.94	0.15	0.60
53.74	18.66	8.44	6.09	51.43	2.94	0.15	0.60
53.82	18.74	8.47	6.07	51.42	2.94	0.15	0.60
53.90	18.83	8.51	6.06	51.55	2.94	0.15	0.61
53.94	18.95	8.58	6.05	51.92	2.94	0.15	0.61
54.01	19.10	8.65	6.05	52.34	2.94	0.15	0.62
54.09	19.25	8.72	6.05	52.76	2.94	0.16	0.62
54.19	19.41	8.79	6.04	53.10	2.93	0.17	0.63
54.24	19.57	8.88	6.01	53.39	2.93	0.17	0.63
54.29	19.71	8.95	5.99	53.60	2.93	0.18	0.64
54.35	19.78	8.98	5.97	53.59	2.93	0.18	0.64
54.44	19.79	8.98	5.94	53.36	2.92	0.17	0.64
54.49	19.78	8.98	5.90	53.01	2.92	0.17	0.64
54.53	19.74	8.96	5.87	52.57	2.92	0.17	0.63
54.63	19.69	8.92	5.83	52.05	2.91	0.15	0.63
54.68	19.64	8.90	5.79	51.53	2.91	0.14	0.63
54.74	19.58	8.86	5.76	51.08	2.91	0.14	0.63
54.83	19.56	8.85	5.73	50.69	2.90	0.14	0.63
54.88	19.53	8.82	5.73	50.52	2.90	0.14	0.62
54.94	19.53	8.81	5.77	50.80	2.91	0.14	0.62
55.03	19.54	8.79	5.83	51.22	2.91	0.14	0.62
55.07	19.56	8.78	5.89	51.71	2.92	0.14	0.62
55.13	19.56	8.76	5.97	52.25	2.93	0.15	0.62
55.23	19.57	8.74	6.04	52.78	2.93	0.17	0.62
55.28	19.59	8.73	6.11	53.32	2.94	0.17	0.62
55.32	19.63	8.73	6.17	53.85	2.95	0.18	0.62
55.42	19.66	8.72	6.21	54.15	2.95	0.18	0.62
55.50	19.75	8.77	6.19	54.28	2.95	0.18	0.63
55.53	19.81	8.80	6.15	54.15	2.94	0.18	0.63
55.58	19.82	8.80	6.14	54.07	2.94	0.18	0.63
55.66	19.80	8.78	6.13	53.84	2.94	0.17	0.63
55.73	19.80	8.79	6.03	53.02	2.93	0.16	0.63
55.78	19.97	8.86	6.11	54.17	2.94	0.16	0.63
55.86	20.32	9.02	6.23	56.19	2.95	0.16	0.64
55.93	20.98	9.35	6.30	58.91	2.96	0.16	0.67
55.97	22.90	10.37	6.15	63.82	2.94	0.12	0.74
56.08	26.02	12.11	5.74	69.47	2.90	0.27	0.86
56.12	30.92	14.96	5.04	75.34	2.83	1.04	1.04
56.17	39.52	20.15	4.02	81.08	2.70	1.36	1.36
56.28	48.92	25.93	3.32	86.19	2.60	0.65	0.65
56.32	59.00	32.27	2.83	91.38	2.51	0.68	0.68
56.37	69.47	39.03	2.44	95.22	2.43	0.70	0.70
56.47	79.91	45.84	2.16	98.82	2.36	0.72	0.72
56.52	90.20	52.68	1.95	102.49	2.30	0.74	0.74
56.57	98.80	58.43	1.81	105.88	2.25	0.75	0.75
56.67	105.68	62.98	1.73	109.00	2.23	0.76	0.76
56.72	109.54	65.45	1.71	111.70	2.22	0.77	0.77

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
56.78	108.92	64.78	1.75	113.30	2.23	0.77	0.77
56.87	106.09	62.58	1.83	114.28	2.26	0.76	0.76
56.91	101.69	59.38	1.94	114.91	2.30	0.76	0.76
56.97	94.90	54.58	2.11	115.36	2.35	0.75	0.75
57.03	87.46	49.42	2.35	116.07	2.41	0.73	0.73
57.11	79.60	44.05	2.66	117.05	2.48	0.72	0.72
57.17	72.07	39.08	3.00	117.09	2.54	0.70	0.70
57.26	64.98	34.48	3.36	115.99	2.61	2.28	2.28
57.32	58.98	30.71	3.71	114.08	2.66	2.05	2.05
57.35	53.23	27.19	4.10	111.44	2.71	1.84	1.84
57.42	48.56	24.36	4.45	108.40	2.76	1.66	1.66
57.51	44.62	22.00	4.78	105.07	2.80	1.52	1.52
57.55	42.37	20.71	4.91	101.63	2.81	1.43	1.43
57.62	40.27	19.53	5.00	97.64	2.82	1.35	1.35
57.71	38.27	18.41	5.07	93.40	2.83	1.28	1.28
57.78	36.28	17.29	5.18	89.53	2.84	1.20	1.20
57.82	34.25	16.16	5.32	86.01	2.86	1.13	1.13
57.90	32.33	15.08	5.47	82.51	2.88	1.06	1.06
57.96	30.91	14.30	5.53	79.14	2.88	1.01	1.01
58.01	29.77	13.70	5.54	75.90	2.88	0.96	0.96
58.11	28.76	13.15	5.54	72.86	2.88	0.92	0.92
58.15	27.83	12.67	5.53	70.01	2.88	0.89	0.89
58.21	27.11	12.29	5.50	67.59	2.88	0.29	0.86
58.31	26.42	11.92	5.46	65.17	2.88	0.26	0.84
58.35	25.74	11.58	5.43	62.82	2.87	0.25	0.81
58.42	25.07	11.21	5.45	61.05	2.87	0.22	0.79
58.50	24.42	10.86	5.47	59.40	2.88	0.20	0.76
58.55	23.79	10.51	5.53	58.05	2.88	0.19	0.74
58.61	23.23	10.19	5.58	56.92	2.89	0.19	0.72
58.70	22.64	9.86	5.67	55.93	2.90	0.18	0.70
58.75	22.12	9.56	5.79	55.31	2.91	0.18	0.68
58.81	21.76	9.34	5.89	55.01	2.92	0.18	0.66
58.89	21.58	9.22	5.95	54.89	2.93	0.17	0.65
58.95	21.52	9.18	5.99	54.99	2.93	0.17	0.65
59.00	21.65	9.23	5.99	55.30	2.93	0.18	0.66
59.10	21.83	9.32	5.97	55.60	2.93	0.18	0.66
59.15	22.01	9.40	5.95	55.91	2.92	0.19	0.67
59.20	22.17	9.48	5.94	56.28	2.92	0.20	0.67
59.28	22.35	9.57	5.92	56.65	2.92	0.21	0.68
59.35	22.51	9.62	5.96	57.35	2.93	0.20	0.68
59.38	22.75	9.74	5.98	58.18	2.93	0.20	0.69
59.46	23.08	9.90	5.94	58.82	2.92	0.20	0.70
59.53	23.71	10.25	5.78	59.22	2.91	0.20	0.72
59.59	24.44	10.68	5.53	59.03	2.88	0.24	0.75
59.67	25.08	11.05	5.33	58.93	2.86	0.25	0.77
59.73	25.65	11.38	5.17	58.87	2.84	0.24	0.79
59.79	26.13	11.64	5.08	59.15	2.83	0.22	0.81
59.89	26.74	11.97	4.99	59.70	2.82	0.18	0.83

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
59.94	27.35	12.30	4.93	60.60	2.82	0.19	0.85
59.99	28.37	12.84	4.85	62.31	2.81	0.19	0.89
60.07	30.97	14.49	4.10	59.42	2.71	0.22	0.98
60.12	34.29	16.66	3.39	56.43	2.61	0.25	1.09
60.19	40.56	20.76	2.59	53.74	2.46	0.07	0.63
60.25	48.38	26.09	1.98	51.69	2.31	0.06	0.65
60.33	55.12	30.89	1.64	50.62	2.19	0.06	0.67
60.38	61.17	35.45	1.00	35.45	2.08	0.04	0.69
60.48	67.60	40.50	1.00	40.50	1.96	0.04	0.71
60.53	77.07	48.20	1.00	48.20	1.81	0.06	0.73
60.61	80.93	-1.00	1.00	-1.00	-1.00	N/A	N/A
60.63	82.24	-1.00	1.00	-1.00	-1.00	N/A	N/A

Abbreviations

q_t:	Total cone resistance
K_c:	Cone resistance correction factor due to fines
$Q_{tn,cs}$:	Adjusted and corrected cone resistance due to fines
I_c:	Soil behavior type index
$S_{u(liq)}/\sigma'_v$:	Calculated liquefied undrained strength ratio
$S_{u(peak)}/\sigma'_v$:	Calculated peak undrained strength ratio

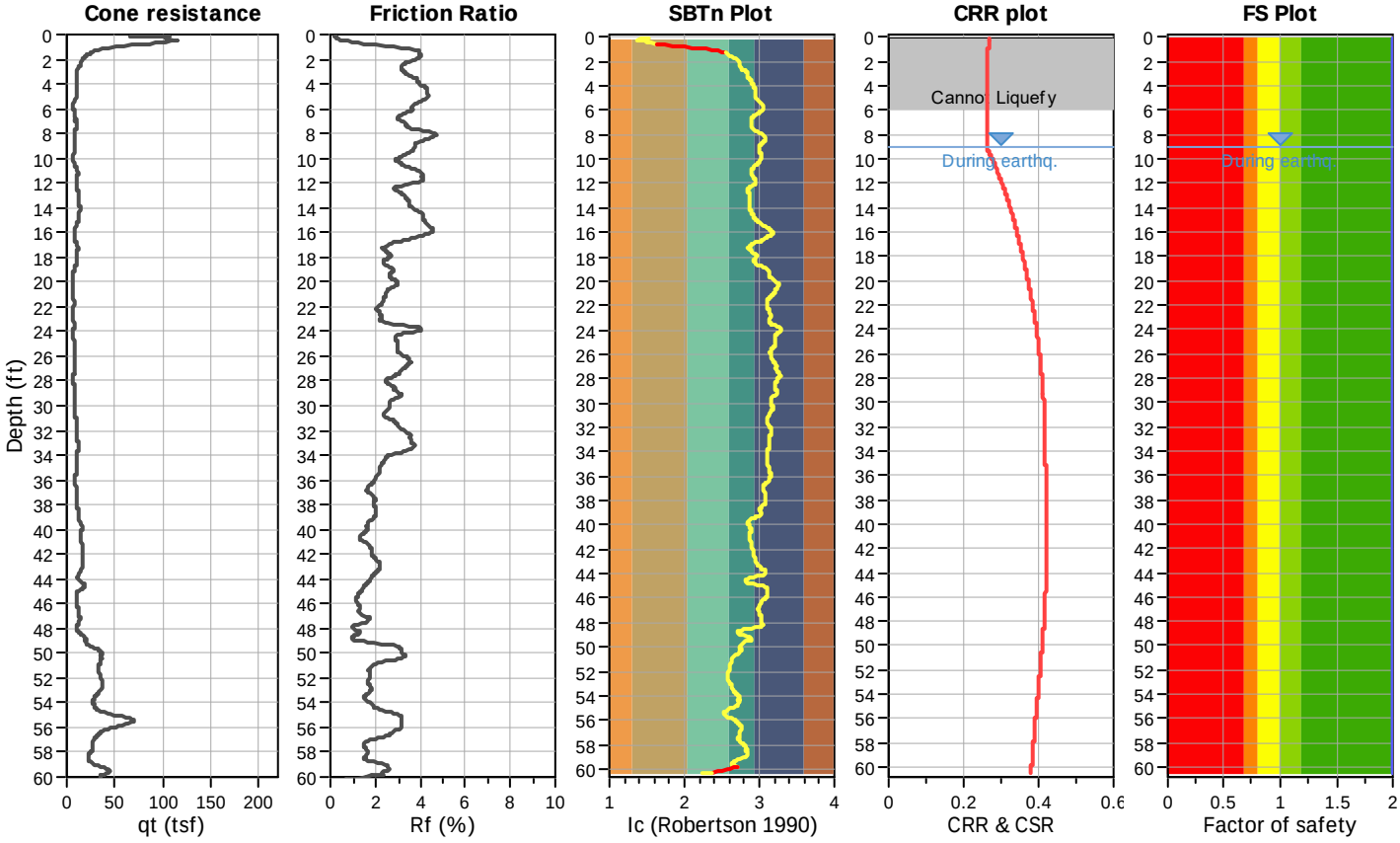
LIQUEFACTION ANALYSIS REPORT

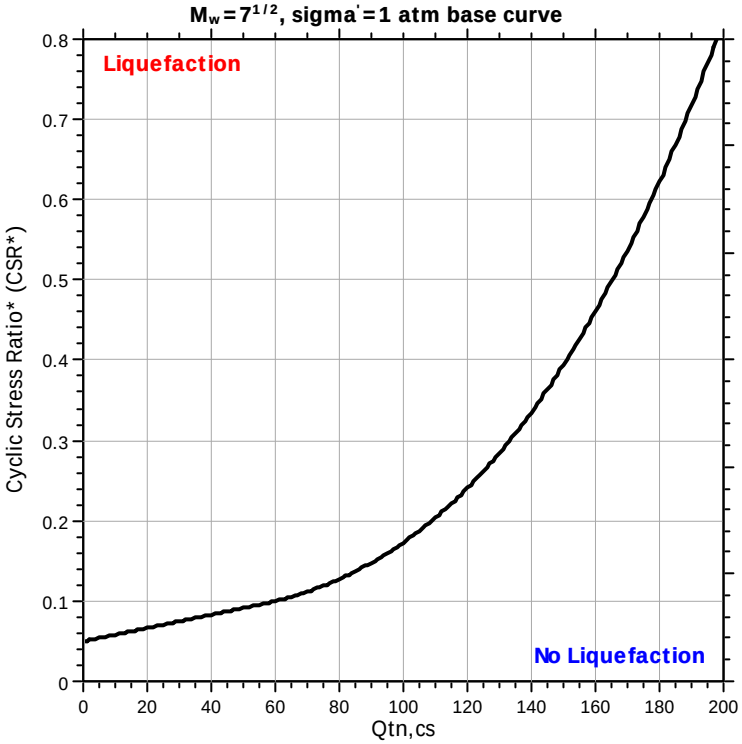
Project title : W1301-06-01 **Location : Perry Street**

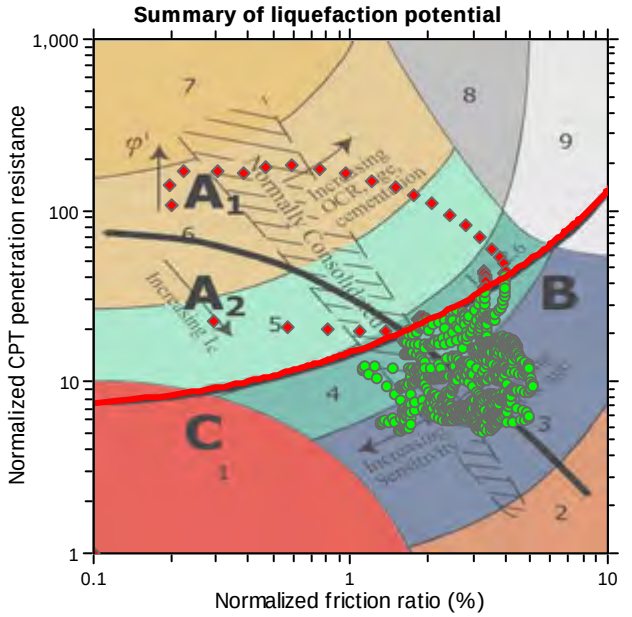
CPT file : CPT-4

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	12.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	9.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	.	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	6.68	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

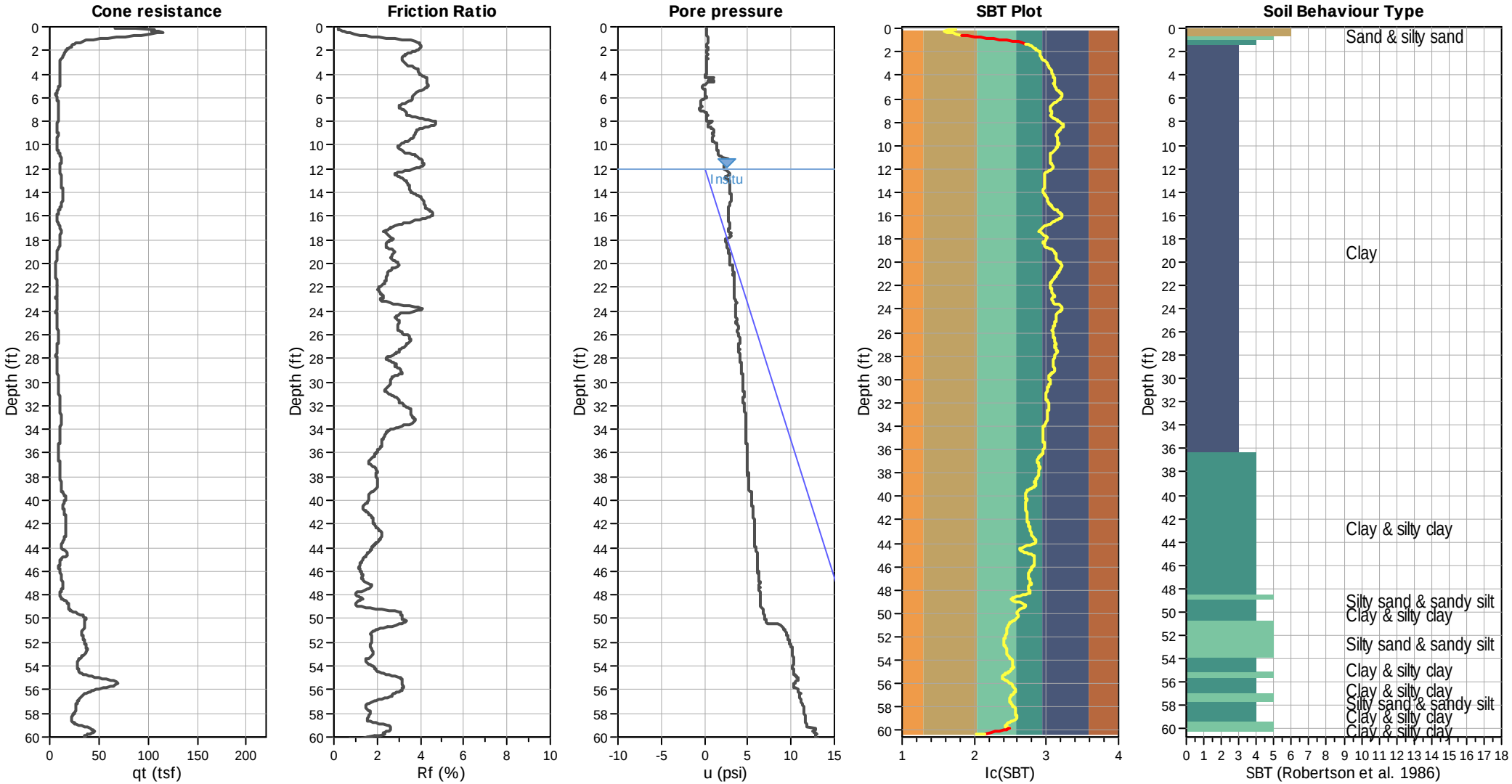






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



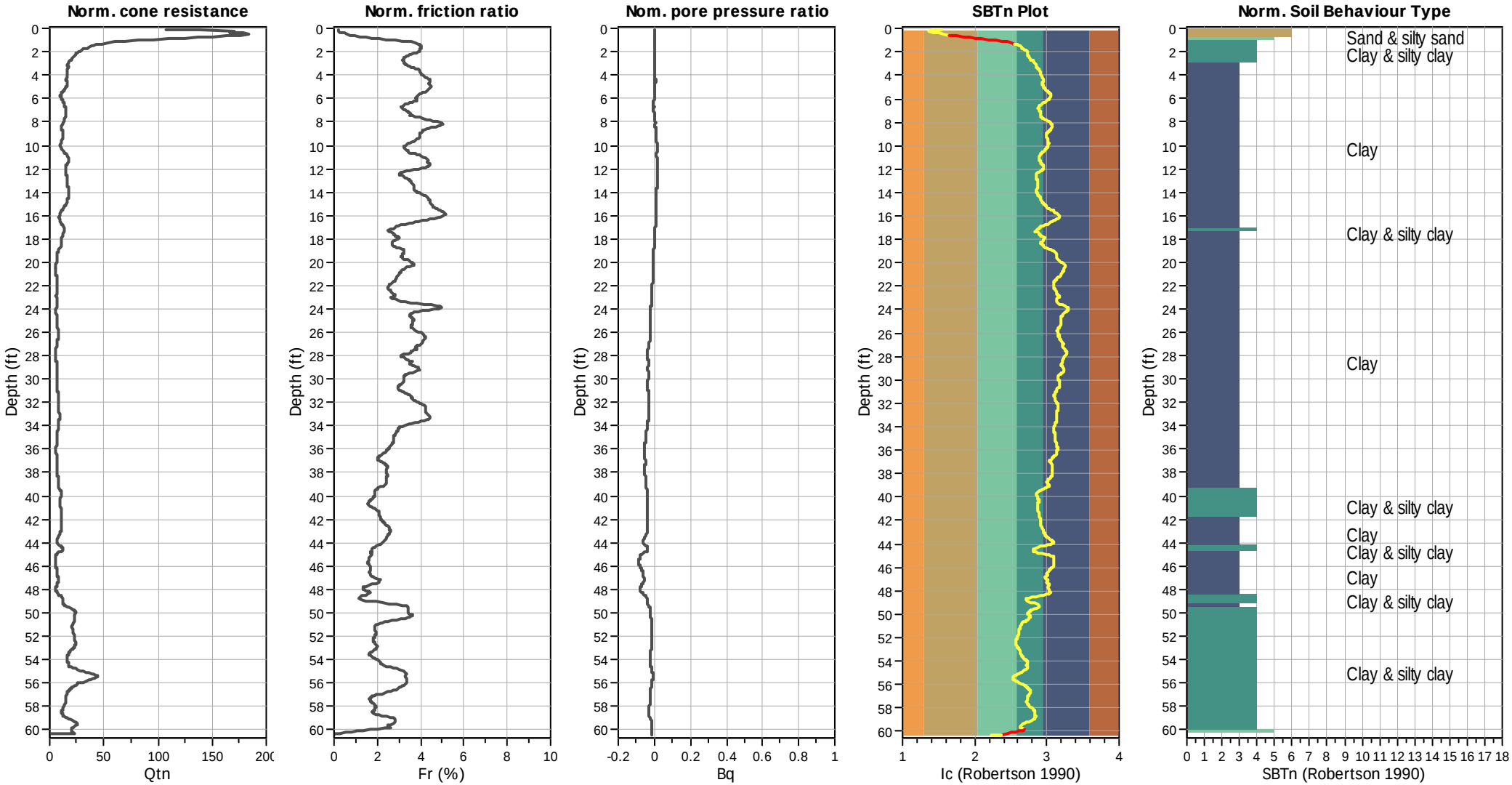
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	9.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	.	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.68	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	12.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

CPT basic interpretation plots (normalized)



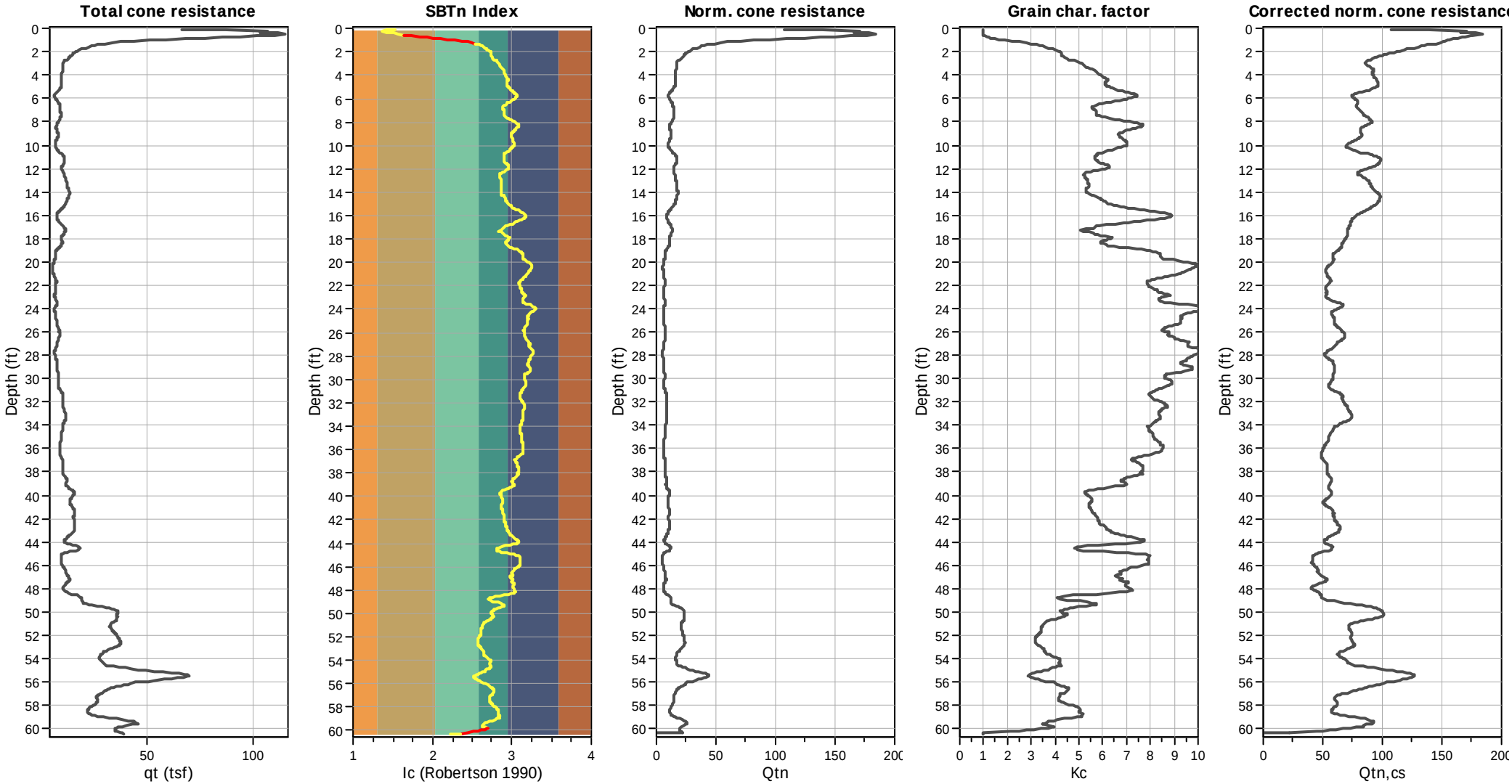
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	9.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	.	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.68	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	12.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

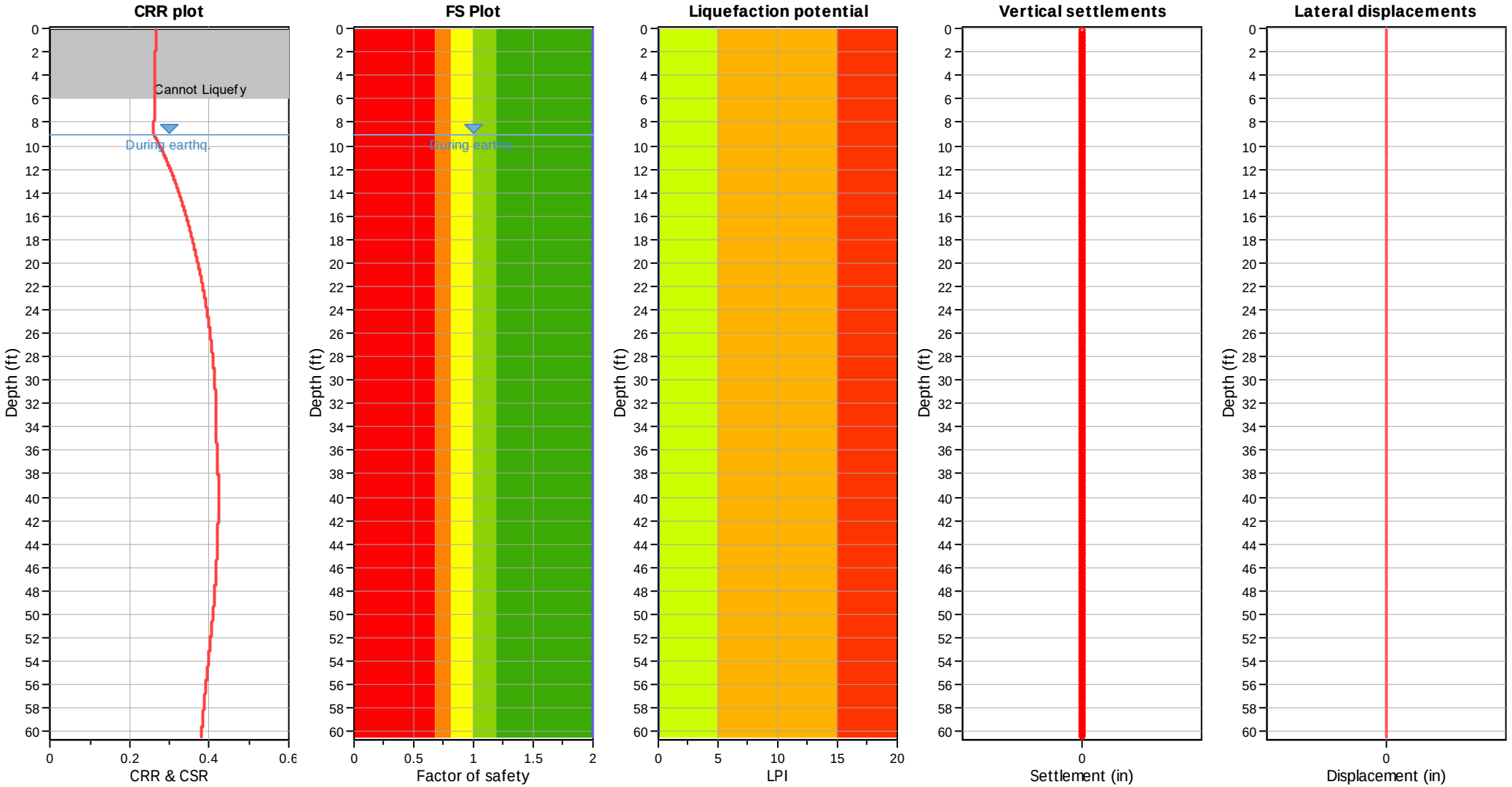
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	9.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	.	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.68	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	12.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	9.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	.	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.68	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	12.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

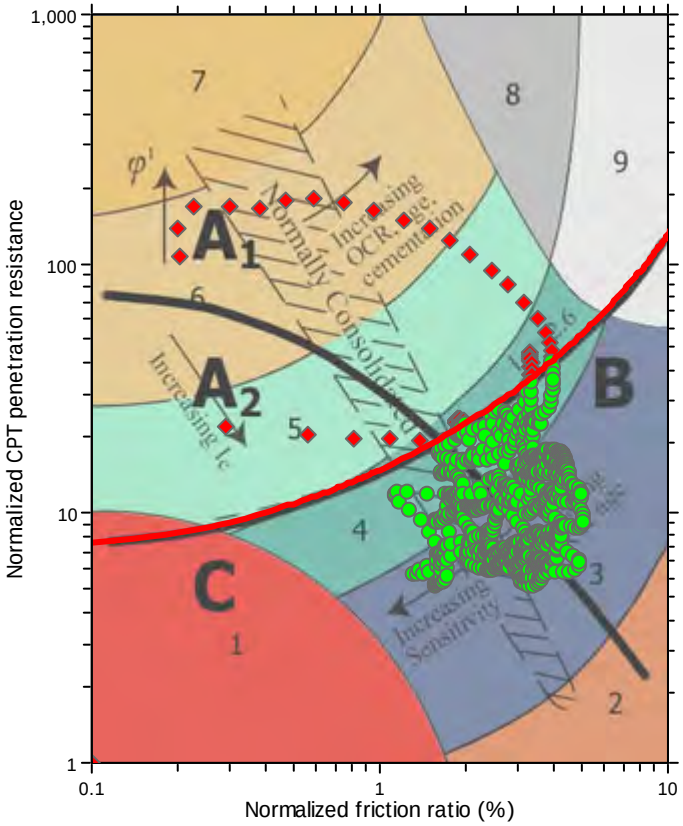
F.S. color scheme

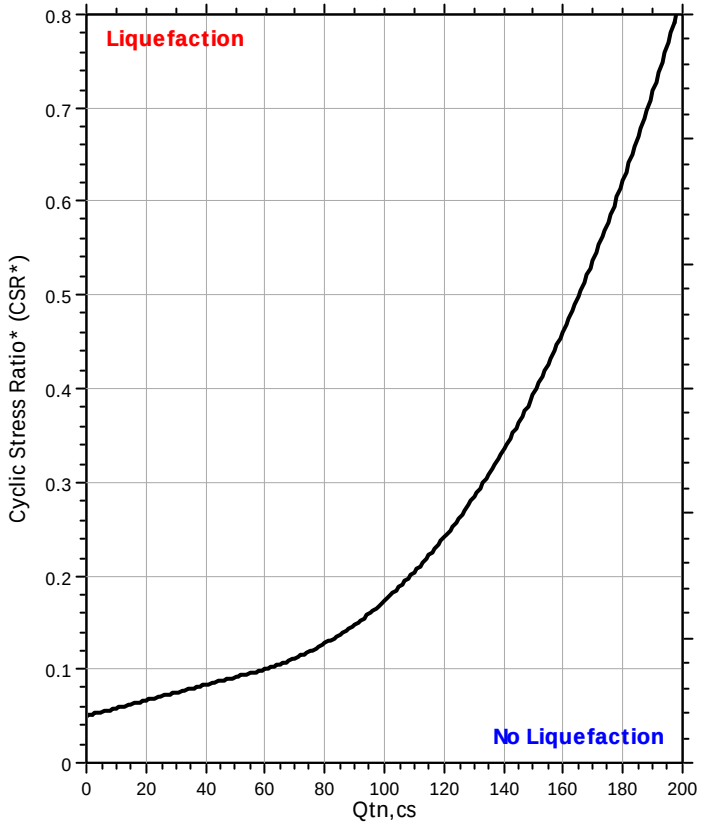
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

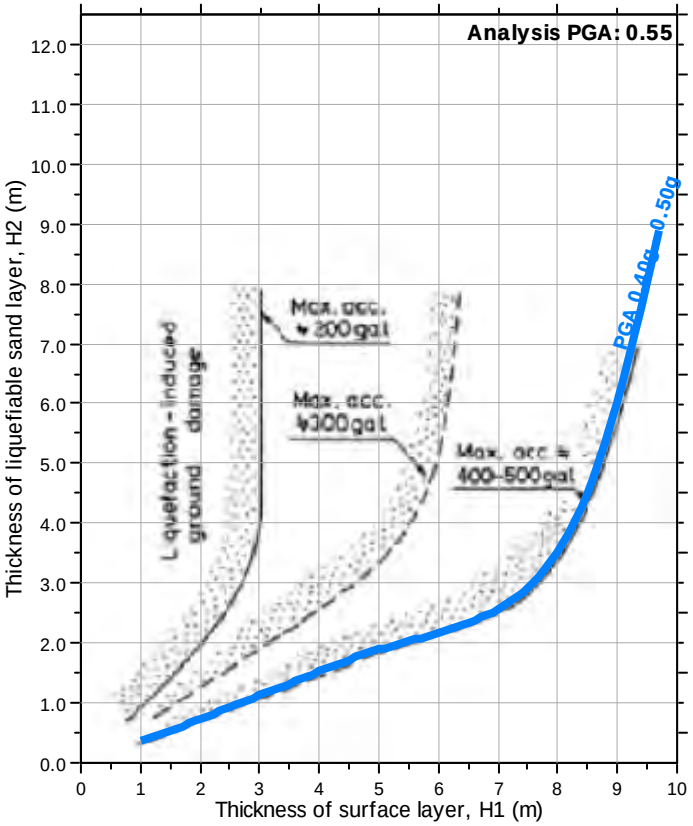
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



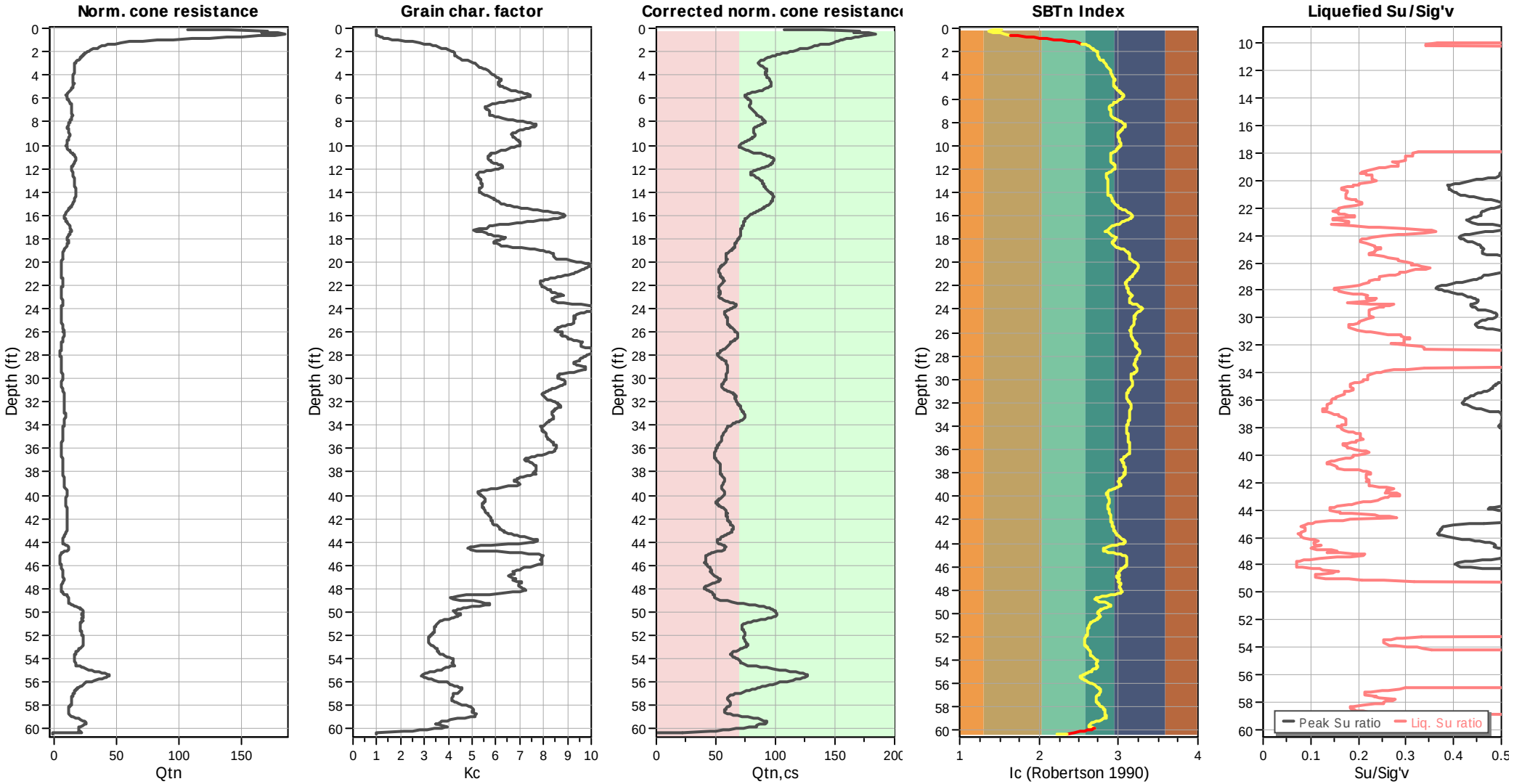




Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	9.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	.	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.68	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	12.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

Check for strength loss plots (Robertson (2010))



Input parameters and analysis data

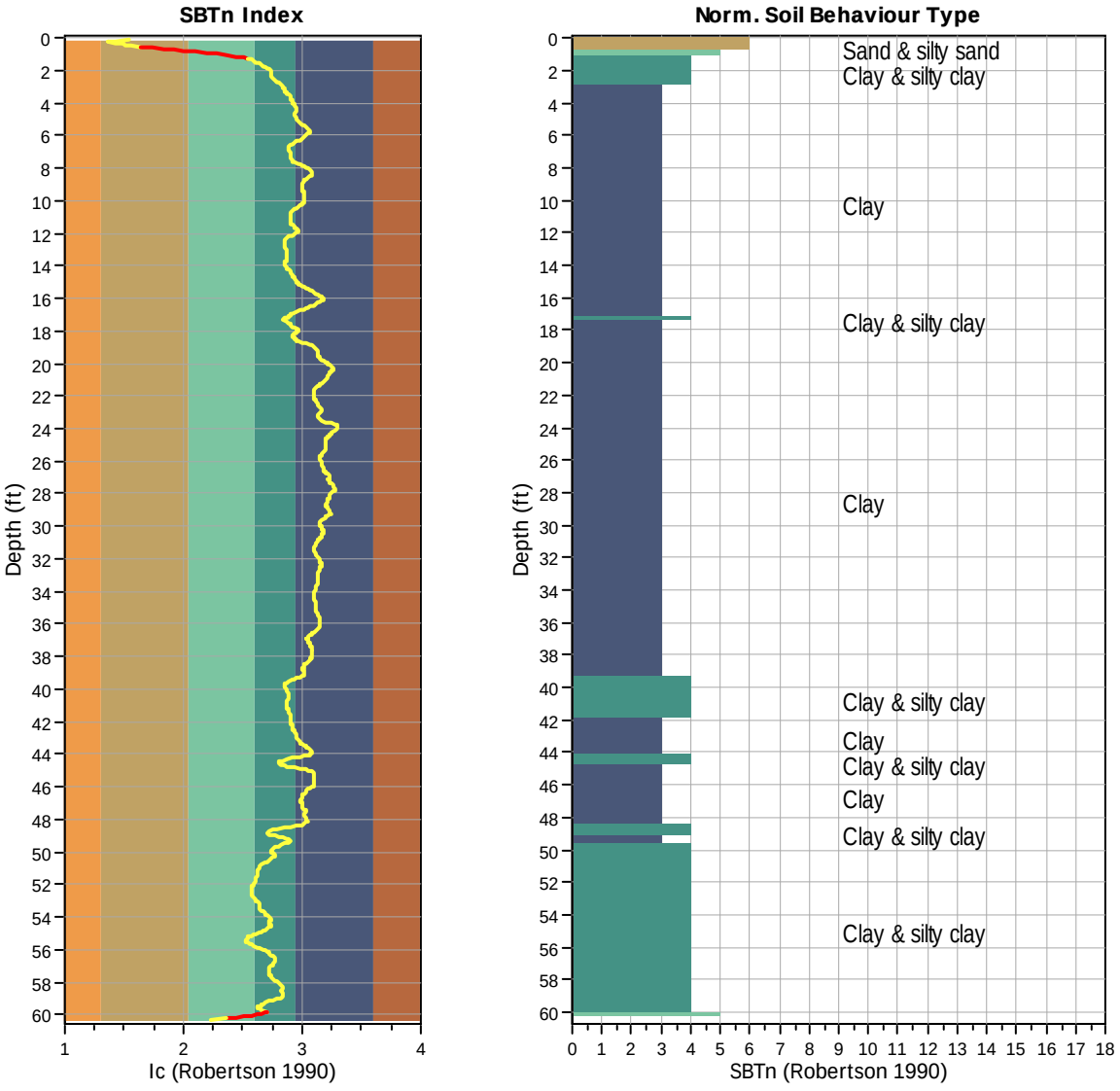
Analysis method:	NCEER (1998)	Depth to water table (erthq.):	9.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	.	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.68	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	12.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

TRANSITION LAYER DETECTION ALGORITHM REPORT
Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between 1.80 < I_c < 3.0) and a rate of change of I_c. Transitions typically occur when the rate of change of I_c is fast (i.e. delta I_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



Transition layer algorithm properties		General statistics	
I_c minimum check value:	1.70	Total points in CPT file:	921
I_c maximum check value:	3.00	Total points excluded:	20
I_c change ratio value:	0.0250	Exclusion percentage:	2.17%
Minimum number of points in layer:	4	Number of layers detected:	2

Transition layer No	Number of points	Depth	SBT_n number	SBT_n description
Transition layer 1	12	Start depth: 0.60 (ft)	6	Sand & silty sand
		End depth: 1.33 (ft)	4	Clay & silty clay
Transition layer 2	8	Start depth: 59.85 (ft)	4	Clay & silty clay
		End depth: 60.33 (ft)	5	Silty sand & sandy silt

Start depth: Depth where the transition layer begins
End depth: Depth where the transition layer ends

:: Field input data ::

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
1	0.10	29.65	0.09	0.19	3.34	105.82
2	0.16	61.45	0.12	0.29	1.84	108.28
3	0.23	127.29	0.16	0.29	1.11	111.21
4	0.30	132.22	0.22	0.29	1.84	113.21
5	0.34	128.99	0.26	0.29	2.65	114.82
6	0.40	114.03	0.34	0.29	2.98	117.01
7	0.50	107.76	0.65	0.29	3.70	118.93
8	0.54	112.51	0.79	0.29	5.09	120.34
9	0.60	115.47	0.94	0.29	6.86	121.41
10	0.68	100.86	1.22	0.29	8.93	122.24
11	0.73	92.89	1.47	0.29	11.03	122.87
12	0.80	83.40	1.55	0.38	13.16	123.09
13	0.87	62.61	1.60	0.38	15.70	123.10
14	0.95	50.25	1.62	0.48	18.79	122.88
15	0.99	44.88	1.59	0.48	21.81	122.46
16	1.09	33.86	1.40	0.48	24.99	121.87
17	1.14	32.34	1.31	0.48	28.40	121.18
18	1.22	30.37	1.19	0.48	30.87	120.51
19	1.29	28.84	1.11	0.48	32.57	119.85
20	1.33	27.86	1.08	0.48	34.07	119.16
21	1.39	26.25	1.04	0.38	34.77	118.63
22	1.48	24.99	0.99	0.29	35.62	118.11
23	1.52	24.28	0.96	0.29	36.50	117.65
24	1.59	22.66	0.91	0.29	37.41	117.17
25	1.66	21.32	0.86	0.29	38.32	116.64
26	1.73	19.80	0.83	0.38	39.17	116.10
27	1.78	19.08	0.79	0.38	39.97	115.55
28	1.84	17.74	0.70	0.38	40.81	114.97
29	1.93	16.93	0.65	0.38	41.66	114.39
30	1.98	16.21	0.62	0.29	42.14	113.86
31	2.04	15.68	0.58	0.29	42.46	113.34
32	2.13	15.05	0.55	0.29	42.52	112.82
33	2.18	14.06	0.53	0.29	42.50	112.40
34	2.25	14.96	0.51	0.29	42.45	112.02
35	2.30	14.42	0.50	0.38	42.52	111.62
36	2.38	14.87	0.47	0.38	42.77	111.22
37	2.44	14.69	0.45	0.29	43.09	110.81
38	2.51	14.33	0.43	0.29	43.26	110.41
39	2.57	13.17	0.41	0.29	43.94	109.99
40	2.66	12.09	0.38	0.29	44.49	109.55
41	2.72	11.29	0.36	0.38	45.34	109.16
42	2.76	11.02	0.35	0.29	46.28	108.79
43	2.84	10.30	0.34	0.29	47.14	108.47
44	2.92	10.30	0.33	0.29	47.74	108.24
45	2.95	10.30	0.33	0.19	48.20	108.19
46	3.07	10.30	0.33	0.19	48.54	108.22
47	3.11	10.57	0.33	0.19	48.82	108.31
48	3.16	10.66	0.34	0.19	48.97	108.48

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
49	3.26	10.75	0.37	0.29	49.23	108.70
50	3.30	10.75	0.38	0.29	49.53	108.91
51	3.36	10.84	0.39	0.29	49.97	109.10
52	3.44	10.84	0.41	0.29	50.58	109.25
53	3.50	10.84	0.42	0.29	51.23	109.35
54	3.56	10.66	0.42	0.29	51.74	109.36
55	3.62	10.30	0.42	0.29	52.00	109.30
56	3.71	10.03	0.41	0.19	52.25	109.22
57	3.76	9.76	0.40	0.19	52.39	109.14
58	3.82	9.76	0.39	0.19	52.63	109.10
59	3.90	9.94	0.36	0.19	52.91	109.06
60	3.95	9.94	0.36	0.19	53.06	109.01
61	4.00	10.21	0.38	0.19	53.43	109.08
62	4.09	10.21	0.41	0.10	53.68	109.18
63	4.16	9.94	0.41	0.10	53.96	109.26
64	4.20	9.76	0.40	0.10	54.33	109.37
65	4.27	9.67	0.45	0.10	54.74	109.46
66	4.34	9.76	0.45	1.05	55.14	109.50
67	4.44	9.59	0.43	0.57	55.08	109.53
68	4.48	9.76	0.42	1.10	54.98	109.60
69	4.58	9.59	0.41	0.38	54.90	109.70
70	4.63	9.67	0.41	1.15	54.63	109.71
71	4.68	10.48	0.42	0.38	54.49	109.72
72	4.73	10.48	0.44	0.29	54.36	109.78
73	4.80	10.39	0.44	0.19	54.55	109.81
74	4.86	10.30	0.45	0.10	54.73	109.82
75	4.93	10.12	0.45	-0.10	55.03	109.76
76	5.00	10.12	0.45	-0.19	55.55	109.58
77	5.07	9.59	0.44	-0.19	55.88	109.29
78	5.12	9.32	0.42	-0.19	56.39	108.94
79	5.20	8.87	0.39	-0.19	56.99	108.52
80	5.27	8.69	0.35	-0.10	57.84	108.02
81	5.33	8.60	0.32	0.00	58.97	107.42
82	5.41	7.97	0.30	0.10	59.80	106.78
83	5.45	7.52	0.29	0.10	60.54	106.12
84	5.52	6.72	0.27	0.00	61.14	105.50
85	5.60	6.09	0.25	0.10	61.82	105.01
86	5.67	6.09	0.23	0.00	62.58	104.64
87	5.71	6.09	0.22	0.10	62.80	104.48
88	5.80	6.09	0.21	0.10	62.60	104.41
89	5.85	6.36	0.22	0.10	61.97	104.49
90	5.91	6.63	0.23	0.19	61.22	104.72
91	6.01	7.26	0.26	0.19	60.61	105.01
92	6.06	7.61	0.27	0.00	60.07	105.33
93	6.11	7.70	0.28	-0.10	59.27	105.65
94	6.18	7.70	0.30	-0.29	58.41	105.90
95	6.26	7.79	0.30	-0.38	57.20	106.10
96	6.30	7.79	0.30	-0.38	55.98	106.17

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
97	6.37	8.24	0.29	-0.38	54.94	106.20
98	6.45	8.42	0.28	-0.38	53.91	106.20
99	6.51	9.14	0.27	-0.38	52.89	106.16
100	6.60	9.41	0.26	-0.38	52.07	106.15
101	6.64	9.41	0.26	-0.38	51.35	106.16
102	6.70	9.41	0.26	-0.29	51.01	106.22
103	6.80	9.32	0.27	-0.38	50.88	106.33
104	6.83	9.23	0.28	-0.38	51.10	106.44
105	6.90	9.14	0.29	-0.57	51.51	106.58
106	6.98	9.14	0.30	-0.57	51.88	106.72
107	7.04	9.14	0.31	-0.57	52.15	106.86
108	7.09	9.23	0.31	-0.48	52.21	107.01
109	7.16	9.23	0.31	-0.10	52.22	107.16
110	7.24	9.32	0.31	0.10	52.30	107.33
111	7.30	9.50	0.31	0.29	52.32	107.45
112	7.39	9.85	0.32	0.29	52.17	107.46
113	7.43	9.85	0.33	0.38	52.25	107.51
114	7.50	9.76	0.35	0.29	52.85	107.73
115	7.59	9.59	0.34	0.29	53.58	107.94
116	7.63	9.50	0.31	0.29	54.43	108.12
117	7.70	9.32	0.33	0.29	55.80	108.23
118	7.78	9.05	0.40	0.29	57.16	108.30
119	7.83	8.87	0.40	0.29	58.10	108.32
120	7.89	8.78	0.40	0.29	59.28	108.36
121	7.95	7.88	0.39	0.29	60.66	108.43
122	8.02	7.88	0.39	0.96	61.91	108.41
123	8.11	8.33	0.38	0.67	62.77	108.20
124	8.16	7.88	0.38	0.48	63.48	107.93
125	8.21	7.70	0.37	0.38	64.10	107.65
126	8.30	7.44	0.35	0.38	64.12	107.38
127	8.36	7.08	0.33	0.38	64.01	107.12
128	8.41	6.99	0.31	0.38	63.81	106.84
129	8.47	6.99	0.30	0.67	63.16	106.59
130	8.56	6.99	0.29	0.77	62.39	106.39
131	8.61	7.17	0.29	0.86	61.65	106.31
132	8.70	7.70	0.28	1.05	60.82	106.29
133	8.75	7.88	0.28	1.05	60.14	106.36
134	8.81	8.06	0.29	1.05	59.50	106.46
135	8.90	8.15	0.31	1.05	58.83	106.56
136	8.94	8.15	0.31	0.96	58.27	106.65
137	9.01	8.15	0.32	0.96	58.05	106.73
138	9.09	8.24	0.32	0.96	58.04	106.79
139	9.13	8.33	0.31	0.96	58.11	106.79
140	9.20	8.33	0.31	1.05	58.15	106.69
141	9.27	8.33	0.30	0.96	58.38	106.56
142	9.35	8.15	0.30	0.96	58.60	106.36
143	9.39	7.97	0.29	0.96	58.84	106.09
144	9.45	7.79	0.28	0.96	59.14	105.81

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
145	9.54	7.35	0.27	0.96	59.38	105.50
146	9.59	7.17	0.26	0.96	59.68	105.20
147	9.65	6.99	0.24	0.96	59.79	104.87
148	9.73	6.99	0.23	1.15	59.95	104.52
149	9.81	6.99	0.22	1.25	60.11	104.15
150	9.85	6.99	0.22	1.34	60.07	103.82
151	9.94	6.99	0.21	1.34	60.00	103.53
152	10.00	6.72	0.20	1.34	59.95	103.31
153	10.04	6.54	0.19	1.34	59.65	103.15
154	10.12	6.45	0.19	1.34	59.22	103.17
155	10.19	6.45	0.19	1.44	58.65	103.39
156	10.24	6.45	0.19	1.44	58.01	103.77
157	10.31	6.90	0.19	1.44	57.26	104.40
158	10.39	7.61	0.22	1.44	56.50	105.02
159	10.48	8.33	0.26	1.53	55.39	105.60
160	10.53	8.96	0.29	1.53	54.38	106.20
161	10.63	9.67	0.34	1.53	53.60	106.88
162	10.67	9.67	0.34	1.53	53.01	107.63
163	10.71	10.12	0.33	1.53	52.52	108.25
164	10.79	10.30	0.35	1.53	52.29	108.78
165	10.83	10.48	0.39	1.53	52.47	109.18
166	10.93	11.02	0.43	1.73	52.10	109.48
167	10.98	11.29	0.44	1.92	51.74	109.79
168	11.06	11.20	0.46	2.11	51.77	110.12
169	11.11	10.48	0.46	2.68	51.83	110.38
170	11.16	11.91	0.46	2.49	51.85	110.55
171	11.23	12.00	0.47	2.40	51.99	110.60
172	11.31	11.73	0.48	2.40	52.29	110.61
173	11.36	11.56	0.48	2.40	52.54	110.56
174	11.42	11.29	0.47	2.40	52.58	110.50
175	11.51	11.02	0.46	2.40	53.28	110.41
176	11.56	10.84	0.45	2.40	53.98	110.25
177	11.65	10.57	0.44	2.40	54.66	110.05
178	11.71	10.39	0.43	2.30	55.10	109.84
179	11.75	10.21	0.43	2.30	55.61	109.62
180	11.84	9.85	0.41	2.30	55.81	109.37
181	11.89	9.67	0.40	2.30	55.80	109.10
182	11.96	9.85	0.39	2.30	55.36	108.80
183	12.03	9.41	0.38	2.30	54.70	108.50
184	12.11	9.85	0.35	2.59	53.82	108.17
185	12.16	9.85	0.33	2.59	52.78	107.91
186	12.21	10.30	0.30	2.68	51.59	107.71
187	12.30	10.57	0.29	2.78	50.55	107.55
188	12.35	10.66	0.28	2.88	49.49	107.47
189	12.41	10.93	0.29	2.97	48.97	107.51
190	12.49	11.38	0.30	2.97	48.68	107.65
191	12.56	11.56	0.31	2.68	48.76	107.89
192	12.60	11.56	0.33	2.59	48.93	108.16

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
193	12.67	11.38	0.35	2.40	49.11	108.45
194	12.75	11.38	0.37	2.40	49.18	108.71
195	12.80	11.38	0.38	2.49	49.27	108.96
196	12.90	11.56	0.39	2.68	49.53	109.20
197	12.95	11.82	0.39	2.78	49.69	109.41
198	13.02	12.27	0.39	2.97	49.78	109.59
199	13.06	12.54	0.40	2.97	49.77	109.74
200	13.14	12.36	0.41	2.88	49.77	109.85
201	13.19	12.36	0.42	2.88	49.77	109.95
202	13.29	12.27	0.43	2.88	49.89	110.03
203	13.33	12.27	0.43	2.88	50.12	110.11
204	13.39	12.18	0.43	2.97	50.31	110.14
205	13.48	12.18	0.43	2.97	50.39	110.16
206	13.54	12.18	0.43	2.97	50.36	110.25
207	13.59	12.18	0.43	2.97	50.18	110.38
208	13.67	12.36	0.42	2.97	49.84	110.53
209	13.72	12.45	0.42	2.97	49.54	110.70
210	13.78	13.08	0.46	2.97	49.44	110.87
211	13.86	13.53	0.48	2.97	49.39	111.05
212	13.93	14.24	0.49	2.97	49.37	111.26
213	14.01	14.06	0.50	2.97	49.52	111.46
214	14.05	13.62	0.51	2.97	49.75	111.65
215	14.14	13.62	0.52	3.07	50.06	111.76
216	14.21	13.62	0.53	3.16	50.43	111.83
217	14.24	13.35	0.53	3.16	51.04	111.87
218	14.31	13.08	0.53	3.07	51.60	111.89
219	14.39	13.08	0.53	3.16	52.03	111.90
220	14.44	13.08	0.53	3.07	52.39	111.88
221	14.54	12.81	0.53	3.16	52.83	111.84
222	14.59	12.81	0.53	3.07	53.18	111.80
223	14.64	12.72	0.53	3.07	53.43	111.75
224	14.70	12.63	0.52	3.07	53.76	111.70
225	14.79	12.45	0.52	2.97	54.14	111.63
226	14.83	12.36	0.52	2.97	54.44	111.52
227	14.93	12.27	0.51	2.88	54.89	111.37
228	14.98	12.09	0.51	2.88	55.41	111.22
229	15.03	11.91	0.50	2.88	56.11	111.03
230	15.10	11.56	0.48	2.88	56.82	110.84
231	15.18	11.11	0.46	2.78	57.64	110.62
232	15.23	10.75	0.46	2.78	58.49	110.38
233	15.33	10.21	0.44	2.78	59.39	110.13
234	15.37	10.12	0.44	2.78	60.50	109.89
235	15.44	9.76	0.43	2.78	61.75	109.63
236	15.52	9.50	0.41	2.78	63.18	109.39
237	15.56	9.41	0.41	2.68	64.40	109.11
238	15.63	8.87	0.41	2.68	65.66	108.84
239	15.71	8.42	0.39	2.68	67.00	108.54
240	15.77	7.88	0.38	2.68	68.16	108.25

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
241	15.82	7.79	0.36	2.68	69.24	107.98
242	15.89	7.44	0.35	2.68	70.21	107.68
243	15.97	7.26	0.34	2.68	70.74	107.37
244	16.02	7.26	0.33	2.68	71.03	107.12
245	16.10	7.26	0.32	2.68	70.87	106.90
246	16.17	7.35	0.31	2.68	70.46	106.73
247	16.22	7.35	0.30	2.68	69.47	106.57
248	16.28	7.35	0.30	2.68	68.23	106.45
249	16.37	7.52	0.30	2.78	66.74	106.40
250	16.42	7.79	0.29	2.78	65.09	106.39
251	16.52	8.15	0.28	2.88	63.50	106.38
252	16.55	8.42	0.28	2.88	61.98	106.40
253	16.62	9.05	0.29	2.88	60.56	106.41
254	16.70	9.41	0.29	2.88	59.38	106.45
255	16.74	9.59	0.28	2.88	57.33	106.56
256	16.82	9.59	0.28	2.88	54.73	106.74
257	16.91	9.59	0.28	2.88	53.15	106.84
258	16.94	9.59	0.29	2.88	52.31	106.83
259	17.01	11.65	0.29	2.88	51.70	106.81
260	17.10	13.71	0.29	2.78	51.25	106.81
261	17.15	12.18	0.28	2.78	50.77	106.81
262	17.21	10.84	0.27	2.78	49.37	106.86
263	17.30	10.75	0.27	2.78	48.04	106.89
264	17.34	10.75	0.27	2.78	48.52	106.79
265	17.41	10.75	0.27	3.07	50.20	106.65
266	17.49	13.26	0.27	2.97	51.27	106.59
267	17.53	13.17	0.27	2.97	51.40	106.62
268	17.59	10.03	0.27	2.97	51.86	106.56
269	17.67	9.14	0.28	3.07	52.56	106.49
270	17.73	9.59	0.28	3.16	53.18	106.39
271	17.79	10.75	0.28	2.88	54.62	106.23
272	17.87	9.59	0.26	2.40	56.15	106.08
273	17.92	9.05	0.26	2.40	56.38	106.00
274	17.99	9.14	0.25	2.49	56.03	105.88
275	18.07	9.85	0.25	2.49	55.16	105.79
276	18.14	9.85	0.25	2.49	54.99	105.66
277	18.19	9.41	0.25	2.49	54.18	105.64
278	18.26	9.41	0.24	2.59	53.41	105.61
279	18.34	10.93	0.24	2.59	53.37	105.54
280	18.38	10.66	0.24	2.59	53.77	105.41
281	18.45	11.11	0.24	2.59	54.26	105.31
282	18.53	10.57	0.24	2.59	54.74	105.21
283	18.60	9.05	0.23	2.59	55.33	105.14
284	18.68	8.60	0.22	2.59	56.82	105.02
285	18.72	8.60	0.23	2.68	58.39	104.86
286	18.79	8.24	0.23	2.68	60.49	104.63
287	18.84	8.15	0.23	2.68	62.50	104.37
288	18.92	8.06	0.23	2.68	63.88	104.14

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
289	18.98	7.61	0.22	2.68	65.00	103.92
290	19.06	7.26	0.21	2.78	66.00	103.62
291	19.11	6.99	0.20	2.78	66.65	103.32
292	19.18	6.63	0.19	2.88	67.28	103.02
293	19.25	6.63	0.18	2.88	67.94	102.75
294	19.33	6.63	0.17	2.88	68.28	102.54
295	19.37	6.72	0.17	2.88	68.26	102.45
296	19.47	6.72	0.17	2.88	68.34	102.40
297	19.52	6.72	0.18	2.88	68.15	102.41
298	19.57	6.81	0.18	2.88	68.16	102.46
299	19.62	7.08	0.19	2.88	68.51	102.55
300	19.71	6.90	0.19	2.97	69.05	102.63
301	19.77	6.90	0.19	2.97	69.99	102.73
302	19.82	6.81	0.19	2.97	71.46	102.72
303	19.91	6.54	0.19	2.97	72.47	102.63
304	19.96	6.45	0.19	2.97	73.62	102.49
305	20.02	6.09	0.20	2.97	74.65	102.35
306	20.11	5.29	0.19	2.97	75.64	102.16
307	20.18	5.73	0.17	3.26	76.64	101.97
308	20.23	5.73	0.17	3.26	77.23	101.75
309	20.28	5.73	0.17	3.26	77.59	101.47
310	20.37	5.73	0.16	3.26	77.34	101.16
311	20.42	5.64	0.16	3.26	76.33	100.92
312	20.48	5.64	0.15	3.26	76.23	100.81
313	20.56	5.64	0.14	3.26	75.95	100.70
314	20.63	5.73	0.14	3.26	75.55	100.61
315	20.67	5.64	0.14	3.26	75.05	100.57
316	20.74	5.64	0.15	3.35	74.39	100.54
317	20.83	5.82	0.15	3.26	73.89	100.56
318	20.90	5.91	0.15	3.35	73.52	100.64
319	20.97	6.09	0.15	3.26	73.26	100.72
320	21.02	6.18	0.15	3.35	72.69	100.80
321	21.10	6.18	0.15	3.35	71.89	100.90
322	21.17	6.18	0.15	3.35	71.06	101.06
323	21.22	6.18	0.15	3.35	70.16	101.22
324	21.27	6.36	0.15	3.35	69.33	101.43
325	21.37	6.63	0.16	3.35	68.59	101.63
326	21.43	6.99	0.17	3.35	67.76	101.84
327	21.46	7.17	0.17	3.35	67.01	102.04
328	21.55	7.44	0.18	3.35	66.23	102.18
329	21.62	7.52	0.18	3.35	65.66	102.32
330	21.66	7.61	0.18	3.35	65.17	102.29
331	21.74	7.52	0.18	3.35	64.99	102.14
332	21.81	7.52	0.17	3.35	65.00	101.99
333	21.85	7.44	0.17	3.35	65.08	101.76
334	21.93	7.17	0.15	3.35	65.21	101.48
335	22.00	6.90	0.14	3.35	65.31	101.18
336	22.07	6.81	0.14	3.35	65.39	100.94

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
337	22.16	6.81	0.14	3.35	65.68	100.74
338	22.19	6.72	0.13	3.35	65.98	100.60
339	22.26	6.81	0.13	3.45	66.48	100.64
340	22.33	6.90	0.14	3.45	67.02	100.81
341	22.40	6.81	0.14	3.45	67.47	100.98
342	22.45	6.81	0.15	3.45	67.61	101.09
343	22.53	6.81	0.16	3.45	67.69	101.09
344	22.60	6.81	0.17	3.45	67.92	101.09
345	22.64	6.81	0.17	3.45	68.51	101.06
346	22.70	6.99	0.16	3.45	69.39	101.14
347	22.80	6.72	0.13	3.45	69.95	101.18
348	22.84	6.63	0.13	3.45	70.62	101.10
349	22.90	6.27	0.14	3.45	70.38	100.93
350	23.00	6.18	0.16	3.45	69.13	100.75
351	23.05	6.45	0.16	3.55	68.58	100.83
352	23.14	6.00	0.15	3.55	68.29	101.27
353	23.18	6.72	0.14	3.55	68.03	101.80
354	23.24	7.70	0.13	3.55	67.99	102.49
355	23.32	7.79	0.17	3.74	68.19	103.21
356	23.39	8.15	0.20	3.64	68.76	103.90
357	23.44	8.24	0.22	3.64	69.27	104.61
358	23.53	8.15	0.27	3.64	70.63	105.26
359	23.59	7.97	0.31	3.55	72.71	105.79
360	23.63	7.79	0.32	3.55	74.78	106.03
361	23.69	7.52	0.33	3.55	76.93	106.13
362	23.77	7.17	0.33	3.55	78.80	106.09
363	23.82	6.99	0.31	3.55	80.08	105.85
364	23.93	6.27	0.27	3.55	80.97	105.50
365	23.95	6.27	0.26	3.55	81.13	105.09
366	24.03	6.36	0.23	3.55	80.69	104.61
367	24.12	6.36	0.21	3.64	79.74	104.12
368	24.16	6.36	0.21	3.64	78.67	103.68
369	24.22	6.63	0.20	3.64	77.27	103.40
370	24.30	6.81	0.19	3.64	76.10	103.19
371	24.37	6.90	0.19	3.64	75.43	103.13
372	24.43	6.90	0.19	3.64	74.72	103.16
373	24.50	6.90	0.19	3.64	73.88	103.24
374	24.57	6.90	0.20	3.64	73.42	103.35
375	24.62	6.90	0.21	3.74	73.24	103.54
376	24.69	7.17	0.21	3.74	73.23	103.72
377	24.77	7.44	0.22	3.74	73.31	103.89
378	24.83	7.44	0.22	3.74	73.35	104.01
379	24.88	7.52	0.23	3.64	73.20	104.10
380	24.97	7.44	0.23	3.74	73.15	104.15
381	25.02	7.35	0.23	3.64	73.05	104.16
382	25.11	7.26	0.22	3.74	73.12	104.12
383	25.17	7.35	0.22	3.74	73.18	104.12
384	25.21	7.17	0.22	3.74	73.19	104.08

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
385	25.29	7.35	0.21	3.93	73.06	104.13
386	25.36	7.35	0.21	3.93	72.49	104.23
387	25.40	7.44	0.22	3.93	71.70	104.39
388	25.46	7.44	0.22	3.93	71.06	104.62
389	25.54	7.79	0.24	3.93	70.33	104.85
390	25.62	8.33	0.25	3.83	69.84	105.10
391	25.66	8.60	0.25	3.83	69.49	105.40
392	25.75	8.78	0.27	3.83	69.25	105.70
393	25.80	8.78	0.27	3.74	68.92	105.99
394	25.85	8.78	0.27	3.93	68.55	106.20
395	25.96	8.78	0.29	3.93	69.47	106.36
396	26.01	8.78	0.30	3.93	70.08	106.56
397	26.05	8.87	0.30	3.93	70.24	106.77
398	26.12	9.05	0.30	3.93	70.29	106.95
399	26.19	7.79	0.31	3.93	70.21	107.10
400	26.25	8.51	0.32	4.03	69.98	107.17
401	26.33	9.32	0.34	4.03	70.30	107.16
402	26.42	9.41	0.33	4.03	70.99	107.10
403	26.46	9.50	0.32	4.03	71.77	107.01
404	26.52	9.41	0.31	4.03	71.62	106.93
405	26.61	8.42	0.30	4.03	71.87	106.78
406	26.67	7.88	0.29	4.03	72.47	106.51
407	26.71	7.79	0.28	4.03	72.98	106.21
408	26.79	7.79	0.28	3.93	73.84	105.91
409	26.87	7.79	0.27	3.93	74.74	105.65
410	26.92	7.79	0.26	3.93	75.11	105.43
411	26.98	7.88	0.24	3.93	74.96	105.22
412	27.06	7.70	0.24	3.93	74.82	105.02
413	27.11	7.70	0.24	3.93	74.64	104.80
414	27.21	7.44	0.24	3.93	74.74	104.61
415	27.26	7.52	0.23	4.03	74.95	104.41
416	27.32	7.44	0.22	3.93	75.90	104.22
417	27.40	7.44	0.22	3.93	76.83	104.02
418	27.45	7.26	0.22	3.93	77.64	103.74
419	27.52	7.08	0.21	3.93	77.83	103.35
420	27.60	6.45	0.20	4.03	78.49	102.97
421	27.65	6.36	0.20	4.03	78.87	102.63
422	27.71	6.27	0.18	4.12	79.19	102.32
423	27.80	6.36	0.15	4.12	78.85	102.04
424	27.84	6.09	0.15	4.12	78.27	101.80
425	27.90	6.36	0.15	4.12	77.11	101.68
426	27.99	6.54	0.16	4.12	76.15	101.67
427	28.05	6.99	0.16	4.12	75.68	101.85
428	28.10	7.08	0.16	4.12	75.60	102.23
429	28.17	7.26	0.17	4.12	75.27	102.59
430	28.25	7.26	0.19	4.12	74.87	102.95
431	28.30	7.17	0.21	4.03	74.34	103.25
432	28.39	7.35	0.22	4.22	74.39	103.61

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
433	28.44	7.35	0.22	4.22	74.36	103.92
434	28.49	7.70	0.22	4.22	74.39	104.21
435	28.54	7.88	0.22	4.22	74.12	104.34
436	28.62	7.97	0.24	4.22	73.25	104.26
437	28.68	7.97	0.23	4.22	73.04	104.31
438	28.74	8.06	0.24	4.22	73.29	104.54
439	28.83	7.97	0.22	4.22	73.76	104.72
440	28.89	7.97	0.18	4.22	74.24	104.85
441	28.98	7.79	0.23	4.22	75.63	104.88
442	29.03	7.79	0.28	4.22	75.89	104.94
443	29.09	7.79	0.27	4.22	75.86	104.91
444	29.14	7.79	0.26	4.22	75.85	104.95
445	29.22	6.63	0.26	4.22	75.98	105.13
446	29.27	7.93	0.25	4.31	75.34	105.16
447	29.38	8.06	0.23	4.41	74.27	105.02
448	29.43	8.15	0.23	4.41	73.18	104.92
449	29.48	8.42	0.23	4.50	72.12	104.85
450	29.57	8.60	0.23	4.50	70.39	104.82
451	29.62	8.69	0.23	4.50	69.77	104.77
452	29.68	8.78	0.23	4.50	69.53	104.82
453	29.73	8.87	0.23	4.50	69.25	104.83
454	29.82	8.69	0.23	4.41	69.21	104.84
455	29.87	8.60	0.23	4.41	69.23	104.80
456	29.94	8.60	0.24	4.41	69.40	104.76
457	30.02	8.60	0.23	4.41	69.74	104.67
458	30.07	8.60	0.23	4.41	70.26	104.57
459	30.16	8.51	0.22	4.41	70.70	104.47
460	30.19	8.42	0.22	4.50	70.92	104.34
461	30.26	8.15	0.21	4.50	71.00	104.13
462	30.36	7.97	0.21	4.50	71.06	103.96
463	30.41	7.97	0.21	4.50	70.92	103.80
464	30.46	7.97	0.20	4.50	70.81	103.67
465	30.53	7.97	0.19	4.50	70.68	103.59
466	30.61	8.15	0.19	4.50	70.37	103.56
467	30.65	8.33	0.19	4.50	69.86	103.58
468	30.71	8.33	0.19	4.50	69.24	103.70
469	30.81	8.42	0.20	4.50	68.66	103.91
470	30.84	8.51	0.20	4.60	68.08	104.24
471	30.91	8.69	0.21	4.60	67.66	104.63
472	30.99	9.14	0.23	4.60	67.39	105.12
473	31.04	9.41	0.24	4.60	67.03	105.58
474	31.11	9.76	0.26	4.60	66.57	106.03
475	31.19	10.03	0.28	4.60	66.20	106.49
476	31.25	10.39	0.31	4.60	65.84	106.89
477	31.30	10.48	0.31	4.50	65.63	107.18
478	31.39	10.75	0.32	4.50	65.59	107.42
479	31.45	10.84	0.33	4.50	65.68	107.59
480	31.50	10.84	0.33	4.50	65.87	107.70

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
481	31.60	10.66	0.32	4.50	66.11	107.72
482	31.65	10.57	0.32	4.50	66.18	107.66
483	31.73	10.39	0.32	4.50	66.49	107.65
484	31.80	10.21	0.32	4.50	67.04	107.71
485	31.84	10.21	0.32	4.60	67.57	107.78
486	31.91	10.21	0.29	4.60	68.14	107.89
487	31.99	10.30	0.32	4.60	68.68	108.00
488	32.03	10.30	0.36	4.60	69.04	108.12
489	32.09	10.30	0.36	4.60	69.29	108.25
490	32.19	10.30	0.37	4.60	69.46	108.37
491	32.25	10.30	0.37	4.60	69.84	108.58
492	32.29	10.35	0.37	4.60	70.12	108.75
493	32.38	10.39	0.37	4.60	70.10	108.82
494	32.43	10.57	0.37	4.60	69.85	108.91
495	32.48	10.57	0.38	4.60	69.44	108.98
496	32.58	10.57	0.39	4.70	69.08	109.07
497	32.63	10.75	0.39	4.70	68.78	109.18
498	32.69	11.11	0.39	4.70	68.56	109.31
499	32.74	11.29	0.39	4.70	68.43	109.45
500	32.83	11.38	0.40	4.70	68.20	109.58
501	32.88	11.38	0.41	4.70	67.88	109.68
502	32.97	11.38	0.42	4.70	67.80	109.82
503	33.01	11.47	0.43	4.70	67.86	109.97
504	33.07	11.65	0.43	4.70	68.03	110.10
505	33.16	11.65	0.43	4.70	68.26	110.19
506	33.20	11.65	0.45	4.70	68.29	110.24
507	33.27	11.73	0.46	4.70	68.26	110.22
508	33.36	11.65	0.45	4.70	68.18	110.16
509	33.42	11.56	0.45	4.70	68.17	110.06
510	33.51	11.56	0.43	4.70	68.06	109.88
511	33.56	11.47	0.41	4.70	67.71	109.58
512	33.61	11.47	0.40	4.70	67.31	109.21
513	33.67	11.29	0.38	4.70	67.07	108.81
514	33.76	11.11	0.34	4.70	67.01	108.36
515	33.81	11.02	0.31	4.70	66.63	107.92
516	33.86	10.84	0.29	4.70	66.55	107.50
517	33.94	10.39	0.28	4.70	66.17	107.07
518	34.02	9.85	0.27	4.70	65.74	106.68
519	34.06	10.44	0.26	4.70	65.39	106.40
520	34.14	9.94	0.26	4.70	65.27	106.21
521	34.21	10.48	0.25	4.70	65.38	106.07
522	34.25	10.57	0.25	4.70	65.42	105.93
523	34.33	10.66	0.25	4.70	65.35	105.82
524	34.41	10.57	0.25	4.70	65.67	105.70
525	34.49	10.21	0.25	4.70	65.62	105.56
526	34.56	9.85	0.24	4.70	65.88	105.40
527	34.59	9.67	0.24	4.79	66.16	105.24
528	34.67	9.59	0.23	4.79	66.44	105.07

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
529	34.76	9.59	0.22	4.79	66.66	104.91
530	34.80	9.59	0.21	4.79	66.69	104.75
531	34.85	9.59	0.21	4.79	66.67	104.67
532	34.93	9.76	0.21	4.79	66.55	104.59
533	34.98	9.76	0.21	4.79	66.59	104.55
534	35.05	9.67	0.21	4.79	66.78	104.50
535	35.13	9.67	0.22	4.79	66.81	104.46
536	35.18	9.67	0.22	4.79	66.88	104.42
537	35.24	9.45	0.22	4.89	67.11	104.37
538	35.32	9.23	0.21	4.89	67.48	104.31
539	35.41	9.50	0.20	4.89	67.83	104.21
540	35.46	9.41	0.20	4.89	68.12	104.07
541	35.51	9.32	0.20	4.89	68.31	103.88
542	35.58	9.14	0.20	4.89	68.44	103.70
543	35.66	8.96	0.19	4.89	68.42	103.52
544	35.71	8.87	0.19	4.89	68.66	103.37
545	35.76	8.87	0.18	4.89	68.83	103.21
546	35.86	8.78	0.18	4.89	68.92	103.07
547	35.91	8.78	0.17	4.89	68.90	102.92
548	36.01	8.78	0.17	4.89	68.90	102.82
549	36.05	8.78	0.17	4.89	68.67	102.68
550	36.12	8.87	0.17	4.89	68.57	102.58
551	36.20	8.78	0.17	4.89	68.61	102.47
552	36.23	8.78	0.17	4.89	68.46	102.43
553	36.31	8.78	0.16	4.89	68.09	102.39
554	36.35	8.78	0.16	4.89	67.28	102.32
555	36.45	8.51	0.16	4.98	66.40	102.25
556	36.51	8.87	0.16	4.98	65.33	102.19
557	36.58	9.23	0.16	4.98	64.41	102.18
558	36.66	9.67	0.15	4.98	63.63	102.21
559	36.70	9.94	0.15	4.98	62.95	102.30
560	36.80	10.12	0.15	4.98	62.13	102.46
561	36.85	10.12	0.16	4.98	61.55	102.65
562	36.89	10.12	0.16	4.98	61.19	102.83
563	36.96	10.12	0.17	4.98	61.34	103.09
564	37.03	10.39	0.18	4.98	61.62	103.34
565	37.09	10.48	0.19	4.98	62.14	103.61
566	37.15	10.48	0.19	4.98	62.54	103.83
567	37.23	10.39	0.20	4.98	62.96	104.05
568	37.27	10.39	0.20	4.98	63.24	104.22
569	37.34	10.30	0.21	4.98	63.51	104.34
570	37.43	10.30	0.21	4.98	63.70	104.42
571	37.49	10.30	0.21	4.98	63.92	104.50
572	37.54	10.30	0.21	4.98	63.90	104.50
573	37.62	10.48	0.21	4.98	64.01	104.50
574	37.69	10.57	0.21	5.08	63.93	104.42
575	37.74	10.48	0.21	4.98	63.93	104.38
576	37.82	10.48	0.20	5.08	63.95	104.34

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
577	37.89	10.30	0.20	4.98	63.96	104.29
578	37.93	10.21	0.19	5.08	63.84	104.30
579	38.02	10.21	0.20	5.08	63.69	104.35
580	38.08	10.21	0.20	5.08	63.41	104.46
581	38.13	10.21	0.20	5.08	63.89	104.61
582	38.23	10.75	0.21	5.08	63.50	104.84
583	38.28	11.11	0.22	5.08	62.70	105.13
584	38.35	11.38	0.23	5.08	61.78	105.37
585	38.42	10.30	0.24	5.08	60.85	105.61
586	38.47	11.91	0.25	5.18	59.99	105.85
587	38.52	12.72	0.25	5.18	59.66	106.05
588	38.61	12.90	0.25	5.18	59.48	106.21
589	38.67	12.99	0.25	5.18	59.28	106.26
590	38.72	12.90	0.25	5.18	58.69	106.29
591	38.82	12.36	0.26	5.18	58.76	106.22
592	38.86	12.27	0.26	5.18	59.16	106.09
593	38.96	12.09	0.24	5.18	59.66	105.92
594	39.01	11.73	0.24	5.18	60.09	105.75
595	39.05	11.56	0.23	5.18	60.15	105.59
596	39.13	11.38	0.22	5.18	59.44	105.47
597	39.21	11.29	0.21	5.27	58.54	105.36
598	39.24	11.47	0.21	5.27	57.27	105.38
599	39.31	12.18	0.21	5.37	55.65	105.47
600	39.40	13.35	0.22	5.37	54.17	105.67
601	39.44	13.71	0.22	5.37	52.68	105.95
602	39.51	14.87	0.23	5.37	51.39	106.29
603	39.60	15.77	0.24	5.37	50.31	106.62
604	39.66	16.03	0.26	5.37	49.52	106.88
605	39.70	16.39	0.27	5.37	49.07	107.01
606	39.80	16.48	0.28	5.37	48.87	107.10
607	39.85	16.30	0.28	5.37	49.01	107.13
608	39.90	16.03	0.27	5.37	49.38	107.07
609	39.98	15.50	0.25	5.37	49.70	106.91
610	40.05	14.96	0.24	5.37	50.05	106.64
611	40.10	14.69	0.24	5.37	50.44	106.29
612	40.20	14.42	0.23	5.37	50.75	105.88
613	40.25	14.33	0.22	5.46	50.95	105.46
614	40.30	13.97	0.20	5.46	51.10	105.11
615	40.40	13.53	0.19	5.46	51.15	104.80
616	40.45	13.44	0.18	5.46	51.09	104.52
617	40.50	13.44	0.17	5.56	50.89	104.35
618	40.59	13.44	0.17	5.56	50.80	104.26
619	40.64	13.44	0.17	5.56	50.70	104.26
620	40.69	13.62	0.18	5.56	50.43	104.33
621	40.79	14.15	0.19	5.56	50.31	104.53
622	40.83	14.24	0.20	5.56	50.44	104.94
623	40.92	14.33	0.20	5.56	50.42	105.38
624	40.98	14.60	0.20	5.56	50.37	105.84

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
625	41.03	14.87	0.22	5.56	50.39	106.28
626	41.08	15.14	0.26	5.56	50.50	106.65
627	41.18	15.86	0.27	5.56	50.55	106.94
628	41.22	16.03	0.28	5.56	50.67	107.21
629	41.31	15.94	0.29	5.66	50.92	107.47
630	41.36	15.94	0.29	5.66	51.10	107.66
631	41.42	15.86	0.28	5.66	51.14	107.72
632	41.50	15.59	0.28	5.66	51.35	107.74
633	41.54	15.50	0.28	5.75	51.60	107.76
634	41.61	15.50	0.28	5.75	51.71	107.73
635	41.70	15.50	0.28	5.75	51.90	107.72
636	41.75	15.50	0.28	5.75	52.13	107.74
637	41.80	15.50	0.29	5.75	52.28	107.77
638	41.87	15.50	0.28	5.75	52.40	107.79
639	41.95	15.50	0.29	5.75	52.45	107.83
640	42.01	15.41	0.29	5.75	52.51	107.89
641	42.10	15.41	0.29	5.75	52.56	108.01
642	42.14	15.41	0.29	5.75	52.59	108.16
643	42.21	15.68	0.29	5.75	52.82	108.39
644	42.27	15.77	0.30	5.75	52.92	108.56
645	42.34	16.21	0.32	5.75	52.98	108.70
646	42.39	16.39	0.34	5.75	53.11	108.84
647	42.49	16.30	0.36	5.75	53.28	108.97
648	42.54	16.30	0.35	5.75	53.67	109.17
649	42.59	16.21	0.34	5.85	54.07	109.36
650	42.69	15.94	0.34	5.85	54.49	109.49
651	42.74	15.86	0.34	5.85	54.71	109.51
652	42.80	15.86	0.37	5.85	54.81	109.48
653	42.89	15.86	0.38	5.85	54.99	109.45
654	42.93	16.03	0.38	5.85	55.31	109.41
655	42.99	15.94	0.35	5.85	55.56	109.34
656	43.08	15.94	0.35	5.85	55.85	109.23
657	43.11	15.77	0.34	5.85	56.08	109.03
658	43.18	15.14	0.33	5.85	56.48	108.74
659	43.28	14.96	0.32	5.85	57.10	108.37
660	43.35	14.51	0.30	5.85	57.81	108.05
661	43.38	14.15	0.30	5.85	58.70	107.67
662	43.45	13.26	0.28	5.85	59.54	107.22
663	43.53	12.54	0.26	5.85	60.26	106.75
664	43.58	12.54	0.25	5.85	61.15	106.25
665	43.64	11.91	0.24	5.85	62.32	105.79
666	43.73	11.73	0.21	5.85	63.44	105.31
667	43.78	11.47	0.20	5.85	64.11	104.91
668	43.84	10.93	0.19	5.85	64.43	104.69
669	43.92	10.30	0.19	5.85	64.47	104.56
670	43.98	10.21	0.19	5.94	63.48	104.52
671	44.07	10.57	0.19	5.94	62.65	104.73
672	44.12	11.20	0.21	5.94	59.78	105.37

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
673	44.17	12.09	0.22	5.94	57.19	106.06
674	44.23	13.53	0.22	5.94	52.78	106.91
675	44.29	14.15	0.25	5.94	49.94	107.71
676	44.39	19.71	0.32	6.13	48.01	108.02
677	44.43	19.71	0.33	6.13	47.15	108.13
678	44.49	25.71	0.36	6.04	46.40	108.15
679	44.57	23.11	0.38	6.04	46.57	108.04
680	44.67	18.90	0.25	6.04	47.03	107.69
681	44.73	14.96	0.23	6.04	48.61	106.97
682	44.78	14.96	0.21	6.04	50.29	106.12
683	44.82	12.36	0.19	6.04	54.12	104.91
684	44.93	10.39	0.15	6.04	57.45	103.44
685	44.97	10.12	0.14	6.13	60.57	102.52
686	45.02	9.85	0.13	6.13	62.40	101.78
687	45.09	9.59	0.12	6.13	64.66	101.10
688	45.17	9.41	0.11	6.13	65.62	100.58
689	45.22	9.41	0.11	6.13	65.67	100.36
690	45.30	9.32	0.12	6.13	65.49	100.15
691	45.37	9.32	0.12	6.13	65.32	100.01
692	45.42	9.50	0.12	6.13	65.33	99.93
693	45.50	9.76	0.12	6.13	65.30	99.86
694	45.57	9.85	0.11	6.13	65.47	99.85
695	45.61	9.76	0.11	6.13	65.41	99.78
696	45.72	9.41	0.11	6.13	65.40	99.70
697	45.77	9.32	0.10	6.13	65.61	99.69
698	45.80	9.23	0.11	6.13	65.50	99.86
699	45.88	9.23	0.11	6.13	65.41	100.17
700	45.96	9.23	0.11	6.23	64.82	100.56
701	46.01	9.23	0.12	6.13	63.80	100.96
702	46.11	10.39	0.14	6.23	62.71	101.35
703	46.14	10.93	0.15	6.13	61.71	101.65
704	46.21	11.82	0.16	6.23	61.11	101.93
705	46.26	12.18	0.16	6.23	60.62	102.26
706	46.35	12.36	0.15	6.23	60.17	102.58
707	46.41	11.91	0.15	6.23	59.40	102.67
708	46.49	11.29	0.15	6.23	58.58	102.66
709	46.55	11.29	0.16	6.23	58.21	102.56
710	46.59	11.29	0.17	6.23	58.23	102.56
711	46.68	12.27	0.15	6.33	58.74	102.83
712	46.74	12.54	0.14	6.33	58.71	103.22
713	46.80	12.27	0.14	6.33	57.80	103.47
714	46.85	12.18	0.16	6.33	57.31	103.86
715	46.93	12.45	0.20	6.42	57.24	104.35
716	47.00	13.53	0.22	6.42	57.95	105.00
717	47.10	14.24	0.19	6.33	58.79	105.63
718	47.15	13.97	0.23	6.33	58.92	106.09
719	47.20	13.62	0.27	6.33	58.79	106.32
720	47.25	13.62	0.30	6.33	58.15	106.24

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
721	47.31	13.62	0.30	6.42	58.33	105.93
722	47.40	14.15	0.26	6.33	59.44	105.60
723	47.44	13.62	0.22	6.33	60.31	105.07
724	47.52	13.62	0.17	6.33	60.38	104.31
725	47.58	11.73	0.14	6.33	60.23	103.33
726	47.67	10.39	0.12	6.42	59.78	102.22
727	47.73	9.85	0.11	6.42	59.86	101.19
728	47.78	10.44	0.10	6.42	59.76	100.33
729	47.86	10.12	0.10	6.42	60.31	99.75
730	47.92	10.48	0.10	6.42	60.51	99.58
731	47.98	10.48	0.10	6.42	60.76	99.82
732	48.05	11.02	0.10	6.52	61.11	100.27
733	48.12	10.93	0.10	6.52	61.50	100.85
734	48.19	10.93	0.12	6.52	61.13	101.74
735	48.27	10.75	0.15	6.52	60.13	102.52
736	48.32	10.75	0.17	6.52	58.22	103.23
737	48.39	11.65	0.18	6.52	55.23	103.75
738	48.47	13.80	0.23	6.52	52.37	104.20
739	48.52	15.14	0.22	6.52	48.97	104.58
740	48.57	17.02	0.21	6.52	45.63	104.82
741	48.67	19.89	0.17	6.52	43.20	104.92
742	48.71	19.89	0.16	6.52	41.55	105.08
743	48.76	22.13	0.16	6.52	41.23	105.24
744	48.82	22.57	0.16	6.52	40.94	105.63
745	48.93	20.07	0.16	6.52	42.02	106.27
746	48.97	19.08	0.19	6.52	43.97	107.28
747	49.05	16.21	0.26	6.61	46.09	108.31
748	49.08	19.04	0.30	6.61	47.92	109.44
749	49.16	16.93	0.37	6.71	49.82	110.62
750	49.25	18.99	0.46	6.71	51.13	111.87
751	49.29	18.99	0.50	6.71	52.10	113.14
752	49.36	23.38	0.58	6.71	52.05	114.52
753	49.43	24.46	0.67	6.81	51.21	115.77
754	49.48	25.08	0.77	6.81	49.34	116.81
755	49.55	25.98	0.91	6.81	47.43	117.60
756	49.64	28.75	1.14	6.90	45.79	118.25
757	49.70	34.76	1.19	6.90	44.94	118.78
758	49.75	37.00	1.16	6.90	44.24	119.23
759	49.81	38.52	1.09	6.90	43.43	119.56
760	49.90	37.17	1.05	6.90	42.73	119.90
761	49.94	36.19	1.08	6.90	42.13	120.10
762	50.01	35.74	1.12	7.00	42.39	120.15
763	50.08	36.01	1.10	7.09	43.00	120.18
764	50.15	36.73	1.26	7.09	43.93	120.19
765	50.24	36.55	1.33	7.09	44.06	120.24
766	50.30	33.95	1.28	7.19	43.61	120.23
767	50.34	33.05	1.24	7.19	43.10	120.11
768	50.41	31.98	1.17	7.28	42.71	119.97

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
769	50.47	37.44	1.13	8.53	42.19	119.58
770	50.54	39.32	1.02	8.72	41.50	119.10
771	50.62	37.71	0.93	8.91	40.55	118.60
772	50.66	36.73	0.89	9.01	39.44	118.04
773	50.77	34.58	0.76	9.11	38.30	117.47
774	50.81	34.22	0.73	9.20	37.79	116.82
775	50.87	33.41	0.68	9.20	37.58	116.23
776	50.92	32.96	0.61	9.30	37.40	115.71
777	51.01	32.34	0.57	9.30	37.12	115.22
778	51.07	31.71	0.55	9.30	36.85	114.92
779	51.15	32.34	0.54	9.39	36.63	114.67
780	51.21	31.89	0.54	9.49	36.47	114.52
781	51.26	32.34	0.54	9.49	36.38	114.50
782	51.32	32.70	0.55	9.49	36.26	114.56
783	51.39	32.70	0.56	9.49	36.13	114.67
784	51.46	32.70	0.58	9.58	36.12	114.80
785	51.53	33.50	0.59	9.58	36.09	114.94
786	51.61	34.13	0.60	9.68	36.06	115.08
787	51.65	34.40	0.61	9.68	35.98	115.20
788	51.72	34.40	0.62	9.68	35.85	115.30
789	51.81	34.31	0.63	9.68	35.61	115.38
790	51.84	34.76	0.63	9.78	35.39	115.44
791	51.92	35.03	0.62	9.78	35.17	115.47
792	52.01	35.38	0.62	9.87	34.96	115.49
793	52.06	36.01	0.62	9.87	34.72	115.49
794	52.11	36.28	0.62	9.87	34.44	115.49
795	52.19	36.64	0.61	9.97	34.28	115.48
796	52.25	36.73	0.61	9.97	34.15	115.51
797	52.30	36.64	0.61	9.97	34.03	115.56
798	52.38	36.68	0.61	9.97	33.96	115.66
799	52.45	36.37	0.62	10.06	33.91	115.77
800	52.49	36.73	0.63	10.06	33.88	115.90
801	52.57	37.44	0.65	10.06	33.95	116.02
802	52.65	38.34	0.68	10.16	34.08	116.14
803	52.70	38.61	0.69	10.16	34.44	116.21
804	52.79	39.06	0.70	10.16	34.78	116.24
805	52.85	38.25	0.70	10.16	35.12	116.22
806	52.89	37.53	0.70	10.16	35.45	116.09
807	52.99	34.67	0.68	10.16	35.82	115.84
808	53.04	34.13	0.66	10.16	36.13	115.49
809	53.08	33.50	0.63	10.16	36.57	115.07
810	53.17	32.61	0.57	10.16	36.93	114.60
811	53.24	31.80	0.52	10.26	37.21	114.09
812	53.33	30.99	0.46	10.26	37.23	113.59
813	53.39	29.74	0.44	10.26	37.22	113.10
814	53.42	29.38	0.42	10.26	37.37	112.64
815	53.49	28.84	0.40	10.26	37.62	112.29
816	53.58	28.49	0.40	10.26	37.98	112.05

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
817	53.63	28.31	0.40	10.26	38.48	111.98
818	53.68	27.05	0.40	10.26	38.93	112.03
819	53.77	27.05	0.41	10.26	39.46	112.19
820	53.83	27.05	0.42	10.26	40.10	112.42
821	53.88	27.05	0.44	10.26	40.78	112.70
822	53.97	27.68	0.48	10.16	41.50	113.01
823	54.03	28.13	0.51	10.16	42.02	113.33
824	54.08	27.59	0.53	10.16	42.14	113.61
825	54.18	27.63	0.56	10.16	42.12	113.82
826	54.22	27.63	0.58	10.16	41.98	114.00
827	54.27	27.68	0.59	10.26	41.78	114.13
828	54.38	29.56	0.57	10.26	41.54	114.24
829	54.42	29.74	0.54	10.26	41.81	114.67
830	54.47	30.01	0.54	10.26	42.05	115.21
831	54.57	30.46	0.55	10.35	42.43	115.78
832	54.61	31.17	0.57	10.35	41.62	116.57
833	54.68	31.17	0.81	10.35	41.14	117.57
834	54.75	32.88	0.93	10.45	40.50	118.66
835	54.79	32.61	1.00	10.45	39.78	119.73
836	54.86	43.45	1.16	10.64	39.03	120.80
837	54.95	47.39	1.40	10.64	38.29	121.91
838	55.01	51.69	1.55	10.73	37.14	122.83
839	55.06	54.02	1.65	10.73	36.02	123.68
840	55.12	57.15	1.80	10.73	34.71	124.52
841	55.21	61.27	2.04	10.73	33.76	125.22
842	55.25	64.14	2.11	10.64	32.87	125.75
843	55.32	66.91	2.23	10.54	32.18	126.15
844	55.40	72.29	2.38	10.54	31.81	126.39
845	55.50	77.75	2.42	10.45	31.72	126.45
846	55.52	77.93	2.40	10.35	31.96	126.30
847	55.60	76.23	2.31	10.26	32.50	126.07
848	55.67	68.89	2.13	10.35	33.16	125.74
849	55.72	61.18	1.92	10.26	33.98	125.28
850	55.79	52.40	1.75	10.35	35.08	124.70
851	55.86	47.48	1.66	10.45	36.27	124.04
852	55.95	45.68	1.60	10.73	37.65	123.26
853	56.00	45.95	1.53	10.73	38.96	122.53
854	56.05	45.51	1.40	10.73	40.16	121.88
855	56.11	44.61	1.29	10.73	40.86	121.32
856	56.19	40.85	1.09	10.73	41.22	120.78
857	56.24	38.34	1.08	10.73	41.64	120.18
858	56.34	35.74	1.04	11.12	42.32	119.54
859	56.37	35.03	1.01	11.02	43.11	118.95
860	56.43	34.31	0.95	10.93	43.79	118.37
861	56.54	31.53	0.87	10.93	44.39	117.93
862	56.59	30.01	0.82	10.93	44.58	117.44
863	56.64	30.10	0.79	10.93	44.42	116.85
864	56.73	31.17	0.73	11.02	44.27	116.23

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
865	56.79	30.73	0.69	11.12	44.22	115.62
866	56.84	30.37	0.63	11.12	43.79	115.04
867	56.93	28.84	0.51	11.12	43.16	114.47
868	56.96	28.22	0.50	11.21	42.56	113.83
869	57.03	27.05	0.48	11.21	42.19	113.19
870	57.13	27.14	0.44	11.31	41.98	112.57
871	57.16	27.14	0.42	11.31	41.84	112.02
872	57.23	26.34	0.38	11.31	41.87	111.70
873	57.29	26.34	0.36	11.31	41.94	111.47
874	57.38	25.44	0.36	11.41	41.75	111.27
875	57.42	25.44	0.36	11.41	41.56	111.22
876	57.49	25.44	0.36	11.41	41.52	111.34
877	57.57	25.71	0.40	11.41	41.66	111.51
878	57.62	26.34	0.39	11.50	42.09	111.67
879	57.68	27.68	0.41	11.50	42.48	111.80
880	57.77	28.67	0.47	11.50	43.04	111.92
881	57.85	27.50	0.46	11.50	43.82	112.03
882	57.92	25.62	0.44	11.50	44.48	111.99
883	57.97	24.81	0.43	11.50	45.20	111.88
884	58.02	23.83	0.43	11.50	45.91	111.65
885	58.07	22.57	0.43	11.50	46.56	111.26
886	58.16	22.13	0.40	11.60	47.09	110.88
887	58.23	21.86	0.36	11.60	47.42	110.58
888	58.31	22.22	0.32	11.60	47.72	110.31
889	58.37	22.22	0.31	11.60	47.78	110.05
890	58.42	22.04	0.31	11.60	47.67	109.88
891	58.50	21.77	0.32	11.60	47.59	109.83
892	58.57	21.50	0.33	11.69	47.59	109.91
893	58.61	21.59	0.33	11.69	47.77	110.16
894	58.68	21.68	0.36	11.69	48.12	110.74
895	58.76	22.22	0.38	11.69	48.53	111.58
896	58.80	22.66	0.39	11.69	48.38	112.57
897	58.87	23.56	0.42	11.79	48.09	113.70
898	58.95	25.62	0.55	11.79	48.27	114.79
899	59.01	27.68	0.69	11.88	46.93	116.17
900	59.06	31.35	0.80	11.88	45.24	117.35
901	59.16	33.95	0.95	11.88	43.13	118.35
902	59.19	32.25	1.03	11.88	41.20	119.16
903	59.29	44.52	1.31	12.75	40.00	119.76
904	59.33	47.57	1.30	12.75	39.12	120.19
905	59.39	51.33	1.21	12.75	38.51	120.44
906	59.47	51.24	1.14	12.56	37.77	120.49
907	59.54	46.40	1.13	12.65	36.79	120.38
908	59.58	43.45	1.12	12.65	36.60	119.93
909	59.65	42.01	1.05	12.84	36.97	119.35
910	59.73	42.46	0.95	12.94	38.40	118.82
911	59.81	40.22	0.82	12.84	40.33	118.46
912	59.85	37.53	0.76	12.84	39.79	117.27

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
913	59.92	32.88	0.69	12.84	38.45	115.93
914	59.99	28.67	0.76	12.84	36.19	114.48
915	60.08	28.84	0.90	12.94	33.75	112.89
916	60.13	31.80	0.00	13.13	31.17	111.17
917	60.18	34.04	0.00	13.13	28.28	109.13
918	60.27	39.24	0.00	13.13	24.82	106.64
919	60.33	40.76	0.00	13.03	5.00	102.26
920	60.38	40.04	0.00	13.03	N/A	87.36
921	60.47	38.88	0.00	13.03	N/A	87.36

Abbreviations

Depth: Depth from free surface, at which CPT was performed (ft)
q_c: Measured cone resistance (tsf)
f_s: Sleeve friction resistance (tsf)
u: Pore pressure (tsf)
Fines content: Percentage of fines in soil (%)
Unit weight: Bulk soil unit weight (pcf)

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data ::

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
1	0.10	0.01	0.00	0.01	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
2	0.16	0.01	0.00	0.01	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
3	0.23	0.01	0.00	0.01	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
4	0.30	0.02	0.00	0.02	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
5	0.34	0.02	0.00	0.02	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
6	0.40	0.02	0.00	0.02	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
7	0.50	0.03	0.00	0.03	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
8	0.54	0.03	0.00	0.03	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
9	0.60	0.03	0.00	0.03	1.00	0.358	1.34	0.266	1.00	1.00	2.000	Yes
10	0.68	0.04	0.00	0.04	1.00	0.358	1.34	0.266	1.00	1.00	2.000	Yes
11	0.73	0.04	0.00	0.04	1.00	0.358	1.34	0.266	1.00	1.00	2.000	Yes
12	0.80	0.05	0.00	0.05	1.00	0.357	1.34	0.266	1.00	1.00	2.000	Yes
13	0.87	0.05	0.00	0.05	1.00	0.357	1.34	0.266	1.00	1.00	2.000	Yes
14	0.95	0.06	0.00	0.06	1.00	0.357	1.34	0.266	1.00	1.00	2.000	Yes
15	0.99	0.06	0.00	0.06	1.00	0.357	1.34	0.266	1.00	1.00	2.000	Yes
16	1.09	0.06	0.00	0.06	1.00	0.357	1.34	0.266	1.00	1.00	2.000	Yes
17	1.14	0.07	0.00	0.07	1.00	0.357	1.34	0.266	1.00	1.00	2.000	Yes
18	1.22	0.07	0.00	0.07	1.00	0.357	1.34	0.266	1.00	1.00	2.000	Yes
19	1.29	0.08	0.00	0.08	1.00	0.357	1.34	0.266	1.00	1.00	2.000	Yes
20	1.33	0.08	0.00	0.08	1.00	0.357	1.34	0.266	1.00	1.00	2.000	Yes
21	1.39	0.08	0.00	0.08	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
22	1.48	0.09	0.00	0.09	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
23	1.52	0.09	0.00	0.09	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
24	1.59	0.09	0.00	0.09	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
25	1.66	0.10	0.00	0.10	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
26	1.73	0.10	0.00	0.10	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
27	1.78	0.11	0.00	0.11	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
28	1.84	0.11	0.00	0.11	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
29	1.93	0.11	0.00	0.11	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
30	1.98	0.12	0.00	0.12	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
31	2.04	0.12	0.00	0.12	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
32	2.13	0.12	0.00	0.12	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
33	2.18	0.13	0.00	0.13	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
34	2.25	0.13	0.00	0.13	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
35	2.30	0.13	0.00	0.13	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
36	2.38	0.14	0.00	0.14	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
37	2.44	0.14	0.00	0.14	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
38	2.51	0.15	0.00	0.15	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
39	2.57	0.15	0.00	0.15	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
40	2.66	0.15	0.00	0.15	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
41	2.72	0.16	0.00	0.16	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
42	2.76	0.16	0.00	0.16	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
43	2.84	0.16	0.00	0.16	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
44	2.92	0.17	0.00	0.17	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
45	2.95	0.17	0.00	0.17	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
46	3.07	0.18	0.00	0.18	0.99	0.356	1.34	0.265	1.00	1.00	2.000	No
47	3.11	0.18	0.00	0.18	0.99	0.356	1.34	0.264	1.00	1.00	2.000	No
48	3.16	0.18	0.00	0.18	0.99	0.356	1.34	0.264	1.00	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
49	3.26	0.19	0.00	0.19	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
50	3.30	0.19	0.00	0.19	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
51	3.36	0.19	0.00	0.19	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
52	3.44	0.20	0.00	0.20	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
53	3.50	0.20	0.00	0.20	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
54	3.56	0.20	0.00	0.20	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
55	3.62	0.21	0.00	0.21	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
56	3.71	0.21	0.00	0.21	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
57	3.76	0.21	0.00	0.21	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
58	3.82	0.22	0.00	0.22	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
59	3.90	0.22	0.00	0.22	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
60	3.95	0.22	0.00	0.22	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
61	4.00	0.23	0.00	0.23	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
62	4.09	0.23	0.00	0.23	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
63	4.16	0.24	0.00	0.24	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
64	4.20	0.24	0.00	0.24	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
65	4.27	0.24	0.00	0.24	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
66	4.34	0.25	0.00	0.25	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
67	4.44	0.25	0.00	0.25	0.99	0.354	1.34	0.264	1.00	1.00	2.000	No
68	4.48	0.25	0.00	0.25	0.99	0.354	1.34	0.264	1.00	1.00	2.000	No
69	4.58	0.26	0.00	0.26	0.99	0.354	1.34	0.264	1.00	1.00	2.000	No
70	4.63	0.26	0.00	0.26	0.99	0.354	1.34	0.264	1.00	1.00	2.000	No
71	4.68	0.26	0.00	0.26	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
72	4.73	0.27	0.00	0.27	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
73	4.80	0.27	0.00	0.27	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
74	4.86	0.27	0.00	0.27	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
75	4.93	0.28	0.00	0.28	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
76	5.00	0.28	0.00	0.28	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
77	5.07	0.29	0.00	0.29	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
78	5.12	0.29	0.00	0.29	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
79	5.20	0.29	0.00	0.29	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
80	5.27	0.30	0.00	0.30	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
81	5.33	0.30	0.00	0.30	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
82	5.41	0.30	0.00	0.30	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
83	5.45	0.31	0.00	0.31	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
84	5.52	0.31	0.00	0.31	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
85	5.60	0.31	0.00	0.31	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
86	5.67	0.32	0.00	0.32	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
87	5.71	0.32	0.00	0.32	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
88	5.80	0.32	0.00	0.32	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
89	5.85	0.33	0.00	0.33	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
90	5.91	0.33	0.00	0.33	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
91	6.01	0.34	0.00	0.34	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
92	6.06	0.34	0.00	0.34	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
93	6.11	0.34	0.00	0.34	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
94	6.18	0.34	0.00	0.34	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
95	6.26	0.35	0.00	0.35	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
96	6.30	0.35	0.00	0.35	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
97	6.37	0.35	0.00	0.35	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
98	6.45	0.36	0.00	0.36	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
99	6.51	0.36	0.00	0.36	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
100	6.60	0.37	0.00	0.37	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
101	6.64	0.37	0.00	0.37	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
102	6.70	0.37	0.00	0.37	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
103	6.80	0.38	0.00	0.38	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
104	6.83	0.38	0.00	0.38	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
105	6.90	0.38	0.00	0.38	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
106	6.98	0.39	0.00	0.39	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
107	7.04	0.39	0.00	0.39	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
108	7.09	0.39	0.00	0.39	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
109	7.16	0.40	0.00	0.40	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
110	7.24	0.40	0.00	0.40	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
111	7.30	0.40	0.00	0.40	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
112	7.39	0.41	0.00	0.41	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
113	7.43	0.41	0.00	0.41	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
114	7.50	0.42	0.00	0.42	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
115	7.59	0.42	0.00	0.42	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
116	7.63	0.42	0.00	0.42	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
117	7.70	0.43	0.00	0.43	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
118	7.78	0.43	0.00	0.43	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
119	7.83	0.43	0.00	0.43	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
120	7.89	0.44	0.00	0.44	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
121	7.95	0.44	0.00	0.44	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
122	8.02	0.44	0.00	0.44	0.98	0.352	1.34	0.261	1.00	1.00	2.000	No
123	8.11	0.45	0.00	0.45	0.98	0.352	1.34	0.261	1.00	1.00	2.000	No
124	8.16	0.45	0.00	0.45	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
125	8.21	0.45	0.00	0.45	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
126	8.30	0.46	0.00	0.46	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
127	8.36	0.46	0.00	0.46	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
128	8.41	0.46	0.00	0.46	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
129	8.47	0.47	0.00	0.47	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
130	8.56	0.47	0.00	0.47	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
131	8.61	0.47	0.00	0.47	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
132	8.70	0.48	0.00	0.48	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
133	8.75	0.48	0.00	0.48	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
134	8.81	0.49	0.00	0.49	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
135	8.90	0.49	0.00	0.49	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
136	8.94	0.49	0.00	0.49	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
137	9.01	0.50	0.00	0.50	0.98	0.351	1.34	0.261	1.00	1.00	0.261	No
138	9.09	0.50	0.00	0.50	0.98	0.353	1.34	0.262	1.00	1.00	0.262	No
139	9.13	0.50	0.00	0.50	0.98	0.354	1.34	0.263	1.00	1.00	0.263	No
140	9.20	0.51	0.01	0.50	0.98	0.355	1.34	0.264	1.00	1.00	0.264	No
141	9.27	0.51	0.01	0.50	0.98	0.356	1.34	0.265	1.00	1.00	0.265	No
142	9.35	0.51	0.01	0.50	0.98	0.358	1.34	0.266	1.00	1.00	0.266	No
143	9.39	0.52	0.01	0.50	0.98	0.359	1.34	0.267	1.00	1.00	0.267	No
144	9.45	0.52	0.01	0.51	0.98	0.360	1.34	0.268	1.00	1.00	0.268	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
145	9.54	0.52	0.02	0.51	0.98	0.362	1.34	0.269	1.00	1.00	0.269	No
146	9.59	0.53	0.02	0.51	0.98	0.363	1.34	0.270	1.00	1.00	0.270	No
147	9.65	0.53	0.02	0.51	0.98	0.364	1.34	0.271	1.00	1.00	0.271	No
148	9.73	0.53	0.02	0.51	0.98	0.366	1.34	0.272	1.00	1.00	0.272	No
149	9.81	0.54	0.03	0.51	0.98	0.367	1.34	0.273	1.00	1.00	0.273	No
150	9.85	0.54	0.03	0.51	0.98	0.368	1.34	0.274	1.00	1.00	0.274	No
151	9.94	0.55	0.03	0.52	0.98	0.370	1.34	0.275	1.00	1.00	0.275	No
152	10.00	0.55	0.03	0.52	0.98	0.371	1.34	0.276	1.00	1.00	0.276	No
153	10.04	0.55	0.03	0.52	0.98	0.372	1.34	0.277	1.00	1.00	0.277	No
154	10.12	0.55	0.03	0.52	0.98	0.373	1.34	0.278	1.00	1.00	0.278	No
155	10.19	0.56	0.04	0.52	0.98	0.375	1.34	0.279	1.00	1.00	0.279	No
156	10.24	0.56	0.04	0.52	0.98	0.376	1.34	0.279	1.00	1.00	0.279	No
157	10.31	0.56	0.04	0.52	0.98	0.377	1.34	0.280	1.00	1.00	0.280	No
158	10.39	0.57	0.04	0.53	0.98	0.379	1.34	0.282	1.00	1.00	0.282	No
159	10.48	0.57	0.05	0.53	0.98	0.380	1.34	0.283	1.00	1.00	0.283	No
160	10.53	0.58	0.05	0.53	0.98	0.381	1.34	0.284	1.00	1.00	0.284	No
161	10.63	0.58	0.05	0.53	0.98	0.383	1.34	0.285	1.00	1.00	0.285	No
162	10.67	0.58	0.05	0.53	0.98	0.384	1.34	0.285	1.00	1.00	0.285	No
163	10.71	0.59	0.05	0.53	0.98	0.385	1.34	0.286	1.00	1.00	0.286	No
164	10.79	0.59	0.06	0.53	0.98	0.386	1.34	0.287	1.00	1.00	0.287	No
165	10.83	0.59	0.06	0.54	0.98	0.387	1.34	0.288	1.00	1.00	0.288	No
166	10.93	0.60	0.06	0.54	0.98	0.388	1.34	0.289	1.00	1.00	0.289	No
167	10.98	0.60	0.06	0.54	0.98	0.389	1.34	0.290	1.00	1.00	0.290	No
168	11.06	0.60	0.06	0.54	0.98	0.391	1.34	0.291	1.00	1.00	0.291	No
169	11.11	0.61	0.07	0.54	0.98	0.392	1.34	0.291	1.00	1.00	0.291	No
170	11.16	0.61	0.07	0.54	0.98	0.393	1.34	0.292	1.00	1.00	0.292	No
171	11.23	0.61	0.07	0.54	0.98	0.394	1.34	0.293	1.00	1.00	0.293	No
172	11.31	0.62	0.07	0.55	0.98	0.395	1.34	0.294	1.00	1.00	0.294	No
173	11.36	0.62	0.07	0.55	0.98	0.396	1.34	0.294	1.00	1.00	0.294	No
174	11.42	0.62	0.08	0.55	0.98	0.397	1.34	0.295	1.00	1.00	0.295	No
175	11.51	0.63	0.08	0.55	0.98	0.398	1.34	0.296	1.00	1.00	0.296	No
176	11.56	0.63	0.08	0.55	0.98	0.399	1.34	0.297	1.00	1.00	0.297	No
177	11.65	0.64	0.08	0.55	0.98	0.401	1.34	0.298	1.00	1.00	0.298	No
178	11.71	0.64	0.08	0.56	0.98	0.402	1.34	0.299	1.00	1.00	0.299	No
179	11.75	0.64	0.09	0.56	0.98	0.402	1.34	0.299	1.00	1.00	0.299	No
180	11.84	0.65	0.09	0.56	0.98	0.404	1.34	0.300	1.00	1.00	0.300	No
181	11.89	0.65	0.09	0.56	0.98	0.405	1.34	0.301	1.00	1.00	0.301	No
182	11.96	0.65	0.09	0.56	0.98	0.406	1.34	0.302	1.00	1.00	0.302	No
183	12.03	0.66	0.09	0.56	0.97	0.407	1.34	0.303	1.00	1.00	0.303	No
184	12.11	0.66	0.10	0.57	0.97	0.408	1.34	0.304	1.00	1.00	0.304	No
185	12.16	0.67	0.10	0.57	0.97	0.409	1.34	0.304	1.00	1.00	0.304	No
186	12.21	0.67	0.10	0.57	0.97	0.410	1.34	0.305	1.00	1.00	0.305	No
187	12.30	0.67	0.10	0.57	0.97	0.411	1.34	0.306	1.00	1.00	0.306	No
188	12.35	0.68	0.10	0.57	0.97	0.412	1.34	0.306	1.00	1.00	0.306	No
189	12.41	0.68	0.11	0.57	0.97	0.413	1.34	0.307	1.00	1.00	0.307	No
190	12.49	0.68	0.11	0.57	0.97	0.414	1.34	0.308	1.00	1.00	0.308	No
191	12.56	0.69	0.11	0.58	0.97	0.415	1.34	0.309	1.00	1.00	0.309	No
192	12.60	0.69	0.11	0.58	0.97	0.416	1.34	0.309	1.00	1.00	0.309	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
193	12.67	0.69	0.11	0.58	0.97	0.417	1.34	0.310	1.00	1.00	0.310	No
194	12.75	0.70	0.12	0.58	0.97	0.418	1.34	0.311	1.00	1.00	0.311	No
195	12.80	0.70	0.12	0.58	0.97	0.419	1.34	0.312	1.00	1.00	0.312	No
196	12.90	0.71	0.12	0.58	0.97	0.420	1.34	0.313	1.00	1.00	0.313	No
197	12.95	0.71	0.12	0.58	0.97	0.421	1.34	0.313	1.00	1.00	0.313	No
198	13.02	0.71	0.13	0.59	0.97	0.422	1.34	0.314	1.00	1.00	0.314	No
199	13.06	0.71	0.13	0.59	0.97	0.423	1.34	0.314	1.00	1.00	0.314	No
200	13.14	0.72	0.13	0.59	0.97	0.424	1.34	0.315	1.00	1.00	0.315	No
201	13.19	0.72	0.13	0.59	0.97	0.425	1.34	0.316	1.00	1.00	0.316	No
202	13.29	0.73	0.13	0.59	0.97	0.426	1.34	0.317	1.00	1.00	0.317	No
203	13.33	0.73	0.14	0.59	0.97	0.427	1.34	0.317	1.00	1.00	0.317	No
204	13.39	0.73	0.14	0.60	0.97	0.427	1.34	0.318	1.00	1.00	0.318	No
205	13.48	0.74	0.14	0.60	0.97	0.429	1.34	0.319	1.00	1.00	0.319	No
206	13.54	0.74	0.14	0.60	0.97	0.430	1.34	0.319	1.00	1.00	0.319	No
207	13.59	0.74	0.14	0.60	0.97	0.430	1.34	0.320	1.00	1.00	0.320	No
208	13.67	0.75	0.15	0.60	0.97	0.431	1.34	0.321	1.00	1.00	0.321	No
209	13.72	0.75	0.15	0.60	0.97	0.432	1.34	0.321	1.00	1.00	0.321	No
210	13.78	0.75	0.15	0.60	0.97	0.433	1.34	0.322	1.00	1.00	0.322	No
211	13.86	0.76	0.15	0.61	0.97	0.434	1.34	0.323	1.00	1.00	0.323	No
212	13.93	0.76	0.15	0.61	0.97	0.435	1.34	0.323	1.00	1.00	0.323	No
213	14.01	0.77	0.16	0.61	0.97	0.436	1.34	0.324	1.00	1.00	0.324	No
214	14.05	0.77	0.16	0.61	0.97	0.436	1.34	0.325	1.00	1.00	0.325	No
215	14.14	0.77	0.16	0.61	0.97	0.438	1.34	0.325	1.00	1.00	0.325	No
216	14.21	0.78	0.16	0.62	0.97	0.439	1.34	0.326	1.00	1.00	0.326	No
217	14.24	0.78	0.16	0.62	0.97	0.439	1.34	0.326	1.00	1.00	0.326	No
218	14.31	0.78	0.17	0.62	0.97	0.440	1.34	0.327	1.00	1.00	0.327	No
219	14.39	0.79	0.17	0.62	0.97	0.441	1.34	0.328	1.00	1.00	0.328	No
220	14.44	0.79	0.17	0.62	0.97	0.441	1.34	0.328	1.00	1.00	0.328	No
221	14.54	0.80	0.17	0.62	0.97	0.443	1.34	0.329	1.00	1.00	0.329	No
222	14.59	0.80	0.17	0.62	0.97	0.443	1.34	0.330	1.00	1.00	0.330	No
223	14.64	0.80	0.18	0.63	0.97	0.444	1.34	0.330	1.00	1.00	0.330	No
224	14.70	0.80	0.18	0.63	0.97	0.445	1.34	0.331	1.00	1.00	0.331	No
225	14.79	0.81	0.18	0.63	0.97	0.446	1.34	0.332	1.00	1.00	0.332	No
226	14.83	0.81	0.18	0.63	0.97	0.446	1.34	0.332	1.00	1.00	0.332	No
227	14.93	0.82	0.19	0.63	0.97	0.448	1.34	0.333	1.00	1.00	0.333	No
228	14.98	0.82	0.19	0.63	0.97	0.448	1.34	0.333	1.00	1.00	0.333	No
229	15.03	0.82	0.19	0.64	0.97	0.449	1.34	0.334	1.00	1.00	0.334	No
230	15.10	0.83	0.19	0.64	0.97	0.450	1.34	0.334	1.00	1.00	0.334	No
231	15.18	0.83	0.19	0.64	0.97	0.451	1.34	0.335	1.00	1.00	0.335	No
232	15.23	0.83	0.19	0.64	0.97	0.451	1.34	0.336	1.00	1.00	0.336	No
233	15.33	0.84	0.20	0.64	0.97	0.452	1.34	0.336	1.00	1.00	0.336	No
234	15.37	0.84	0.20	0.64	0.97	0.453	1.34	0.337	1.00	1.00	0.337	No
235	15.44	0.85	0.20	0.65	0.97	0.454	1.34	0.337	1.00	1.00	0.337	No
236	15.52	0.85	0.20	0.65	0.97	0.455	1.34	0.338	1.00	1.00	0.338	No
237	15.56	0.85	0.20	0.65	0.97	0.455	1.34	0.338	1.00	1.00	0.338	No
238	15.63	0.86	0.21	0.65	0.97	0.456	1.34	0.339	1.00	1.00	0.339	No
239	15.71	0.86	0.21	0.65	0.97	0.457	1.34	0.340	1.00	1.00	0.340	No
240	15.77	0.86	0.21	0.65	0.97	0.458	1.34	0.340	1.00	1.00	0.340	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
241	15.82	0.87	0.21	0.65	0.97	0.458	1.34	0.341	1.00	1.00	0.341	No
242	15.89	0.87	0.21	0.66	0.97	0.459	1.34	0.341	1.00	1.00	0.341	No
243	15.97	0.87	0.22	0.66	0.97	0.460	1.34	0.342	1.00	1.00	0.342	No
244	16.02	0.88	0.22	0.66	0.97	0.460	1.34	0.342	1.00	1.00	0.342	No
245	16.10	0.88	0.22	0.66	0.97	0.461	1.34	0.343	1.00	1.00	0.343	No
246	16.17	0.89	0.22	0.66	0.97	0.462	1.34	0.344	1.00	1.00	0.344	No
247	16.22	0.89	0.23	0.66	0.97	0.463	1.34	0.344	1.00	1.00	0.344	No
248	16.28	0.89	0.23	0.66	0.97	0.463	1.34	0.345	1.00	1.00	0.345	No
249	16.37	0.90	0.23	0.67	0.97	0.464	1.34	0.345	1.00	1.00	0.345	No
250	16.42	0.90	0.23	0.67	0.97	0.465	1.34	0.346	1.00	1.00	0.346	No
251	16.52	0.90	0.23	0.67	0.97	0.466	1.34	0.347	1.00	1.00	0.347	No
252	16.55	0.91	0.24	0.67	0.97	0.466	1.34	0.347	1.00	1.00	0.347	No
253	16.62	0.91	0.24	0.67	0.96	0.467	1.34	0.347	1.00	1.00	0.347	No
254	16.70	0.91	0.24	0.67	0.96	0.468	1.34	0.348	1.00	1.00	0.348	No
255	16.74	0.92	0.24	0.67	0.96	0.468	1.34	0.348	1.00	1.00	0.348	No
256	16.82	0.92	0.24	0.68	0.96	0.469	1.34	0.349	1.00	1.00	0.349	No
257	16.91	0.92	0.25	0.68	0.96	0.470	1.34	0.350	1.00	1.00	0.350	No
258	16.94	0.93	0.25	0.68	0.96	0.471	1.34	0.350	1.00	1.00	0.350	No
259	17.01	0.93	0.25	0.68	0.96	0.471	1.34	0.351	1.00	1.00	0.351	No
260	17.10	0.93	0.25	0.68	0.96	0.472	1.34	0.351	1.00	1.00	0.351	No
261	17.15	0.94	0.25	0.68	0.96	0.473	1.34	0.352	1.00	1.00	0.352	No
262	17.21	0.94	0.26	0.68	0.96	0.473	1.34	0.352	1.00	1.00	0.352	No
263	17.30	0.95	0.26	0.69	0.96	0.474	1.34	0.353	1.00	1.00	0.353	No
264	17.34	0.95	0.26	0.69	0.96	0.475	1.34	0.353	1.00	1.00	0.353	No
265	17.41	0.95	0.26	0.69	0.96	0.475	1.34	0.354	1.00	1.00	0.354	No
266	17.49	0.96	0.26	0.69	0.96	0.476	1.34	0.354	1.00	1.00	0.354	No
267	17.53	0.96	0.27	0.69	0.96	0.477	1.34	0.355	1.00	1.00	0.355	No
268	17.59	0.96	0.27	0.69	0.96	0.477	1.34	0.355	1.00	1.00	0.355	No
269	17.67	0.97	0.27	0.69	0.96	0.478	1.34	0.356	1.00	1.00	0.356	No
270	17.73	0.97	0.27	0.70	0.96	0.479	1.34	0.356	1.00	1.00	0.356	No
271	17.79	0.97	0.27	0.70	0.96	0.479	1.34	0.356	1.00	1.00	0.356	No
272	17.87	0.98	0.28	0.70	0.96	0.480	1.34	0.357	1.00	1.00	0.357	No
273	17.92	0.98	0.28	0.70	0.96	0.481	1.34	0.357	1.00	1.00	0.357	No
274	17.99	0.98	0.28	0.70	0.96	0.481	1.34	0.358	1.00	1.00	0.358	No
275	18.07	0.99	0.28	0.70	0.96	0.482	1.34	0.359	1.00	1.00	0.359	No
276	18.14	0.99	0.29	0.71	0.96	0.483	1.34	0.359	1.00	1.00	0.359	No
277	18.19	0.99	0.29	0.71	0.96	0.483	1.34	0.359	1.00	1.00	0.359	No
278	18.26	1.00	0.29	0.71	0.96	0.484	1.34	0.360	1.00	1.00	0.360	No
279	18.34	1.00	0.29	0.71	0.96	0.485	1.34	0.360	1.00	1.00	0.360	No
280	18.38	1.00	0.29	0.71	0.96	0.485	1.34	0.361	1.00	1.00	0.361	No
281	18.45	1.01	0.29	0.71	0.96	0.486	1.34	0.361	1.00	1.00	0.361	No
282	18.53	1.01	0.30	0.71	0.96	0.487	1.34	0.362	1.00	1.00	0.362	No
283	18.60	1.01	0.30	0.71	0.96	0.487	1.34	0.362	1.00	1.00	0.362	No
284	18.68	1.02	0.30	0.72	0.96	0.488	1.34	0.363	1.00	1.00	0.363	No
285	18.72	1.02	0.30	0.72	0.96	0.488	1.34	0.363	1.00	1.00	0.363	No
286	18.79	1.02	0.31	0.72	0.96	0.489	1.34	0.364	1.00	1.00	0.364	No
287	18.84	1.03	0.31	0.72	0.96	0.489	1.34	0.364	1.00	1.00	0.364	No
288	18.92	1.03	0.31	0.72	0.96	0.490	1.34	0.365	1.00	1.00	0.365	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
289	18.98	1.03	0.31	0.72	0.96	0.491	1.34	0.365	1.00	1.00	0.365	No
290	19.06	1.04	0.31	0.72	0.96	0.491	1.34	0.366	1.00	1.00	0.366	No
291	19.11	1.04	0.32	0.73	0.96	0.492	1.34	0.366	1.00	1.00	0.366	No
292	19.18	1.04	0.32	0.73	0.96	0.493	1.34	0.366	1.00	1.00	0.366	No
293	19.25	1.05	0.32	0.73	0.96	0.493	1.34	0.367	1.00	1.00	0.367	No
294	19.33	1.05	0.32	0.73	0.96	0.494	1.34	0.367	1.00	1.00	0.367	No
295	19.37	1.05	0.32	0.73	0.96	0.494	1.34	0.368	1.00	1.00	0.368	No
296	19.47	1.06	0.33	0.73	0.96	0.495	1.34	0.368	1.00	1.00	0.368	No
297	19.52	1.06	0.33	0.73	0.96	0.496	1.34	0.369	1.00	1.00	0.369	No
298	19.57	1.06	0.33	0.73	0.96	0.496	1.34	0.369	1.00	1.00	0.369	No
299	19.62	1.07	0.33	0.74	0.96	0.497	1.34	0.369	1.00	1.00	0.369	No
300	19.71	1.07	0.33	0.74	0.96	0.497	1.34	0.370	1.00	1.00	0.370	No
301	19.77	1.07	0.34	0.74	0.96	0.498	1.34	0.370	1.00	1.00	0.370	No
302	19.82	1.08	0.34	0.74	0.96	0.498	1.34	0.371	1.00	1.00	0.371	No
303	19.91	1.08	0.34	0.74	0.96	0.499	1.34	0.371	1.00	1.00	0.371	No
304	19.96	1.08	0.34	0.74	0.96	0.500	1.34	0.372	1.00	1.00	0.372	No
305	20.02	1.09	0.34	0.74	0.96	0.500	1.34	0.372	1.00	1.00	0.372	No
306	20.11	1.09	0.35	0.75	0.96	0.501	1.34	0.373	1.00	1.00	0.373	No
307	20.18	1.10	0.35	0.75	0.96	0.502	1.34	0.373	1.00	1.00	0.373	No
308	20.23	1.10	0.35	0.75	0.96	0.502	1.34	0.373	1.00	1.00	0.373	No
309	20.28	1.10	0.35	0.75	0.96	0.502	1.34	0.374	1.00	1.00	0.374	No
310	20.37	1.11	0.35	0.75	0.96	0.503	1.34	0.374	1.00	1.00	0.374	No
311	20.42	1.11	0.36	0.75	0.96	0.504	1.34	0.375	1.00	1.00	0.375	No
312	20.48	1.11	0.36	0.75	0.96	0.504	1.34	0.375	1.00	1.00	0.375	No
313	20.56	1.12	0.36	0.75	0.96	0.505	1.34	0.375	1.00	1.00	0.375	No
314	20.63	1.12	0.36	0.76	0.96	0.505	1.34	0.376	1.00	1.00	0.376	No
315	20.67	1.12	0.36	0.76	0.96	0.506	1.34	0.376	1.00	1.00	0.376	No
316	20.74	1.12	0.37	0.76	0.95	0.506	1.34	0.377	1.00	1.00	0.377	No
317	20.83	1.13	0.37	0.76	0.95	0.507	1.34	0.377	1.00	1.00	0.377	No
318	20.90	1.13	0.37	0.76	0.95	0.508	1.34	0.378	1.00	1.00	0.378	No
319	20.97	1.14	0.37	0.76	0.95	0.508	1.34	0.378	1.00	1.00	0.378	No
320	21.02	1.14	0.38	0.76	0.95	0.509	1.34	0.378	1.00	1.00	0.378	No
321	21.10	1.14	0.38	0.76	0.95	0.509	1.34	0.379	1.00	1.00	0.379	No
322	21.17	1.15	0.38	0.77	0.95	0.510	1.34	0.379	1.00	1.00	0.379	No
323	21.22	1.15	0.38	0.77	0.95	0.510	1.34	0.380	1.00	1.00	0.380	No
324	21.27	1.15	0.38	0.77	0.95	0.511	1.34	0.380	1.00	1.00	0.380	No
325	21.37	1.16	0.39	0.77	0.95	0.512	1.34	0.380	1.00	1.00	0.380	No
326	21.43	1.16	0.39	0.77	0.95	0.512	1.34	0.381	1.00	1.00	0.381	No
327	21.46	1.16	0.39	0.77	0.95	0.512	1.34	0.381	1.00	1.00	0.381	No
328	21.55	1.17	0.39	0.77	0.95	0.513	1.34	0.382	1.00	1.00	0.382	No
329	21.62	1.17	0.39	0.77	0.95	0.514	1.34	0.382	1.00	1.00	0.382	No
330	21.66	1.17	0.39	0.78	0.95	0.514	1.34	0.382	1.00	1.00	0.382	No
331	21.74	1.17	0.40	0.78	0.95	0.514	1.34	0.383	1.00	1.00	0.383	No
332	21.81	1.18	0.40	0.78	0.95	0.515	1.34	0.383	1.00	1.00	0.383	No
333	21.85	1.18	0.40	0.78	0.95	0.515	1.34	0.383	1.00	1.00	0.383	No
334	21.93	1.18	0.40	0.78	0.95	0.516	1.34	0.384	1.00	1.00	0.384	No
335	22.00	1.19	0.41	0.78	0.95	0.516	1.34	0.384	1.00	1.00	0.384	No
336	22.07	1.19	0.41	0.78	0.95	0.517	1.34	0.385	1.00	1.00	0.385	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
337	22.16	1.20	0.41	0.79	0.95	0.518	1.34	0.385	1.00	1.00	0.385	No
338	22.19	1.20	0.41	0.79	0.95	0.518	1.34	0.385	1.00	1.00	0.385	No
339	22.26	1.20	0.41	0.79	0.95	0.518	1.34	0.386	1.00	1.00	0.386	No
340	22.33	1.20	0.42	0.79	0.95	0.519	1.34	0.386	1.00	1.00	0.386	No
341	22.40	1.21	0.42	0.79	0.95	0.519	1.34	0.386	1.00	1.00	0.386	No
342	22.45	1.21	0.42	0.79	0.95	0.520	1.34	0.387	1.00	1.00	0.387	No
343	22.53	1.21	0.42	0.79	0.95	0.520	1.34	0.387	1.00	1.00	0.387	No
344	22.60	1.22	0.42	0.79	0.95	0.521	1.34	0.387	1.00	1.00	0.387	No
345	22.64	1.22	0.43	0.79	0.95	0.521	1.34	0.388	1.00	1.00	0.388	No
346	22.70	1.22	0.43	0.80	0.95	0.522	1.34	0.388	1.00	1.00	0.388	No
347	22.80	1.23	0.43	0.80	0.95	0.522	1.34	0.389	1.00	1.00	0.389	No
348	22.84	1.23	0.43	0.80	0.95	0.523	1.34	0.389	1.00	1.00	0.389	No
349	22.90	1.23	0.43	0.80	0.95	0.523	1.34	0.389	1.00	1.00	0.389	No
350	23.00	1.24	0.44	0.80	0.95	0.524	1.34	0.390	1.00	1.00	0.390	No
351	23.05	1.24	0.44	0.80	0.95	0.524	1.34	0.390	1.00	1.00	0.390	No
352	23.14	1.25	0.44	0.80	0.95	0.525	1.34	0.390	1.00	1.00	0.390	No
353	23.18	1.25	0.44	0.81	0.95	0.525	1.34	0.391	1.00	1.00	0.391	No
354	23.24	1.25	0.44	0.81	0.95	0.525	1.34	0.391	1.00	1.00	0.391	No
355	23.32	1.25	0.45	0.81	0.95	0.526	1.34	0.391	1.00	1.00	0.391	No
356	23.39	1.26	0.45	0.81	0.95	0.526	1.34	0.392	1.00	1.00	0.392	No
357	23.44	1.26	0.45	0.81	0.95	0.527	1.34	0.392	1.00	1.00	0.392	No
358	23.53	1.27	0.45	0.81	0.95	0.527	1.34	0.392	1.00	1.00	0.392	No
359	23.59	1.27	0.46	0.81	0.95	0.528	1.34	0.392	1.00	1.00	0.392	No
360	23.63	1.27	0.46	0.81	0.95	0.528	1.34	0.393	1.00	1.00	0.393	No
361	23.69	1.27	0.46	0.82	0.95	0.528	1.34	0.393	1.00	1.00	0.393	No
362	23.77	1.28	0.46	0.82	0.95	0.529	1.34	0.393	1.00	1.00	0.393	No
363	23.82	1.28	0.46	0.82	0.95	0.529	1.34	0.394	1.00	1.00	0.394	No
364	23.93	1.29	0.47	0.82	0.95	0.530	1.34	0.394	1.00	1.00	0.394	No
365	23.95	1.29	0.47	0.82	0.95	0.530	1.34	0.394	1.00	1.00	0.394	No
366	24.03	1.29	0.47	0.82	0.95	0.530	1.34	0.394	1.00	1.00	0.394	No
367	24.12	1.30	0.47	0.83	0.94	0.531	1.34	0.395	1.00	1.00	0.395	No
368	24.16	1.30	0.47	0.83	0.94	0.531	1.34	0.395	1.00	1.00	0.395	No
369	24.22	1.30	0.47	0.83	0.94	0.531	1.34	0.395	1.00	1.00	0.395	No
370	24.30	1.31	0.48	0.83	0.94	0.532	1.34	0.396	1.00	1.00	0.396	No
371	24.37	1.31	0.48	0.83	0.94	0.532	1.34	0.396	1.00	1.00	0.396	No
372	24.43	1.31	0.48	0.83	0.94	0.533	1.34	0.396	1.00	1.00	0.396	No
373	24.50	1.32	0.48	0.83	0.94	0.533	1.34	0.397	1.00	1.00	0.397	No
374	24.57	1.32	0.49	0.83	0.94	0.534	1.34	0.397	1.00	1.00	0.397	No
375	24.62	1.32	0.49	0.84	0.94	0.534	1.34	0.397	1.00	1.00	0.397	No
376	24.69	1.33	0.49	0.84	0.94	0.534	1.34	0.397	1.00	1.00	0.397	No
377	24.77	1.33	0.49	0.84	0.94	0.535	1.34	0.398	1.00	1.00	0.398	No
378	24.83	1.33	0.49	0.84	0.94	0.535	1.34	0.398	1.00	1.00	0.398	No
379	24.88	1.34	0.50	0.84	0.94	0.535	1.34	0.398	1.00	1.00	0.398	No
380	24.97	1.34	0.50	0.84	0.94	0.536	1.34	0.399	1.00	1.00	0.399	No
381	25.02	1.34	0.50	0.84	0.94	0.536	1.34	0.399	1.00	1.00	0.399	No
382	25.11	1.35	0.50	0.85	0.94	0.537	1.34	0.399	1.00	1.00	0.399	No
383	25.17	1.35	0.50	0.85	0.94	0.537	1.34	0.399	1.00	1.00	0.399	No
384	25.21	1.35	0.51	0.85	0.94	0.537	1.34	0.400	1.00	1.00	0.400	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
385	25.29	1.36	0.51	0.85	0.94	0.538	1.34	0.400	1.00	1.00	0.400	No
386	25.36	1.36	0.51	0.85	0.94	0.538	1.34	0.400	1.00	1.00	0.400	No
387	25.40	1.36	0.51	0.85	0.94	0.538	1.34	0.400	1.00	1.00	0.400	No
388	25.46	1.37	0.51	0.85	0.94	0.538	1.34	0.401	1.00	1.00	0.401	No
389	25.54	1.37	0.52	0.85	0.94	0.539	1.34	0.401	1.00	1.00	0.401	No
390	25.62	1.37	0.52	0.86	0.94	0.539	1.34	0.401	1.00	1.00	0.401	No
391	25.66	1.38	0.52	0.86	0.94	0.540	1.34	0.401	1.00	1.00	0.401	No
392	25.75	1.38	0.52	0.86	0.94	0.540	1.34	0.402	1.00	1.00	0.402	No
393	25.80	1.38	0.52	0.86	0.94	0.540	1.34	0.402	1.00	1.00	0.402	No
394	25.85	1.39	0.53	0.86	0.94	0.540	1.34	0.402	1.00	1.00	0.402	No
395	25.96	1.39	0.53	0.86	0.94	0.541	1.34	0.402	1.00	1.00	0.402	No
396	26.01	1.40	0.53	0.86	0.94	0.541	1.34	0.403	1.00	1.00	0.403	No
397	26.05	1.40	0.53	0.87	0.94	0.541	1.34	0.403	1.00	1.00	0.403	No
398	26.12	1.40	0.53	0.87	0.94	0.542	1.34	0.403	1.00	1.00	0.403	No
399	26.19	1.41	0.54	0.87	0.94	0.542	1.34	0.403	1.00	1.00	0.403	No
400	26.25	1.41	0.54	0.87	0.94	0.542	1.34	0.403	1.00	1.00	0.403	No
401	26.33	1.41	0.54	0.87	0.94	0.543	1.34	0.404	1.00	1.00	0.404	No
402	26.42	1.42	0.54	0.87	0.94	0.543	1.34	0.404	1.00	1.00	0.404	No
403	26.46	1.42	0.54	0.87	0.94	0.543	1.34	0.404	1.00	1.00	0.404	No
404	26.52	1.42	0.55	0.88	0.94	0.543	1.34	0.404	1.00	1.00	0.404	No
405	26.61	1.43	0.55	0.88	0.94	0.544	1.34	0.404	1.00	1.00	0.404	No
406	26.67	1.43	0.55	0.88	0.94	0.544	1.34	0.405	1.00	1.00	0.405	No
407	26.71	1.43	0.55	0.88	0.94	0.544	1.34	0.405	1.00	1.00	0.405	No
408	26.79	1.44	0.56	0.88	0.94	0.545	1.34	0.405	1.00	1.00	0.405	No
409	26.87	1.44	0.56	0.88	0.93	0.545	1.34	0.405	1.00	1.00	0.405	No
410	26.92	1.44	0.56	0.88	0.93	0.545	1.34	0.405	1.00	1.00	0.405	No
411	26.98	1.45	0.56	0.89	0.93	0.545	1.34	0.406	1.00	1.00	0.406	No
412	27.06	1.45	0.56	0.89	0.93	0.546	1.34	0.406	1.00	1.00	0.406	No
413	27.11	1.45	0.57	0.89	0.93	0.546	1.34	0.406	1.00	1.00	0.406	No
414	27.21	1.46	0.57	0.89	0.93	0.546	1.34	0.406	1.00	1.00	0.406	No
415	27.26	1.46	0.57	0.89	0.93	0.547	1.34	0.407	1.00	1.00	0.407	No
416	27.32	1.47	0.57	0.89	0.93	0.547	1.34	0.407	1.00	1.00	0.407	No
417	27.40	1.47	0.57	0.90	0.93	0.547	1.34	0.407	1.00	1.00	0.407	No
418	27.45	1.47	0.58	0.90	0.93	0.547	1.34	0.407	1.00	1.00	0.407	No
419	27.52	1.48	0.58	0.90	0.93	0.548	1.34	0.407	1.00	1.00	0.407	No
420	27.60	1.48	0.58	0.90	0.93	0.548	1.34	0.408	1.00	1.00	0.408	No
421	27.65	1.48	0.58	0.90	0.93	0.548	1.34	0.408	1.00	1.00	0.408	No
422	27.71	1.49	0.58	0.90	0.93	0.549	1.34	0.408	1.00	1.00	0.408	No
423	27.80	1.49	0.59	0.90	0.93	0.549	1.34	0.408	1.00	1.00	0.408	No
424	27.84	1.49	0.59	0.90	0.93	0.549	1.34	0.408	1.00	1.00	0.408	No
425	27.90	1.49	0.59	0.91	0.93	0.549	1.34	0.409	1.00	1.00	0.409	No
426	27.99	1.50	0.59	0.91	0.93	0.550	1.34	0.409	1.00	1.00	0.409	No
427	28.05	1.50	0.59	0.91	0.93	0.550	1.34	0.409	1.00	1.00	0.409	No
428	28.10	1.51	0.60	0.91	0.93	0.550	1.34	0.409	1.00	1.00	0.409	No
429	28.17	1.51	0.60	0.91	0.93	0.550	1.34	0.409	1.00	1.00	0.409	No
430	28.25	1.51	0.60	0.91	0.93	0.551	1.34	0.410	1.00	1.00	0.410	No
431	28.30	1.52	0.60	0.91	0.93	0.551	1.34	0.410	1.00	1.00	0.410	No
432	28.39	1.52	0.60	0.92	0.93	0.551	1.34	0.410	1.00	1.00	0.410	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
433	28.44	1.52	0.61	0.92	0.93	0.551	1.34	0.410	1.00	1.00	0.410	No
434	28.49	1.53	0.61	0.92	0.93	0.552	1.34	0.410	1.00	1.00	0.410	No
435	28.54	1.53	0.61	0.92	0.93	0.552	1.34	0.410	1.00	1.00	0.410	No
436	28.62	1.53	0.61	0.92	0.93	0.552	1.34	0.411	1.00	1.00	0.411	No
437	28.68	1.54	0.61	0.92	0.93	0.552	1.34	0.411	1.00	1.00	0.411	No
438	28.74	1.54	0.62	0.92	0.93	0.553	1.34	0.411	1.00	1.00	0.411	No
439	28.83	1.54	0.62	0.92	0.93	0.553	1.34	0.411	1.00	1.00	0.411	No
440	28.89	1.55	0.62	0.93	0.93	0.553	1.34	0.411	1.00	1.00	0.411	No
441	28.98	1.55	0.62	0.93	0.93	0.553	1.34	0.412	1.00	1.00	0.412	No
442	29.03	1.55	0.62	0.93	0.93	0.553	1.34	0.412	1.00	1.00	0.412	No
443	29.09	1.56	0.63	0.93	0.93	0.554	1.34	0.412	1.00	1.00	0.412	No
444	29.14	1.56	0.63	0.93	0.92	0.554	1.34	0.412	1.00	1.00	0.412	No
445	29.22	1.56	0.63	0.93	0.92	0.554	1.34	0.412	1.00	1.00	0.412	No
446	29.27	1.57	0.63	0.93	0.92	0.554	1.34	0.412	1.00	1.00	0.412	No
447	29.38	1.57	0.64	0.94	0.92	0.555	1.34	0.412	1.00	1.00	0.412	No
448	29.43	1.57	0.64	0.94	0.92	0.555	1.34	0.413	1.00	1.00	0.413	No
449	29.48	1.58	0.64	0.94	0.92	0.555	1.34	0.413	1.00	1.00	0.413	No
450	29.57	1.58	0.64	0.94	0.92	0.555	1.34	0.413	1.00	1.00	0.413	No
451	29.62	1.58	0.64	0.94	0.92	0.555	1.34	0.413	1.00	1.00	0.413	No
452	29.68	1.59	0.65	0.94	0.92	0.555	1.34	0.413	1.00	1.00	0.413	No
453	29.73	1.59	0.65	0.94	0.92	0.556	1.34	0.413	1.00	1.00	0.413	No
454	29.82	1.59	0.65	0.95	0.92	0.556	1.34	0.413	1.00	1.00	0.413	No
455	29.87	1.60	0.65	0.95	0.92	0.556	1.34	0.413	1.00	1.00	0.413	No
456	29.94	1.60	0.65	0.95	0.92	0.556	1.34	0.414	1.00	1.00	0.414	No
457	30.02	1.61	0.66	0.95	0.92	0.556	1.34	0.414	1.00	1.00	0.414	No
458	30.07	1.61	0.66	0.95	0.92	0.556	1.34	0.414	1.00	1.00	0.414	No
459	30.16	1.61	0.66	0.95	0.92	0.557	1.34	0.414	1.00	1.00	0.414	No
460	30.19	1.61	0.66	0.95	0.92	0.557	1.34	0.414	1.00	1.00	0.414	No
461	30.26	1.62	0.66	0.95	0.92	0.557	1.34	0.414	1.00	1.00	0.414	No
462	30.36	1.62	0.67	0.96	0.92	0.557	1.34	0.414	1.00	1.00	0.414	No
463	30.41	1.63	0.67	0.96	0.92	0.557	1.34	0.415	1.00	1.00	0.415	No
464	30.46	1.63	0.67	0.96	0.92	0.558	1.34	0.415	1.00	1.00	0.415	No
465	30.53	1.63	0.67	0.96	0.92	0.558	1.34	0.415	1.00	1.00	0.415	No
466	30.61	1.64	0.67	0.96	0.92	0.558	1.34	0.415	1.00	1.00	0.415	No
467	30.65	1.64	0.68	0.96	0.92	0.558	1.34	0.415	1.00	1.00	0.415	No
468	30.71	1.64	0.68	0.96	0.92	0.558	1.34	0.415	1.00	1.00	0.415	No
469	30.81	1.65	0.68	0.97	0.92	0.558	1.34	0.415	1.00	1.00	0.415	No
470	30.84	1.65	0.68	0.97	0.92	0.558	1.34	0.415	1.00	1.00	0.415	No
471	30.91	1.65	0.68	0.97	0.92	0.559	1.34	0.415	1.00	1.00	0.415	No
472	30.99	1.66	0.69	0.97	0.92	0.559	1.34	0.416	1.00	1.00	0.416	No
473	31.04	1.66	0.69	0.97	0.92	0.559	1.34	0.416	1.00	1.00	0.416	No
474	31.11	1.66	0.69	0.97	0.91	0.559	1.34	0.416	1.00	1.00	0.416	No
475	31.19	1.67	0.69	0.97	0.91	0.559	1.34	0.416	1.00	1.00	0.416	No
476	31.25	1.67	0.69	0.98	0.91	0.559	1.34	0.416	1.00	1.00	0.416	No
477	31.30	1.67	0.70	0.98	0.91	0.559	1.34	0.416	1.00	1.00	0.416	No
478	31.39	1.68	0.70	0.98	0.91	0.560	1.34	0.416	1.00	1.00	0.416	No
479	31.45	1.68	0.70	0.98	0.91	0.560	1.34	0.416	1.00	1.00	0.416	No
480	31.50	1.68	0.70	0.98	0.91	0.560	1.34	0.416	1.00	1.00	0.416	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
481	31.60	1.69	0.71	0.98	0.91	0.560	1.34	0.416	1.00	1.00	0.416	No
482	31.65	1.69	0.71	0.98	0.91	0.560	1.34	0.416	1.00	1.00	0.416	No
483	31.73	1.70	0.71	0.99	0.91	0.560	1.34	0.417	1.00	1.00	0.417	No
484	31.80	1.70	0.71	0.99	0.91	0.560	1.34	0.417	1.00	1.00	0.417	No
485	31.84	1.70	0.71	0.99	0.91	0.560	1.34	0.417	1.00	1.00	0.417	No
486	31.91	1.71	0.71	0.99	0.91	0.560	1.34	0.417	1.00	1.00	0.417	No
487	31.99	1.71	0.72	0.99	0.91	0.560	1.34	0.417	1.00	1.00	0.417	No
488	32.03	1.71	0.72	0.99	0.91	0.560	1.34	0.417	1.00	1.00	0.417	No
489	32.09	1.71	0.72	0.99	0.91	0.561	1.34	0.417	1.00	1.00	0.417	No
490	32.19	1.72	0.72	1.00	0.91	0.561	1.34	0.417	1.00	1.00	0.417	No
491	32.25	1.72	0.73	1.00	0.91	0.561	1.34	0.417	1.00	1.00	0.417	No
492	32.29	1.73	0.73	1.00	0.91	0.561	1.34	0.417	1.00	1.00	0.417	No
493	32.38	1.73	0.73	1.00	0.91	0.561	1.34	0.417	1.00	1.00	0.417	No
494	32.43	1.73	0.73	1.00	0.91	0.561	1.34	0.417	1.00	1.00	0.417	No
495	32.48	1.74	0.73	1.00	0.91	0.561	1.34	0.417	1.00	1.00	0.417	No
496	32.58	1.74	0.74	1.01	0.91	0.561	1.34	0.417	1.00	1.00	0.417	No
497	32.63	1.74	0.74	1.01	0.91	0.561	1.34	0.417	1.00	1.00	0.417	No
498	32.69	1.75	0.74	1.01	0.91	0.561	1.34	0.417	1.00	1.00	0.417	No
499	32.74	1.75	0.74	1.01	0.91	0.561	1.34	0.417	1.00	1.00	0.417	No
500	32.83	1.76	0.74	1.01	0.90	0.561	1.34	0.417	1.00	1.00	0.417	No
501	32.88	1.76	0.75	1.01	0.90	0.561	1.34	0.417	1.00	1.00	0.417	No
502	32.97	1.76	0.75	1.02	0.90	0.561	1.34	0.417	1.00	1.00	0.417	No
503	33.01	1.77	0.75	1.02	0.90	0.561	1.34	0.417	1.00	1.00	0.417	No
504	33.07	1.77	0.75	1.02	0.90	0.561	1.34	0.417	1.00	1.00	0.417	No
505	33.16	1.77	0.75	1.02	0.90	0.561	1.34	0.418	1.00	1.00	0.418	No
506	33.20	1.78	0.76	1.02	0.90	0.561	1.34	0.418	1.00	1.00	0.418	No
507	33.27	1.78	0.76	1.02	0.90	0.561	1.34	0.418	1.00	1.00	0.418	No
508	33.36	1.78	0.76	1.02	0.90	0.561	1.34	0.418	1.00	1.00	0.418	No
509	33.42	1.79	0.76	1.03	0.90	0.561	1.34	0.418	1.00	1.00	0.418	No
510	33.51	1.79	0.76	1.03	0.90	0.561	1.34	0.418	1.00	1.00	0.418	No
511	33.56	1.80	0.77	1.03	0.90	0.561	1.34	0.418	1.00	1.00	0.418	No
512	33.61	1.80	0.77	1.03	0.90	0.561	1.34	0.418	1.00	1.00	0.418	No
513	33.67	1.80	0.77	1.03	0.90	0.562	1.34	0.418	1.00	1.00	0.418	No
514	33.76	1.81	0.77	1.03	0.90	0.562	1.34	0.418	1.00	1.00	0.418	No
515	33.81	1.81	0.77	1.03	0.90	0.562	1.34	0.418	1.00	1.00	0.418	No
516	33.86	1.81	0.78	1.04	0.90	0.562	1.34	0.418	1.00	1.00	0.418	No
517	33.94	1.82	0.78	1.04	0.90	0.562	1.34	0.418	1.00	1.00	0.418	No
518	34.02	1.82	0.78	1.04	0.90	0.562	1.34	0.418	1.00	1.00	0.418	No
519	34.06	1.82	0.78	1.04	0.90	0.562	1.34	0.418	1.00	1.00	0.418	No
520	34.14	1.83	0.78	1.04	0.90	0.562	1.34	0.418	1.00	1.00	0.418	No
521	34.21	1.83	0.79	1.04	0.90	0.562	1.34	0.418	1.00	1.00	0.418	No
522	34.25	1.83	0.79	1.04	0.90	0.562	1.34	0.418	1.00	1.00	0.418	No
523	34.33	1.84	0.79	1.05	0.90	0.562	1.34	0.418	1.00	1.00	0.418	No
524	34.41	1.84	0.79	1.05	0.89	0.562	1.34	0.418	1.00	1.00	0.418	No
525	34.49	1.85	0.80	1.05	0.89	0.562	1.34	0.418	1.00	1.00	0.418	No
526	34.56	1.85	0.80	1.05	0.89	0.562	1.34	0.418	1.00	1.00	0.418	No
527	34.59	1.85	0.80	1.05	0.89	0.562	1.34	0.418	1.00	1.00	0.418	No
528	34.67	1.85	0.80	1.05	0.89	0.562	1.34	0.418	1.00	1.00	0.418	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
529	34.76	1.86	0.80	1.06	0.89	0.562	1.34	0.418	1.00	1.00	0.418	No
530	34.80	1.86	0.80	1.06	0.89	0.562	1.34	0.418	1.00	1.00	0.418	No
531	34.85	1.86	0.81	1.06	0.89	0.562	1.34	0.418	1.00	1.00	0.418	No
532	34.93	1.87	0.81	1.06	0.89	0.562	1.34	0.418	1.00	1.00	0.418	No
533	34.98	1.87	0.81	1.06	0.89	0.562	1.34	0.418	1.00	1.00	0.418	No
534	35.05	1.87	0.81	1.06	0.89	0.562	1.34	0.418	1.00	1.00	0.418	No
535	35.13	1.88	0.82	1.06	0.89	0.562	1.34	0.418	1.00	1.00	0.418	No
536	35.18	1.88	0.82	1.06	0.89	0.562	1.34	0.418	1.00	1.00	0.419	No
537	35.24	1.88	0.82	1.07	0.89	0.562	1.34	0.418	1.00	1.00	0.419	No
538	35.32	1.89	0.82	1.07	0.89	0.562	1.34	0.418	1.00	1.00	0.419	No
539	35.41	1.89	0.82	1.07	0.89	0.562	1.34	0.418	1.00	1.00	0.419	No
540	35.46	1.90	0.83	1.07	0.89	0.562	1.34	0.418	1.00	1.00	0.419	No
541	35.51	1.90	0.83	1.07	0.89	0.562	1.34	0.418	1.00	1.00	0.419	No
542	35.58	1.90	0.83	1.07	0.89	0.562	1.34	0.418	1.00	1.00	0.419	No
543	35.66	1.91	0.83	1.07	0.89	0.562	1.34	0.418	1.00	1.00	0.419	No
544	35.71	1.91	0.83	1.08	0.89	0.562	1.34	0.418	1.00	1.00	0.419	No
545	35.76	1.91	0.83	1.08	0.89	0.562	1.34	0.418	1.00	1.00	0.420	No
546	35.86	1.92	0.84	1.08	0.88	0.562	1.34	0.418	1.00	1.00	0.420	No
547	35.91	1.92	0.84	1.08	0.88	0.562	1.34	0.418	1.00	1.00	0.420	No
548	36.01	1.92	0.84	1.08	0.88	0.562	1.34	0.418	0.99	1.00	0.420	No
549	36.05	1.93	0.84	1.08	0.88	0.562	1.34	0.418	0.99	1.00	0.420	No
550	36.12	1.93	0.85	1.08	0.88	0.562	1.34	0.418	0.99	1.00	0.420	No
551	36.20	1.93	0.85	1.09	0.88	0.562	1.34	0.418	0.99	1.00	0.420	No
552	36.23	1.94	0.85	1.09	0.88	0.562	1.34	0.418	0.99	1.00	0.420	No
553	36.31	1.94	0.85	1.09	0.88	0.562	1.34	0.418	0.99	1.00	0.421	No
554	36.35	1.94	0.85	1.09	0.88	0.562	1.34	0.418	0.99	1.00	0.421	No
555	36.45	1.95	0.86	1.09	0.88	0.562	1.34	0.418	0.99	1.00	0.421	No
556	36.51	1.95	0.86	1.09	0.88	0.562	1.34	0.418	0.99	1.00	0.421	No
557	36.58	1.95	0.86	1.09	0.88	0.562	1.34	0.418	0.99	1.00	0.421	No
558	36.66	1.96	0.86	1.09	0.88	0.562	1.34	0.418	0.99	1.00	0.421	No
559	36.70	1.96	0.86	1.10	0.88	0.562	1.34	0.418	0.99	1.00	0.421	No
560	36.80	1.96	0.87	1.10	0.88	0.562	1.34	0.418	0.99	1.00	0.421	No
561	36.85	1.97	0.87	1.10	0.88	0.562	1.34	0.418	0.99	1.00	0.421	No
562	36.89	1.97	0.87	1.10	0.88	0.562	1.34	0.418	0.99	1.00	0.421	No
563	36.96	1.97	0.87	1.10	0.88	0.562	1.34	0.418	0.99	1.00	0.421	No
564	37.03	1.98	0.87	1.10	0.88	0.562	1.34	0.418	0.99	1.00	0.422	No
565	37.09	1.98	0.88	1.10	0.88	0.561	1.34	0.418	0.99	1.00	0.422	No
566	37.15	1.98	0.88	1.10	0.87	0.561	1.34	0.418	0.99	1.00	0.422	No
567	37.23	1.99	0.88	1.11	0.87	0.561	1.34	0.417	0.99	1.00	0.422	No
568	37.27	1.99	0.88	1.11	0.87	0.561	1.34	0.417	0.99	1.00	0.422	No
569	37.34	1.99	0.88	1.11	0.87	0.561	1.34	0.417	0.99	1.00	0.422	No
570	37.43	2.00	0.89	1.11	0.87	0.561	1.34	0.417	0.99	1.00	0.422	No
571	37.49	2.00	0.89	1.11	0.87	0.561	1.34	0.417	0.99	1.00	0.422	No
572	37.54	2.00	0.89	1.11	0.87	0.561	1.34	0.417	0.99	1.00	0.422	No
573	37.62	2.01	0.89	1.11	0.87	0.561	1.34	0.417	0.99	1.00	0.422	No
574	37.69	2.01	0.90	1.12	0.87	0.561	1.34	0.417	0.99	1.00	0.422	No
575	37.74	2.01	0.90	1.12	0.87	0.561	1.34	0.417	0.99	1.00	0.422	No
576	37.82	2.02	0.90	1.12	0.87	0.561	1.34	0.417	0.99	1.00	0.422	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
577	37.89	2.02	0.90	1.12	0.87	0.561	1.34	0.417	0.99	1.00	0.422	No
578	37.93	2.02	0.90	1.12	0.87	0.561	1.34	0.417	0.99	1.00	0.422	No
579	38.02	2.03	0.91	1.12	0.87	0.560	1.34	0.417	0.99	1.00	0.423	No
580	38.08	2.03	0.91	1.12	0.87	0.560	1.34	0.417	0.99	1.00	0.423	No
581	38.13	2.03	0.91	1.12	0.87	0.560	1.34	0.417	0.99	1.00	0.423	No
582	38.23	2.04	0.91	1.13	0.87	0.560	1.34	0.417	0.99	1.00	0.423	No
583	38.28	2.04	0.91	1.13	0.87	0.560	1.34	0.417	0.99	1.00	0.423	No
584	38.35	2.05	0.92	1.13	0.87	0.560	1.34	0.416	0.99	1.00	0.423	No
585	38.42	2.05	0.92	1.13	0.86	0.560	1.34	0.416	0.98	1.00	0.423	No
586	38.47	2.05	0.92	1.13	0.86	0.560	1.34	0.416	0.98	1.00	0.423	No
587	38.52	2.05	0.92	1.13	0.86	0.560	1.34	0.416	0.98	1.00	0.423	No
588	38.61	2.06	0.92	1.14	0.86	0.560	1.34	0.416	0.98	1.00	0.423	No
589	38.67	2.06	0.93	1.14	0.86	0.559	1.34	0.416	0.98	1.00	0.423	No
590	38.72	2.07	0.93	1.14	0.86	0.559	1.34	0.416	0.98	1.00	0.423	No
591	38.82	2.07	0.93	1.14	0.86	0.559	1.34	0.416	0.98	1.00	0.423	No
592	38.86	2.07	0.93	1.14	0.86	0.559	1.34	0.416	0.98	1.00	0.423	No
593	38.96	2.08	0.93	1.14	0.86	0.559	1.34	0.416	0.98	1.00	0.423	No
594	39.01	2.08	0.94	1.14	0.86	0.559	1.34	0.416	0.98	1.00	0.423	No
595	39.05	2.08	0.94	1.14	0.86	0.559	1.34	0.416	0.98	1.00	0.423	No
596	39.13	2.09	0.94	1.15	0.86	0.559	1.34	0.415	0.98	1.00	0.423	No
597	39.21	2.09	0.94	1.15	0.86	0.558	1.34	0.415	0.98	1.00	0.423	No
598	39.24	2.09	0.94	1.15	0.86	0.558	1.34	0.415	0.98	1.00	0.423	No
599	39.31	2.10	0.95	1.15	0.86	0.558	1.34	0.415	0.98	1.00	0.423	No
600	39.40	2.10	0.95	1.15	0.86	0.558	1.34	0.415	0.98	1.00	0.423	No
601	39.44	2.10	0.95	1.15	0.86	0.558	1.34	0.415	0.98	1.00	0.423	No
602	39.51	2.11	0.95	1.15	0.86	0.558	1.34	0.415	0.98	1.00	0.423	No
603	39.60	2.11	0.95	1.16	0.85	0.558	1.34	0.415	0.98	1.00	0.423	No
604	39.66	2.11	0.96	1.16	0.85	0.557	1.34	0.415	0.98	1.00	0.423	No
605	39.70	2.12	0.96	1.16	0.85	0.557	1.34	0.415	0.98	1.00	0.423	No
606	39.80	2.12	0.96	1.16	0.85	0.557	1.34	0.414	0.98	1.00	0.423	No
607	39.85	2.12	0.96	1.16	0.85	0.557	1.34	0.414	0.98	1.00	0.423	No
608	39.90	2.13	0.96	1.16	0.85	0.557	1.34	0.414	0.98	1.00	0.423	No
609	39.98	2.13	0.97	1.17	0.85	0.557	1.34	0.414	0.98	1.00	0.423	No
610	40.05	2.14	0.97	1.17	0.85	0.557	1.34	0.414	0.98	1.00	0.423	No
611	40.10	2.14	0.97	1.17	0.85	0.556	1.34	0.414	0.98	1.00	0.423	No
612	40.20	2.14	0.97	1.17	0.85	0.556	1.34	0.414	0.98	1.00	0.423	No
613	40.25	2.15	0.98	1.17	0.85	0.556	1.34	0.414	0.98	1.00	0.423	No
614	40.30	2.15	0.98	1.17	0.85	0.556	1.34	0.413	0.98	1.00	0.423	No
615	40.40	2.15	0.98	1.17	0.85	0.556	1.34	0.413	0.98	1.00	0.423	No
616	40.45	2.16	0.98	1.18	0.85	0.556	1.34	0.413	0.98	1.00	0.423	No
617	40.50	2.16	0.98	1.18	0.85	0.555	1.34	0.413	0.98	1.00	0.423	No
618	40.59	2.16	0.99	1.18	0.85	0.555	1.34	0.413	0.98	1.00	0.423	No
619	40.64	2.17	0.99	1.18	0.85	0.555	1.34	0.413	0.98	1.00	0.423	No
620	40.69	2.17	0.99	1.18	0.84	0.555	1.34	0.413	0.98	1.00	0.423	No
621	40.79	2.17	0.99	1.18	0.84	0.555	1.34	0.413	0.97	1.00	0.423	No
622	40.83	2.18	0.99	1.18	0.84	0.555	1.34	0.413	0.97	1.00	0.423	No
623	40.92	2.18	1.00	1.19	0.84	0.554	1.34	0.412	0.97	1.00	0.423	No
624	40.98	2.18	1.00	1.19	0.84	0.554	1.34	0.412	0.97	1.00	0.423	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
625	41.03	2.19	1.00	1.19	0.84	0.554	1.34	0.412	0.97	1.00	0.423	No
626	41.08	2.19	1.00	1.19	0.84	0.554	1.34	0.412	0.97	1.00	0.423	No
627	41.18	2.20	1.00	1.19	0.84	0.554	1.34	0.412	0.97	1.00	0.423	No
628	41.22	2.20	1.01	1.19	0.84	0.554	1.34	0.412	0.97	1.00	0.423	No
629	41.31	2.20	1.01	1.19	0.84	0.553	1.34	0.412	0.97	1.00	0.423	No
630	41.36	2.20	1.01	1.20	0.84	0.553	1.34	0.411	0.97	1.00	0.423	No
631	41.42	2.21	1.01	1.20	0.84	0.553	1.34	0.411	0.97	1.00	0.423	No
632	41.50	2.21	1.01	1.20	0.84	0.553	1.34	0.411	0.97	1.00	0.423	No
633	41.54	2.21	1.02	1.20	0.84	0.553	1.34	0.411	0.97	1.00	0.423	No
634	41.61	2.22	1.02	1.20	0.84	0.552	1.34	0.411	0.97	1.00	0.423	No
635	41.70	2.22	1.02	1.20	0.84	0.552	1.34	0.411	0.97	1.00	0.423	No
636	41.75	2.23	1.02	1.20	0.84	0.552	1.34	0.411	0.97	1.00	0.423	No
637	41.80	2.23	1.02	1.21	0.83	0.552	1.34	0.410	0.97	1.00	0.423	No
638	41.87	2.23	1.03	1.21	0.83	0.552	1.34	0.410	0.97	1.00	0.423	No
639	41.95	2.24	1.03	1.21	0.83	0.551	1.34	0.410	0.97	1.00	0.423	No
640	42.01	2.24	1.03	1.21	0.83	0.551	1.34	0.410	0.97	1.00	0.423	No
641	42.10	2.24	1.03	1.21	0.83	0.551	1.34	0.410	0.97	1.00	0.423	No
642	42.14	2.25	1.03	1.21	0.83	0.551	1.34	0.410	0.97	1.00	0.423	No
643	42.21	2.25	1.04	1.21	0.83	0.550	1.34	0.409	0.97	1.00	0.423	No
644	42.27	2.25	1.04	1.22	0.83	0.550	1.34	0.409	0.97	1.00	0.423	No
645	42.34	2.26	1.04	1.22	0.83	0.550	1.34	0.409	0.97	1.00	0.422	No
646	42.39	2.26	1.04	1.22	0.83	0.550	1.34	0.409	0.97	1.00	0.422	No
647	42.49	2.27	1.04	1.22	0.83	0.549	1.34	0.409	0.97	1.00	0.422	No
648	42.54	2.27	1.05	1.22	0.83	0.549	1.34	0.409	0.97	1.00	0.422	No
649	42.59	2.27	1.05	1.22	0.83	0.549	1.34	0.408	0.97	1.00	0.422	No
650	42.69	2.28	1.05	1.23	0.83	0.549	1.34	0.408	0.97	1.00	0.422	No
651	42.74	2.28	1.05	1.23	0.83	0.549	1.34	0.408	0.97	1.00	0.422	No
652	42.80	2.28	1.05	1.23	0.83	0.548	1.34	0.408	0.97	1.00	0.422	No
653	42.89	2.29	1.06	1.23	0.82	0.548	1.34	0.408	0.97	1.00	0.422	No
654	42.93	2.29	1.06	1.23	0.82	0.548	1.34	0.407	0.97	1.00	0.422	No
655	42.99	2.29	1.06	1.23	0.82	0.548	1.34	0.407	0.97	1.00	0.422	No
656	43.08	2.30	1.06	1.23	0.82	0.547	1.34	0.407	0.97	1.00	0.422	No
657	43.11	2.30	1.06	1.24	0.82	0.547	1.34	0.407	0.96	1.00	0.422	No
658	43.18	2.30	1.07	1.24	0.82	0.547	1.34	0.407	0.96	1.00	0.422	No
659	43.28	2.31	1.07	1.24	0.82	0.546	1.34	0.406	0.96	1.00	0.422	No
660	43.35	2.31	1.07	1.24	0.82	0.546	1.34	0.406	0.96	1.00	0.421	No
661	43.38	2.31	1.07	1.24	0.82	0.546	1.34	0.406	0.96	1.00	0.421	No
662	43.45	2.32	1.07	1.24	0.82	0.546	1.34	0.406	0.96	1.00	0.421	No
663	43.53	2.32	1.08	1.25	0.82	0.546	1.34	0.406	0.96	1.00	0.421	No
664	43.58	2.33	1.08	1.25	0.82	0.545	1.34	0.406	0.96	1.00	0.421	No
665	43.64	2.33	1.08	1.25	0.82	0.545	1.34	0.405	0.96	1.00	0.421	No
666	43.73	2.33	1.08	1.25	0.82	0.545	1.34	0.405	0.96	1.00	0.421	No
667	43.78	2.34	1.09	1.25	0.82	0.545	1.34	0.405	0.96	1.00	0.421	No
668	43.84	2.34	1.09	1.25	0.82	0.544	1.34	0.405	0.96	1.00	0.421	No
669	43.92	2.34	1.09	1.25	0.81	0.544	1.34	0.405	0.96	1.00	0.421	No
670	43.98	2.35	1.09	1.25	0.81	0.544	1.34	0.405	0.96	1.00	0.421	No
671	44.07	2.35	1.09	1.26	0.81	0.544	1.34	0.404	0.96	1.00	0.421	No
672	44.12	2.35	1.10	1.26	0.81	0.543	1.34	0.404	0.96	1.00	0.421	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
673	44.17	2.36	1.10	1.26	0.81	0.543	1.34	0.404	0.96	1.00	0.421	No
674	44.23	2.36	1.10	1.26	0.81	0.543	1.34	0.404	0.96	1.00	0.420	No
675	44.29	2.36	1.10	1.26	0.81	0.543	1.34	0.404	0.96	1.00	0.420	No
676	44.39	2.37	1.10	1.26	0.81	0.542	1.34	0.403	0.96	1.00	0.420	No
677	44.43	2.37	1.11	1.26	0.81	0.542	1.34	0.403	0.96	1.00	0.420	No
678	44.49	2.37	1.11	1.27	0.81	0.542	1.34	0.403	0.96	1.00	0.420	No
679	44.57	2.38	1.11	1.27	0.81	0.542	1.34	0.403	0.96	1.00	0.420	No
680	44.67	2.38	1.11	1.27	0.81	0.541	1.34	0.403	0.96	1.00	0.420	No
681	44.73	2.39	1.11	1.27	0.81	0.541	1.34	0.402	0.96	1.00	0.420	No
682	44.78	2.39	1.12	1.27	0.81	0.541	1.34	0.402	0.96	1.00	0.420	No
683	44.82	2.39	1.12	1.27	0.81	0.541	1.34	0.402	0.96	1.00	0.420	No
684	44.93	2.40	1.12	1.28	0.80	0.540	1.34	0.402	0.96	1.00	0.419	No
685	44.97	2.40	1.12	1.28	0.80	0.540	1.34	0.402	0.96	1.00	0.419	No
686	45.02	2.40	1.12	1.28	0.80	0.540	1.34	0.402	0.96	1.00	0.419	No
687	45.09	2.40	1.13	1.28	0.80	0.540	1.34	0.401	0.96	1.00	0.419	No
688	45.17	2.41	1.13	1.28	0.80	0.539	1.34	0.401	0.96	1.00	0.419	No
689	45.22	2.41	1.13	1.28	0.80	0.539	1.34	0.401	0.96	1.00	0.419	No
690	45.30	2.42	1.13	1.28	0.80	0.539	1.34	0.401	0.96	1.00	0.419	No
691	45.37	2.42	1.13	1.28	0.80	0.539	1.34	0.401	0.96	1.00	0.419	No
692	45.42	2.42	1.14	1.29	0.80	0.538	1.34	0.401	0.96	1.00	0.419	No
693	45.50	2.43	1.14	1.29	0.80	0.538	1.34	0.400	0.96	1.00	0.419	No
694	45.57	2.43	1.14	1.29	0.80	0.538	1.34	0.400	0.96	1.00	0.419	No
695	45.61	2.43	1.14	1.29	0.80	0.538	1.34	0.400	0.96	1.00	0.419	No
696	45.72	2.44	1.15	1.29	0.80	0.537	1.34	0.400	0.96	1.00	0.418	No
697	45.77	2.44	1.15	1.29	0.80	0.537	1.34	0.400	0.96	1.00	0.418	No
698	45.80	2.44	1.15	1.29	0.80	0.537	1.34	0.400	0.96	1.00	0.418	No
699	45.88	2.44	1.15	1.29	0.79	0.537	1.34	0.399	0.95	1.00	0.418	No
700	45.96	2.45	1.15	1.30	0.79	0.537	1.34	0.399	0.95	1.00	0.418	No
701	46.01	2.45	1.15	1.30	0.79	0.536	1.34	0.399	0.95	1.00	0.418	No
702	46.11	2.46	1.16	1.30	0.79	0.536	1.34	0.399	0.95	1.00	0.418	No
703	46.14	2.46	1.16	1.30	0.79	0.536	1.34	0.399	0.95	1.00	0.418	No
704	46.21	2.46	1.16	1.30	0.79	0.536	1.34	0.398	0.95	1.00	0.418	No
705	46.26	2.46	1.16	1.30	0.79	0.535	1.34	0.398	0.95	1.00	0.418	No
706	46.35	2.47	1.17	1.30	0.79	0.535	1.34	0.398	0.95	1.00	0.417	No
707	46.41	2.47	1.17	1.30	0.79	0.535	1.34	0.398	0.95	1.00	0.417	No
708	46.49	2.48	1.17	1.31	0.79	0.534	1.34	0.398	0.95	1.00	0.417	No
709	46.55	2.48	1.17	1.31	0.79	0.534	1.34	0.397	0.95	1.00	0.417	No
710	46.59	2.48	1.17	1.31	0.79	0.534	1.34	0.397	0.95	1.00	0.417	No
711	46.68	2.49	1.18	1.31	0.79	0.534	1.34	0.397	0.95	1.00	0.417	No
712	46.74	2.49	1.18	1.31	0.79	0.533	1.34	0.397	0.95	1.00	0.417	No
713	46.80	2.49	1.18	1.31	0.79	0.533	1.34	0.397	0.95	1.00	0.417	No
714	46.85	2.49	1.18	1.31	0.78	0.533	1.34	0.396	0.95	1.00	0.417	No
715	46.93	2.50	1.18	1.31	0.78	0.533	1.34	0.396	0.95	1.00	0.416	No
716	47.00	2.50	1.19	1.32	0.78	0.532	1.34	0.396	0.95	1.00	0.416	No
717	47.10	2.51	1.19	1.32	0.78	0.532	1.34	0.396	0.95	1.00	0.416	No
718	47.15	2.51	1.19	1.32	0.78	0.532	1.34	0.395	0.95	1.00	0.416	No
719	47.20	2.51	1.19	1.32	0.78	0.531	1.34	0.395	0.95	1.00	0.416	No
720	47.25	2.52	1.19	1.32	0.78	0.531	1.34	0.395	0.95	1.00	0.416	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
721	47.31	2.52	1.20	1.32	0.78	0.531	1.34	0.395	0.95	1.00	0.416	No
722	47.40	2.52	1.20	1.32	0.78	0.531	1.34	0.395	0.95	1.00	0.416	No
723	47.44	2.53	1.20	1.33	0.78	0.530	1.34	0.394	0.95	1.00	0.415	No
724	47.52	2.53	1.20	1.33	0.78	0.530	1.34	0.394	0.95	1.00	0.415	No
725	47.58	2.53	1.20	1.33	0.78	0.530	1.34	0.394	0.95	1.00	0.415	No
726	47.67	2.54	1.21	1.33	0.78	0.529	1.34	0.394	0.95	1.00	0.415	No
727	47.73	2.54	1.21	1.33	0.78	0.529	1.34	0.394	0.95	1.00	0.415	No
728	47.78	2.54	1.21	1.33	0.78	0.529	1.34	0.393	0.95	1.00	0.415	No
729	47.86	2.55	1.21	1.33	0.77	0.529	1.34	0.393	0.95	1.00	0.415	No
730	47.92	2.55	1.21	1.34	0.77	0.528	1.34	0.393	0.95	1.00	0.415	No
731	47.98	2.55	1.22	1.34	0.77	0.528	1.34	0.393	0.95	1.00	0.414	No
732	48.05	2.56	1.22	1.34	0.77	0.528	1.34	0.393	0.95	1.00	0.414	No
733	48.12	2.56	1.22	1.34	0.77	0.528	1.34	0.392	0.95	1.00	0.414	No
734	48.19	2.56	1.22	1.34	0.77	0.527	1.34	0.392	0.95	1.00	0.414	No
735	48.27	2.57	1.23	1.34	0.77	0.527	1.34	0.392	0.95	1.00	0.414	No
736	48.32	2.57	1.23	1.34	0.77	0.527	1.34	0.392	0.95	1.00	0.414	No
737	48.39	2.57	1.23	1.34	0.77	0.526	1.34	0.391	0.95	1.00	0.414	No
738	48.47	2.58	1.23	1.35	0.77	0.526	1.34	0.391	0.95	1.00	0.413	No
739	48.52	2.58	1.23	1.35	0.77	0.526	1.34	0.391	0.95	1.00	0.413	No
740	48.57	2.58	1.23	1.35	0.77	0.526	1.34	0.391	0.95	1.00	0.413	No
741	48.67	2.59	1.24	1.35	0.77	0.525	1.34	0.391	0.95	1.00	0.413	No
742	48.71	2.59	1.24	1.35	0.77	0.525	1.34	0.390	0.95	1.00	0.413	No
743	48.76	2.59	1.24	1.35	0.77	0.525	1.34	0.390	0.95	1.00	0.413	No
744	48.82	2.60	1.24	1.35	0.76	0.524	1.34	0.390	0.94	1.00	0.413	No
745	48.93	2.60	1.25	1.36	0.76	0.524	1.34	0.390	0.94	1.00	0.412	No
746	48.97	2.60	1.25	1.36	0.76	0.524	1.34	0.389	0.94	1.00	0.412	No
747	49.05	2.61	1.25	1.36	0.76	0.523	1.34	0.389	0.94	1.00	0.412	No
748	49.08	2.61	1.25	1.36	0.76	0.523	1.34	0.389	0.94	1.00	0.412	No
749	49.16	2.61	1.25	1.36	0.76	0.523	1.34	0.389	0.94	1.00	0.412	No
750	49.25	2.62	1.26	1.36	0.76	0.522	1.34	0.388	0.94	1.00	0.412	No
751	49.29	2.62	1.26	1.36	0.76	0.522	1.34	0.388	0.94	1.00	0.412	No
752	49.36	2.63	1.26	1.37	0.76	0.522	1.34	0.388	0.94	1.00	0.411	No
753	49.43	2.63	1.26	1.37	0.76	0.521	1.34	0.388	0.94	1.00	0.411	No
754	49.48	2.63	1.26	1.37	0.76	0.521	1.34	0.387	0.94	1.00	0.411	No
755	49.55	2.64	1.27	1.37	0.76	0.520	1.34	0.387	0.94	1.00	0.411	No
756	49.64	2.64	1.27	1.37	0.76	0.520	1.34	0.387	0.94	1.00	0.411	No
757	49.70	2.65	1.27	1.38	0.76	0.520	1.34	0.386	0.94	1.00	0.410	No
758	49.75	2.65	1.27	1.38	0.76	0.519	1.34	0.386	0.94	1.00	0.410	No
759	49.81	2.65	1.27	1.38	0.75	0.519	1.34	0.386	0.94	1.00	0.410	No
760	49.90	2.66	1.28	1.38	0.75	0.518	1.34	0.386	0.94	1.00	0.410	No
761	49.94	2.66	1.28	1.38	0.75	0.518	1.34	0.385	0.94	1.00	0.410	No
762	50.01	2.66	1.28	1.38	0.75	0.518	1.34	0.385	0.94	1.00	2.000	No
763	50.08	2.67	1.28	1.39	0.75	0.517	1.34	0.385	0.94	1.00	2.000	No
764	50.15	2.67	1.28	1.39	0.75	0.517	1.34	0.384	0.94	1.00	2.000	No
765	50.24	2.68	1.29	1.39	0.75	0.516	1.34	0.384	0.94	1.00	2.000	No
766	50.30	2.68	1.29	1.39	0.75	0.516	1.34	0.384	0.94	1.00	2.000	No
767	50.34	2.68	1.29	1.39	0.75	0.516	1.34	0.384	0.94	1.00	2.000	No
768	50.41	2.69	1.29	1.40	0.75	0.515	1.34	0.383	0.94	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
769	50.47	2.69	1.29	1.40	0.75	0.515	1.34	0.383	0.94	1.00	2.000	No
770	50.54	2.70	1.30	1.40	0.75	0.514	1.34	0.383	0.94	1.00	2.000	No
771	50.62	2.70	1.30	1.40	0.75	0.514	1.34	0.382	0.94	1.00	2.000	No
772	50.66	2.70	1.30	1.40	0.75	0.514	1.34	0.382	0.94	1.00	2.000	No
773	50.77	2.71	1.30	1.41	0.74	0.513	1.34	0.382	0.94	1.00	2.000	No
774	50.81	2.71	1.30	1.41	0.74	0.513	1.34	0.381	0.94	1.00	2.000	No
775	50.87	2.72	1.31	1.41	0.74	0.512	1.34	0.381	0.94	1.00	2.000	No
776	50.92	2.72	1.31	1.41	0.74	0.512	1.34	0.381	0.94	1.00	2.000	No
777	51.01	2.72	1.31	1.41	0.74	0.512	1.34	0.381	0.94	1.00	2.000	No
778	51.07	2.73	1.31	1.41	0.74	0.511	1.34	0.380	0.94	1.00	2.000	No
779	51.15	2.73	1.32	1.42	0.74	0.511	1.34	0.380	0.94	1.00	2.000	No
780	51.21	2.73	1.32	1.42	0.74	0.511	1.34	0.380	0.93	1.00	2.000	No
781	51.26	2.74	1.32	1.42	0.74	0.510	1.34	0.380	0.93	1.00	2.000	No
782	51.32	2.74	1.32	1.42	0.74	0.510	1.34	0.379	0.93	1.00	2.000	No
783	51.39	2.75	1.32	1.42	0.74	0.510	1.34	0.379	0.93	1.00	2.000	No
784	51.46	2.75	1.32	1.42	0.74	0.509	1.34	0.379	0.93	1.00	2.000	No
785	51.53	2.75	1.33	1.43	0.74	0.509	1.34	0.378	0.93	1.00	2.000	No
786	51.61	2.76	1.33	1.43	0.74	0.508	1.34	0.378	0.93	1.00	2.000	No
787	51.65	2.76	1.33	1.43	0.74	0.508	1.34	0.378	0.93	1.00	2.000	No
788	51.72	2.76	1.33	1.43	0.74	0.508	1.34	0.378	0.93	1.00	2.000	No
789	51.81	2.77	1.34	1.43	0.73	0.507	1.34	0.377	0.93	1.00	2.000	No
790	51.84	2.77	1.34	1.43	0.73	0.507	1.34	0.377	0.93	1.00	2.000	No
791	51.92	2.78	1.34	1.44	0.73	0.507	1.34	0.377	0.93	1.00	2.000	No
792	52.01	2.78	1.34	1.44	0.73	0.506	1.34	0.376	0.93	1.00	2.000	No
793	52.06	2.78	1.34	1.44	0.73	0.506	1.34	0.376	0.93	1.00	2.000	No
794	52.11	2.79	1.35	1.44	0.73	0.505	1.34	0.376	0.93	1.00	2.000	No
795	52.19	2.79	1.35	1.44	0.73	0.505	1.34	0.376	0.93	1.00	2.000	No
796	52.25	2.79	1.35	1.45	0.73	0.505	1.34	0.375	0.93	1.00	2.000	No
797	52.30	2.80	1.35	1.45	0.73	0.504	1.34	0.375	0.93	1.00	2.000	No
798	52.38	2.80	1.35	1.45	0.73	0.504	1.34	0.375	0.93	1.00	2.000	No
799	52.45	2.81	1.36	1.45	0.73	0.503	1.34	0.374	0.93	1.00	2.000	No
800	52.49	2.81	1.36	1.45	0.73	0.503	1.34	0.374	0.93	1.00	2.000	No
801	52.57	2.81	1.36	1.45	0.73	0.503	1.34	0.374	0.93	1.00	2.000	No
802	52.65	2.82	1.36	1.46	0.73	0.502	1.34	0.374	0.93	1.00	2.000	No
803	52.70	2.82	1.36	1.46	0.73	0.502	1.34	0.373	0.93	1.00	2.000	No
804	52.79	2.83	1.37	1.46	0.72	0.502	1.34	0.373	0.93	1.00	2.000	No
805	52.85	2.83	1.37	1.46	0.72	0.501	1.34	0.373	0.93	1.00	2.000	No
806	52.89	2.83	1.37	1.46	0.72	0.501	1.34	0.373	0.93	1.00	2.000	No
807	52.99	2.84	1.37	1.47	0.72	0.500	1.34	0.372	0.93	1.00	2.000	No
808	53.04	2.84	1.37	1.47	0.72	0.500	1.34	0.372	0.93	1.00	2.000	No
809	53.08	2.84	1.38	1.47	0.72	0.500	1.34	0.372	0.93	1.00	2.000	No
810	53.17	2.85	1.38	1.47	0.72	0.499	1.34	0.371	0.93	1.00	2.000	No
811	53.24	2.85	1.38	1.47	0.72	0.499	1.34	0.371	0.93	1.00	2.000	No
812	53.33	2.86	1.38	1.47	0.72	0.498	1.34	0.371	0.93	1.00	2.000	No
813	53.39	2.86	1.38	1.48	0.72	0.498	1.34	0.371	0.93	1.00	2.000	No
814	53.42	2.86	1.39	1.48	0.72	0.498	1.34	0.370	0.93	1.00	2.000	No
815	53.49	2.87	1.39	1.48	0.72	0.498	1.34	0.370	0.93	1.00	2.000	No
816	53.58	2.87	1.39	1.48	0.72	0.497	1.34	0.370	0.93	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
817	53.63	2.87	1.39	1.48	0.72	0.497	1.34	0.370	0.93	1.00	2.000	No
818	53.68	2.88	1.39	1.48	0.72	0.497	1.34	0.369	0.93	1.00	2.000	No
819	53.77	2.88	1.40	1.49	0.72	0.496	1.34	0.369	0.93	1.00	2.000	No
820	53.83	2.89	1.40	1.49	0.71	0.496	1.34	0.369	0.92	1.00	2.000	No
821	53.88	2.89	1.40	1.49	0.71	0.496	1.34	0.369	0.92	1.00	2.000	No
822	53.97	2.89	1.40	1.49	0.71	0.495	1.34	0.368	0.92	1.00	2.000	No
823	54.03	2.90	1.40	1.49	0.71	0.495	1.34	0.368	0.92	1.00	2.000	No
824	54.08	2.90	1.41	1.49	0.71	0.494	1.34	0.368	0.92	1.00	2.000	No
825	54.18	2.91	1.41	1.50	0.71	0.494	1.34	0.367	0.92	1.00	2.000	No
826	54.22	2.91	1.41	1.50	0.71	0.494	1.34	0.367	0.92	1.00	2.000	No
827	54.27	2.91	1.41	1.50	0.71	0.493	1.34	0.367	0.92	1.00	2.000	No
828	54.38	2.92	1.42	1.50	0.71	0.493	1.34	0.366	0.92	1.00	2.000	No
829	54.42	2.92	1.42	1.50	0.71	0.493	1.34	0.366	0.92	1.00	2.000	No
830	54.47	2.92	1.42	1.50	0.71	0.492	1.34	0.366	0.92	1.00	2.000	No
831	54.57	2.93	1.42	1.51	0.71	0.492	1.34	0.366	0.92	1.00	2.000	No
832	54.61	2.93	1.42	1.51	0.71	0.491	1.34	0.366	0.92	1.00	2.000	No
833	54.68	2.93	1.43	1.51	0.71	0.491	1.34	0.365	0.92	1.00	2.000	No
834	54.75	2.94	1.43	1.51	0.71	0.491	1.34	0.365	0.92	1.00	2.000	No
835	54.79	2.94	1.43	1.51	0.71	0.490	1.34	0.365	0.92	1.00	2.000	No
836	54.86	2.94	1.43	1.51	0.70	0.490	1.34	0.364	0.92	1.00	2.000	No
837	54.95	2.95	1.43	1.52	0.70	0.489	1.34	0.364	0.92	1.00	2.000	No
838	55.01	2.95	1.44	1.52	0.70	0.489	1.34	0.364	0.92	1.00	2.000	No
839	55.06	2.96	1.44	1.52	0.70	0.489	1.34	0.364	0.92	1.00	2.000	No
840	55.12	2.96	1.44	1.52	0.70	0.488	1.34	0.363	0.92	1.00	2.000	No
841	55.21	2.97	1.44	1.52	0.70	0.488	1.34	0.363	0.92	1.00	2.000	No
842	55.25	2.97	1.44	1.53	0.70	0.488	1.34	0.363	0.92	1.00	2.000	No
843	55.32	2.97	1.45	1.53	0.70	0.487	1.34	0.362	0.92	1.00	2.000	No
844	55.40	2.98	1.45	1.53	0.70	0.487	1.34	0.362	0.92	1.00	2.000	No
845	55.50	2.98	1.45	1.53	0.70	0.486	1.34	0.361	0.92	1.00	2.000	No
846	55.52	2.99	1.45	1.53	0.70	0.486	1.34	0.361	0.92	1.00	2.000	No
847	55.60	2.99	1.45	1.54	0.70	0.485	1.34	0.361	0.92	1.00	2.000	No
848	55.67	3.00	1.46	1.54	0.70	0.485	1.34	0.361	0.92	1.00	2.000	No
849	55.72	3.00	1.46	1.54	0.70	0.485	1.34	0.360	0.92	1.00	2.000	No
850	55.79	3.00	1.46	1.54	0.70	0.484	1.34	0.360	0.92	1.00	2.000	No
851	55.86	3.01	1.46	1.55	0.70	0.484	1.34	0.360	0.92	1.00	2.000	No
852	55.95	3.01	1.46	1.55	0.69	0.483	1.34	0.359	0.92	1.00	2.000	No
853	56.00	3.02	1.47	1.55	0.69	0.483	1.34	0.359	0.92	1.00	2.000	No
854	56.05	3.02	1.47	1.55	0.69	0.483	1.34	0.359	0.92	1.00	2.000	No
855	56.11	3.02	1.47	1.55	0.69	0.482	1.34	0.359	0.92	1.00	2.000	No
856	56.19	3.03	1.47	1.55	0.69	0.482	1.34	0.358	0.92	1.00	2.000	No
857	56.24	3.03	1.47	1.56	0.69	0.482	1.34	0.358	0.92	1.00	2.000	No
858	56.34	3.04	1.48	1.56	0.69	0.481	1.34	0.358	0.91	1.00	2.000	No
859	56.37	3.04	1.48	1.56	0.69	0.481	1.34	0.358	0.91	1.00	2.000	No
860	56.43	3.04	1.48	1.56	0.69	0.480	1.34	0.357	0.91	1.00	2.000	No
861	56.54	3.05	1.48	1.56	0.69	0.480	1.34	0.357	0.91	1.00	2.000	No
862	56.59	3.05	1.48	1.57	0.69	0.480	1.34	0.357	0.91	1.00	2.000	No
863	56.64	3.05	1.49	1.57	0.69	0.479	1.34	0.356	0.91	1.00	2.000	No
864	56.73	3.06	1.49	1.57	0.69	0.479	1.34	0.356	0.91	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
865	56.79	3.06	1.49	1.57	0.69	0.478	1.34	0.356	0.91	1.00	2.000	No
866	56.84	3.07	1.49	1.57	0.69	0.478	1.34	0.356	0.91	1.00	2.000	No
867	56.93	3.07	1.50	1.58	0.69	0.478	1.34	0.355	0.91	1.00	2.000	No
868	56.96	3.07	1.50	1.58	0.69	0.478	1.34	0.355	0.91	1.00	2.000	No
869	57.03	3.08	1.50	1.58	0.68	0.477	1.34	0.355	0.91	1.00	2.000	No
870	57.13	3.08	1.50	1.58	0.68	0.477	1.34	0.355	0.91	1.00	2.000	No
871	57.16	3.08	1.50	1.58	0.68	0.477	1.34	0.354	0.91	1.00	2.000	No
872	57.23	3.09	1.50	1.58	0.68	0.476	1.34	0.354	0.91	1.00	2.000	No
873	57.29	3.09	1.51	1.58	0.68	0.476	1.34	0.354	0.91	1.00	2.000	No
874	57.38	3.10	1.51	1.59	0.68	0.475	1.34	0.354	0.91	1.00	2.000	No
875	57.42	3.10	1.51	1.59	0.68	0.475	1.34	0.353	0.91	1.00	2.000	No
876	57.49	3.10	1.51	1.59	0.68	0.475	1.34	0.353	0.91	1.00	2.000	No
877	57.57	3.11	1.52	1.59	0.68	0.475	1.34	0.353	0.91	1.00	2.000	No
878	57.62	3.11	1.52	1.59	0.68	0.474	1.34	0.353	0.91	1.00	2.000	No
879	57.68	3.11	1.52	1.59	0.68	0.474	1.34	0.353	0.91	1.00	2.000	No
880	57.77	3.12	1.52	1.60	0.68	0.474	1.34	0.352	0.91	1.00	2.000	No
881	57.85	3.12	1.52	1.60	0.68	0.473	1.34	0.352	0.91	1.00	2.000	No
882	57.92	3.13	1.53	1.60	0.68	0.473	1.34	0.352	0.91	1.00	2.000	No
883	57.97	3.13	1.53	1.60	0.68	0.473	1.34	0.351	0.91	1.00	2.000	No
884	58.02	3.13	1.53	1.60	0.68	0.472	1.34	0.351	0.91	1.00	2.000	No
885	58.07	3.13	1.53	1.60	0.68	0.472	1.34	0.351	0.91	1.00	2.000	No
886	58.16	3.14	1.53	1.61	0.67	0.472	1.34	0.351	0.91	1.00	2.000	No
887	58.23	3.14	1.54	1.61	0.67	0.471	1.34	0.351	0.91	1.00	2.000	No
888	58.31	3.15	1.54	1.61	0.67	0.471	1.34	0.350	0.91	1.00	2.000	No
889	58.37	3.15	1.54	1.61	0.67	0.471	1.34	0.350	0.91	1.00	2.000	No
890	58.42	3.15	1.54	1.61	0.67	0.470	1.34	0.350	0.91	1.00	2.000	No
891	58.50	3.16	1.54	1.61	0.67	0.470	1.34	0.350	0.91	1.00	2.000	No
892	58.57	3.16	1.55	1.62	0.67	0.470	1.34	0.349	0.91	1.00	2.000	No
893	58.61	3.16	1.55	1.62	0.67	0.469	1.34	0.349	0.91	1.00	2.000	No
894	58.68	3.17	1.55	1.62	0.67	0.469	1.34	0.349	0.91	1.00	2.000	No
895	58.76	3.17	1.55	1.62	0.67	0.469	1.34	0.349	0.91	1.00	2.000	No
896	58.80	3.17	1.55	1.62	0.67	0.469	1.34	0.348	0.91	1.00	2.000	No
897	58.87	3.18	1.56	1.62	0.67	0.468	1.34	0.348	0.91	1.00	2.000	No
898	58.95	3.18	1.56	1.62	0.67	0.468	1.34	0.348	0.91	1.00	2.000	No
899	59.01	3.19	1.56	1.63	0.67	0.467	1.34	0.348	0.91	1.00	2.000	No
900	59.06	3.19	1.56	1.63	0.67	0.467	1.34	0.348	0.91	1.00	2.000	No
901	59.16	3.20	1.56	1.63	0.67	0.467	1.34	0.347	0.91	1.00	2.000	No
902	59.19	3.20	1.57	1.63	0.67	0.467	1.34	0.347	0.91	1.00	2.000	No
903	59.29	3.20	1.57	1.63	0.67	0.466	1.34	0.347	0.90	1.00	2.000	No
904	59.33	3.21	1.57	1.64	0.66	0.466	1.34	0.346	0.90	1.00	2.000	No
905	59.39	3.21	1.57	1.64	0.66	0.465	1.34	0.346	0.90	1.00	2.000	No
906	59.47	3.21	1.57	1.64	0.66	0.465	1.34	0.346	0.90	1.00	2.000	No
907	59.54	3.22	1.58	1.64	0.66	0.465	1.34	0.346	0.90	1.00	2.000	No
908	59.58	3.22	1.58	1.64	0.66	0.464	1.34	0.345	0.90	1.00	2.000	No
909	59.65	3.23	1.58	1.64	0.66	0.464	1.34	0.345	0.90	1.00	2.000	No
910	59.73	3.23	1.58	1.65	0.66	0.464	1.34	0.345	0.90	1.00	2.000	No
911	59.81	3.23	1.59	1.65	0.66	0.463	1.34	0.345	0.90	1.00	2.000	No
912	59.85	3.24	1.59	1.65	0.66	0.463	1.34	0.344	0.90	1.00	2.000	Yes

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
913	59.92	3.24	1.59	1.65	0.66	0.463	1.34	0.344	0.90	1.00	2.000	Yes
914	59.99	3.25	1.59	1.65	0.66	0.462	1.34	0.344	0.90	1.00	2.000	Yes
915	60.08	3.25	1.59	1.66	0.66	0.462	1.34	0.344	0.90	1.00	2.000	Yes
916	60.13	3.25	1.60	1.66	0.66	0.462	1.34	0.343	0.90	1.00	2.000	Yes
917	60.18	3.26	1.60	1.66	0.66	0.462	1.34	0.343	0.90	1.00	2.000	Yes
918	60.27	3.26	1.60	1.66	0.66	0.461	1.34	0.343	0.90	1.00	2.000	Yes
919	60.33	3.26	1.60	1.66	0.66	0.461	1.34	0.343	0.90	1.00	2.000	Yes
920	60.38	3.27	1.60	1.66	0.66	0.461	1.34	0.343	0.90	1.00	2.000	No
921	60.47	3.27	1.61	1.66	0.66	0.460	1.34	0.342	0.90	1.00	2.000	No

Abbreviations

Depth: Depth from free surface, at which CPT was performed (ft)
σ_v: Total overburden pressure at test point (tsf)
u_0: Water pressure at test point (tsf)
σ_v': Effective overburden pressure based on GWT during earthquake (tsf)
r_d: Nonlinear shear mass factor
CSR: Cyclic Stress Ratio
MSF: Magnitude Scaling Factor
CSR_{eq}: CSR adjusted for M=7.5
K_σ: Effective overburden stress factor
CSR^*: CSR fully adjusted

:: Cyclic Resistance Ratio (CRR) calculation data ::

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
1	0.10	66.47	1.53	0.20	0.50	106.79	1.00	106.79	4.000	No	No	2.00
2	0.16	86.45	1.43	0.20	0.50	138.87	1.00	138.87	4.000	No	No	2.00
3	0.23	106.22	1.36	0.23	0.50	170.64	1.00	170.64	4.000	No	No	2.00
4	0.30	105.13	1.43	0.30	0.50	168.88	1.00	168.88	4.000	No	No	2.00
5	0.34	103.27	1.49	0.38	0.50	165.88	1.00	165.88	4.000	No	No	2.00
6	0.40	111.18	1.51	0.47	0.50	178.59	1.00	178.59	4.000	No	No	2.00
7	0.50	114.67	1.56	0.59	0.50	184.19	1.00	184.19	4.000	No	No	2.00
8	0.54	109.80	1.64	0.75	0.50	176.35	1.00	176.09	4.000	No	No	2.00
9	0.60	102.06	1.74	0.96	0.54	163.92	1.06	174.37	4.000	Yes	No	2.00
10	0.68	93.31	1.84	1.21	0.58	149.86	1.13	170.05	4.000	Yes	No	2.00
11	0.73	85.63	1.93	1.48	0.61	137.51	1.21	166.98	4.000	Yes	No	2.00
12	0.80	77.42	2.01	1.75	0.64	124.31	1.31	162.91	4.000	Yes	No	2.00
13	0.87	68.51	2.10	2.06	0.67	109.99	1.45	159.28	4.000	Yes	No	2.00
14	0.95	59.06	2.19	2.44	0.71	94.79	1.65	156.57	4.000	Yes	No	2.00
15	0.99	51.06	2.28	2.80	0.74	81.93	1.89	154.68	4.000	Yes	No	2.00
16	1.09	43.83	2.36	3.16	0.78	70.32	2.17	152.86	4.000	Yes	No	2.00
17	1.14	37.48	2.45	3.55	0.81	60.11	2.52	151.36	4.000	Yes	No	2.00
18	1.22	33.30	2.50	3.79	0.83	53.38	2.79	148.94	4.000	Yes	No	2.00
19	1.29	30.41	2.54	3.91	0.84	48.74	2.99	145.59	4.000	Yes	No	2.00
20	1.33	27.94	2.57	3.98	0.86	44.77	3.17	141.81	4.000	Yes	No	2.00
21	1.39	26.55	2.59	3.97	0.86	42.53	3.25	138.36	4.000	No	No	2.00
22	1.48	25.16	2.61	3.98	0.87	40.28	3.36	135.34	4.000	No	Yes	2.00
23	1.52	23.90	2.62	4.00	0.87	38.26	3.47	132.83	4.000	No	Yes	2.00
24	1.59	22.67	2.64	4.02	0.88	36.27	3.59	130.17	4.000	No	Yes	2.00
25	1.66	21.45	2.66	4.02	0.89	34.31	3.71	127.25	4.000	No	Yes	2.00
26	1.73	20.34	2.68	4.01	0.89	32.51	3.82	124.27	4.000	No	Yes	2.00
27	1.78	19.30	2.69	3.99	0.90	30.85	3.93	121.23	4.000	No	Yes	2.00
28	1.84	18.28	2.71	3.97	0.91	29.19	4.05	118.09	4.000	No	Yes	2.00
29	1.93	17.32	2.72	3.94	0.91	27.65	4.16	115.10	4.000	No	Yes	2.00
30	1.98	16.62	2.73	3.88	0.92	26.51	4.23	112.12	4.000	No	Yes	2.00
31	2.04	16.02	2.74	3.79	0.92	25.54	4.27	109.19	4.000	No	Yes	2.00
32	2.13	15.55	2.74	3.68	0.92	24.78	4.28	106.17	4.000	No	Yes	2.00
33	2.18	15.21	2.74	3.58	0.92	24.24	4.28	103.74	4.000	No	Yes	2.00
34	2.25	14.92	2.74	3.49	0.92	23.76	4.27	101.54	4.000	No	Yes	2.00
35	2.30	14.59	2.74	3.41	0.92	23.22	4.28	99.44	4.000	No	Yes	2.00
36	2.38	14.19	2.74	3.35	0.92	22.57	4.32	97.46	4.000	No	Yes	2.00
37	2.44	13.77	2.75	3.29	0.92	21.89	4.36	95.56	4.000	No	Yes	2.00
38	2.51	13.43	2.75	3.23	0.92	21.34	4.39	93.67	4.000	No	Yes	2.00
39	2.57	12.91	2.76	3.21	0.93	20.51	4.49	91.99	4.000	No	Yes	2.00
40	2.66	12.46	2.77	3.18	0.93	19.76	4.56	90.22	4.000	No	Yes	2.00
41	2.72	11.95	2.79	3.19	0.94	18.94	4.69	88.81	4.000	No	Yes	2.00
42	2.76	11.46	2.80	3.21	0.94	18.15	4.83	87.61	4.000	No	Yes	2.00
43	2.84	11.04	2.82	3.23	0.95	17.48	4.95	86.59	4.000	No	Yes	2.00
44	2.92	10.76	2.83	3.24	0.95	17.02	5.04	85.86	4.000	No	Yes	2.00
45	2.95	10.61	2.84	3.28	0.96	16.78	5.11	85.81	4.000	No	Yes	2.00
46	3.07	10.55	2.84	3.32	0.96	16.67	5.16	86.11	4.000	No	Yes	2.00
47	3.11	10.53	2.85	3.37	0.96	16.64	5.21	86.64	4.000	No	Yes	2.00
48	3.16	10.59	2.85	3.43	0.96	16.73	5.23	87.50	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
49	3.26	10.65	2.85	3.50	0.96	16.82	5.27	88.61	4.000	No	Yes	2.00
50	3.30	10.69	2.86	3.59	0.96	16.88	5.32	89.72	4.000	No	Yes	2.00
51	3.36	10.69	2.87	3.68	0.97	16.87	5.38	90.83	4.000	No	Yes	2.00
52	3.44	10.63	2.88	3.79	0.97	16.77	5.48	91.84	4.000	No	Yes	2.00
53	3.50	10.53	2.89	3.89	0.98	16.60	5.58	92.62	4.000	No	Yes	2.00
54	3.56	10.42	2.90	3.96	0.98	16.42	5.66	92.91	4.000	No	Yes	2.00
55	3.62	10.33	2.90	3.97	0.98	16.27	5.70	92.71	4.000	No	Yes	2.00
56	3.71	10.23	2.90	3.98	0.98	16.10	5.74	92.40	4.000	No	Yes	2.00
57	3.76	10.16	2.91	3.98	0.98	15.98	5.76	92.07	4.000	No	Yes	2.00
58	3.82	10.09	2.91	3.99	0.98	15.87	5.80	91.98	4.000	No	Yes	2.00
59	3.90	10.01	2.91	4.02	0.99	15.73	5.84	91.90	4.000	No	Yes	2.00
60	3.95	9.95	2.92	4.02	0.99	15.63	5.87	91.68	4.000	No	Yes	2.00
61	4.00	9.91	2.92	4.08	0.99	15.56	5.92	92.18	4.000	No	Yes	2.00
62	4.09	9.91	2.93	4.14	0.99	15.55	5.96	92.78	4.000	No	Yes	2.00
63	4.16	9.90	2.93	4.20	0.99	15.52	6.01	93.26	4.000	No	Yes	2.00
64	4.20	9.88	2.94	4.28	0.99	15.49	6.07	93.97	4.000	No	Yes	2.00
65	4.27	9.84	2.94	4.35	1.00	15.42	6.13	94.57	4.000	No	Yes	2.00
66	4.34	9.78	2.95	4.42	1.00	15.32	6.20	94.94	4.000	No	Yes	2.00
67	4.44	9.81	2.95	4.42	1.00	15.36	6.19	95.05	4.000	No	Yes	2.00
68	4.48	9.87	2.95	4.43	1.00	15.45	6.17	95.38	4.000	No	Yes	2.00
69	4.58	9.94	2.95	4.44	1.00	15.55	6.16	95.82	4.000	No	Yes	2.00
70	4.63	10.01	2.94	4.41	1.00	15.66	6.12	95.80	4.000	No	Yes	2.00
71	4.68	10.05	2.94	4.39	1.00	15.72	6.09	95.79	4.000	No	Yes	2.00
72	4.73	10.11	2.94	4.39	0.99	15.81	6.07	96.00	4.000	No	Yes	2.00
73	4.80	10.09	2.94	4.43	1.00	15.77	6.10	96.24	4.000	No	Yes	2.00
74	4.86	10.05	2.94	4.45	1.00	15.71	6.13	96.36	4.000	No	Yes	2.00
75	4.93	9.96	2.95	4.47	1.00	15.56	6.18	96.16	4.000	No	Yes	2.00
76	5.00	9.76	2.96	4.49	1.00	15.23	6.26	95.42	4.000	No	Yes	2.00
77	5.07	9.55	2.96	4.45	1.00	14.89	6.32	94.09	4.000	No	Yes	2.00
78	5.12	9.29	2.97	4.41	1.00	14.45	6.40	92.51	4.000	No	Yes	2.00
79	5.20	8.98	2.98	4.36	1.00	13.95	6.50	90.66	4.000	No	Yes	2.00
80	5.27	8.60	2.99	4.32	1.00	13.34	6.64	88.54	4.000	No	Yes	2.00
81	5.33	8.15	3.01	4.29	1.00	12.61	6.82	86.10	4.000	No	Yes	2.00
82	5.41	7.76	3.02	4.20	1.00	11.98	6.96	83.44	4.000	No	Yes	2.00
83	5.45	7.40	3.03	4.10	1.00	11.40	7.09	80.81	4.000	No	Yes	2.00
84	5.52	7.10	3.04	4.00	1.00	10.90	7.19	78.36	4.000	No	Yes	2.00
85	5.60	6.84	3.05	3.93	1.00	10.48	7.30	76.53	4.000	No	Yes	2.00
86	5.67	6.62	3.06	3.91	1.00	10.12	7.43	75.22	4.000	No	Yes	2.00
87	5.71	6.54	3.06	3.89	1.00	9.99	7.47	74.64	4.000	No	Yes	2.00
88	5.80	6.55	3.06	3.86	1.00	10.00	7.43	74.36	4.000	No	Yes	2.00
89	5.85	6.66	3.05	3.81	1.00	10.17	7.33	74.53	4.000	No	Yes	2.00
90	5.91	6.84	3.04	3.79	1.00	10.45	7.20	75.27	4.000	No	Yes	2.00
91	6.01	7.03	3.03	3.80	1.00	10.75	7.10	76.28	4.000	No	Yes	2.00
92	6.06	7.21	3.02	3.83	1.00	11.05	7.01	77.41	4.000	No	Yes	2.00
93	6.11	7.45	3.01	3.83	1.00	11.42	6.87	78.52	4.000	No	Yes	2.00
94	6.18	7.68	3.00	3.80	1.00	11.78	6.73	79.34	4.000	No	Yes	2.00
95	6.26	7.96	2.98	3.72	1.00	12.22	6.53	79.86	4.000	No	Yes	2.00
96	6.30	8.20	2.96	3.61	1.00	12.60	6.33	79.82	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
97	6.37	8.40	2.95	3.51	1.00	12.92	6.17	79.64	4.000	No	Yes	2.00
98	6.45	8.58	2.93	3.40	0.99	13.22	6.00	79.31	4.000	No	Yes	2.00
99	6.51	8.76	2.91	3.29	0.99	13.50	5.84	78.83	4.000	No	Yes	2.00
100	6.60	8.92	2.90	3.21	0.98	13.75	5.71	78.49	4.000	No	Yes	2.00
101	6.64	9.07	2.89	3.14	0.98	13.99	5.60	78.29	4.000	No	Yes	2.00
102	6.70	9.17	2.88	3.12	0.97	14.14	5.54	78.39	4.000	No	Yes	2.00
103	6.80	9.25	2.88	3.13	0.97	14.26	5.52	78.78	4.000	No	Yes	2.00
104	6.83	9.26	2.89	3.18	0.97	14.27	5.56	79.34	4.000	No	Yes	2.00
105	6.90	9.24	2.89	3.25	0.98	14.24	5.62	80.05	4.000	No	Yes	2.00
106	6.98	9.23	2.90	3.32	0.98	14.21	5.68	80.74	4.000	No	Yes	2.00
107	7.04	9.25	2.90	3.38	0.98	14.23	5.72	81.42	4.000	No	Yes	2.00
108	7.09	9.31	2.90	3.42	0.98	14.32	5.73	82.07	4.000	No	Yes	2.00
109	7.16	9.38	2.90	3.45	0.98	14.43	5.73	82.72	4.000	No	Yes	2.00
110	7.24	9.45	2.90	3.50	0.98	14.53	5.75	83.49	4.000	No	Yes	2.00
111	7.30	9.50	2.91	3.53	0.98	14.61	5.75	84.00	4.000	No	Yes	2.00
112	7.39	9.54	2.90	3.52	0.98	14.67	5.73	83.98	4.000	No	Yes	2.00
113	7.43	9.55	2.90	3.54	0.98	14.68	5.74	84.24	4.000	No	Yes	2.00
114	7.50	9.53	2.91	3.66	0.99	14.65	5.83	85.43	4.000	No	Yes	2.00
115	7.59	9.48	2.93	3.79	0.99	14.56	5.95	86.60	4.000	No	Yes	2.00
116	7.63	9.40	2.94	3.94	0.99	14.43	6.08	87.77	4.000	No	Yes	2.00
117	7.70	9.18	2.96	4.12	1.00	14.07	6.30	88.70	4.000	No	Yes	2.00
118	7.78	8.96	2.98	4.31	1.00	13.71	6.53	89.48	4.000	No	Yes	2.00
119	7.83	8.81	2.99	4.43	1.00	13.45	6.68	89.86	4.000	No	Yes	2.00
120	7.89	8.62	3.01	4.59	1.00	13.14	6.88	90.36	4.000	No	Yes	2.00
121	7.95	8.42	3.03	4.79	1.00	12.82	7.11	91.06	4.000	No	Yes	2.00
122	8.02	8.21	3.05	4.95	1.00	12.47	7.32	91.27	4.000	No	Yes	2.00
123	8.11	7.99	3.06	5.00	1.00	12.12	7.46	90.42	4.000	No	Yes	2.00
124	8.16	7.78	3.07	5.00	1.00	11.78	7.58	89.31	4.000	No	Yes	2.00
125	8.21	7.58	3.08	4.99	1.00	11.45	7.69	88.06	4.000	No	Yes	2.00
126	8.30	7.48	3.08	4.90	1.00	11.29	7.69	86.84	4.000	No	Yes	2.00
127	8.36	7.40	3.08	4.80	1.00	11.16	7.67	85.60	4.000	No	Yes	2.00
128	8.41	7.34	3.08	4.69	1.00	11.04	7.64	84.34	4.000	No	Yes	2.00
129	8.47	7.34	3.07	4.53	1.00	11.04	7.53	83.09	4.000	No	Yes	2.00
130	8.56	7.38	3.06	4.38	1.00	11.09	7.40	82.08	4.000	No	Yes	2.00
131	8.61	7.46	3.05	4.26	1.00	11.22	7.27	81.58	4.000	No	Yes	2.00
132	8.70	7.58	3.03	4.16	1.00	11.40	7.13	81.34	4.000	No	Yes	2.00
133	8.75	7.71	3.02	4.11	1.00	11.61	7.02	81.48	4.000	No	Yes	2.00
134	8.81	7.85	3.01	4.06	1.00	11.83	6.91	81.75	4.000	No	Yes	2.00
135	8.90	8.00	3.01	4.01	1.00	12.06	6.80	82.01	4.000	No	Yes	2.00
136	8.94	8.12	3.00	3.97	1.00	12.26	6.71	82.26	4.000	No	Yes	2.00
137	9.01	8.19	2.99	3.97	1.00	12.37	6.67	82.52	4.000	No	Yes	2.00
138	9.09	8.22	2.99	3.98	1.00	12.41	6.67	82.78	4.000	No	Yes	2.00
139	9.13	8.21	2.99	3.99	1.00	12.39	6.68	82.78	4.000	No	Yes	2.00
140	9.20	8.17	2.99	3.97	1.00	12.32	6.69	82.39	4.000	No	Yes	2.00
141	9.27	8.09	3.00	3.96	1.00	12.17	6.73	81.87	4.000	No	Yes	2.00
142	9.35	7.98	3.00	3.93	1.00	11.99	6.76	81.08	4.000	No	Yes	2.00
143	9.39	7.84	3.01	3.89	1.00	11.76	6.80	80.02	4.000	No	Yes	2.00
144	9.45	7.69	3.01	3.84	1.00	11.52	6.85	78.94	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
145	9.54	7.54	3.01	3.79	1.00	11.27	6.89	77.70	4.000	No	Yes	2.00
146	9.59	7.39	3.02	3.74	1.00	11.03	6.94	76.58	4.000	No	Yes	2.00
147	9.65	7.26	3.02	3.66	1.00	10.82	6.96	75.30	4.000	No	Yes	2.00
148	9.73	7.13	3.02	3.59	1.00	10.59	6.99	73.99	4.000	No	Yes	2.00
149	9.81	6.99	3.02	3.51	1.00	10.36	7.01	72.66	4.000	No	Yes	2.00
150	9.85	6.89	3.02	3.43	1.00	10.20	7.01	71.46	4.000	No	Yes	2.00
151	9.94	6.81	3.02	3.35	1.00	10.06	7.00	70.39	4.000	No	Yes	2.00
152	10.00	6.75	3.02	3.30	1.00	9.96	6.99	69.61	4.000	No	Yes	2.00
153	10.04	6.74	3.02	3.23	1.00	9.94	6.94	68.99	4.000	No	Yes	2.00
154	10.12	6.81	3.01	3.20	1.00	10.05	6.87	69.00	4.000	No	Yes	2.00
155	10.19	6.96	3.00	3.19	1.00	10.28	6.77	69.63	4.000	No	Yes	2.00
156	10.24	7.18	2.99	3.22	1.00	10.63	6.67	70.86	4.000	No	Yes	2.00
157	10.31	7.51	2.98	3.30	1.00	11.15	6.54	72.96	4.000	No	Yes	2.00
158	10.39	7.85	2.97	3.37	1.00	11.70	6.42	75.13	4.000	No	Yes	2.00
159	10.48	8.26	2.95	3.40	1.00	12.35	6.24	77.07	4.000	No	Yes	2.00
160	10.53	8.69	2.94	3.44	0.99	13.04	6.08	79.21	4.000	No	Yes	2.00
161	10.63	9.14	2.93	3.52	0.99	13.75	5.95	81.80	4.000	No	Yes	2.00
162	10.67	9.60	2.92	3.64	0.99	14.48	5.86	84.82	4.000	No	Yes	2.00
163	10.71	10.01	2.91	3.74	0.98	15.13	5.78	87.48	4.000	No	Yes	2.00
164	10.79	10.33	2.90	3.85	0.98	15.64	5.74	89.85	4.000	No	Yes	2.00
165	10.83	10.50	2.91	3.97	0.98	15.91	5.77	91.85	4.000	No	Yes	2.00
166	10.93	10.75	2.90	4.01	0.98	16.31	5.71	93.18	4.000	No	Yes	2.00
167	10.98	11.01	2.90	4.05	0.98	16.72	5.66	94.60	4.000	No	Yes	2.00
168	11.06	11.19	2.90	4.14	0.98	17.00	5.66	96.27	4.000	No	Yes	2.00
169	11.11	11.33	2.90	4.22	0.98	17.22	5.67	97.70	4.000	No	Yes	2.00
170	11.16	11.42	2.90	4.27	0.98	17.37	5.68	98.57	4.000	No	Yes	2.00
171	11.23	11.42	2.90	4.30	0.98	17.36	5.70	98.91	4.000	No	Yes	2.00
172	11.31	11.37	2.90	4.33	0.98	17.21	5.75	98.90	4.000	No	Yes	2.00
173	11.36	11.30	2.91	4.34	0.98	17.04	5.78	98.56	4.000	No	Yes	2.00
174	11.42	11.29	2.91	4.31	0.98	16.93	5.79	98.01	4.000	No	Yes	2.00
175	11.51	11.10	2.92	4.36	0.99	16.53	5.90	97.52	4.000	No	Yes	2.00
176	11.56	10.86	2.93	4.40	0.99	16.11	6.01	96.84	4.000	No	Yes	2.00
177	11.65	10.63	2.94	4.41	1.00	15.65	6.12	95.79	4.000	No	Yes	2.00
178	11.71	10.44	2.95	4.40	1.00	15.29	6.19	94.68	4.000	No	Yes	2.00
179	11.75	10.23	2.96	4.39	1.00	14.92	6.27	93.61	4.000	No	Yes	2.00
180	11.84	10.11	2.96	4.32	1.00	14.60	6.31	92.08	4.000	No	Yes	2.00
181	11.89	10.00	2.96	4.23	1.00	14.37	6.30	90.56	4.000	No	Yes	2.00
182	11.96	9.97	2.95	4.08	1.00	14.23	6.23	88.71	4.000	No	Yes	2.00
183	12.03	9.99	2.94	3.91	1.00	14.17	6.13	86.82	4.000	No	Yes	2.00
184	12.11	10.04	2.93	3.71	0.99	14.16	5.99	84.80	4.000	No	Yes	2.00
185	12.16	10.16	2.91	3.52	0.98	14.28	5.82	83.13	4.000	No	Yes	2.00
186	12.21	10.35	2.89	3.34	0.98	14.49	5.63	81.63	4.000	No	Yes	2.00
187	12.30	10.54	2.88	3.19	0.97	14.68	5.47	80.34	4.000	No	Yes	2.00
188	12.35	10.78	2.86	3.06	0.96	14.96	5.31	79.44	4.000	No	Yes	2.00
189	12.41	10.95	2.85	3.01	0.96	15.15	5.23	79.26	4.000	No	Yes	2.00
190	12.49	11.12	2.85	3.00	0.96	15.34	5.19	79.58	4.000	No	Yes	2.00
191	12.56	11.24	2.85	3.05	0.96	15.48	5.20	80.48	4.000	No	Yes	2.00
192	12.60	11.35	2.85	3.13	0.96	15.63	5.22	81.65	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
193	12.67	11.48	2.85	3.20	0.96	15.78	5.25	82.89	4.000	No	Yes	2.00
194	12.75	11.63	2.85	3.26	0.96	15.96	5.26	83.95	4.000	No	Yes	2.00
195	12.80	11.76	2.86	3.33	0.96	16.12	5.28	85.04	4.000	No	Yes	2.00
196	12.90	11.84	2.86	3.40	0.96	16.20	5.32	86.09	4.000	No	Yes	2.00
197	12.95	11.93	2.86	3.46	0.97	16.30	5.34	87.05	4.000	No	Yes	2.00
198	13.02	12.03	2.86	3.51	0.97	16.41	5.35	87.86	4.000	No	Yes	2.00
199	13.06	12.13	2.86	3.54	0.97	16.53	5.35	88.44	4.000	No	Yes	2.00
200	13.14	12.22	2.86	3.56	0.97	16.60	5.35	88.87	4.000	No	Yes	2.00
201	13.19	12.29	2.86	3.58	0.97	16.67	5.35	89.23	4.000	No	Yes	2.00
202	13.29	12.33	2.87	3.61	0.97	16.67	5.37	89.55	4.000	No	Yes	2.00
203	13.33	12.32	2.87	3.65	0.97	16.64	5.41	89.97	4.000	No	Yes	2.00
204	13.39	12.30	2.87	3.68	0.97	16.58	5.44	90.15	4.000	No	Yes	2.00
205	13.48	12.31	2.87	3.69	0.97	16.54	5.45	90.15	4.000	No	Yes	2.00
206	13.54	12.39	2.87	3.70	0.97	16.62	5.44	90.48	4.000	No	Yes	2.00
207	13.59	12.53	2.87	3.70	0.97	16.78	5.42	90.88	4.000	No	Yes	2.00
208	13.67	12.75	2.86	3.69	0.97	17.02	5.36	91.29	4.000	No	Yes	2.00
209	13.72	12.96	2.86	3.69	0.96	17.27	5.32	91.86	4.000	No	Yes	2.00
210	13.78	13.12	2.86	3.72	0.96	17.46	5.30	92.55	4.000	No	Yes	2.00
211	13.86	13.28	2.86	3.75	0.96	17.63	5.29	93.31	4.000	No	Yes	2.00
212	13.93	13.44	2.86	3.79	0.96	17.80	5.29	94.19	4.000	No	Yes	2.00
213	14.01	13.55	2.86	3.86	0.96	17.91	5.31	95.18	4.000	No	Yes	2.00
214	14.05	13.62	2.86	3.93	0.97	17.99	5.35	96.24	4.000	No	Yes	2.00
215	14.14	13.62	2.87	4.00	0.97	17.94	5.40	96.86	4.000	No	Yes	2.00
216	14.21	13.57	2.87	4.06	0.97	17.84	5.45	97.32	4.000	No	Yes	2.00
217	14.24	13.41	2.88	4.14	0.97	17.63	5.55	97.81	4.000	No	Yes	2.00
218	14.31	13.27	2.89	4.22	0.98	17.41	5.64	98.13	4.000	No	Yes	2.00
219	14.39	13.17	2.90	4.27	0.98	17.24	5.70	98.30	4.000	No	Yes	2.00
220	14.44	13.06	2.91	4.31	0.98	17.07	5.76	98.31	4.000	No	Yes	2.00
221	14.54	12.93	2.91	4.35	0.99	16.84	5.83	98.16	4.000	No	Yes	2.00
222	14.59	12.82	2.92	4.38	0.99	16.67	5.88	98.07	4.000	No	Yes	2.00
223	14.64	12.73	2.92	4.40	0.99	16.52	5.92	97.86	4.000	No	Yes	2.00
224	14.70	12.62	2.93	4.42	0.99	16.34	5.98	97.64	4.000	No	Yes	2.00
225	14.79	12.49	2.93	4.44	0.99	16.12	6.04	97.30	4.000	No	Yes	2.00
226	14.83	12.35	2.94	4.45	0.99	15.91	6.09	96.83	4.000	No	Yes	2.00
227	14.93	12.16	2.95	4.46	1.00	15.61	6.16	96.10	4.000	No	Yes	2.00
228	14.98	11.95	2.95	4.47	1.00	15.29	6.24	95.44	4.000	No	Yes	2.00
229	15.03	11.68	2.96	4.50	1.00	14.89	6.36	94.64	4.000	No	Yes	2.00
230	15.10	11.42	2.98	4.53	1.00	14.50	6.47	93.80	4.000	No	Yes	2.00
231	15.18	11.13	2.99	4.57	1.00	14.06	6.60	92.84	4.000	No	Yes	2.00
232	15.23	10.82	3.00	4.60	1.00	13.61	6.75	91.81	4.000	No	Yes	2.00
233	15.33	10.52	3.01	4.63	1.00	13.15	6.89	90.69	4.000	No	Yes	2.00
234	15.37	10.18	3.03	4.69	1.00	12.68	7.08	89.73	4.000	No	Yes	2.00
235	15.44	9.83	3.05	4.76	1.00	12.17	7.29	88.70	4.000	No	Yes	2.00
236	15.52	9.47	3.07	4.86	1.00	11.65	7.53	87.73	4.000	No	Yes	2.00
237	15.56	9.15	3.09	4.92	1.00	11.19	7.74	86.58	4.000	No	Yes	2.00
238	15.63	8.84	3.10	4.98	1.00	10.74	7.96	85.48	4.000	No	Yes	2.00
239	15.71	8.52	3.12	5.05	1.00	10.28	8.19	84.22	4.000	No	Yes	2.00
240	15.77	8.24	3.14	5.09	1.00	9.89	8.39	82.98	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
241	15.82	7.99	3.15	5.13	1.00	9.53	8.58	81.84	4.000	No	Yes	2.00
242	15.89	7.76	3.16	5.14	1.00	9.20	8.75	80.56	4.000	No	Yes	2.00
243	15.97	7.60	3.17	5.09	1.00	8.95	8.85	79.20	4.000	No	Yes	2.00
244	16.02	7.48	3.17	5.03	1.00	8.78	8.90	78.11	4.000	No	Yes	2.00
245	16.10	7.44	3.17	4.93	1.00	8.70	8.87	77.14	4.000	No	Yes	2.00
246	16.17	7.44	3.17	4.82	1.00	8.67	8.80	76.32	4.000	No	Yes	2.00
247	16.22	7.52	3.15	4.64	1.00	8.76	8.62	75.56	4.000	No	Yes	2.00
248	16.28	7.65	3.14	4.46	1.00	8.91	8.41	74.93	4.000	No	Yes	2.00
249	16.37	7.84	3.12	4.27	1.00	9.15	8.15	74.50	4.000	No	Yes	2.00
250	16.42	8.08	3.09	4.08	1.00	9.44	7.86	74.22	4.000	No	Yes	2.00
251	16.52	8.33	3.07	3.90	1.00	9.74	7.59	73.87	4.000	No	Yes	2.00
252	16.55	8.58	3.05	3.75	1.00	10.05	7.33	73.67	4.000	No	Yes	2.00
253	16.62	8.83	3.03	3.60	1.00	10.35	7.09	73.40	4.000	No	Yes	2.00
254	16.70	9.06	3.01	3.49	1.00	10.62	6.89	73.23	4.000	No	Yes	2.00
255	16.74	9.49	2.98	3.32	1.00	11.17	6.55	73.19	4.000	No	Yes	2.00
256	16.82	10.11	2.94	3.11	1.00	11.93	6.13	73.13	4.000	No	Yes	2.00
257	16.91	10.53	2.92	2.97	0.99	12.39	5.88	72.87	4.000	No	Yes	2.00
258	16.94	10.72	2.90	2.89	0.98	12.62	5.75	72.51	4.000	No	Yes	2.00
259	17.01	10.87	2.90	2.83	0.98	12.76	5.65	72.13	4.000	No	Yes	2.00
260	17.10	11.00	2.89	2.78	0.98	12.88	5.58	71.87	4.000	No	Yes	2.00
261	17.15	11.13	2.88	2.74	0.97	13.01	5.51	71.64	4.000	No	Yes	2.00
262	17.21	11.54	2.86	2.62	0.96	13.47	5.29	71.26	4.000	No	Yes	2.00
263	17.30	11.94	2.83	2.51	0.96	13.90	5.09	70.72	4.000	No	Yes	2.00
264	17.34	11.76	2.84	2.53	0.96	13.66	5.16	70.54	4.000	No	Yes	2.00
265	17.41	11.25	2.87	2.64	0.97	13.04	5.42	70.64	4.000	No	Yes	2.00
266	17.49	10.96	2.89	2.72	0.98	12.66	5.59	70.73	4.000	No	Yes	2.00
267	17.53	10.95	2.89	2.73	0.98	12.64	5.60	70.83	4.000	No	Yes	2.00
268	17.59	10.82	2.90	2.76	0.98	12.46	5.68	70.73	4.000	No	Yes	2.00
269	17.67	10.63	2.91	2.80	0.98	12.20	5.79	70.63	4.000	No	Yes	2.00
270	17.73	10.45	2.92	2.83	0.99	11.97	5.88	70.41	4.000	No	Yes	2.00
271	17.79	10.07	2.94	2.93	1.00	11.49	6.11	70.27	4.000	No	Yes	2.00
272	17.87	9.70	2.96	3.03	1.00	11.01	6.36	70.05	4.000	No	Yes	2.00
273	17.92	9.63	2.97	3.03	1.00	10.90	6.40	69.77	4.000	No	Yes	2.00
274	17.99	9.66	2.96	2.97	1.00	10.91	6.34	69.22	4.000	No	Yes	2.00
275	18.07	9.81	2.95	2.87	1.00	11.07	6.20	68.63	4.000	No	Yes	2.00
276	18.14	9.80	2.95	2.82	1.00	11.03	6.17	68.07	4.000	No	Yes	2.00
277	18.19	9.97	2.93	2.75	0.99	11.20	6.04	67.72	4.000	No	Yes	2.00
278	18.26	10.14	2.92	2.67	0.99	11.38	5.92	67.35	4.000	No	Yes	2.00
279	18.34	10.13	2.92	2.65	0.99	11.33	5.92	67.04	4.000	No	Yes	2.00
280	18.38	9.99	2.93	2.66	0.99	11.15	5.98	66.67	4.000	No	Yes	2.00
281	18.45	9.85	2.94	2.68	0.99	10.96	6.06	66.41	4.000	No	Yes	2.00
282	18.53	9.72	2.94	2.69	1.00	10.78	6.13	66.14	4.000	No	Yes	2.00
283	18.60	9.58	2.95	2.72	1.00	10.60	6.23	66.01	4.000	No	Yes	2.00
284	18.68	9.26	2.98	2.82	1.00	10.18	6.47	65.85	4.000	No	Yes	2.00
285	18.72	8.93	3.00	2.91	1.00	9.75	6.73	65.57	4.000	No	Yes	2.00
286	18.79	8.50	3.03	3.03	1.00	9.20	7.08	65.11	4.000	No	Yes	2.00
287	18.84	8.10	3.06	3.14	1.00	8.69	7.42	64.48	4.000	No	Yes	2.00
288	18.92	7.83	3.08	3.20	1.00	8.34	7.65	63.84	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
289	18.98	7.61	3.09	3.24	1.00	8.06	7.84	63.20	4.000	No	Yes	2.00
290	19.06	7.40	3.11	3.25	1.00	7.77	8.02	62.28	4.000	No	Yes	2.00
291	19.11	7.23	3.12	3.23	1.00	7.55	8.13	61.39	4.000	No	Yes	2.00
292	19.18	7.07	3.12	3.21	1.00	7.34	8.24	60.47	4.000	No	Yes	2.00
293	19.25	6.92	3.13	3.20	1.00	7.14	8.36	59.68	4.000	No	Yes	2.00
294	19.33	6.83	3.14	3.17	1.00	7.02	8.41	59.04	4.000	No	Yes	2.00
295	19.37	6.81	3.14	3.15	1.00	6.98	8.41	58.73	4.000	No	Yes	2.00
296	19.47	6.80	3.14	3.13	1.00	6.95	8.42	58.53	4.000	No	Yes	2.00
297	19.52	6.83	3.14	3.12	1.00	6.97	8.39	58.52	4.000	No	Yes	2.00
298	19.57	6.85	3.14	3.13	1.00	6.99	8.39	58.63	4.000	No	Yes	2.00
299	19.62	6.84	3.14	3.17	1.00	6.96	8.45	58.85	4.000	No	Yes	2.00
300	19.71	6.81	3.15	3.23	1.00	6.91	8.55	59.04	4.000	No	Yes	2.00
301	19.77	6.74	3.16	3.33	1.00	6.81	8.71	59.33	4.000	No	Yes	2.00
302	19.82	6.58	3.18	3.45	1.00	6.61	8.97	59.29	4.000	No	Yes	2.00
303	19.91	6.46	3.19	3.51	1.00	6.44	9.15	58.99	4.000	No	Yes	2.00
304	19.96	6.31	3.21	3.57	1.00	6.25	9.36	58.55	4.000	No	Yes	2.00
305	20.02	6.19	3.22	3.62	1.00	6.09	9.55	58.11	4.000	No	Yes	2.00
306	20.11	6.06	3.23	3.65	1.00	5.91	9.73	57.52	4.000	No	Yes	2.00
307	20.18	5.93	3.25	3.68	1.00	5.75	9.91	56.93	4.000	No	Yes	2.00
308	20.23	5.83	3.25	3.67	1.00	5.62	10.01	56.25	4.000	No	Yes	2.00
309	20.28	5.74	3.26	3.62	1.00	5.50	10.08	55.46	4.000	No	Yes	2.00
310	20.37	5.70	3.25	3.51	1.00	5.44	10.03	54.57	4.000	No	Yes	2.00
311	20.42	5.74	3.24	3.36	1.00	5.48	9.85	53.93	4.000	No	Yes	2.00
312	20.48	5.73	3.24	3.32	1.00	5.45	9.83	53.62	4.000	No	Yes	2.00
313	20.56	5.74	3.24	3.27	1.00	5.45	9.78	53.31	4.000	No	Yes	2.00
314	20.63	5.76	3.23	3.21	1.00	5.46	9.71	53.02	4.000	No	Yes	2.00
315	20.67	5.80	3.23	3.16	1.00	5.50	9.62	52.91	4.000	No	Yes	2.00
316	20.74	5.86	3.22	3.10	1.00	5.56	9.50	52.80	4.000	No	Yes	2.00
317	20.83	5.92	3.21	3.06	1.00	5.61	9.41	52.82	4.000	No	Yes	2.00
318	20.90	5.98	3.21	3.05	1.00	5.67	9.34	52.98	4.000	No	Yes	2.00
319	20.97	6.03	3.20	3.04	1.00	5.72	9.30	53.14	4.000	No	Yes	2.00
320	21.02	6.11	3.20	3.02	1.00	5.80	9.19	53.33	4.000	No	Yes	2.00
321	21.10	6.22	3.19	2.98	1.00	5.91	9.05	53.53	4.000	No	Yes	2.00
322	21.17	6.35	3.17	2.95	1.00	6.05	8.90	53.88	4.000	No	Yes	2.00
323	21.22	6.49	3.16	2.91	1.00	6.20	8.74	54.25	4.000	No	Yes	2.00
324	21.27	6.64	3.15	2.90	1.00	6.37	8.60	54.75	4.000	No	Yes	2.00
325	21.37	6.79	3.14	2.88	1.00	6.52	8.47	55.21	4.000	No	Yes	2.00
326	21.43	6.95	3.13	2.86	1.00	6.69	8.32	55.69	4.000	No	Yes	2.00
327	21.46	7.09	3.12	2.85	1.00	6.86	8.19	56.17	4.000	No	Yes	2.00
328	21.55	7.24	3.11	2.81	1.00	7.01	8.06	56.47	4.000	No	Yes	2.00
329	21.62	7.36	3.10	2.80	1.00	7.13	7.96	56.76	4.000	No	Yes	2.00
330	21.66	7.42	3.10	2.75	1.00	7.19	7.87	56.63	4.000	No	Yes	2.00
331	21.74	7.41	3.09	2.71	1.00	7.16	7.84	56.18	4.000	No	Yes	2.00
332	21.81	7.37	3.09	2.67	1.00	7.10	7.84	55.71	4.000	No	Yes	2.00
333	21.85	7.30	3.09	2.63	1.00	7.01	7.86	55.11	4.000	No	Yes	2.00
334	21.93	7.21	3.10	2.58	1.00	6.89	7.88	54.32	4.000	No	Yes	2.00
335	22.00	7.13	3.10	2.53	1.00	6.78	7.90	53.54	4.000	No	Yes	2.00
336	22.07	7.06	3.10	2.48	1.00	6.69	7.91	52.89	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
337	22.16	6.98	3.10	2.46	1.00	6.58	7.96	52.37	4.000	No	Yes	2.00
338	22.19	6.91	3.11	2.45	1.00	6.49	8.01	52.03	4.000	No	Yes	2.00
339	22.26	6.87	3.11	2.49	1.00	6.43	8.10	52.11	4.000	No	Yes	2.00
340	22.33	6.86	3.12	2.55	1.00	6.41	8.19	52.50	4.000	No	Yes	2.00
341	22.40	6.86	3.13	2.62	1.00	6.39	8.27	52.89	4.000	No	Yes	2.00
342	22.45	6.88	3.13	2.65	1.00	6.41	8.30	53.16	4.000	No	Yes	2.00
343	22.53	6.88	3.13	2.65	1.00	6.39	8.31	53.12	4.000	No	Yes	2.00
344	22.60	6.86	3.13	2.66	1.00	6.36	8.35	53.07	4.000	No	Yes	2.00
345	22.64	6.79	3.14	2.69	1.00	6.27	8.45	53.00	4.000	No	Yes	2.00
346	22.70	6.72	3.15	2.77	1.00	6.18	8.61	53.20	4.000	No	Yes	2.00
347	22.80	6.68	3.16	2.81	1.00	6.11	8.71	53.25	4.000	No	Yes	2.00
348	22.84	6.59	3.17	2.84	1.00	6.01	8.83	53.02	4.000	No	Yes	2.00
349	22.90	6.58	3.17	2.78	1.00	5.98	8.78	52.57	4.000	No	Yes	2.00
350	23.00	6.68	3.15	2.65	1.00	6.08	8.56	52.04	4.000	No	Yes	2.00
351	23.05	6.77	3.14	2.63	1.00	6.17	8.47	52.22	4.000	No	Yes	2.00
352	23.14	6.93	3.14	2.70	1.00	6.33	8.42	53.25	4.000	No	Yes	2.00
353	23.18	7.11	3.13	2.79	1.00	6.52	8.37	54.56	4.000	No	Yes	2.00
354	23.24	7.32	3.13	2.93	1.00	6.74	8.36	56.36	4.000	No	Yes	2.00
355	23.32	7.52	3.14	3.11	1.00	6.94	8.40	58.31	4.000	No	Yes	2.00
356	23.39	7.66	3.14	3.31	1.00	7.09	8.50	60.28	4.000	No	Yes	2.00
357	23.44	7.83	3.15	3.53	1.00	7.27	8.59	62.42	4.000	No	Yes	2.00
358	23.53	7.88	3.17	3.83	1.00	7.30	8.83	64.47	4.000	No	Yes	2.00
359	23.59	7.80	3.20	4.18	1.00	7.20	9.20	66.24	4.000	No	Yes	2.00
360	23.63	7.63	3.22	4.47	1.00	7.01	9.57	67.05	4.000	No	Yes	2.00
361	23.69	7.43	3.25	4.73	1.00	6.76	9.96	67.36	4.000	No	Yes	2.00
362	23.77	7.22	3.27	4.92	1.00	6.52	10.30	67.12	4.000	No	Yes	2.00
363	23.82	7.02	3.29	4.98	1.00	6.29	10.54	66.24	4.000	No	Yes	2.00
364	23.93	6.84	3.30	4.94	1.00	6.07	10.70	64.93	4.000	No	Yes	2.00
365	23.95	6.71	3.30	4.82	1.00	5.92	10.73	63.57	4.000	No	Yes	2.00
366	24.03	6.63	3.30	4.60	1.00	5.82	10.65	62.00	4.000	No	Yes	2.00
367	24.12	6.60	3.28	4.34	1.00	5.77	10.47	60.46	4.000	No	Yes	2.00
368	24.16	6.59	3.27	4.09	1.00	5.76	10.28	59.15	4.000	No	Yes	2.00
369	24.22	6.66	3.25	3.88	1.00	5.82	10.02	58.33	4.000	No	Yes	2.00
370	24.30	6.73	3.24	3.71	1.00	5.88	9.81	57.69	4.000	No	Yes	2.00
371	24.37	6.79	3.23	3.63	1.00	5.93	9.69	57.49	4.000	No	Yes	2.00
372	24.43	6.88	3.22	3.57	1.00	6.02	9.56	57.55	4.000	No	Yes	2.00
373	24.50	7.00	3.21	3.52	1.00	6.14	9.41	57.74	4.000	No	Yes	2.00
374	24.57	7.09	3.21	3.50	1.00	6.22	9.33	58.01	4.000	No	Yes	2.00
375	24.62	7.17	3.20	3.53	1.00	6.30	9.29	58.51	4.000	No	Yes	2.00
376	24.69	7.23	3.20	3.57	1.00	6.35	9.29	58.98	4.000	No	Yes	2.00
377	24.77	7.28	3.20	3.62	1.00	6.39	9.31	59.42	4.000	No	Yes	2.00
378	24.83	7.32	3.20	3.66	1.00	6.42	9.31	59.75	4.000	No	Yes	2.00
379	24.88	7.37	3.20	3.66	1.00	6.46	9.29	59.98	4.000	No	Yes	2.00
380	24.97	7.40	3.20	3.67	1.00	6.47	9.28	60.06	4.000	No	Yes	2.00
381	25.02	7.42	3.20	3.66	1.00	6.49	9.26	60.05	4.000	No	Yes	2.00
382	25.11	7.41	3.20	3.65	1.00	6.46	9.27	59.87	4.000	No	Yes	2.00
383	25.17	7.41	3.20	3.65	1.00	6.45	9.28	59.83	4.000	No	Yes	2.00
384	25.21	7.40	3.20	3.64	1.00	6.43	9.28	59.69	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
385	25.29	7.44	3.20	3.63	1.00	6.45	9.26	59.78	4.000	No	Yes	2.00
386	25.36	7.55	3.19	3.61	1.00	6.56	9.16	60.05	4.000	No	Yes	2.00
387	25.40	7.70	3.18	3.58	1.00	6.71	9.02	60.47	4.000	No	Yes	2.00
388	25.46	7.86	3.17	3.58	1.00	6.86	8.90	61.10	4.000	No	Yes	2.00
389	25.54	8.04	3.17	3.57	1.00	7.03	8.77	61.72	4.000	No	Yes	2.00
390	25.62	8.20	3.16	3.58	1.00	7.18	8.69	62.42	4.000	No	Yes	2.00
391	25.66	8.36	3.15	3.63	1.00	7.34	8.63	63.34	4.000	No	Yes	2.00
392	25.75	8.51	3.15	3.68	1.00	7.48	8.58	64.20	4.000	No	Yes	2.00
393	25.80	8.67	3.15	3.72	1.00	7.63	8.53	65.08	4.000	No	Yes	2.00
394	25.85	8.81	3.14	3.74	1.00	7.77	8.46	65.74	4.000	No	Yes	2.00
395	25.96	8.75	3.15	3.87	1.00	7.68	8.62	66.22	4.000	No	Yes	2.00
396	26.01	8.74	3.16	3.98	1.00	7.66	8.73	66.87	4.000	No	Yes	2.00
397	26.05	8.80	3.16	4.05	1.00	7.71	8.76	67.56	4.000	No	Yes	2.00
398	26.12	8.87	3.16	4.11	1.00	7.77	8.77	68.13	4.000	No	Yes	2.00
399	26.19	8.95	3.16	4.14	1.00	7.84	8.75	68.60	4.000	No	Yes	2.00
400	26.25	9.02	3.16	4.13	1.00	7.89	8.71	68.79	4.000	No	Yes	2.00
401	26.33	8.98	3.16	4.16	1.00	7.83	8.77	68.70	4.000	No	Yes	2.00
402	26.42	8.87	3.17	4.21	1.00	7.70	8.89	68.46	4.000	No	Yes	2.00
403	26.46	8.73	3.18	4.26	1.00	7.55	9.03	68.15	4.000	No	Yes	2.00
404	26.52	8.73	3.18	4.21	1.00	7.53	9.00	67.82	4.000	No	Yes	2.00
405	26.61	8.65	3.19	4.19	1.00	7.43	9.05	67.22	4.000	No	Yes	2.00
406	26.67	8.48	3.19	4.16	1.00	7.24	9.15	66.29	4.000	No	Yes	2.00
407	26.71	8.31	3.20	4.12	1.00	7.06	9.25	65.26	4.000	No	Yes	2.00
408	26.79	8.11	3.21	4.11	1.00	6.84	9.40	64.26	4.000	No	Yes	2.00
409	26.87	7.92	3.22	4.12	1.00	6.62	9.56	63.35	4.000	No	Yes	2.00
410	26.92	7.81	3.23	4.09	1.00	6.50	9.63	62.62	4.000	No	Yes	2.00
411	26.98	7.77	3.23	4.01	1.00	6.45	9.60	61.94	4.000	No	Yes	2.00
412	27.06	7.73	3.22	3.93	1.00	6.40	9.58	61.25	4.000	No	Yes	2.00
413	27.11	7.69	3.22	3.85	1.00	6.35	9.54	60.57	4.000	No	Yes	2.00
414	27.21	7.63	3.22	3.80	1.00	6.27	9.56	59.94	4.000	No	Yes	2.00
415	27.26	7.55	3.22	3.76	1.00	6.18	9.60	59.31	4.000	No	Yes	2.00
416	27.32	7.39	3.24	3.79	1.00	6.01	9.77	58.70	4.000	No	Yes	2.00
417	27.40	7.24	3.25	3.81	1.00	5.84	9.94	58.07	4.000	No	Yes	2.00
418	27.45	7.09	3.26	3.80	1.00	5.67	10.09	57.22	4.000	No	Yes	2.00
419	27.52	6.97	3.26	3.70	1.00	5.54	10.12	56.08	4.000	No	Yes	2.00
420	27.60	6.81	3.27	3.65	1.00	5.37	10.24	54.98	4.000	No	Yes	2.00
421	27.65	6.69	3.27	3.59	1.00	5.24	10.31	54.03	4.000	No	Yes	2.00
422	27.71	6.59	3.28	3.53	1.00	5.13	10.37	53.20	4.000	No	Yes	2.00
423	27.80	6.56	3.27	3.42	1.00	5.09	10.31	52.43	4.000	No	Yes	2.00
424	27.84	6.56	3.27	3.31	1.00	5.08	10.20	51.83	4.000	No	Yes	2.00
425	27.90	6.65	3.25	3.19	1.00	5.16	9.99	51.56	4.000	No	Yes	2.00
426	27.99	6.75	3.24	3.11	1.00	5.25	9.82	51.51	4.000	No	Yes	2.00
427	28.05	6.85	3.23	3.12	1.00	5.34	9.73	51.95	4.000	No	Yes	2.00
428	28.10	6.96	3.23	3.20	1.00	5.44	9.72	52.86	4.000	No	Yes	2.00
429	28.17	7.10	3.23	3.26	1.00	5.57	9.66	53.77	4.000	No	Yes	2.00
430	28.25	7.25	3.22	3.31	1.00	5.70	9.59	54.67	4.000	No	Yes	2.00
431	28.30	7.40	3.22	3.34	1.00	5.84	9.49	55.46	4.000	No	Yes	2.00
432	28.39	7.51	3.22	3.43	1.00	5.94	9.50	56.38	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
433	28.44	7.61	3.22	3.51	1.00	6.03	9.49	57.20	4.000	No	Yes	2.00
434	28.49	7.69	3.22	3.58	1.00	6.10	9.50	57.99	4.000	No	Yes	2.00
435	28.54	7.77	3.21	3.59	1.00	6.17	9.45	58.34	4.000	No	Yes	2.00
436	28.62	7.86	3.20	3.49	1.00	6.25	9.29	58.06	4.000	No	Yes	2.00
437	28.68	7.91	3.20	3.48	1.00	6.28	9.26	58.18	4.000	No	Yes	2.00
438	28.74	7.96	3.20	3.56	1.00	6.32	9.30	58.81	4.000	No	Yes	2.00
439	28.83	7.97	3.21	3.65	1.00	6.32	9.39	59.27	4.000	No	Yes	2.00
440	28.89	7.96	3.22	3.72	1.00	6.29	9.47	59.63	4.000	No	Yes	2.00
441	28.98	7.81	3.23	3.85	1.00	6.13	9.72	59.63	4.000	No	Yes	2.00
442	29.03	7.81	3.24	3.89	1.00	6.12	9.77	59.79	4.000	No	Yes	2.00
443	29.09	7.81	3.24	3.87	1.00	6.11	9.77	59.65	4.000	No	Yes	2.00
444	29.14	7.83	3.24	3.88	1.00	6.12	9.76	59.74	4.000	No	Yes	2.00
445	29.22	7.88	3.24	3.94	1.00	6.15	9.79	60.23	4.000	No	Yes	2.00
446	29.27	7.97	3.23	3.89	1.00	6.23	9.67	60.29	4.000	No	Yes	2.00
447	29.38	8.07	3.22	3.74	1.00	6.31	9.48	59.82	4.000	No	Yes	2.00
448	29.43	8.18	3.20	3.62	1.00	6.41	9.28	59.49	4.000	No	Yes	2.00
449	29.48	8.30	3.19	3.50	1.00	6.52	9.09	59.25	4.000	No	Yes	2.00
450	29.57	8.53	3.17	3.34	1.00	6.72	8.79	59.06	4.000	No	Yes	2.00
451	29.62	8.60	3.16	3.28	1.00	6.78	8.68	58.87	4.000	No	Yes	2.00
452	29.68	8.66	3.15	3.27	1.00	6.83	8.63	58.98	4.000	No	Yes	2.00
453	29.73	8.71	3.15	3.24	1.00	6.87	8.58	58.98	4.000	No	Yes	2.00
454	29.82	8.73	3.15	3.24	1.00	6.87	8.58	58.94	4.000	No	Yes	2.00
455	29.87	8.72	3.15	3.23	1.00	6.85	8.58	58.80	4.000	No	Yes	2.00
456	29.94	8.69	3.15	3.23	1.00	6.81	8.61	58.64	4.000	No	Yes	2.00
457	30.02	8.62	3.16	3.23	1.00	6.73	8.67	58.34	4.000	No	Yes	2.00
458	30.07	8.52	3.16	3.25	1.00	6.62	8.76	58.04	4.000	No	Yes	2.00
459	30.16	8.44	3.17	3.25	1.00	6.53	8.84	57.73	4.000	No	Yes	2.00
460	30.19	8.37	3.17	3.24	1.00	6.46	8.88	57.35	4.000	No	Yes	2.00
461	30.26	8.30	3.17	3.19	1.00	6.38	8.89	56.73	4.000	No	Yes	2.00
462	30.36	8.25	3.17	3.15	1.00	6.31	8.90	56.22	4.000	No	Yes	2.00
463	30.41	8.22	3.17	3.10	1.00	6.28	8.88	55.74	4.000	No	Yes	2.00
464	30.46	8.20	3.17	3.06	1.00	6.25	8.86	55.37	4.000	No	Yes	2.00
465	30.53	8.20	3.17	3.03	1.00	6.24	8.84	55.12	4.000	No	Yes	2.00
466	30.61	8.24	3.17	2.99	1.00	6.26	8.78	55.00	4.000	No	Yes	2.00
467	30.65	8.33	3.16	2.96	1.00	6.33	8.69	55.03	4.000	No	Yes	2.00
468	30.71	8.46	3.15	2.94	1.00	6.44	8.58	55.30	4.000	No	Yes	2.00
469	30.81	8.62	3.14	2.93	1.00	6.58	8.48	55.79	4.000	No	Yes	2.00
470	30.84	8.81	3.14	2.96	1.00	6.76	8.38	56.64	4.000	No	Yes	2.00
471	30.91	9.02	3.13	3.01	1.00	6.94	8.31	57.68	4.000	No	Yes	2.00
472	30.99	9.25	3.13	3.10	1.00	7.14	8.26	59.00	4.000	No	Yes	2.00
473	31.04	9.49	3.12	3.18	1.00	7.36	8.20	60.31	4.000	No	Yes	2.00
474	31.11	9.75	3.11	3.24	1.00	7.59	8.12	61.58	4.000	No	Yes	2.00
475	31.19	10.01	3.11	3.32	1.00	7.81	8.05	62.91	4.000	No	Yes	2.00
476	31.25	10.25	3.11	3.38	1.00	8.02	7.99	64.11	4.000	No	Yes	2.00
477	31.30	10.42	3.10	3.43	1.00	8.17	7.95	64.99	4.000	No	Yes	2.00
478	31.39	10.55	3.10	3.48	1.00	8.27	7.95	65.72	4.000	No	Yes	2.00
479	31.45	10.62	3.10	3.53	1.00	8.32	7.96	66.25	4.000	No	Yes	2.00
480	31.50	10.63	3.11	3.57	1.00	8.33	7.99	66.59	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
481	31.60	10.61	3.11	3.60	1.00	8.29	8.04	66.61	4.000	No	Yes	2.00
482	31.65	10.59	3.11	3.59	1.00	8.25	8.05	66.39	4.000	No	Yes	2.00
483	31.73	10.54	3.11	3.61	1.00	8.19	8.10	66.32	4.000	No	Yes	2.00
484	31.80	10.48	3.12	3.67	1.00	8.12	8.20	66.52	4.000	No	Yes	2.00
485	31.84	10.42	3.13	3.74	1.00	8.05	8.29	66.74	4.000	No	Yes	2.00
486	31.91	10.38	3.14	3.82	1.00	8.00	8.39	67.11	4.000	No	Yes	2.00
487	31.99	10.35	3.14	3.90	1.00	7.95	8.48	67.48	4.000	No	Yes	2.00
488	32.03	10.34	3.15	3.97	1.00	7.94	8.55	67.88	4.000	No	Yes	2.00
489	32.09	10.36	3.15	4.02	1.00	7.95	8.59	68.27	4.000	No	Yes	2.00
490	32.19	10.40	3.15	4.07	1.00	7.96	8.62	68.65	4.000	No	Yes	2.00
491	32.25	10.44	3.16	4.17	1.00	7.99	8.69	69.37	4.000	No	Yes	2.00
492	32.29	10.47	3.16	4.24	1.00	8.00	8.74	69.94	4.000	No	Yes	2.00
493	32.38	10.52	3.16	4.26	1.00	8.03	8.73	70.14	4.000	No	Yes	2.00
494	32.43	10.61	3.16	4.25	1.00	8.10	8.69	70.40	4.000	No	Yes	2.00
495	32.48	10.72	3.15	4.23	1.00	8.19	8.62	70.58	4.000	No	Yes	2.00
496	32.58	10.84	3.15	4.21	1.00	8.28	8.55	70.82	4.000	No	Yes	2.00
497	32.63	10.96	3.14	4.21	1.00	8.37	8.50	71.16	4.000	No	Yes	2.00
498	32.69	11.07	3.14	4.22	1.00	8.46	8.46	71.57	4.000	No	Yes	2.00
499	32.74	11.17	3.14	4.25	1.00	8.54	8.44	72.05	4.000	No	Yes	2.00
500	32.83	11.29	3.14	4.25	1.00	8.62	8.40	72.44	4.000	No	Yes	2.00
501	32.88	11.41	3.13	4.25	1.00	8.72	8.34	72.77	4.000	No	Yes	2.00
502	32.97	11.51	3.13	4.28	1.00	8.79	8.33	73.21	4.000	No	Yes	2.00
503	33.01	11.58	3.13	4.33	1.00	8.84	8.34	73.76	4.000	No	Yes	2.00
504	33.07	11.62	3.13	4.38	1.00	8.86	8.37	74.19	4.000	No	Yes	2.00
505	33.16	11.64	3.14	4.43	1.00	8.86	8.41	74.51	4.000	No	Yes	2.00
506	33.20	11.66	3.14	4.44	1.00	8.87	8.42	74.64	4.000	No	Yes	2.00
507	33.27	11.67	3.14	4.43	1.00	8.86	8.41	74.52	4.000	No	Yes	2.00
508	33.36	11.67	3.14	4.40	1.00	8.84	8.40	74.22	4.000	No	Yes	2.00
509	33.42	11.63	3.14	4.36	1.00	8.79	8.39	73.78	4.000	No	Yes	2.00
510	33.51	11.57	3.14	4.29	1.00	8.71	8.38	73.00	4.000	No	Yes	2.00
511	33.56	11.50	3.13	4.16	1.00	8.64	8.31	71.84	4.000	No	Yes	2.00
512	33.61	11.40	3.12	4.00	1.00	8.54	8.24	70.41	4.000	No	Yes	2.00
513	33.67	11.26	3.12	3.87	1.00	8.40	8.20	68.94	4.000	No	Yes	2.00
514	33.76	11.07	3.12	3.73	1.00	8.22	8.19	67.30	4.000	No	Yes	2.00
515	33.81	10.94	3.12	3.58	1.00	8.09	8.13	65.77	4.000	No	Yes	2.00
516	33.86	10.77	3.11	3.46	1.00	7.93	8.11	64.36	4.000	No	Yes	2.00
517	33.94	10.66	3.11	3.32	1.00	7.82	8.05	62.93	4.000	No	Yes	2.00
518	34.02	10.58	3.10	3.18	1.00	7.73	7.97	61.65	4.000	No	Yes	2.00
519	34.06	10.53	3.10	3.09	1.00	7.68	7.91	60.77	4.000	No	Yes	2.00
520	34.14	10.48	3.10	3.03	1.00	7.62	7.89	60.14	4.000	No	Yes	2.00
521	34.21	10.41	3.10	3.00	1.00	7.55	7.91	59.69	4.000	No	Yes	2.00
522	34.25	10.35	3.10	2.97	1.00	7.49	7.92	59.26	4.000	No	Yes	2.00
523	34.33	10.33	3.10	2.94	1.00	7.45	7.90	58.92	4.000	No	Yes	2.00
524	34.41	10.24	3.10	2.94	1.00	7.36	7.96	58.55	4.000	No	Yes	2.00
525	34.49	10.20	3.10	2.90	1.00	7.31	7.95	58.11	4.000	No	Yes	2.00
526	34.56	10.10	3.11	2.88	1.00	7.21	8.00	57.64	4.000	No	Yes	2.00
527	34.59	9.99	3.11	2.87	1.00	7.11	8.04	57.18	4.000	No	Yes	2.00
528	34.67	9.89	3.11	2.85	1.00	7.01	8.09	56.70	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
529	34.76	9.80	3.12	2.83	1.00	6.91	8.13	56.22	4.000	No	Yes	2.00
530	34.80	9.74	3.12	2.79	1.00	6.85	8.14	55.76	4.000	No	Yes	2.00
531	34.85	9.72	3.12	2.77	1.00	6.83	8.13	55.53	4.000	No	Yes	2.00
532	34.93	9.72	3.11	2.74	1.00	6.81	8.11	55.28	4.000	No	Yes	2.00
533	34.98	9.71	3.12	2.74	1.00	6.79	8.12	55.15	4.000	No	Yes	2.00
534	35.05	9.67	3.12	2.74	1.00	6.75	8.15	55.00	4.000	No	Yes	2.00
535	35.13	9.66	3.12	2.73	1.00	6.72	8.16	54.86	4.000	No	Yes	2.00
536	35.18	9.64	3.12	2.72	1.00	6.70	8.17	54.72	4.000	No	Yes	2.00
537	35.24	9.59	3.12	2.73	1.00	6.65	8.21	54.57	4.000	No	Yes	2.00
538	35.32	9.52	3.13	2.74	1.00	6.57	8.27	54.40	4.000	No	Yes	2.00
539	35.41	9.44	3.13	2.74	1.00	6.49	8.34	54.11	4.000	No	Yes	2.00
540	35.46	9.35	3.14	2.73	1.00	6.41	8.39	53.73	4.000	No	Yes	2.00
541	35.51	9.26	3.14	2.70	1.00	6.32	8.42	53.25	4.000	No	Yes	2.00
542	35.58	9.19	3.14	2.67	1.00	6.25	8.44	52.75	4.000	No	Yes	2.00
543	35.66	9.14	3.14	2.63	1.00	6.19	8.44	52.26	4.000	No	Yes	2.00
544	35.71	9.06	3.14	2.61	1.00	6.12	8.48	51.88	4.000	No	Yes	2.00
545	35.76	8.99	3.15	2.59	1.00	6.05	8.51	51.49	4.000	No	Yes	2.00
546	35.86	8.94	3.15	2.56	1.00	5.99	8.53	51.09	4.000	No	Yes	2.00
547	35.91	8.90	3.15	2.53	1.00	5.95	8.52	50.72	4.000	No	Yes	2.00
548	36.01	8.88	3.15	2.51	1.00	5.92	8.52	50.45	4.000	No	Yes	2.00
549	36.05	8.87	3.14	2.46	1.00	5.91	8.48	50.09	4.000	No	Yes	2.00
550	36.12	8.86	3.14	2.44	1.00	5.89	8.47	49.84	4.000	No	Yes	2.00
551	36.20	8.83	3.14	2.42	1.00	5.85	8.47	49.56	4.000	No	Yes	2.00
552	36.23	8.84	3.14	2.40	1.00	5.85	8.45	49.44	4.000	No	Yes	2.00
553	36.31	8.89	3.14	2.37	1.00	5.89	8.38	49.32	4.000	No	Yes	2.00
554	36.35	8.99	3.12	2.30	1.00	5.96	8.24	49.13	4.000	No	Yes	2.00
555	36.45	9.11	3.11	2.23	1.00	6.05	8.09	48.92	4.000	No	Yes	2.00
556	36.51	9.26	3.10	2.16	1.00	6.17	7.90	48.73	4.000	No	Yes	2.00
557	36.58	9.41	3.09	2.10	1.00	6.28	7.74	48.64	4.000	No	Yes	2.00
558	36.66	9.56	3.07	2.06	1.00	6.40	7.61	48.67	4.000	No	Yes	2.00
559	36.70	9.71	3.06	2.04	1.00	6.52	7.49	48.82	4.000	No	Yes	2.00
560	36.80	9.91	3.05	2.01	1.00	6.68	7.35	49.08	4.000	No	Yes	2.00
561	36.85	10.09	3.04	2.01	1.00	6.82	7.26	49.47	4.000	No	Yes	2.00
562	36.89	10.23	3.04	2.02	1.00	6.93	7.19	49.84	4.000	No	Yes	2.00
563	36.96	10.31	3.04	2.07	1.00	6.98	7.22	50.42	4.000	No	Yes	2.00
564	37.03	10.36	3.05	2.12	1.00	7.01	7.27	50.98	4.000	No	Yes	2.00
565	37.09	10.38	3.05	2.20	1.00	7.02	7.35	51.64	4.000	No	Yes	2.00
566	37.15	10.40	3.06	2.26	1.00	7.03	7.42	52.17	4.000	No	Yes	2.00
567	37.23	10.42	3.06	2.32	1.00	7.03	7.49	52.69	4.000	No	Yes	2.00
568	37.27	10.44	3.07	2.37	1.00	7.04	7.54	53.11	4.000	No	Yes	2.00
569	37.34	10.45	3.07	2.40	1.00	7.04	7.59	53.40	4.000	No	Yes	2.00
570	37.43	10.46	3.08	2.43	1.00	7.03	7.62	53.58	4.000	No	Yes	2.00
571	37.49	10.46	3.08	2.46	1.00	7.02	7.66	53.77	4.000	No	Yes	2.00
572	37.54	10.47	3.08	2.45	1.00	7.02	7.66	53.75	4.000	No	Yes	2.00
573	37.62	10.46	3.08	2.46	1.00	7.00	7.67	53.71	4.000	No	Yes	2.00
574	37.69	10.45	3.08	2.44	1.00	6.98	7.66	53.47	4.000	No	Yes	2.00
575	37.74	10.44	3.08	2.43	1.00	6.96	7.66	53.35	4.000	No	Yes	2.00
576	37.82	10.43	3.08	2.42	1.00	6.94	7.66	53.21	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
577	37.89	10.42	3.08	2.41	1.00	6.92	7.67	53.07	4.000	No	Yes	2.00
578	37.93	10.45	3.08	2.40	1.00	6.94	7.65	53.07	4.000	No	Yes	2.00
579	38.02	10.51	3.08	2.40	1.00	6.98	7.62	53.15	4.000	No	Yes	2.00
580	38.08	10.61	3.07	2.40	1.00	7.05	7.57	53.37	4.000	No	Yes	2.00
581	38.13	10.59	3.08	2.45	1.00	7.02	7.65	53.76	4.000	No	Yes	2.00
582	38.23	10.77	3.07	2.47	1.00	7.15	7.59	54.28	4.000	No	Yes	2.00
583	38.28	11.05	3.06	2.47	1.00	7.37	7.45	54.94	4.000	No	Yes	2.00
584	38.35	11.35	3.05	2.45	1.00	7.61	7.29	55.48	4.000	No	Yes	2.00
585	38.42	11.66	3.03	2.43	1.00	7.85	7.14	56.01	4.000	No	Yes	2.00
586	38.47	11.96	3.02	2.41	1.00	8.08	6.99	56.53	4.000	No	Yes	2.00
587	38.52	12.14	3.02	2.42	1.00	8.22	6.94	57.02	4.000	No	Yes	2.00
588	38.61	12.27	3.01	2.44	1.00	8.31	6.91	57.39	4.000	No	Yes	2.00
589	38.67	12.35	3.01	2.43	1.00	8.36	6.88	57.47	4.000	No	Yes	2.00
590	38.72	12.50	3.00	2.39	1.00	8.48	6.78	57.46	4.000	No	Yes	2.00
591	38.82	12.47	3.00	2.38	1.00	8.43	6.79	57.22	4.000	No	Yes	2.00
592	38.86	12.32	3.01	2.39	1.00	8.30	6.86	56.90	4.000	No	Yes	2.00
593	38.96	12.14	3.02	2.39	1.00	8.14	6.94	56.45	4.000	No	Yes	2.00
594	39.01	11.97	3.02	2.38	1.00	7.99	7.01	56.01	4.000	No	Yes	2.00
595	39.05	11.89	3.02	2.36	1.00	7.92	7.02	55.59	4.000	No	Yes	2.00
596	39.13	12.00	3.01	2.29	1.00	7.99	6.90	55.17	4.000	No	Yes	2.00
597	39.21	12.16	3.00	2.21	1.00	8.11	6.75	54.75	4.000	No	Yes	2.00
598	39.24	12.47	2.98	2.13	1.00	8.35	6.54	54.65	4.000	No	Yes	2.00
599	39.31	12.92	2.96	2.04	1.00	8.70	6.28	54.63	4.000	No	Yes	2.00
600	39.40	13.42	2.93	1.98	0.99	9.09	6.04	54.92	4.000	No	Yes	2.00
601	39.44	13.97	2.91	1.94	0.98	9.54	5.81	55.41	4.000	No	Yes	2.00
602	39.51	14.55	2.89	1.91	0.98	10.01	5.60	56.06	4.000	No	Yes	2.00
603	39.60	15.09	2.87	1.89	0.97	10.43	5.44	56.69	4.000	No	Yes	2.00
604	39.66	15.51	2.86	1.88	0.96	10.77	5.31	57.21	4.000	No	Yes	2.00
605	39.70	15.75	2.85	1.87	0.96	10.96	5.25	57.47	4.000	No	Yes	2.00
606	39.80	15.89	2.85	1.87	0.96	11.05	5.22	57.61	4.000	No	Yes	2.00
607	39.85	15.87	2.85	1.88	0.96	11.02	5.24	57.69	4.000	No	Yes	2.00
608	39.90	15.72	2.86	1.90	0.96	10.88	5.29	57.60	4.000	No	Yes	2.00
609	39.98	15.53	2.86	1.89	0.97	10.71	5.34	57.20	4.000	No	Yes	2.00
610	40.05	15.26	2.87	1.87	0.97	10.47	5.40	56.51	4.000	No	Yes	2.00
611	40.10	14.94	2.87	1.84	0.97	10.20	5.46	55.63	4.000	No	Yes	2.00
612	40.20	14.62	2.88	1.80	0.97	9.92	5.50	54.60	4.000	No	Yes	2.00
613	40.25	14.33	2.88	1.75	0.97	9.68	5.53	53.57	4.000	No	Yes	2.00
614	40.30	14.10	2.89	1.71	0.97	9.49	5.56	52.72	4.000	No	Yes	2.00
615	40.40	13.93	2.89	1.67	0.97	9.33	5.57	51.94	4.000	No	Yes	2.00
616	40.45	13.82	2.89	1.63	0.97	9.23	5.56	51.28	4.000	No	Yes	2.00
617	40.50	13.79	2.88	1.60	0.97	9.20	5.52	50.82	4.000	No	Yes	2.00
618	40.59	13.78	2.88	1.58	0.97	9.17	5.51	50.57	4.000	No	Yes	2.00
619	40.64	13.82	2.88	1.57	0.97	9.20	5.50	50.56	4.000	No	Yes	2.00
620	40.69	13.94	2.87	1.57	0.97	9.29	5.45	50.65	4.000	No	Yes	2.00
621	40.79	14.09	2.87	1.58	0.97	9.39	5.44	51.06	4.000	No	Yes	2.00
622	40.83	14.28	2.87	1.64	0.97	9.53	5.46	52.01	4.000	No	Yes	2.00
623	40.92	14.55	2.87	1.70	0.97	9.73	5.45	53.03	4.000	No	Yes	2.00
624	40.98	14.84	2.87	1.76	0.97	9.94	5.45	54.14	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
625	41.03	15.10	2.87	1.82	0.97	10.13	5.45	55.21	4.000	No	Yes	2.00
626	41.08	15.30	2.88	1.87	0.97	10.28	5.47	56.17	4.000	No	Yes	2.00
627	41.18	15.48	2.88	1.92	0.97	10.40	5.47	56.90	4.000	No	Yes	2.00
628	41.22	15.62	2.88	1.96	0.97	10.50	5.49	57.63	4.000	No	Yes	2.00
629	41.31	15.72	2.88	2.01	0.97	10.55	5.53	58.34	4.000	No	Yes	2.00
630	41.36	15.79	2.89	2.05	0.97	10.59	5.56	58.87	4.000	No	Yes	2.00
631	41.42	15.83	2.89	2.06	0.97	10.61	5.56	59.03	4.000	No	Yes	2.00
632	41.50	15.79	2.89	2.08	0.98	10.56	5.60	59.10	4.000	No	Yes	2.00
633	41.54	15.73	2.89	2.10	0.98	10.50	5.64	59.18	4.000	No	Yes	2.00
634	41.61	15.68	2.90	2.10	0.98	10.45	5.65	59.06	4.000	No	Yes	2.00
635	41.70	15.63	2.90	2.10	0.98	10.39	5.68	59.03	4.000	No	Yes	2.00
636	41.75	15.58	2.90	2.12	0.98	10.33	5.72	59.10	4.000	No	Yes	2.00
637	41.80	15.56	2.90	2.13	0.98	10.31	5.74	59.18	4.000	No	Yes	2.00
638	41.87	15.55	2.91	2.14	0.98	10.28	5.76	59.24	4.000	No	Yes	2.00
639	41.95	15.57	2.91	2.15	0.98	10.28	5.77	59.30	4.000	No	Yes	2.00
640	42.01	15.60	2.91	2.16	0.98	10.29	5.78	59.45	4.000	No	Yes	2.00
641	42.10	15.68	2.91	2.18	0.98	10.33	5.79	59.77	4.000	No	Yes	2.00
642	42.14	15.78	2.91	2.21	0.98	10.39	5.79	60.19	4.000	No	Yes	2.00
643	42.21	15.87	2.91	2.26	0.99	10.44	5.83	60.86	4.000	No	Yes	2.00
644	42.27	15.96	2.91	2.29	0.99	10.50	5.84	61.35	4.000	No	Yes	2.00
645	42.34	16.05	2.92	2.32	0.99	10.55	5.85	61.74	4.000	No	Yes	2.00
646	42.39	16.11	2.92	2.35	0.99	10.58	5.87	62.14	4.000	No	Yes	2.00
647	42.49	16.16	2.92	2.38	0.99	10.59	5.90	62.52	4.000	No	Yes	2.00
648	42.54	16.18	2.93	2.44	0.99	10.59	5.96	63.15	4.000	No	Yes	2.00
649	42.59	16.19	2.93	2.51	0.99	10.58	6.03	63.79	4.000	No	Yes	2.00
650	42.69	16.17	2.94	2.56	1.00	10.54	6.09	64.22	4.000	No	Yes	2.00
651	42.74	16.12	2.94	2.58	1.00	10.49	6.13	64.28	4.000	No	Yes	2.00
652	42.80	16.08	2.94	2.58	1.00	10.44	6.15	64.17	4.000	No	Yes	2.00
653	42.89	16.02	2.95	2.58	1.00	10.38	6.17	64.05	4.000	No	Yes	2.00
654	42.93	15.90	2.95	2.60	1.00	10.27	6.23	63.95	4.000	No	Yes	2.00
655	42.99	15.79	2.96	2.60	1.00	10.18	6.27	63.77	4.000	No	Yes	2.00
656	43.08	15.64	2.96	2.60	1.00	10.04	6.31	63.41	4.000	No	Yes	2.00
657	43.11	15.45	2.96	2.58	1.00	9.89	6.35	62.83	4.000	No	Yes	2.00
658	43.18	15.16	2.97	2.55	1.00	9.66	6.41	61.98	4.000	No	Yes	2.00
659	43.28	14.77	2.98	2.52	1.00	9.35	6.52	60.93	4.000	No	Yes	2.00
660	43.35	14.40	2.99	2.51	1.00	9.05	6.63	60.05	4.000	No	Yes	2.00
661	43.38	13.95	3.00	2.50	1.00	8.71	6.78	59.07	4.000	No	Yes	2.00
662	43.45	13.50	3.02	2.47	1.00	8.36	6.92	57.87	4.000	No	Yes	2.00
663	43.53	13.09	3.03	2.43	1.00	8.04	7.04	56.63	4.000	No	Yes	2.00
664	43.58	12.64	3.04	2.40	1.00	7.70	7.19	55.36	4.000	No	Yes	2.00
665	43.64	12.18	3.06	2.39	1.00	7.34	7.39	54.23	4.000	No	Yes	2.00
666	43.73	11.74	3.07	2.37	1.00	7.00	7.58	53.06	4.000	No	Yes	2.00
667	43.78	11.44	3.08	2.34	1.00	6.77	7.69	52.10	4.000	No	Yes	2.00
668	43.84	11.29	3.09	2.32	1.00	6.65	7.75	51.55	4.000	No	Yes	2.00
669	43.92	11.24	3.09	2.30	1.00	6.61	7.75	51.21	4.000	No	Yes	2.00
670	43.98	11.42	3.07	2.23	1.00	6.73	7.58	51.04	4.000	No	Yes	2.00
671	44.07	11.69	3.06	2.21	1.00	6.92	7.44	51.48	4.000	No	Yes	2.00
672	44.12	12.61	3.02	2.15	1.00	7.59	6.96	52.80	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
673	44.17	13.58	2.98	2.10	1.00	8.30	6.53	54.21	4.000	No	Yes	2.00
674	44.23	15.30	2.91	1.97	0.98	9.59	5.82	55.83	4.000	No	Yes	2.00
675	44.29	16.73	2.87	1.92	0.97	10.69	5.38	57.49	4.000	No	Yes	2.00
676	44.39	17.65	2.83	1.85	0.96	11.39	5.08	57.91	4.000	No	Yes	2.00
677	44.43	18.07	2.82	1.81	0.95	11.71	4.96	58.02	4.000	No	Yes	2.00
678	44.49	18.39	2.81	1.77	0.94	11.95	4.84	57.87	4.000	No	Yes	2.00
679	44.57	18.26	2.81	1.76	0.95	11.83	4.87	57.59	4.000	No	Yes	2.00
680	44.67	17.84	2.82	1.74	0.95	11.49	4.94	56.71	4.000	No	Yes	2.00
681	44.73	16.78	2.84	1.73	0.96	10.65	5.18	55.13	4.000	No	Yes	2.00
682	44.78	15.68	2.87	1.71	0.97	9.81	5.43	53.28	4.000	No	Yes	2.00
683	44.82	13.89	2.93	1.74	0.99	8.43	6.03	50.86	4.000	No	Yes	2.00
684	44.93	12.37	2.98	1.70	1.00	7.28	6.57	47.87	4.000	No	Yes	2.00
685	44.97	11.32	3.03	1.73	1.00	6.51	7.09	46.15	4.000	No	Yes	2.00
686	45.02	10.69	3.06	1.72	1.00	6.04	7.40	44.73	4.000	No	Yes	2.00
687	45.09	10.06	3.09	1.73	1.00	5.58	7.79	43.44	4.000	No	Yes	2.00
688	45.17	9.74	3.10	1.70	1.00	5.34	7.95	42.46	4.000	No	Yes	2.00
689	45.22	9.67	3.10	1.67	1.00	5.28	7.96	42.05	4.000	No	Yes	2.00
690	45.30	9.64	3.10	1.63	1.00	5.25	7.93	41.64	4.000	No	Yes	2.00
691	45.37	9.63	3.10	1.60	1.00	5.24	7.90	41.37	4.000	No	Yes	2.00
692	45.42	9.61	3.10	1.59	1.00	5.22	7.90	41.23	4.000	No	Yes	2.00
693	45.50	9.60	3.10	1.58	1.00	5.20	7.90	41.08	4.000	No	Yes	2.00
694	45.57	9.58	3.10	1.58	1.00	5.18	7.92	41.05	4.000	No	Yes	2.00
695	45.61	9.57	3.10	1.57	1.00	5.17	7.92	40.91	4.000	No	Yes	2.00
696	45.72	9.57	3.10	1.56	1.00	5.15	7.91	40.75	4.000	No	Yes	2.00
697	45.77	9.54	3.10	1.57	1.00	5.12	7.95	40.73	4.000	No	Yes	2.00
698	45.80	9.61	3.10	1.58	1.00	5.17	7.93	41.00	4.000	No	Yes	2.00
699	45.88	9.73	3.10	1.62	1.00	5.25	7.91	41.54	4.000	No	Yes	2.00
700	45.96	9.95	3.09	1.64	1.00	5.40	7.81	42.23	4.000	No	Yes	2.00
701	46.01	10.26	3.08	1.65	1.00	5.62	7.64	42.93	4.000	No	Yes	2.00
702	46.11	10.60	3.06	1.65	1.00	5.85	7.45	43.61	4.000	No	Yes	2.00
703	46.14	10.90	3.05	1.65	1.00	6.06	7.28	44.16	4.000	No	Yes	2.00
704	46.21	11.13	3.04	1.65	1.00	6.22	7.18	44.66	4.000	No	Yes	2.00
705	46.26	11.36	3.03	1.67	1.00	6.38	7.10	45.27	4.000	No	Yes	2.00
706	46.35	11.59	3.02	1.69	1.00	6.53	7.02	45.86	4.000	No	Yes	2.00
707	46.41	11.79	3.01	1.67	1.00	6.67	6.90	45.99	4.000	No	Yes	2.00
708	46.49	11.97	3.00	1.63	1.00	6.79	6.76	45.89	4.000	No	Yes	2.00
709	46.55	12.02	3.00	1.59	1.00	6.82	6.70	45.65	4.000	No	Yes	2.00
710	46.59	12.02	3.00	1.60	1.00	6.81	6.70	45.64	4.000	No	Yes	2.00
711	46.68	12.03	3.00	1.65	1.00	6.81	6.79	46.18	4.000	No	Yes	2.00
712	46.74	12.21	3.00	1.70	1.00	6.93	6.78	46.96	4.000	No	Yes	2.00
713	46.80	12.54	2.99	1.69	1.00	7.15	6.63	47.42	4.000	No	Yes	2.00
714	46.85	12.84	2.98	1.72	1.00	7.36	6.55	48.18	4.000	No	Yes	2.00
715	46.93	13.10	2.98	1.78	1.00	7.53	6.54	49.23	4.000	No	Yes	2.00
716	47.00	13.25	2.99	1.91	1.00	7.62	6.66	50.73	4.000	No	Yes	2.00
717	47.10	13.37	3.00	2.06	1.00	7.69	6.79	52.26	4.000	No	Yes	2.00
718	47.15	13.58	3.01	2.14	1.00	7.83	6.82	53.39	4.000	No	Yes	2.00
719	47.20	13.74	3.00	2.17	1.00	7.94	6.80	53.94	4.000	No	Yes	2.00
720	47.25	13.87	3.00	2.11	1.00	8.02	6.69	53.66	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
721	47.31	13.67	3.00	2.07	1.00	7.87	6.72	52.88	4.000	No	Yes	2.00
722	47.40	13.24	3.01	2.08	1.00	7.56	6.90	52.16	4.000	No	Yes	2.00
723	47.44	12.78	3.03	2.05	1.00	7.23	7.05	50.94	4.000	No	Yes	2.00
724	47.52	12.43	3.03	1.93	1.00	6.97	7.06	49.18	4.000	No	Yes	2.00
725	47.58	12.04	3.03	1.78	1.00	6.69	7.03	47.03	4.000	No	Yes	2.00
726	47.67	11.69	3.02	1.60	1.00	6.43	6.96	44.74	4.000	No	Yes	2.00
727	47.73	11.28	3.02	1.47	1.00	6.14	6.97	42.78	4.000	No	Yes	2.00
728	47.78	11.00	3.02	1.37	1.00	5.93	6.95	41.22	4.000	No	Yes	2.00
729	47.86	10.70	3.03	1.32	1.00	5.71	7.05	40.24	4.000	No	Yes	2.00
730	47.92	10.61	3.03	1.31	1.00	5.64	7.08	39.94	4.000	No	Yes	2.00
731	47.98	10.65	3.03	1.34	1.00	5.66	7.12	40.33	4.000	No	Yes	2.00
732	48.05	10.75	3.04	1.41	1.00	5.72	7.18	41.11	4.000	No	Yes	2.00
733	48.12	10.88	3.04	1.50	1.00	5.81	7.25	42.11	4.000	No	Yes	2.00
734	48.19	11.29	3.04	1.59	1.00	6.09	7.18	43.74	4.000	No	Yes	2.00
735	48.27	11.81	3.02	1.65	1.00	6.44	7.02	45.19	4.000	No	Yes	2.00
736	48.32	12.54	3.00	1.65	1.00	6.94	6.70	46.49	4.000	No	Yes	2.00
737	48.39	13.52	2.95	1.57	1.00	7.61	6.21	47.30	4.000	No	Yes	2.00
738	48.47	14.52	2.91	1.50	0.98	8.34	5.76	48.00	4.000	No	Yes	2.00
739	48.52	15.76	2.85	1.39	0.96	9.26	5.23	48.43	4.000	No	Yes	2.00
740	48.57	17.08	2.79	1.27	0.94	10.24	4.73	48.45	4.000	No	Yes	2.00
741	48.67	18.11	2.75	1.18	0.92	11.01	4.38	48.22	4.000	No	Yes	2.00
742	48.71	18.94	2.72	1.13	0.91	11.63	4.15	48.22	4.000	No	Yes	2.00
743	48.76	19.21	2.71	1.13	0.91	11.82	4.10	48.49	4.000	No	Yes	2.00
744	48.82	19.64	2.71	1.15	0.91	12.12	4.06	49.25	4.000	No	Yes	2.00
745	48.93	19.63	2.73	1.26	0.92	12.06	4.21	50.82	4.000	No	Yes	2.00
746	48.97	19.53	2.76	1.46	0.93	11.93	4.49	53.58	4.000	No	Yes	2.00
747	49.05	19.43	2.80	1.69	0.94	11.79	4.80	56.59	4.000	No	Yes	2.00
748	49.08	19.57	2.83	1.95	0.95	11.84	5.07	60.05	4.000	No	Yes	2.00
749	49.16	19.78	2.86	2.26	0.97	11.92	5.36	63.92	4.000	No	Yes	2.00
750	49.25	20.34	2.89	2.57	0.97	12.26	5.56	68.19	4.000	No	Yes	2.00
751	49.29	21.10	2.90	2.90	0.98	12.75	5.71	72.88	4.000	No	Yes	2.00
752	49.36	22.50	2.90	3.19	0.98	13.70	5.71	78.16	4.000	No	Yes	2.00
753	49.43	24.24	2.89	3.39	0.98	14.90	5.58	83.10	4.000	No	Yes	2.00
754	49.48	26.47	2.86	3.44	0.96	16.49	5.29	87.16	4.000	No	Yes	2.00
755	49.55	28.64	2.82	3.42	0.95	18.03	5.00	90.13	4.000	No	Yes	2.00
756	49.64	30.67	2.80	3.39	0.94	19.47	4.75	92.56	4.000	No	Yes	2.00
757	49.70	32.09	2.78	3.42	0.94	20.47	4.63	94.76	4.000	No	Yes	2.00
758	49.75	33.34	2.77	3.44	0.93	21.35	4.53	96.70	4.000	No	Yes	2.00
759	49.81	34.56	2.75	3.43	0.92	22.21	4.41	98.00	4.000	No	Yes	2.00
760	49.90	35.75	2.74	3.42	0.92	23.04	4.31	99.36	4.000	No	Yes	2.00
761	49.94	36.62	2.73	3.40	0.92	23.66	4.23	100.04	4.000	No	Yes	2.00
762	50.01	36.53	2.74	3.44	0.92	23.55	4.26	100.43	4.000	No	Yes	2.00
763	50.08	36.09	2.75	3.51	0.92	23.18	4.35	100.85	4.000	No	Yes	2.00
764	50.15	35.37	2.76	3.61	0.93	22.60	4.48	101.32	4.000	No	Yes	2.00
765	50.24	35.40	2.77	3.64	0.93	22.57	4.50	101.61	4.000	No	Yes	2.00
766	50.30	35.75	2.76	3.58	0.93	22.81	4.44	101.22	4.000	No	Yes	2.00
767	50.34	35.97	2.75	3.49	0.92	22.97	4.36	100.26	4.000	No	Yes	2.00
768	50.41	36.05	2.74	3.41	0.92	23.02	4.31	99.21	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
769	50.47	35.82	2.73	3.27	0.92	22.86	4.24	96.84	4.000	No	Yes	2.00
770	50.54	35.56	2.72	3.09	0.91	22.69	4.14	93.92	4.000	No	Yes	2.00
771	50.62	35.51	2.70	2.90	0.90	22.67	4.01	90.88	4.000	No	Yes	2.00
772	50.66	35.50	2.68	2.68	0.90	22.71	3.86	87.61	4.000	No	Yes	2.00
773	50.77	35.54	2.66	2.48	0.89	22.76	3.71	84.35	4.000	No	Yes	2.00
774	50.81	34.91	2.65	2.33	0.88	22.33	3.64	81.27	4.000	No	Yes	2.00
775	50.87	34.13	2.64	2.21	0.88	21.78	3.61	78.68	4.000	No	Yes	2.00
776	50.92	33.49	2.64	2.12	0.88	21.33	3.59	76.51	4.000	No	Yes	2.00
777	51.01	33.00	2.64	2.03	0.88	20.97	3.55	74.48	4.000	No	Yes	2.00
778	51.07	32.79	2.63	1.96	0.88	20.82	3.52	73.21	4.000	No	Yes	2.00
779	51.15	32.62	2.63	1.91	0.88	20.69	3.49	72.16	4.000	No	Yes	2.00
780	51.21	32.54	2.62	1.88	0.87	20.62	3.47	71.53	4.000	No	Yes	2.00
781	51.26	32.61	2.62	1.87	0.87	20.65	3.46	71.37	4.000	No	Yes	2.00
782	51.32	32.80	2.62	1.87	0.87	20.78	3.44	71.50	4.000	No	Yes	2.00
783	51.39	33.10	2.62	1.87	0.87	20.97	3.42	71.79	4.000	No	Yes	2.00
784	51.46	33.33	2.62	1.89	0.87	21.10	3.42	72.21	4.000	No	Yes	2.00
785	51.53	33.60	2.61	1.90	0.87	21.26	3.42	72.69	4.000	No	Yes	2.00
786	51.61	33.87	2.61	1.92	0.87	21.42	3.42	73.16	4.000	No	Yes	2.00
787	51.65	34.13	2.61	1.93	0.87	21.59	3.41	73.51	4.000	No	Yes	2.00
788	51.72	34.43	2.61	1.93	0.87	21.78	3.39	73.79	4.000	No	Yes	2.00
789	51.81	34.80	2.61	1.92	0.87	22.01	3.36	73.92	4.000	No	Yes	2.00
790	51.84	35.11	2.60	1.91	0.87	22.23	3.33	74.03	4.000	No	Yes	2.00
791	51.92	35.39	2.60	1.90	0.86	22.40	3.30	74.01	4.000	No	No	2.00
792	52.01	35.65	2.59	1.89	0.86	22.56	3.28	73.92	4.000	No	No	2.00
793	52.06	35.90	2.59	1.87	0.86	22.73	3.25	73.80	4.000	No	No	2.00
794	52.11	36.16	2.58	1.85	0.86	22.91	3.21	73.61	4.000	No	No	2.00
795	52.19	36.34	2.58	1.83	0.86	23.01	3.19	73.49	4.000	No	No	2.00
796	52.25	36.53	2.58	1.83	0.86	23.13	3.18	73.49	4.000	No	No	2.00
797	52.30	36.76	2.57	1.83	0.86	23.27	3.16	73.61	4.000	No	No	2.00
798	52.38	37.02	2.57	1.83	0.86	23.43	3.15	73.88	4.000	No	No	2.00
799	52.45	37.28	2.57	1.84	0.85	23.58	3.15	74.22	4.000	No	No	2.00
800	52.49	37.54	2.57	1.86	0.85	23.75	3.14	74.68	4.000	No	No	2.00
801	52.57	37.71	2.57	1.88	0.86	23.83	3.15	75.13	4.000	No	No	2.00
802	52.65	37.81	2.57	1.90	0.86	23.86	3.17	75.60	4.000	No	No	2.00
803	52.70	37.59	2.58	1.93	0.86	23.66	3.21	76.02	4.000	No	No	2.00
804	52.79	37.34	2.59	1.96	0.86	23.43	3.25	76.26	4.000	No	No	2.00
805	52.85	36.98	2.60	1.98	0.86	23.14	3.30	76.30	4.000	No	No	2.00
806	52.89	36.45	2.60	1.99	0.87	22.74	3.34	75.93	4.000	No	Yes	2.00
807	52.99	35.72	2.61	1.98	0.87	22.19	3.38	75.10	4.000	No	Yes	2.00
808	53.04	34.87	2.62	1.95	0.87	21.58	3.42	73.90	4.000	No	Yes	2.00
809	53.08	33.84	2.62	1.92	0.88	20.84	3.48	72.53	4.000	No	Yes	2.00
810	53.17	32.85	2.63	1.88	0.88	20.12	3.53	70.98	4.000	No	Yes	2.00
811	53.24	31.89	2.64	1.83	0.88	19.44	3.56	69.26	4.000	No	Yes	2.00
812	53.33	31.20	2.64	1.76	0.88	18.95	3.57	67.56	4.000	No	Yes	2.00
813	53.39	30.55	2.64	1.70	0.88	18.50	3.57	65.95	4.000	No	Yes	2.00
814	53.42	29.84	2.64	1.65	0.88	18.00	3.58	64.53	4.000	No	Yes	2.00
815	53.49	29.22	2.65	1.62	0.88	17.56	3.62	63.51	4.000	No	Yes	2.00
816	53.58	28.69	2.65	1.61	0.89	17.16	3.66	62.88	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
817	53.63	28.25	2.66	1.63	0.89	16.83	3.73	62.80	4.000	No	Yes	2.00
818	53.68	28.03	2.67	1.67	0.89	16.65	3.79	63.10	4.000	No	Yes	2.00
819	53.77	27.89	2.68	1.72	0.90	16.51	3.86	63.72	4.000	No	Yes	2.00
820	53.83	27.75	2.69	1.78	0.90	16.37	3.95	64.62	4.000	No	Yes	2.00
821	53.88	27.65	2.71	1.86	0.91	16.26	4.04	65.69	4.000	No	Yes	2.00
822	53.97	27.58	2.72	1.95	0.91	16.15	4.14	66.86	4.000	No	Yes	2.00
823	54.03	27.65	2.73	2.03	0.92	16.16	4.21	68.06	4.000	No	Yes	2.00
824	54.08	27.92	2.73	2.08	0.92	16.32	4.23	69.02	4.000	No	Yes	2.00
825	54.18	28.22	2.73	2.11	0.92	16.49	4.23	69.69	4.000	No	Yes	2.00
826	54.22	28.55	2.73	2.12	0.91	16.70	4.21	70.24	4.000	No	Yes	2.00
827	54.27	28.86	2.72	2.13	0.91	16.89	4.18	70.60	4.000	No	Yes	2.00
828	54.38	29.20	2.72	2.13	0.91	17.09	4.15	70.87	4.000	No	Yes	2.00
829	54.42	29.60	2.73	2.21	0.91	17.33	4.18	72.48	4.000	No	Yes	2.00
830	54.47	30.18	2.73	2.32	0.92	17.68	4.22	74.54	4.000	No	Yes	2.00
831	54.57	30.74	2.74	2.44	0.92	17.99	4.27	76.80	4.000	No	Yes	2.00
832	54.61	32.49	2.72	2.51	0.91	19.15	4.16	79.62	4.000	No	Yes	2.00
833	54.68	34.47	2.71	2.64	0.91	20.44	4.09	83.61	4.000	No	Yes	2.00
834	54.75	36.91	2.70	2.78	0.90	22.04	4.00	88.19	4.000	No	Yes	2.00
835	54.79	39.58	2.69	2.92	0.90	23.80	3.90	92.93	4.000	No	Yes	2.00
836	54.86	42.54	2.67	3.05	0.89	25.75	3.80	97.96	4.000	No	Yes	2.00
837	54.95	45.89	2.66	3.19	0.89	27.95	3.70	103.54	4.000	No	Yes	2.00
838	55.01	49.55	2.64	3.25	0.88	30.41	3.55	108.09	4.000	No	Yes	2.00
839	55.06	53.33	2.61	3.30	0.87	32.97	3.41	112.42	4.000	No	Yes	2.00
840	55.12	57.74	2.59	3.31	0.86	35.97	3.25	116.75	4.000	No	No	2.00
841	55.21	61.55	2.57	3.33	0.85	38.53	3.13	120.57	4.000	No	No	2.00
842	55.25	64.95	2.55	3.33	0.85	40.86	3.02	123.48	4.000	No	No	2.00
843	55.32	67.67	2.53	3.32	0.84	42.71	2.94	125.59	4.000	No	No	2.00
844	55.40	69.32	2.52	3.32	0.84	43.79	2.90	126.89	4.000	No	No	2.00
845	55.50	69.77	2.52	3.32	0.84	44.02	2.89	127.13	4.000	No	No	2.00
846	55.52	68.79	2.53	3.32	0.84	43.32	2.91	126.29	4.000	No	No	2.00
847	55.60	66.93	2.54	3.34	0.84	41.97	2.98	124.98	4.000	No	No	2.00
848	55.67	64.58	2.55	3.35	0.85	40.27	3.06	123.13	4.000	No	No	2.00
849	55.72	61.65	2.57	3.36	0.86	38.22	3.16	120.61	4.000	No	No	2.00
850	55.79	58.07	2.59	3.37	0.86	35.70	3.29	117.52	4.000	No	No	2.00
851	55.86	54.37	2.62	3.37	0.87	33.13	3.44	114.05	4.000	No	Yes	2.00
852	55.95	50.44	2.65	3.37	0.88	30.41	3.62	110.07	4.000	No	Yes	2.00
853	56.00	47.04	2.67	3.36	0.89	28.08	3.79	106.54	4.000	No	Yes	2.00
854	56.05	44.22	2.69	3.36	0.90	26.16	3.96	103.47	4.000	No	Yes	2.00
855	56.11	42.29	2.71	3.31	0.91	24.85	4.05	100.71	4.000	No	Yes	2.00
856	56.19	40.82	2.71	3.23	0.91	23.87	4.10	97.89	4.000	No	Yes	2.00
857	56.24	39.25	2.72	3.15	0.91	22.82	4.16	94.95	4.000	No	Yes	2.00
858	56.34	37.48	2.73	3.08	0.92	21.62	4.25	92.00	4.000	No	Yes	2.00
859	56.37	35.77	2.75	3.03	0.92	20.49	4.37	89.45	4.000	No	Yes	2.00
860	56.43	34.28	2.76	2.98	0.93	19.49	4.46	87.00	4.000	No	Yes	2.00
861	56.54	33.15	2.77	2.95	0.93	18.72	4.55	85.17	4.000	No	Yes	2.00
862	56.59	32.27	2.78	2.86	0.93	18.14	4.58	83.05	4.000	No	Yes	2.00
863	56.64	31.50	2.77	2.73	0.93	17.66	4.56	80.45	4.000	No	Yes	2.00
864	56.73	30.75	2.77	2.60	0.93	17.17	4.53	77.84	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
865	56.79	29.94	2.77	2.49	0.93	16.66	4.53	75.39	4.000	No	Yes	2.00
866	56.84	29.45	2.76	2.35	0.93	16.36	4.46	73.04	4.000	No	Yes	2.00
867	56.93	29.13	2.75	2.21	0.92	16.17	4.37	70.74	4.000	No	Yes	2.00
868	56.96	28.72	2.74	2.07	0.92	15.94	4.29	68.35	4.000	No	Yes	2.00
869	57.03	28.18	2.73	1.95	0.92	15.60	4.24	66.11	4.000	No	Yes	2.00
870	57.13	27.59	2.73	1.85	0.91	15.23	4.21	64.05	4.000	No	Yes	2.00
871	57.16	27.05	2.73	1.77	0.91	14.88	4.19	62.33	4.000	No	Yes	2.00
872	57.23	26.67	2.73	1.72	0.91	14.63	4.19	61.35	4.000	No	Yes	2.00
873	57.29	26.39	2.73	1.70	0.91	14.44	4.20	60.68	4.000	No	Yes	2.00
874	57.38	26.31	2.72	1.66	0.91	14.38	4.17	60.04	4.000	No	Yes	2.00
875	57.42	26.37	2.72	1.64	0.91	14.42	4.15	59.82	4.000	No	Yes	2.00
876	57.49	26.54	2.72	1.65	0.91	14.51	4.14	60.12	4.000	No	Yes	2.00
877	57.57	26.67	2.72	1.68	0.91	14.57	4.16	60.64	4.000	No	Yes	2.00
878	57.62	26.59	2.73	1.73	0.92	14.49	4.22	61.18	4.000	No	Yes	2.00
879	57.68	26.52	2.74	1.77	0.92	14.41	4.28	61.64	4.000	No	Yes	2.00
880	57.77	26.34	2.75	1.81	0.92	14.25	4.36	62.10	4.000	No	Yes	2.00
881	57.85	26.02	2.76	1.87	0.93	14.01	4.47	62.58	4.000	No	Yes	2.00
882	57.92	25.63	2.77	1.91	0.93	13.72	4.56	62.60	4.000	No	Yes	2.00
883	57.97	25.13	2.79	1.93	0.94	13.37	4.67	62.43	4.000	No	Yes	2.00
884	58.02	24.52	2.80	1.94	0.94	12.97	4.77	61.87	4.000	No	Yes	2.00
885	58.07	23.81	2.81	1.92	0.95	12.50	4.87	60.83	4.000	No	Yes	2.00
886	58.16	23.20	2.82	1.90	0.95	12.09	4.95	59.82	4.000	No	Yes	2.00
887	58.23	22.77	2.82	1.87	0.95	11.81	5.00	59.00	4.000	No	Yes	2.00
888	58.31	22.40	2.83	1.85	0.95	11.56	5.04	58.29	4.000	No	Yes	2.00
889	58.37	22.16	2.83	1.82	0.95	11.40	5.05	57.57	4.000	No	Yes	2.00
890	58.42	22.06	2.83	1.79	0.95	11.33	5.03	57.06	4.000	No	Yes	2.00
891	58.50	22.07	2.83	1.77	0.95	11.33	5.02	56.90	4.000	No	Yes	2.00
892	58.57	22.16	2.83	1.78	0.95	11.37	5.02	57.09	4.000	No	Yes	2.00
893	58.61	22.31	2.83	1.83	0.95	11.45	5.05	57.78	4.000	No	Yes	2.00
894	58.68	22.68	2.84	1.93	0.96	11.65	5.10	59.42	4.000	No	Yes	2.00
895	58.76	23.31	2.84	2.08	0.96	11.99	5.16	61.90	4.000	No	Yes	2.00
896	58.80	24.38	2.84	2.23	0.96	12.62	5.14	64.88	4.000	No	Yes	2.00
897	58.87	25.76	2.84	2.40	0.96	13.44	5.10	68.50	4.000	No	Yes	2.00
898	58.95	26.94	2.84	2.60	0.96	14.12	5.12	72.34	4.000	No	Yes	2.00
899	59.01	29.48	2.82	2.75	0.95	15.68	4.92	77.17	4.000	No	Yes	2.00
900	59.06	32.30	2.79	2.84	0.94	17.44	4.67	81.48	4.000	No	Yes	2.00
901	59.16	35.49	2.75	2.84	0.92	19.45	4.37	84.96	4.000	No	Yes	2.00
902	59.19	38.57	2.71	2.82	0.91	21.43	4.10	87.83	4.000	No	Yes	2.00
903	59.29	40.88	2.69	2.82	0.90	22.89	3.93	90.03	4.000	No	Yes	2.00
904	59.33	42.63	2.67	2.82	0.89	24.01	3.82	91.61	4.000	No	Yes	2.00
905	59.39	43.82	2.66	2.80	0.89	24.76	3.73	92.47	4.000	No	Yes	2.00
906	59.47	44.76	2.65	2.74	0.88	25.38	3.64	92.27	4.000	No	Yes	2.00
907	59.54	45.65	2.63	2.63	0.88	25.98	3.51	91.18	4.000	No	Yes	2.00
908	59.58	44.87	2.63	2.53	0.88	25.51	3.48	88.87	4.000	No	Yes	2.00
909	59.65	43.24	2.63	2.46	0.88	24.45	3.53	86.35	4.000	No	Yes	2.00
910	59.73	40.72	2.66	2.50	0.89	22.76	3.72	84.64	4.000	No	Yes	2.00
911	59.81	38.24	2.70	2.60	0.90	21.07	3.98	83.87	4.000	No	Yes	2.00
912	59.85	36.61	2.69	2.35	0.90	20.12	3.91	78.60	4.000	Yes	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
913	59.92	35.57	2.66	2.04	0.89	19.57	3.73	72.90	4.000	Yes	Yes	2.00
914	59.99	35.26	2.62	1.69	0.87	19.53	3.43	67.02	4.000	Yes	Yes	2.00
915	60.08	35.07	2.57	1.37	0.85	19.57	3.13	61.24	4.000	Yes	No	2.00
916	60.13	35.05	2.51	1.09	0.83	19.76	2.82	55.82	4.000	Yes	No	2.00
917	60.18	35.20	2.44	0.82	0.81	20.10	2.51	50.35	4.000	Yes	No	2.00
918	60.27	35.91	2.36	0.56	0.77	20.86	2.16	44.99	4.000	Yes	No	2.00
919	60.33	37.42	2.23	0.29	0.72	22.37	1.00	22.37	4.000	Yes	No	2.00
920	60.38	38.51	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
921	60.47	38.91	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00

Abbreviations

Depth: Depth from free surface, at which CPT was performed (ft)
q_t: Total cone resistance
I_c: Soil behavior type index
Fr: Normalized friction ratio (%)
n: Stress exponent
Q_{tn}: Normalized cone resistance
K_c: Cone resistance correction factor due to fines
$Q_{tn,cs}$: Normalized and adjusted cone resistance
$CRR_{7.5}$: Cyclic resistance ratio for M_w=7.5
FS: Factor of safety against soil liquefaction

:: Liquefaction Potential Index calculation data ::

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
0.10	2.00	0.00	0.00	0.02	0.00	0.16	2.00	0.00	0.00	0.02	0.00
0.23	2.00	0.00	0.00	0.02	0.00	0.30	2.00	0.00	0.00	0.02	0.00
0.34	2.00	0.00	0.00	0.01	0.00	0.40	2.00	0.00	0.00	0.02	0.00
0.50	2.00	0.00	0.00	0.03	0.00	0.54	2.00	0.00	0.00	0.01	0.00
0.60	2.00	0.00	0.00	0.02	0.00	0.68	2.00	0.00	0.00	0.02	0.00
0.73	2.00	0.00	0.00	0.02	0.00	0.80	2.00	0.00	0.00	0.02	0.00
0.87	2.00	0.00	0.00	0.02	0.00	0.95	2.00	0.00	0.00	0.02	0.00
0.99	2.00	0.00	0.00	0.01	0.00	1.09	2.00	0.00	0.00	0.03	0.00
1.14	2.00	0.00	0.00	0.02	0.00	1.22	2.00	0.00	0.00	0.02	0.00
1.29	2.00	0.00	0.00	0.02	0.00	1.33	2.00	0.00	0.00	0.01	0.00
1.39	2.00	0.00	0.00	0.02	0.00	1.48	2.00	0.00	0.00	0.03	0.00
1.52	2.00	0.00	0.00	0.01	0.00	1.59	2.00	0.00	0.00	0.02	0.00
1.66	2.00	0.00	0.00	0.02	0.00	1.73	2.00	0.00	0.00	0.02	0.00
1.78	2.00	0.00	0.00	0.02	0.00	1.84	2.00	0.00	0.00	0.02	0.00
1.93	2.00	0.00	0.00	0.03	0.00	1.98	2.00	0.00	0.00	0.02	0.00
2.04	2.00	0.00	0.00	0.02	0.00	2.13	2.00	0.00	0.00	0.03	0.00
2.18	2.00	0.00	0.00	0.02	0.00	2.25	2.00	0.00	0.00	0.02	0.00
2.30	2.00	0.00	0.00	0.02	0.00	2.38	2.00	0.00	0.00	0.02	0.00
2.44	2.00	0.00	0.00	0.02	0.00	2.51	2.00	0.00	0.00	0.02	0.00
2.57	2.00	0.00	0.00	0.02	0.00	2.66	2.00	0.00	0.00	0.03	0.00
2.72	2.00	0.00	0.00	0.02	0.00	2.76	2.00	0.00	0.00	0.01	0.00
2.84	2.00	0.00	0.00	0.02	0.00	2.92	2.00	0.00	0.00	0.02	0.00
2.95	2.00	0.00	0.00	0.01	0.00	3.07	2.00	0.00	0.00	0.04	0.00
3.11	2.00	0.00	0.00	0.01	0.00	3.16	2.00	0.00	0.00	0.02	0.00
3.26	2.00	0.00	0.00	0.03	0.00	3.30	2.00	0.00	0.00	0.01	0.00
3.36	2.00	0.00	0.00	0.02	0.00	3.44	2.00	0.00	0.00	0.02	0.00
3.50	2.00	0.00	0.00	0.02	0.00	3.56	2.00	0.00	0.00	0.02	0.00
3.62	2.00	0.00	0.00	0.02	0.00	3.71	2.00	0.00	0.00	0.03	0.00
3.76	2.00	0.00	0.00	0.02	0.00	3.82	2.00	0.00	0.00	0.02	0.00
3.90	2.00	0.00	0.00	0.02	0.00	3.95	2.00	0.00	0.00	0.02	0.00
4.00	2.00	0.00	0.00	0.02	0.00	4.09	2.00	0.00	0.00	0.03	0.00
4.16	2.00	0.00	0.00	0.02	0.00	4.20	2.00	0.00	0.00	0.01	0.00
4.27	2.00	0.00	0.00	0.02	0.00	4.34	2.00	0.00	0.00	0.02	0.00
4.44	2.00	0.00	0.00	0.03	0.00	4.48	2.00	0.00	0.00	0.01	0.00
4.58	2.00	0.00	0.00	0.03	0.00	4.63	2.00	0.00	0.00	0.02	0.00
4.68	2.00	0.00	0.00	0.02	0.00	4.73	2.00	0.00	0.00	0.02	0.00
4.80	2.00	0.00	0.00	0.02	0.00	4.86	2.00	0.00	0.00	0.02	0.00
4.93	2.00	0.00	0.00	0.02	0.00	5.00	2.00	0.00	0.00	0.02	0.00
5.07	2.00	0.00	0.00	0.02	0.00	5.12	2.00	0.00	0.00	0.02	0.00
5.20	2.00	0.00	0.00	0.02	0.00	5.27	2.00	0.00	0.00	0.02	0.00
5.33	2.00	0.00	0.00	0.02	0.00	5.41	2.00	0.00	0.00	0.02	0.00
5.45	2.00	0.00	0.00	0.01	0.00	5.52	2.00	0.00	0.00	0.02	0.00
5.60	2.00	0.00	0.00	0.02	0.00	5.67	2.00	0.00	0.00	0.02	0.00
5.71	2.00	0.00	0.00	0.01	0.00	5.80	2.00	0.00	0.00	0.03	0.00
5.85	2.00	0.00	0.00	0.02	0.00	5.91	2.00	0.00	0.00	0.02	0.00
6.01	2.00	0.00	0.00	0.03	0.00	6.06	2.00	0.00	0.00	0.02	0.00
6.11	2.00	0.00	0.00	0.02	0.00	6.18	2.00	0.00	0.00	0.02	0.00
6.26	2.00	0.00	0.00	0.02	0.00	6.30	2.00	0.00	0.00	0.01	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
6.37	2.00	0.00	0.00	0.02	0.00	6.45	2.00	0.00	0.00	0.02	0.00
6.51	2.00	0.00	0.00	0.02	0.00	6.60	2.00	0.00	0.00	0.03	0.00
6.64	2.00	0.00	0.00	0.01	0.00	6.70	2.00	0.00	0.00	0.02	0.00
6.80	2.00	0.00	0.00	0.03	0.00	6.83	2.00	0.00	0.00	0.01	0.00
6.90	2.00	0.00	0.00	0.02	0.00	6.98	2.00	0.00	0.00	0.02	0.00
7.04	2.00	0.00	0.00	0.02	0.00	7.09	2.00	0.00	0.00	0.02	0.00
7.16	2.00	0.00	0.00	0.02	0.00	7.24	2.00	0.00	0.00	0.02	0.00
7.30	2.00	0.00	0.00	0.02	0.00	7.39	2.00	0.00	0.00	0.03	0.00
7.43	2.00	0.00	0.00	0.01	0.00	7.50	2.00	0.00	0.00	0.02	0.00
7.59	2.00	0.00	0.00	0.03	0.00	7.63	2.00	0.00	0.00	0.01	0.00
7.70	2.00	0.00	0.00	0.02	0.00	7.78	2.00	0.00	0.00	0.02	0.00
7.83	2.00	0.00	0.00	0.02	0.00	7.89	2.00	0.00	0.00	0.02	0.00
7.95	2.00	0.00	0.00	0.02	0.00	8.02	2.00	0.00	0.00	0.02	0.00
8.11	2.00	0.00	0.00	0.03	0.00	8.16	2.00	0.00	0.00	0.02	0.00
8.21	2.00	0.00	0.00	0.02	0.00	8.30	2.00	0.00	0.00	0.03	0.00
8.36	2.00	0.00	0.00	0.02	0.00	8.41	2.00	0.00	0.00	0.02	0.00
8.47	2.00	0.00	0.00	0.02	0.00	8.56	2.00	0.00	0.00	0.03	0.00
8.61	2.00	0.00	0.00	0.02	0.00	8.70	2.00	0.00	0.00	0.03	0.00
8.75	2.00	0.00	0.00	0.02	0.00	8.81	2.00	0.00	0.00	0.02	0.00
8.90	2.00	0.00	0.00	0.03	0.00	8.94	2.00	0.00	0.00	0.01	0.00
9.01	2.00	0.00	0.00	0.02	0.00	9.09	2.00	0.00	0.00	0.02	0.00
9.13	2.00	0.00	0.00	0.01	0.00	9.20	2.00	0.00	0.00	0.02	0.00
9.27	2.00	0.00	0.00	0.02	0.00	9.35	2.00	0.00	0.00	0.02	0.00
9.39	2.00	0.00	0.00	0.01	0.00	9.45	2.00	0.00	0.00	0.02	0.00
9.54	2.00	0.00	0.00	0.03	0.00	9.59	2.00	0.00	0.00	0.02	0.00
9.65	2.00	0.00	0.00	0.02	0.00	9.73	2.00	0.00	0.00	0.02	0.00
9.81	2.00	0.00	0.00	0.02	0.00	9.85	2.00	0.00	0.00	0.01	0.00
9.94	2.00	0.00	0.00	0.03	0.00	10.00	2.00	0.00	0.00	0.02	0.00
10.04	2.00	0.00	0.00	0.01	0.00	10.12	2.00	0.00	0.00	0.02	0.00
10.19	2.00	0.00	0.00	0.02	0.00	10.24	2.00	0.00	0.00	0.02	0.00
10.31	2.00	0.00	0.00	0.02	0.00	10.39	2.00	0.00	0.00	0.02	0.00
10.48	2.00	0.00	0.00	0.03	0.00	10.53	2.00	0.00	0.00	0.02	0.00
10.63	2.00	0.00	0.00	0.03	0.00	10.67	2.00	0.00	0.00	0.01	0.00
10.71	2.00	0.00	0.00	0.01	0.00	10.79	2.00	0.00	0.00	0.02	0.00
10.83	2.00	0.00	0.00	0.01	0.00	10.93	2.00	0.00	0.00	0.03	0.00
10.98	2.00	0.00	0.00	0.02	0.00	11.06	2.00	0.00	0.00	0.02	0.00
11.11	2.00	0.00	0.00	0.02	0.00	11.16	2.00	0.00	0.00	0.02	0.00
11.23	2.00	0.00	0.00	0.02	0.00	11.31	2.00	0.00	0.00	0.02	0.00
11.36	2.00	0.00	0.00	0.02	0.00	11.42	2.00	0.00	0.00	0.02	0.00
11.51	2.00	0.00	0.00	0.03	0.00	11.56	2.00	0.00	0.00	0.02	0.00
11.65	2.00	0.00	0.00	0.03	0.00	11.71	2.00	0.00	0.00	0.02	0.00
11.75	2.00	0.00	0.00	0.01	0.00	11.84	2.00	0.00	0.00	0.03	0.00
11.89	2.00	0.00	0.00	0.02	0.00	11.96	2.00	0.00	0.00	0.02	0.00
12.03	2.00	0.00	0.00	0.02	0.00	12.11	2.00	0.00	0.00	0.02	0.00
12.16	2.00	0.00	0.00	0.02	0.00	12.21	2.00	0.00	0.00	0.02	0.00
12.30	2.00	0.00	0.00	0.03	0.00	12.35	2.00	0.00	0.00	0.02	0.00
12.41	2.00	0.00	0.00	0.02	0.00	12.49	2.00	0.00	0.00	0.02	0.00
12.56	2.00	0.00	0.00	0.02	0.00	12.60	2.00	0.00	0.00	0.01	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
12.67	2.00	0.00	0.00	0.02	0.00	12.75	2.00	0.00	0.00	0.02	0.00
12.80	2.00	0.00	0.00	0.02	0.00	12.90	2.00	0.00	0.00	0.03	0.00
12.95	2.00	0.00	0.00	0.02	0.00	13.02	2.00	0.00	0.00	0.02	0.00
13.06	2.00	0.00	0.00	0.01	0.00	13.14	2.00	0.00	0.00	0.02	0.00
13.19	2.00	0.00	0.00	0.02	0.00	13.29	2.00	0.00	0.00	0.03	0.00
13.33	2.00	0.00	0.00	0.01	0.00	13.39	2.00	0.00	0.00	0.02	0.00
13.48	2.00	0.00	0.00	0.03	0.00	13.54	2.00	0.00	0.00	0.02	0.00
13.59	2.00	0.00	0.00	0.02	0.00	13.67	2.00	0.00	0.00	0.02	0.00
13.72	2.00	0.00	0.00	0.02	0.00	13.78	2.00	0.00	0.00	0.02	0.00
13.86	2.00	0.00	0.00	0.02	0.00	13.93	2.00	0.00	0.00	0.02	0.00
14.01	2.00	0.00	0.00	0.02	0.00	14.05	2.00	0.00	0.00	0.01	0.00
14.14	2.00	0.00	0.00	0.03	0.00	14.21	2.00	0.00	0.00	0.02	0.00
14.24	2.00	0.00	0.00	0.01	0.00	14.31	2.00	0.00	0.00	0.02	0.00
14.39	2.00	0.00	0.00	0.02	0.00	14.44	2.00	0.00	0.00	0.02	0.00
14.54	2.00	0.00	0.00	0.03	0.00	14.59	2.00	0.00	0.00	0.02	0.00
14.64	2.00	0.00	0.00	0.02	0.00	14.70	2.00	0.00	0.00	0.02	0.00
14.79	2.00	0.00	0.00	0.03	0.00	14.83	2.00	0.00	0.00	0.01	0.00
14.93	2.00	0.00	0.00	0.03	0.00	14.98	2.00	0.00	0.00	0.02	0.00
15.03	2.00	0.00	0.00	0.02	0.00	15.10	2.00	0.00	0.00	0.02	0.00
15.18	2.00	0.00	0.00	0.02	0.00	15.23	2.00	0.00	0.00	0.02	0.00
15.33	2.00	0.00	0.00	0.03	0.00	15.37	2.00	0.00	0.00	0.01	0.00
15.44	2.00	0.00	0.00	0.02	0.00	15.52	2.00	0.00	0.00	0.02	0.00
15.56	2.00	0.00	0.00	0.01	0.00	15.63	2.00	0.00	0.00	0.02	0.00
15.71	2.00	0.00	0.00	0.02	0.00	15.77	2.00	0.00	0.00	0.02	0.00
15.82	2.00	0.00	0.00	0.02	0.00	15.89	2.00	0.00	0.00	0.02	0.00
15.97	2.00	0.00	0.00	0.02	0.00	16.02	2.00	0.00	0.00	0.02	0.00
16.10	2.00	0.00	0.00	0.02	0.00	16.17	2.00	0.00	0.00	0.02	0.00
16.22	2.00	0.00	0.00	0.02	0.00	16.28	2.00	0.00	0.00	0.02	0.00
16.37	2.00	0.00	0.00	0.03	0.00	16.42	2.00	0.00	0.00	0.02	0.00
16.52	2.00	0.00	0.00	0.03	0.00	16.55	2.00	0.00	0.00	0.01	0.00
16.62	2.00	0.00	0.00	0.02	0.00	16.70	2.00	0.00	0.00	0.02	0.00
16.74	2.00	0.00	0.00	0.01	0.00	16.82	2.00	0.00	0.00	0.02	0.00
16.91	2.00	0.00	0.00	0.03	0.00	16.94	2.00	0.00	0.00	0.01	0.00
17.01	2.00	0.00	0.00	0.02	0.00	17.10	2.00	0.00	0.00	0.03	0.00
17.15	2.00	0.00	0.00	0.02	0.00	17.21	2.00	0.00	0.00	0.02	0.00
17.30	2.00	0.00	0.00	0.03	0.00	17.34	2.00	0.00	0.00	0.01	0.00
17.41	2.00	0.00	0.00	0.02	0.00	17.49	2.00	0.00	0.00	0.02	0.00
17.53	2.00	0.00	0.00	0.01	0.00	17.59	2.00	0.00	0.00	0.02	0.00
17.67	2.00	0.00	0.00	0.02	0.00	17.73	2.00	0.00	0.00	0.02	0.00
17.79	2.00	0.00	0.00	0.02	0.00	17.87	2.00	0.00	0.00	0.02	0.00
17.92	2.00	0.00	0.00	0.02	0.00	17.99	2.00	0.00	0.00	0.02	0.00
18.07	2.00	0.00	0.00	0.02	0.00	18.14	2.00	0.00	0.00	0.02	0.00
18.19	2.00	0.00	0.00	0.02	0.00	18.26	2.00	0.00	0.00	0.02	0.00
18.34	2.00	0.00	0.00	0.02	0.00	18.38	2.00	0.00	0.00	0.01	0.00
18.45	2.00	0.00	0.00	0.02	0.00	18.53	2.00	0.00	0.00	0.02	0.00
18.60	2.00	0.00	0.00	0.02	0.00	18.68	2.00	0.00	0.00	0.02	0.00
18.72	2.00	0.00	0.00	0.01	0.00	18.79	2.00	0.00	0.00	0.02	0.00
18.84	2.00	0.00	0.00	0.02	0.00	18.92	2.00	0.00	0.00	0.02	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
18.98	2.00	0.00	0.00	0.02	0.00	19.06	2.00	0.00	0.00	0.02	0.00
19.11	2.00	0.00	0.00	0.02	0.00	19.18	2.00	0.00	0.00	0.02	0.00
19.25	2.00	0.00	0.00	0.02	0.00	19.33	2.00	0.00	0.00	0.02	0.00
19.37	2.00	0.00	0.00	0.01	0.00	19.47	2.00	0.00	0.00	0.03	0.00
19.52	2.00	0.00	0.00	0.02	0.00	19.57	2.00	0.00	0.00	0.02	0.00
19.62	2.00	0.00	0.00	0.02	0.00	19.71	2.00	0.00	0.00	0.03	0.00
19.77	2.00	0.00	0.00	0.02	0.00	19.82	2.00	0.00	0.00	0.02	0.00
19.91	2.00	0.00	0.00	0.03	0.00	19.96	2.00	0.00	0.00	0.02	0.00
20.02	2.00	0.00	0.00	0.02	0.00	20.11	2.00	0.00	0.00	0.03	0.00
20.18	2.00	0.00	0.00	0.02	0.00	20.23	2.00	0.00	0.00	0.02	0.00
20.28	2.00	0.00	0.00	0.02	0.00	20.37	2.00	0.00	0.00	0.03	0.00
20.42	2.00	0.00	0.00	0.02	0.00	20.48	2.00	0.00	0.00	0.02	0.00
20.56	2.00	0.00	0.00	0.02	0.00	20.63	2.00	0.00	0.00	0.02	0.00
20.67	2.00	0.00	0.00	0.01	0.00	20.74	2.00	0.00	0.00	0.02	0.00
20.83	2.00	0.00	0.00	0.03	0.00	20.90	2.00	0.00	0.00	0.02	0.00
20.97	2.00	0.00	0.00	0.02	0.00	21.02	2.00	0.00	0.00	0.02	0.00
21.10	2.00	0.00	0.00	0.02	0.00	21.17	2.00	0.00	0.00	0.02	0.00
21.22	2.00	0.00	0.00	0.02	0.00	21.27	2.00	0.00	0.00	0.02	0.00
21.37	2.00	0.00	0.00	0.03	0.00	21.43	2.00	0.00	0.00	0.02	0.00
21.46	2.00	0.00	0.00	0.01	0.00	21.55	2.00	0.00	0.00	0.03	0.00
21.62	2.00	0.00	0.00	0.02	0.00	21.66	2.00	0.00	0.00	0.01	0.00
21.74	2.00	0.00	0.00	0.02	0.00	21.81	2.00	0.00	0.00	0.02	0.00
21.85	2.00	0.00	0.00	0.01	0.00	21.93	2.00	0.00	0.00	0.02	0.00
22.00	2.00	0.00	0.00	0.02	0.00	22.07	2.00	0.00	0.00	0.02	0.00
22.16	2.00	0.00	0.00	0.03	0.00	22.19	2.00	0.00	0.00	0.01	0.00
22.26	2.00	0.00	0.00	0.02	0.00	22.33	2.00	0.00	0.00	0.02	0.00
22.40	2.00	0.00	0.00	0.02	0.00	22.45	2.00	0.00	0.00	0.02	0.00
22.53	2.00	0.00	0.00	0.02	0.00	22.60	2.00	0.00	0.00	0.02	0.00
22.64	2.00	0.00	0.00	0.01	0.00	22.70	2.00	0.00	0.00	0.02	0.00
22.80	2.00	0.00	0.00	0.03	0.00	22.84	2.00	0.00	0.00	0.01	0.00
22.90	2.00	0.00	0.00	0.02	0.00	23.00	2.00	0.00	0.00	0.03	0.00
23.05	2.00	0.00	0.00	0.02	0.00	23.14	2.00	0.00	0.00	0.03	0.00
23.18	2.00	0.00	0.00	0.01	0.00	23.24	2.00	0.00	0.00	0.02	0.00
23.32	2.00	0.00	0.00	0.02	0.00	23.39	2.00	0.00	0.00	0.02	0.00
23.44	2.00	0.00	0.00	0.02	0.00	23.53	2.00	0.00	0.00	0.03	0.00
23.59	2.00	0.00	0.00	0.02	0.00	23.63	2.00	0.00	0.00	0.01	0.00
23.69	2.00	0.00	0.00	0.02	0.00	23.77	2.00	0.00	0.00	0.02	0.00
23.82	2.00	0.00	0.00	0.02	0.00	23.93	2.00	0.00	0.00	0.03	0.00
23.95	2.00	0.00	0.00	0.01	0.00	24.03	2.00	0.00	0.00	0.02	0.00
24.12	2.00	0.00	0.00	0.03	0.00	24.16	2.00	0.00	0.00	0.01	0.00
24.22	2.00	0.00	0.00	0.02	0.00	24.30	2.00	0.00	0.00	0.02	0.00
24.37	2.00	0.00	0.00	0.02	0.00	24.43	2.00	0.00	0.00	0.02	0.00
24.50	2.00	0.00	0.00	0.02	0.00	24.57	2.00	0.00	0.00	0.02	0.00
24.62	2.00	0.00	0.00	0.02	0.00	24.69	2.00	0.00	0.00	0.02	0.00
24.77	2.00	0.00	0.00	0.02	0.00	24.83	2.00	0.00	0.00	0.02	0.00
24.88	2.00	0.00	0.00	0.02	0.00	24.97	2.00	0.00	0.00	0.03	0.00
25.02	2.00	0.00	0.00	0.02	0.00	25.11	2.00	0.00	0.00	0.03	0.00
25.17	2.00	0.00	0.00	0.02	0.00	25.21	2.00	0.00	0.00	0.01	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
25.29	2.00	0.00	0.00	0.02	0.00	25.36	2.00	0.00	0.00	0.02	0.00
25.40	2.00	0.00	0.00	0.01	0.00	25.46	2.00	0.00	0.00	0.02	0.00
25.54	2.00	0.00	0.00	0.02	0.00	25.62	2.00	0.00	0.00	0.02	0.00
25.66	2.00	0.00	0.00	0.01	0.00	25.75	2.00	0.00	0.00	0.03	0.00
25.80	2.00	0.00	0.00	0.02	0.00	25.85	2.00	0.00	0.00	0.02	0.00
25.96	2.00	0.00	0.00	0.03	0.00	26.01	2.00	0.00	0.00	0.02	0.00
26.05	2.00	0.00	0.00	0.01	0.00	26.12	2.00	0.00	0.00	0.02	0.00
26.19	2.00	0.00	0.00	0.02	0.00	26.25	2.00	0.00	0.00	0.02	0.00
26.33	2.00	0.00	0.00	0.02	0.00	26.42	2.00	0.00	0.00	0.03	0.00
26.46	2.00	0.00	0.00	0.01	0.00	26.52	2.00	0.00	0.00	0.02	0.00
26.61	2.00	0.00	0.00	0.03	0.00	26.67	2.00	0.00	0.00	0.02	0.00
26.71	2.00	0.00	0.00	0.01	0.00	26.79	2.00	0.00	0.00	0.02	0.00
26.87	2.00	0.00	0.00	0.02	0.00	26.92	2.00	0.00	0.00	0.02	0.00
26.98	2.00	0.00	0.00	0.02	0.00	27.06	2.00	0.00	0.00	0.02	0.00
27.11	2.00	0.00	0.00	0.02	0.00	27.21	2.00	0.00	0.00	0.03	0.00
27.26	2.00	0.00	0.00	0.02	0.00	27.32	2.00	0.00	0.00	0.02	0.00
27.40	2.00	0.00	0.00	0.02	0.00	27.45	2.00	0.00	0.00	0.02	0.00
27.52	2.00	0.00	0.00	0.02	0.00	27.60	2.00	0.00	0.00	0.02	0.00
27.65	2.00	0.00	0.00	0.02	0.00	27.71	2.00	0.00	0.00	0.02	0.00
27.80	2.00	0.00	0.00	0.03	0.00	27.84	2.00	0.00	0.00	0.01	0.00
27.90	2.00	0.00	0.00	0.02	0.00	27.99	2.00	0.00	0.00	0.03	0.00
28.05	2.00	0.00	0.00	0.02	0.00	28.10	2.00	0.00	0.00	0.02	0.00
28.17	2.00	0.00	0.00	0.02	0.00	28.25	2.00	0.00	0.00	0.02	0.00
28.30	2.00	0.00	0.00	0.02	0.00	28.39	2.00	0.00	0.00	0.03	0.00
28.44	2.00	0.00	0.00	0.02	0.00	28.49	2.00	0.00	0.00	0.02	0.00
28.54	2.00	0.00	0.00	0.02	0.00	28.62	2.00	0.00	0.00	0.02	0.00
28.68	2.00	0.00	0.00	0.02	0.00	28.74	2.00	0.00	0.00	0.02	0.00
28.83	2.00	0.00	0.00	0.03	0.00	28.89	2.00	0.00	0.00	0.02	0.00
28.98	2.00	0.00	0.00	0.03	0.00	29.03	2.00	0.00	0.00	0.02	0.00
29.09	2.00	0.00	0.00	0.02	0.00	29.14	2.00	0.00	0.00	0.02	0.00
29.22	2.00	0.00	0.00	0.02	0.00	29.27	2.00	0.00	0.00	0.02	0.00
29.38	2.00	0.00	0.00	0.03	0.00	29.43	2.00	0.00	0.00	0.02	0.00
29.48	2.00	0.00	0.00	0.02	0.00	29.57	2.00	0.00	0.00	0.03	0.00
29.62	2.00	0.00	0.00	0.02	0.00	29.68	2.00	0.00	0.00	0.02	0.00
29.73	2.00	0.00	0.00	0.02	0.00	29.82	2.00	0.00	0.00	0.03	0.00
29.87	2.00	0.00	0.00	0.02	0.00	29.94	2.00	0.00	0.00	0.02	0.00
30.02	2.00	0.00	0.00	0.02	0.00	30.07	2.00	0.00	0.00	0.02	0.00
30.16	2.00	0.00	0.00	0.03	0.00	30.19	2.00	0.00	0.00	0.01	0.00
30.26	2.00	0.00	0.00	0.02	0.00	30.36	2.00	0.00	0.00	0.03	0.00
30.41	2.00	0.00	0.00	0.02	0.00	30.46	2.00	0.00	0.00	0.02	0.00
30.53	2.00	0.00	0.00	0.02	0.00	30.61	2.00	0.00	0.00	0.02	0.00
30.65	2.00	0.00	0.00	0.01	0.00	30.71	2.00	0.00	0.00	0.02	0.00
30.81	2.00	0.00	0.00	0.03	0.00	30.84	2.00	0.00	0.00	0.01	0.00
30.91	2.00	0.00	0.00	0.02	0.00	30.99	2.00	0.00	0.00	0.02	0.00
31.04	2.00	0.00	0.00	0.02	0.00	31.11	2.00	0.00	0.00	0.02	0.00
31.19	2.00	0.00	0.00	0.02	0.00	31.25	2.00	0.00	0.00	0.02	0.00
31.30	2.00	0.00	0.00	0.02	0.00	31.39	2.00	0.00	0.00	0.03	0.00
31.45	2.00	0.00	0.00	0.02	0.00	31.50	2.00	0.00	0.00	0.02	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
31.60	2.00	0.00	0.00	0.03	0.00	31.65	2.00	0.00	0.00	0.02	0.00
31.73	2.00	0.00	0.00	0.02	0.00	31.80	2.00	0.00	0.00	0.02	0.00
31.84	2.00	0.00	0.00	0.01	0.00	31.91	2.00	0.00	0.00	0.02	0.00
31.99	2.00	0.00	0.00	0.02	0.00	32.03	2.00	0.00	0.00	0.01	0.00
32.09	2.00	0.00	0.00	0.02	0.00	32.19	2.00	0.00	0.00	0.03	0.00
32.25	2.00	0.00	0.00	0.02	0.00	32.29	2.00	0.00	0.00	0.01	0.00
32.38	2.00	0.00	0.00	0.03	0.00	32.43	2.00	0.00	0.00	0.02	0.00
32.48	2.00	0.00	0.00	0.02	0.00	32.58	2.00	0.00	0.00	0.03	0.00
32.63	2.00	0.00	0.00	0.02	0.00	32.69	2.00	0.00	0.00	0.02	0.00
32.74	2.00	0.00	0.00	0.02	0.00	32.83	2.00	0.00	0.00	0.03	0.00
32.88	2.00	0.00	0.00	0.02	0.00	32.97	2.00	0.00	0.00	0.03	0.00
33.01	2.00	0.00	0.00	0.01	0.00	33.07	2.00	0.00	0.00	0.02	0.00
33.16	2.00	0.00	0.00	0.03	0.00	33.20	2.00	0.00	0.00	0.01	0.00
33.27	2.00	0.00	0.00	0.02	0.00	33.36	2.00	0.00	0.00	0.03	0.00
33.42	2.00	0.00	0.00	0.02	0.00	33.51	2.00	0.00	0.00	0.03	0.00
33.56	2.00	0.00	0.00	0.02	0.00	33.61	2.00	0.00	0.00	0.02	0.00
33.67	2.00	0.00	0.00	0.02	0.00	33.76	2.00	0.00	0.00	0.03	0.00
33.81	2.00	0.00	0.00	0.02	0.00	33.86	2.00	0.00	0.00	0.02	0.00
33.94	2.00	0.00	0.00	0.02	0.00	34.02	2.00	0.00	0.00	0.02	0.00
34.06	2.00	0.00	0.00	0.01	0.00	34.14	2.00	0.00	0.00	0.02	0.00
34.21	2.00	0.00	0.00	0.02	0.00	34.25	2.00	0.00	0.00	0.01	0.00
34.33	2.00	0.00	0.00	0.02	0.00	34.41	2.00	0.00	0.00	0.02	0.00
34.49	2.00	0.00	0.00	0.02	0.00	34.56	2.00	0.00	0.00	0.02	0.00
34.59	2.00	0.00	0.00	0.01	0.00	34.67	2.00	0.00	0.00	0.02	0.00
34.76	2.00	0.00	0.00	0.03	0.00	34.80	2.00	0.00	0.00	0.01	0.00
34.85	2.00	0.00	0.00	0.02	0.00	34.93	2.00	0.00	0.00	0.02	0.00
34.98	2.00	0.00	0.00	0.02	0.00	35.05	2.00	0.00	0.00	0.02	0.00
35.13	2.00	0.00	0.00	0.02	0.00	35.18	2.00	0.00	0.00	0.02	0.00
35.24	2.00	0.00	0.00	0.02	0.00	35.32	2.00	0.00	0.00	0.02	0.00
35.41	2.00	0.00	0.00	0.03	0.00	35.46	2.00	0.00	0.00	0.02	0.00
35.51	2.00	0.00	0.00	0.02	0.00	35.58	2.00	0.00	0.00	0.02	0.00
35.66	2.00	0.00	0.00	0.02	0.00	35.71	2.00	0.00	0.00	0.02	0.00
35.76	2.00	0.00	0.00	0.02	0.00	35.86	2.00	0.00	0.00	0.03	0.00
35.91	2.00	0.00	0.00	0.02	0.00	36.01	2.00	0.00	0.00	0.03	0.00
36.05	2.00	0.00	0.00	0.01	0.00	36.12	2.00	0.00	0.00	0.02	0.00
36.20	2.00	0.00	0.00	0.02	0.00	36.23	2.00	0.00	0.00	0.01	0.00
36.31	2.00	0.00	0.00	0.02	0.00	36.35	2.00	0.00	0.00	0.01	0.00
36.45	2.00	0.00	0.00	0.03	0.00	36.51	2.00	0.00	0.00	0.02	0.00
36.58	2.00	0.00	0.00	0.02	0.00	36.66	2.00	0.00	0.00	0.02	0.00
36.70	2.00	0.00	0.00	0.01	0.00	36.80	2.00	0.00	0.00	0.03	0.00
36.85	2.00	0.00	0.00	0.02	0.00	36.89	2.00	0.00	0.00	0.01	0.00
36.96	2.00	0.00	0.00	0.02	0.00	37.03	2.00	0.00	0.00	0.02	0.00
37.09	2.00	0.00	0.00	0.02	0.00	37.15	2.00	0.00	0.00	0.02	0.00
37.23	2.00	0.00	0.00	0.02	0.00	37.27	2.00	0.00	0.00	0.01	0.00
37.34	2.00	0.00	0.00	0.02	0.00	37.43	2.00	0.00	0.00	0.03	0.00
37.49	2.00	0.00	0.00	0.02	0.00	37.54	2.00	0.00	0.00	0.02	0.00
37.62	2.00	0.00	0.00	0.02	0.00	37.69	2.00	0.00	0.00	0.02	0.00
37.74	2.00	0.00	0.00	0.02	0.00	37.82	2.00	0.00	0.00	0.02	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
37.89	2.00	0.00	0.00	0.02	0.00	37.93	2.00	0.00	0.00	0.01	0.00
38.02	2.00	0.00	0.00	0.03	0.00	38.08	2.00	0.00	0.00	0.02	0.00
38.13	2.00	0.00	0.00	0.02	0.00	38.23	2.00	0.00	0.00	0.03	0.00
38.28	2.00	0.00	0.00	0.02	0.00	38.35	2.00	0.00	0.00	0.02	0.00
38.42	2.00	0.00	0.00	0.02	0.00	38.47	2.00	0.00	0.00	0.02	0.00
38.52	2.00	0.00	0.00	0.02	0.00	38.61	2.00	0.00	0.00	0.03	0.00
38.67	2.00	0.00	0.00	0.02	0.00	38.72	2.00	0.00	0.00	0.02	0.00
38.82	2.00	0.00	0.00	0.03	0.00	38.86	2.00	0.00	0.00	0.01	0.00
38.96	2.00	0.00	0.00	0.03	0.00	39.01	2.00	0.00	0.00	0.02	0.00
39.05	2.00	0.00	0.00	0.01	0.00	39.13	2.00	0.00	0.00	0.02	0.00
39.21	2.00	0.00	0.00	0.02	0.00	39.24	2.00	0.00	0.00	0.01	0.00
39.31	2.00	0.00	0.00	0.02	0.00	39.40	2.00	0.00	0.00	0.03	0.00
39.44	2.00	0.00	0.00	0.01	0.00	39.51	2.00	0.00	0.00	0.02	0.00
39.60	2.00	0.00	0.00	0.03	0.00	39.66	2.00	0.00	0.00	0.02	0.00
39.70	2.00	0.00	0.00	0.01	0.00	39.80	2.00	0.00	0.00	0.03	0.00
39.85	2.00	0.00	0.00	0.02	0.00	39.90	2.00	0.00	0.00	0.02	0.00
39.98	2.00	0.00	0.00	0.02	0.00	40.05	2.00	0.00	0.00	0.02	0.00
40.10	2.00	0.00	0.00	0.02	0.00	40.20	2.00	0.00	0.00	0.03	0.00
40.25	2.00	0.00	0.00	0.02	0.00	40.30	2.00	0.00	0.00	0.02	0.00
40.40	2.00	0.00	0.00	0.03	0.00	40.45	2.00	0.00	0.00	0.02	0.00
40.50	2.00	0.00	0.00	0.02	0.00	40.59	2.00	0.00	0.00	0.03	0.00
40.64	2.00	0.00	0.00	0.02	0.00	40.69	2.00	0.00	0.00	0.02	0.00
40.79	2.00	0.00	0.00	0.03	0.00	40.83	2.00	0.00	0.00	0.01	0.00
40.92	2.00	0.00	0.00	0.03	0.00	40.98	2.00	0.00	0.00	0.02	0.00
41.03	2.00	0.00	0.00	0.02	0.00	41.08	2.00	0.00	0.00	0.02	0.00
41.18	2.00	0.00	0.00	0.03	0.00	41.22	2.00	0.00	0.00	0.01	0.00
41.31	2.00	0.00	0.00	0.03	0.00	41.36	2.00	0.00	0.00	0.02	0.00
41.42	2.00	0.00	0.00	0.02	0.00	41.50	2.00	0.00	0.00	0.02	0.00
41.54	2.00	0.00	0.00	0.01	0.00	41.61	2.00	0.00	0.00	0.02	0.00
41.70	2.00	0.00	0.00	0.03	0.00	41.75	2.00	0.00	0.00	0.02	0.00
41.80	2.00	0.00	0.00	0.02	0.00	41.87	2.00	0.00	0.00	0.02	0.00
41.95	2.00	0.00	0.00	0.02	0.00	42.01	2.00	0.00	0.00	0.02	0.00
42.10	2.00	0.00	0.00	0.03	0.00	42.14	2.00	0.00	0.00	0.01	0.00
42.21	2.00	0.00	0.00	0.02	0.00	42.27	2.00	0.00	0.00	0.02	0.00
42.34	2.00	0.00	0.00	0.02	0.00	42.39	2.00	0.00	0.00	0.02	0.00
42.49	2.00	0.00	0.00	0.03	0.00	42.54	2.00	0.00	0.00	0.02	0.00
42.59	2.00	0.00	0.00	0.02	0.00	42.69	2.00	0.00	0.00	0.03	0.00
42.74	2.00	0.00	0.00	0.02	0.00	42.80	2.00	0.00	0.00	0.02	0.00
42.89	2.00	0.00	0.00	0.03	0.00	42.93	2.00	0.00	0.00	0.01	0.00
42.99	2.00	0.00	0.00	0.02	0.00	43.08	2.00	0.00	0.00	0.03	0.00
43.11	2.00	0.00	0.00	0.01	0.00	43.18	2.00	0.00	0.00	0.02	0.00
43.28	2.00	0.00	0.00	0.03	0.00	43.35	2.00	0.00	0.00	0.02	0.00
43.38	2.00	0.00	0.00	0.01	0.00	43.45	2.00	0.00	0.00	0.02	0.00
43.53	2.00	0.00	0.00	0.02	0.00	43.58	2.00	0.00	0.00	0.02	0.00
43.64	2.00	0.00	0.00	0.02	0.00	43.73	2.00	0.00	0.00	0.03	0.00
43.78	2.00	0.00	0.00	0.02	0.00	43.84	2.00	0.00	0.00	0.02	0.00
43.92	2.00	0.00	0.00	0.02	0.00	43.98	2.00	0.00	0.00	0.02	0.00
44.07	2.00	0.00	0.00	0.03	0.00	44.12	2.00	0.00	0.00	0.02	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
44.17	2.00	0.00	0.00	0.02	0.00	44.23	2.00	0.00	0.00	0.02	0.00
44.29	2.00	0.00	0.00	0.02	0.00	44.39	2.00	0.00	0.00	0.03	0.00
44.43	2.00	0.00	0.00	0.01	0.00	44.49	2.00	0.00	0.00	0.02	0.00
44.57	2.00	0.00	0.00	0.02	0.00	44.67	2.00	0.00	0.00	0.03	0.00
44.73	2.00	0.00	0.00	0.02	0.00	44.78	2.00	0.00	0.00	0.02	0.00
44.82	2.00	0.00	0.00	0.01	0.00	44.93	2.00	0.00	0.00	0.03	0.00
44.97	2.00	0.00	0.00	0.01	0.00	45.02	2.00	0.00	0.00	0.02	0.00
45.09	2.00	0.00	0.00	0.02	0.00	45.17	2.00	0.00	0.00	0.02	0.00
45.22	2.00	0.00	0.00	0.02	0.00	45.30	2.00	0.00	0.00	0.02	0.00
45.37	2.00	0.00	0.00	0.02	0.00	45.42	2.00	0.00	0.00	0.02	0.00
45.50	2.00	0.00	0.00	0.02	0.00	45.57	2.00	0.00	0.00	0.02	0.00
45.61	2.00	0.00	0.00	0.01	0.00	45.72	2.00	0.00	0.00	0.03	0.00
45.77	2.00	0.00	0.00	0.02	0.00	45.80	2.00	0.00	0.00	0.01	0.00
45.88	2.00	0.00	0.00	0.02	0.00	45.96	2.00	0.00	0.00	0.02	0.00
46.01	2.00	0.00	0.00	0.02	0.00	46.11	2.00	0.00	0.00	0.03	0.00
46.14	2.00	0.00	0.00	0.01	0.00	46.21	2.00	0.00	0.00	0.02	0.00
46.26	2.00	0.00	0.00	0.02	0.00	46.35	2.00	0.00	0.00	0.03	0.00
46.41	2.00	0.00	0.00	0.02	0.00	46.49	2.00	0.00	0.00	0.02	0.00
46.55	2.00	0.00	0.00	0.02	0.00	46.59	2.00	0.00	0.00	0.01	0.00
46.68	2.00	0.00	0.00	0.03	0.00	46.74	2.00	0.00	0.00	0.02	0.00
46.80	2.00	0.00	0.00	0.02	0.00	46.85	2.00	0.00	0.00	0.02	0.00
46.93	2.00	0.00	0.00	0.02	0.00	47.00	2.00	0.00	0.00	0.02	0.00
47.10	2.00	0.00	0.00	0.03	0.00	47.15	2.00	0.00	0.00	0.02	0.00
47.20	2.00	0.00	0.00	0.02	0.00	47.25	2.00	0.00	0.00	0.02	0.00
47.31	2.00	0.00	0.00	0.02	0.00	47.40	2.00	0.00	0.00	0.03	0.00
47.44	2.00	0.00	0.00	0.01	0.00	47.52	2.00	0.00	0.00	0.02	0.00
47.58	2.00	0.00	0.00	0.02	0.00	47.67	2.00	0.00	0.00	0.03	0.00
47.73	2.00	0.00	0.00	0.02	0.00	47.78	2.00	0.00	0.00	0.02	0.00
47.86	2.00	0.00	0.00	0.02	0.00	47.92	2.00	0.00	0.00	0.02	0.00
47.98	2.00	0.00	0.00	0.02	0.00	48.05	2.00	0.00	0.00	0.02	0.00
48.12	2.00	0.00	0.00	0.02	0.00	48.19	2.00	0.00	0.00	0.02	0.00
48.27	2.00	0.00	0.00	0.02	0.00	48.32	2.00	0.00	0.00	0.02	0.00
48.39	2.00	0.00	0.00	0.02	0.00	48.47	2.00	0.00	0.00	0.02	0.00
48.52	2.00	0.00	0.00	0.02	0.00	48.57	2.00	0.00	0.00	0.02	0.00
48.67	2.00	0.00	0.00	0.03	0.00	48.71	2.00	0.00	0.00	0.01	0.00
48.76	2.00	0.00	0.00	0.02	0.00	48.82	2.00	0.00	0.00	0.02	0.00
48.93	2.00	0.00	0.00	0.03	0.00	48.97	2.00	0.00	0.00	0.01	0.00
49.05	2.00	0.00	0.00	0.02	0.00	49.08	2.00	0.00	0.00	0.01	0.00
49.16	2.00	0.00	0.00	0.02	0.00	49.25	2.00	0.00	0.00	0.03	0.00
49.29	2.00	0.00	0.00	0.01	0.00	49.36	2.00	0.00	0.00	0.02	0.00
49.43	2.00	0.00	0.00	0.02	0.00	49.48	2.00	0.00	0.00	0.02	0.00
49.55	2.00	0.00	0.00	0.02	0.00	49.64	2.00	0.00	0.00	0.03	0.00
49.70	2.00	0.00	0.00	0.02	0.00	49.75	2.00	0.00	0.00	0.02	0.00
49.81	2.00	0.00	0.00	0.02	0.00	49.90	2.00	0.00	0.00	0.03	0.00
49.94	2.00	0.00	0.00	0.01	0.00	50.01	2.00	0.00	0.00	0.02	0.00
50.08	2.00	0.00	0.00	0.02	0.00	50.15	2.00	0.00	0.00	0.02	0.00
50.24	2.00	0.00	0.00	0.03	0.00	50.30	2.00	0.00	0.00	0.02	0.00
50.34	2.00	0.00	0.00	0.01	0.00	50.41	2.00	0.00	0.00	0.02	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
50.47	2.00	0.00	0.00	0.02	0.00	50.54	2.00	0.00	0.00	0.02	0.00
50.62	2.00	0.00	0.00	0.02	0.00	50.66	2.00	0.00	0.00	0.01	0.00
50.77	2.00	0.00	0.00	0.03	0.00	50.81	2.00	0.00	0.00	0.01	0.00
50.87	2.00	0.00	0.00	0.02	0.00	50.92	2.00	0.00	0.00	0.02	0.00
51.01	2.00	0.00	0.00	0.03	0.00	51.07	2.00	0.00	0.00	0.02	0.00
51.15	2.00	0.00	0.00	0.02	0.00	51.21	2.00	0.00	0.00	0.02	0.00
51.26	2.00	0.00	0.00	0.02	0.00	51.32	2.00	0.00	0.00	0.02	0.00
51.39	2.00	0.00	0.00	0.02	0.00	51.46	2.00	0.00	0.00	0.02	0.00
51.53	2.00	0.00	0.00	0.02	0.00	51.61	2.00	0.00	0.00	0.02	0.00
51.65	2.00	0.00	0.00	0.01	0.00	51.72	2.00	0.00	0.00	0.02	0.00
51.81	2.00	0.00	0.00	0.03	0.00	51.84	2.00	0.00	0.00	0.01	0.00
51.92	2.00	0.00	0.00	0.02	0.00	52.01	2.00	0.00	0.00	0.03	0.00
52.06	2.00	0.00	0.00	0.02	0.00	52.11	2.00	0.00	0.00	0.02	0.00
52.19	2.00	0.00	0.00	0.02	0.00	52.25	2.00	0.00	0.00	0.02	0.00
52.30	2.00	0.00	0.00	0.02	0.00	52.38	2.00	0.00	0.00	0.02	0.00
52.45	2.00	0.00	0.00	0.02	0.00	52.49	2.00	0.00	0.00	0.01	0.00
52.57	2.00	0.00	0.00	0.02	0.00	52.65	2.00	0.00	0.00	0.02	0.00
52.70	2.00	0.00	0.00	0.02	0.00	52.79	2.00	0.00	0.00	0.03	0.00
52.85	2.00	0.00	0.00	0.02	0.00	52.89	2.00	0.00	0.00	0.01	0.00
52.99	2.00	0.00	0.00	0.03	0.00	53.04	2.00	0.00	0.00	0.02	0.00
53.08	2.00	0.00	0.00	0.01	0.00	53.17	2.00	0.00	0.00	0.03	0.00
53.24	2.00	0.00	0.00	0.02	0.00	53.33	2.00	0.00	0.00	0.03	0.00
53.39	2.00	0.00	0.00	0.02	0.00	53.42	2.00	0.00	0.00	0.01	0.00
53.49	2.00	0.00	0.00	0.02	0.00	53.58	2.00	0.00	0.00	0.03	0.00
53.63	2.00	0.00	0.00	0.02	0.00	53.68	2.00	0.00	0.00	0.02	0.00
53.77	2.00	0.00	0.00	0.03	0.00	53.83	2.00	0.00	0.00	0.02	0.00
53.88	2.00	0.00	0.00	0.02	0.00	53.97	2.00	0.00	0.00	0.03	0.00
54.03	2.00	0.00	0.00	0.02	0.00	54.08	2.00	0.00	0.00	0.02	0.00
54.18	2.00	0.00	0.00	0.03	0.00	54.22	2.00	0.00	0.00	0.01	0.00
54.27	2.00	0.00	0.00	0.02	0.00	54.38	2.00	0.00	0.00	0.03	0.00
54.42	2.00	0.00	0.00	0.01	0.00	54.47	2.00	0.00	0.00	0.02	0.00
54.57	2.00	0.00	0.00	0.03	0.00	54.61	2.00	0.00	0.00	0.01	0.00
54.68	2.00	0.00	0.00	0.02	0.00	54.75	2.00	0.00	0.00	0.02	0.00
54.79	2.00	0.00	0.00	0.01	0.00	54.86	2.00	0.00	0.00	0.02	0.00
54.95	2.00	0.00	0.00	0.03	0.00	55.01	2.00	0.00	0.00	0.02	0.00
55.06	2.00	0.00	0.00	0.02	0.00	55.12	2.00	0.00	0.00	0.02	0.00
55.21	2.00	0.00	0.00	0.03	0.00	55.25	2.00	0.00	0.00	0.01	0.00
55.32	2.00	0.00	0.00	0.02	0.00	55.40	2.00	0.00	0.00	0.02	0.00
55.50	2.00	0.00	0.00	0.03	0.00	55.52	2.00	0.00	0.00	0.01	0.00
55.60	2.00	0.00	0.00	0.02	0.00	55.67	2.00	0.00	0.00	0.02	0.00
55.72	2.00	0.00	0.00	0.02	0.00	55.79	2.00	0.00	0.00	0.02	0.00
55.86	2.00	0.00	0.00	0.02	0.00	55.95	2.00	0.00	0.00	0.03	0.00
56.00	2.00	0.00	0.00	0.02	0.00	56.05	2.00	0.00	0.00	0.02	0.00
56.11	2.00	0.00	0.00	0.02	0.00	56.19	2.00	0.00	0.00	0.02	0.00
56.24	2.00	0.00	0.00	0.02	0.00	56.34	2.00	0.00	0.00	0.03	0.00
56.37	2.00	0.00	0.00	0.01	0.00	56.43	2.00	0.00	0.00	0.02	0.00
56.54	2.00	0.00	0.00	0.03	0.00	56.59	2.00	0.00	0.00	0.02	0.00
56.64	2.00	0.00	0.00	0.02	0.00	56.73	2.00	0.00	0.00	0.03	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
56.79	2.00	0.00	0.00	0.02	0.00	56.84	2.00	0.00	0.00	0.02	0.00
56.93	2.00	0.00	0.00	0.03	0.00	56.96	2.00	0.00	0.00	0.01	0.00
57.03	2.00	0.00	0.00	0.02	0.00	57.13	2.00	0.00	0.00	0.03	0.00
57.16	2.00	0.00	0.00	0.01	0.00	57.23	2.00	0.00	0.00	0.02	0.00
57.29	2.00	0.00	0.00	0.02	0.00	57.38	2.00	0.00	0.00	0.03	0.00
57.42	2.00	0.00	0.00	0.01	0.00	57.49	2.00	0.00	0.00	0.02	0.00
57.57	2.00	0.00	0.00	0.02	0.00	57.62	2.00	0.00	0.00	0.02	0.00
57.68	2.00	0.00	0.00	0.02	0.00	57.77	2.00	0.00	0.00	0.03	0.00
57.85	2.00	0.00	0.00	0.02	0.00	57.92	2.00	0.00	0.00	0.02	0.00
57.97	2.00	0.00	0.00	0.02	0.00	58.02	2.00	0.00	0.00	0.02	0.00
58.07	2.00	0.00	0.00	0.02	0.00	58.16	2.00	0.00	0.00	0.03	0.00
58.23	2.00	0.00	0.00	0.02	0.00	58.31	2.00	0.00	0.00	0.02	0.00
58.37	2.00	0.00	0.00	0.02	0.00	58.42	2.00	0.00	0.00	0.02	0.00
58.50	2.00	0.00	0.00	0.02	0.00	58.57	2.00	0.00	0.00	0.02	0.00
58.61	2.00	0.00	0.00	0.01	0.00	58.68	2.00	0.00	0.00	0.02	0.00
58.76	2.00	0.00	0.00	0.02	0.00	58.80	2.00	0.00	0.00	0.01	0.00
58.87	2.00	0.00	0.00	0.02	0.00	58.95	2.00	0.00	0.00	0.02	0.00
59.01	2.00	0.00	0.00	0.02	0.00	59.06	2.00	0.00	0.00	0.02	0.00
59.16	2.00	0.00	0.00	0.03	0.00	59.19	2.00	0.00	0.00	0.01	0.00
59.29	2.00	0.00	0.00	0.03	0.00	59.33	2.00	0.00	0.00	0.01	0.00
59.39	2.00	0.00	0.00	0.02	0.00	59.47	2.00	0.00	0.00	0.02	0.00
59.54	2.00	0.00	0.00	0.02	0.00	59.58	2.00	0.00	0.00	0.01	0.00
59.65	2.00	0.00	0.00	0.02	0.00	59.73	2.00	0.00	0.00	0.02	0.00
59.81	2.00	0.00	0.00	0.02	0.00	59.85	2.00	0.00	0.00	0.01	0.00
59.92	2.00	0.00	0.00	0.02	0.00	59.99	2.00	0.00	0.00	0.02	0.00
60.08	2.00	0.00	0.00	0.03	0.00	60.13	2.00	0.00	0.00	0.02	0.00
60.18	2.00	0.00	0.00	0.02	0.00	60.27	2.00	0.00	0.00	0.03	0.00
60.33	2.00	0.00	0.00	0.02	0.00	60.38	2.00	0.00	0.00	0.02	0.00
60.47	2.00	0.00	0.00	0.03	0.00						

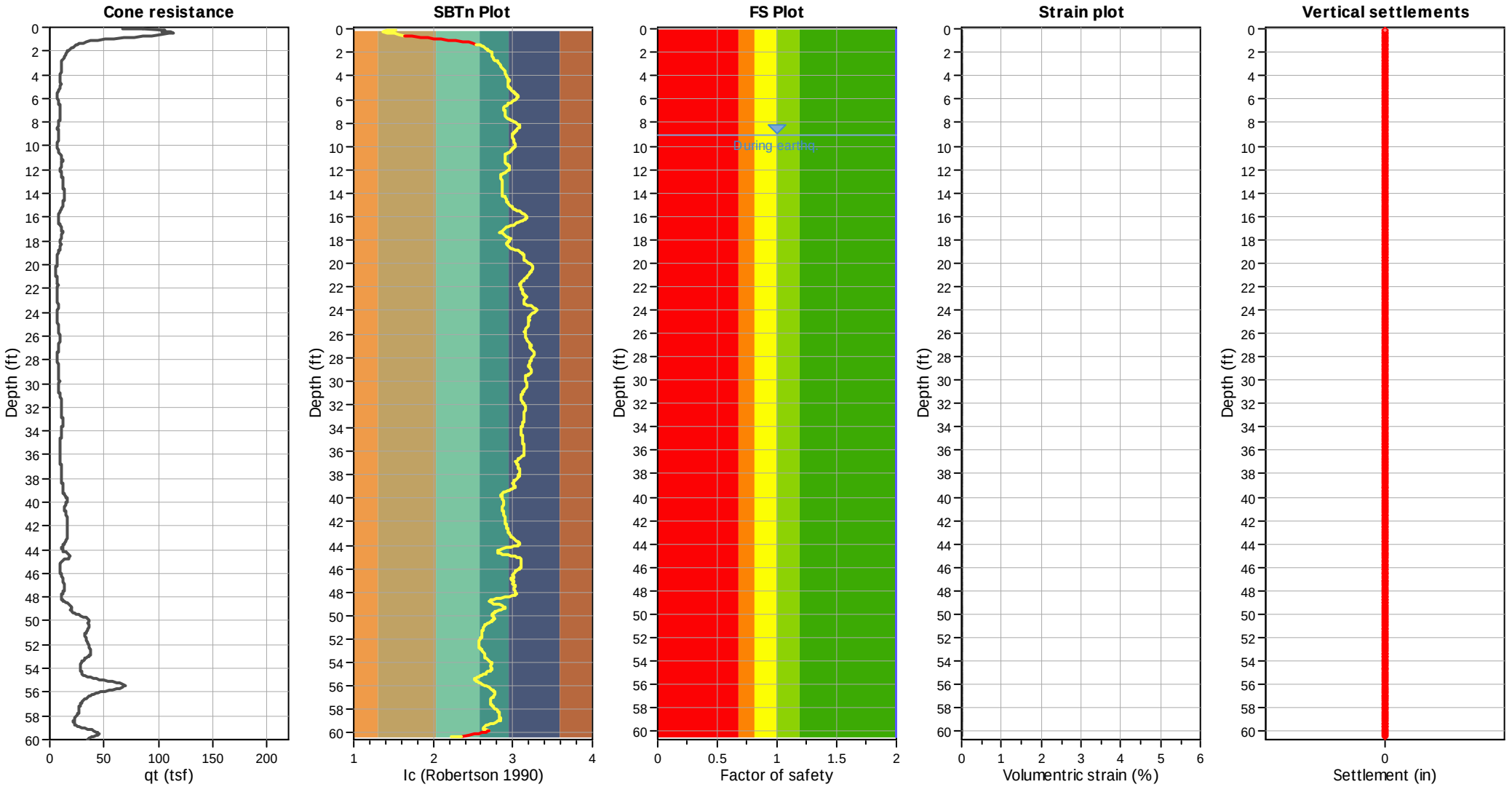
Overall liquefaction potential: 0.00

LPI = 0.00 - Liquefaction risk very low
LPI between 0.00 and 5.00 - Liquefaction risk low
LPI between 5.00 and 15.00 - Liquefaction risk high
LPI > 15.00 - Liquefaction risk very high

Abbreviations

FS: Calculated factor of safety for test point
F_L: 1 - FS
w_z: Function value of the extend of soil liquefaction according to depth
d_z: Layer thickness (ft)
LPI: Liquefaction potential index value for test point

Estimation of post-earthquake settlements



Abbreviations

q_t:	Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c:	Soil Behaviour Type Index
FS:	Calculated Factor of Safety against liquefaction
Volumentric strain:	Post-liquefaction volumentric strain

:: Lateral displacement index calculation ::

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
9.01	8.19	12.37	3.73	82.52	2.00	0.00	0.00	0.00
9.09	8.22	12.41	3.74	82.78	2.00	0.00	0.00	0.00
9.13	8.21	12.39	3.75	82.78	2.00	0.00	0.00	0.00
9.20	8.17	12.32	3.72	82.39	2.00	0.00	0.00	0.00
9.27	8.09	12.17	3.71	81.87	2.00	0.00	0.00	0.00
9.35	7.98	11.99	3.68	81.08	2.00	0.00	0.00	0.00
9.39	7.84	11.76	3.63	80.02	2.00	0.00	0.00	0.00
9.45	7.69	11.52	3.58	78.94	2.00	0.00	0.00	0.00
9.54	7.54	11.27	3.52	77.70	2.00	0.00	0.00	0.00
9.59	7.39	11.03	3.47	76.58	2.00	0.00	0.00	0.00
9.65	7.26	10.82	3.40	75.30	2.00	0.00	0.00	0.00
9.73	7.13	10.59	3.32	73.99	2.00	0.00	0.00	0.00
9.81	6.99	10.36	3.24	72.66	2.00	0.00	0.00	0.00
9.85	6.89	10.20	3.16	71.46	2.00	0.00	0.00	0.00
9.94	6.81	10.06	3.08	70.39	2.00	0.00	0.00	0.00
10.00	6.75	9.96	3.03	69.61	2.00	0.00	0.00	0.00
10.04	6.74	9.94	2.97	68.99	2.00	0.00	0.00	0.00
10.12	6.81	10.05	2.94	69.00	2.00	0.00	0.00	0.00
10.19	6.96	10.28	2.94	69.63	2.00	0.00	0.00	0.00
10.24	7.18	10.63	2.97	70.86	2.00	0.00	0.00	0.00
10.31	7.51	11.15	3.05	72.96	2.00	0.00	0.00	0.00
10.39	7.85	11.70	3.13	75.13	2.00	0.00	0.00	0.00
10.48	8.26	12.35	3.16	77.07	2.00	0.00	0.00	0.00
10.53	8.69	13.04	3.21	79.21	2.00	0.00	0.00	0.00
10.63	9.14	13.75	3.30	81.80	2.00	1.50	0.00	0.00
10.67	9.60	14.48	3.42	84.82	2.00	3.22	0.00	0.00
10.71	10.01	15.13	3.52	87.48	2.00	4.68	0.00	0.00
10.79	10.33	15.64	3.63	89.85	2.00	5.76	0.00	0.00
10.83	10.50	15.91	3.75	91.85	2.00	6.33	0.00	0.00
10.93	10.75	16.31	3.78	93.18	2.00	7.14	0.00	0.00
10.98	11.01	16.72	3.83	94.60	2.00	7.96	0.00	0.00
11.06	11.19	17.00	3.91	96.27	2.00	8.52	0.00	0.00
11.11	11.33	17.22	3.99	97.70	2.00	8.95	0.00	0.00
11.16	11.42	17.37	4.04	98.57	2.00	9.22	0.00	0.00
11.23	11.42	17.36	4.07	98.91	2.00	9.21	0.00	0.00
11.31	11.37	17.21	4.09	98.90	2.00	8.93	0.00	0.00
11.36	11.30	17.04	4.10	98.56	2.00	8.59	0.00	0.00
11.42	11.29	16.93	4.07	98.01	2.00	8.38	0.00	0.00
11.51	11.10	16.53	4.11	97.52	2.00	7.58	0.00	0.00
11.56	10.86	16.11	4.14	96.84	2.00	6.73	0.00	0.00
11.65	10.63	15.65	4.15	95.79	2.00	5.79	0.00	0.00
11.71	10.44	15.29	4.13	94.68	2.00	5.02	0.00	0.00
11.75	10.23	14.92	4.11	93.61	2.00	4.21	0.00	0.00
11.84	10.11	14.60	4.05	92.08	2.00	3.49	0.00	0.00
11.89	10.00	14.37	3.96	90.56	2.00	2.96	0.00	0.00
11.96	9.97	14.23	3.81	88.71	2.00	2.65	0.00	0.00
12.03	9.99	14.17	3.65	86.82	2.00	2.50	0.00	0.00
12.11	10.04	14.16	3.46	84.80	2.00	2.49	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
12.16	10.16	14.28	3.29	83.13	2.00	2.76	0.00	0.00
12.21	10.35	14.49	3.12	81.63	2.00	3.24	0.00	0.00
12.30	10.54	14.68	2.98	80.34	2.00	3.67	0.00	0.00
12.35	10.78	14.96	2.87	79.44	2.00	4.29	0.00	0.00
12.41	10.95	15.15	2.82	79.26	2.00	4.72	0.00	0.00
12.49	11.12	15.34	2.82	79.58	2.00	5.13	0.00	0.00
12.56	11.24	15.48	2.87	80.48	2.00	5.43	0.00	0.00
12.60	11.35	15.63	2.94	81.65	2.00	5.74	0.00	0.00
12.67	11.48	15.78	3.01	82.89	2.00	6.06	0.00	0.00
12.75	11.63	15.96	3.07	83.95	2.00	6.42	0.00	0.00
12.80	11.76	16.12	3.13	85.04	2.00	6.75	0.00	0.00
12.90	11.84	16.20	3.20	86.09	2.00	6.92	0.00	0.00
12.95	11.93	16.30	3.26	87.05	2.00	7.13	0.00	0.00
13.02	12.03	16.41	3.31	87.86	2.00	7.34	0.00	0.00
13.06	12.13	16.53	3.33	88.44	2.00	7.58	0.00	0.00
13.14	12.22	16.60	3.35	88.87	2.00	7.74	0.00	0.00
13.19	12.29	16.67	3.37	89.23	2.00	7.87	0.00	0.00
13.29	12.33	16.67	3.40	89.55	2.00	7.87	0.00	0.00
13.33	12.32	16.64	3.44	89.97	2.00	7.81	0.00	0.00
13.39	12.30	16.58	3.46	90.15	2.00	7.70	0.00	0.00
13.48	12.31	16.54	3.47	90.15	2.00	7.62	0.00	0.00
13.54	12.39	16.62	3.48	90.48	2.00	7.77	0.00	0.00
13.59	12.53	16.78	3.48	90.88	2.00	8.08	0.00	0.00
13.67	12.75	17.02	3.48	91.29	2.00	8.56	0.00	0.00
13.72	12.96	17.27	3.48	91.86	2.00	9.04	0.00	0.00
13.78	13.12	17.46	3.51	92.55	2.00	9.39	0.00	0.00
13.86	13.28	17.63	3.54	93.31	2.00	9.71	0.00	0.00
13.93	13.44	17.80	3.58	94.19	2.00	10.04	0.00	0.00
14.01	13.55	17.91	3.64	95.18	2.00	10.24	0.00	0.00
14.05	13.62	17.99	3.71	96.24	2.00	10.38	0.00	0.00
14.14	13.62	17.94	3.77	96.86	2.00	10.30	0.00	0.00
14.21	13.57	17.84	3.82	97.32	2.00	10.11	0.00	0.00
14.24	13.41	17.63	3.90	97.81	2.00	9.71	0.00	0.00
14.31	13.27	17.41	3.97	98.13	2.00	9.30	0.00	0.00
14.39	13.17	17.24	4.01	98.30	2.00	8.97	0.00	0.00
14.44	13.06	17.07	4.05	98.31	2.00	8.64	0.00	0.00
14.54	12.93	16.84	4.08	98.16	2.00	8.20	0.00	0.00
14.59	12.82	16.67	4.11	98.07	2.00	7.86	0.00	0.00
14.64	12.73	16.52	4.12	97.86	2.00	7.57	0.00	0.00
14.70	12.62	16.34	4.14	97.64	2.00	7.20	0.00	0.00
14.79	12.49	16.12	4.15	97.30	2.00	6.75	0.00	0.00
14.83	12.35	15.91	4.16	96.83	2.00	6.33	0.00	0.00
14.93	12.16	15.61	4.16	96.10	2.00	5.69	0.00	0.00
14.98	11.95	15.29	4.17	95.44	2.00	5.01	0.00	0.00
15.03	11.68	14.89	4.19	94.64	2.00	4.14	0.00	0.00
15.10	11.42	14.50	4.20	93.80	2.00	3.26	0.00	0.00
15.18	11.13	14.06	4.22	92.84	2.00	2.24	0.00	0.00
15.23	10.82	13.61	4.24	91.81	2.00	1.17	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
15.33	10.52	13.15	4.26	90.69	2.00	0.05	0.00	0.00
15.37	10.18	12.68	4.30	89.73	2.00	0.00	0.00	0.00
15.44	9.83	12.17	4.35	88.70	2.00	0.00	0.00	0.00
15.52	9.47	11.65	4.42	87.73	2.00	0.00	0.00	0.00
15.56	9.15	11.19	4.46	86.58	2.00	0.00	0.00	0.00
15.63	8.84	10.74	4.50	85.48	2.00	0.00	0.00	0.00
15.71	8.52	10.28	4.54	84.22	2.00	0.00	0.00	0.00
15.77	8.24	9.89	4.56	82.98	2.00	0.00	0.00	0.00
15.82	7.99	9.53	4.57	81.84	2.00	0.00	0.00	0.00
15.89	7.76	9.20	4.57	80.56	2.00	0.00	0.00	0.00
15.97	7.60	8.95	4.51	79.20	2.00	0.00	0.00	0.00
16.02	7.48	8.78	4.44	78.11	2.00	0.00	0.00	0.00
16.10	7.44	8.70	4.35	77.14	2.00	0.00	0.00	0.00
16.17	7.44	8.67	4.24	76.32	2.00	0.00	0.00	0.00
16.22	7.52	8.76	4.10	75.56	2.00	0.00	0.00	0.00
16.28	7.65	8.91	3.94	74.93	2.00	0.00	0.00	0.00
16.37	7.84	9.15	3.78	74.50	2.00	0.00	0.00	0.00
16.42	8.08	9.44	3.63	74.22	2.00	0.00	0.00	0.00
16.52	8.33	9.74	3.48	73.87	2.00	0.00	0.00	0.00
16.55	8.58	10.05	3.35	73.67	2.00	0.00	0.00	0.00
16.62	8.83	10.35	3.23	73.40	2.00	0.00	0.00	0.00
16.70	9.06	10.62	3.14	73.23	2.00	0.00	0.00	0.00
16.74	9.49	11.17	3.00	73.19	2.00	0.00	0.00	0.00
16.82	10.11	11.93	2.83	73.13	2.00	0.00	0.00	0.00
16.91	10.53	12.39	2.71	72.87	2.00	0.00	0.00	0.00
16.94	10.72	12.62	2.64	72.51	2.00	0.00	0.00	0.00
17.01	10.87	12.76	2.59	72.13	2.00	0.00	0.00	0.00
17.10	11.00	12.88	2.55	71.87	2.00	0.00	0.00	0.00
17.15	11.13	13.01	2.51	71.64	2.00	0.00	0.00	0.00
17.21	11.54	13.47	2.41	71.26	2.00	0.83	0.00	0.00
17.30	11.94	13.90	2.31	70.72	2.00	1.86	0.00	0.00
17.34	11.76	13.66	2.32	70.54	2.00	1.31	0.00	0.00
17.41	11.25	13.04	2.42	70.64	2.00	0.00	0.00	0.00
17.49	10.96	12.66	2.48	70.73	2.00	0.00	0.00	0.00
17.53	10.95	12.64	2.50	70.83	2.00	0.00	0.00	0.00
17.59	10.82	12.46	2.52	70.73	2.00	0.00	0.00	0.00
17.67	10.63	12.20	2.55	70.63	2.00	0.00	0.00	0.00
17.73	10.45	11.97	2.57	70.41	2.00	0.00	0.00	0.00
17.79	10.07	11.49	2.65	70.27	2.00	0.00	0.00	0.00
17.87	9.70	11.01	2.72	70.05	2.00	0.00	0.00	0.00
17.92	9.63	10.90	2.72	69.77	2.00	0.00	0.00	0.00
17.99	9.66	10.91	2.67	69.22	2.00	0.00	0.00	0.00
18.07	9.81	11.07	2.58	68.63	2.00	0.00	0.00	0.00
18.14	9.80	11.03	2.54	68.07	2.00	0.00	0.00	0.00
18.19	9.97	11.20	2.47	67.72	2.00	0.00	0.00	0.00
18.26	10.14	11.38	2.41	67.35	2.00	0.00	0.00	0.00
18.34	10.13	11.33	2.39	67.04	2.00	0.00	0.00	0.00
18.38	9.99	11.15	2.39	66.67	2.00	0.00	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
18.45	9.85	10.96	2.40	66.41	2.00	0.00	0.00	0.00
18.53	9.72	10.78	2.41	66.14	2.00	0.00	0.00	0.00
18.60	9.58	10.60	2.43	66.01	2.00	0.00	0.00	0.00
18.68	9.26	10.18	2.51	65.85	2.00	0.00	0.00	0.00
18.72	8.93	9.75	2.58	65.57	2.00	0.00	0.00	0.00
18.79	8.50	9.20	2.67	65.11	2.00	0.00	0.00	0.00
18.84	8.10	8.69	2.74	64.48	2.00	0.00	0.00	0.00
18.92	7.83	8.34	2.78	63.84	2.00	0.00	0.00	0.00
18.98	7.61	8.06	2.80	63.20	2.00	0.00	0.00	0.00
19.06	7.40	7.77	2.79	62.28	2.00	0.00	0.00	0.00
19.11	7.23	7.55	2.77	61.39	2.00	0.00	0.00	0.00
19.18	7.07	7.34	2.74	60.47	2.00	0.00	0.00	0.00
19.25	6.92	7.14	2.71	59.68	2.00	0.00	0.00	0.00
19.33	6.83	7.02	2.68	59.04	2.00	0.00	0.00	0.00
19.37	6.81	6.98	2.66	58.73	2.00	0.00	0.00	0.00
19.47	6.80	6.95	2.65	58.53	2.00	0.00	0.00	0.00
19.52	6.83	6.97	2.63	58.52	2.00	0.00	0.00	0.00
19.57	6.85	6.99	2.64	58.63	2.00	0.00	0.00	0.00
19.62	6.84	6.96	2.68	58.85	2.00	0.00	0.00	0.00
19.71	6.81	6.91	2.72	59.04	2.00	0.00	0.00	0.00
19.77	6.74	6.81	2.80	59.33	2.00	0.00	0.00	0.00
19.82	6.58	6.61	2.89	59.29	2.00	0.00	0.00	0.00
19.91	6.46	6.44	2.92	58.99	2.00	0.00	0.00	0.00
19.96	6.31	6.25	2.96	58.55	2.00	0.00	0.00	0.00
20.02	6.19	6.09	2.98	58.11	2.00	0.00	0.00	0.00
20.11	6.06	5.91	2.99	57.52	2.00	0.00	0.00	0.00
20.18	5.93	5.75	3.00	56.93	2.00	0.00	0.00	0.00
20.23	5.83	5.62	2.97	56.25	2.00	0.00	0.00	0.00
20.28	5.74	5.50	2.92	55.46	2.00	0.00	0.00	0.00
20.37	5.70	5.44	2.83	54.57	2.00	0.00	0.00	0.00
20.42	5.74	5.48	2.71	53.93	2.00	0.00	0.00	0.00
20.48	5.73	5.45	2.68	53.62	2.00	0.00	0.00	0.00
20.56	5.74	5.45	2.63	53.31	2.00	0.00	0.00	0.00
20.63	5.76	5.46	2.59	53.02	2.00	0.00	0.00	0.00
20.67	5.80	5.50	2.55	52.91	2.00	0.00	0.00	0.00
20.74	5.86	5.56	2.50	52.80	2.00	0.00	0.00	0.00
20.83	5.92	5.61	2.48	52.82	2.00	0.00	0.00	0.00
20.90	5.98	5.67	2.47	52.98	2.00	0.00	0.00	0.00
20.97	6.03	5.72	2.47	53.14	2.00	0.00	0.00	0.00
21.02	6.11	5.80	2.46	53.33	2.00	0.00	0.00	0.00
21.10	6.22	5.91	2.43	53.53	2.00	0.00	0.00	0.00
21.17	6.35	6.05	2.42	53.88	2.00	0.00	0.00	0.00
21.22	6.49	6.20	2.40	54.25	2.00	0.00	0.00	0.00
21.27	6.64	6.37	2.39	54.75	2.00	0.00	0.00	0.00
21.37	6.79	6.52	2.39	55.21	2.00	0.00	0.00	0.00
21.43	6.95	6.69	2.38	55.69	2.00	0.00	0.00	0.00
21.46	7.09	6.86	2.38	56.17	2.00	0.00	0.00	0.00
21.55	7.24	7.01	2.36	56.47	2.00	0.00	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
21.62	7.36	7.13	2.35	56.76	2.00	0.00	0.00	0.00
21.66	7.42	7.19	2.32	56.63	2.00	0.00	0.00	0.00
21.74	7.41	7.16	2.28	56.18	2.00	0.00	0.00	0.00
21.81	7.37	7.10	2.25	55.71	2.00	0.00	0.00	0.00
21.85	7.30	7.01	2.21	55.11	2.00	0.00	0.00	0.00
21.93	7.21	6.89	2.16	54.32	2.00	0.00	0.00	0.00
22.00	7.13	6.78	2.10	53.54	2.00	0.00	0.00	0.00
22.07	7.06	6.69	2.06	52.89	2.00	0.00	0.00	0.00
22.16	6.98	6.58	2.04	52.37	2.00	0.00	0.00	0.00
22.19	6.91	6.49	2.03	52.03	2.00	0.00	0.00	0.00
22.26	6.87	6.43	2.05	52.11	2.00	0.00	0.00	0.00
22.33	6.86	6.41	2.11	52.50	2.00	0.00	0.00	0.00
22.40	6.86	6.39	2.15	52.89	2.00	0.00	0.00	0.00
22.45	6.88	6.41	2.18	53.16	2.00	0.00	0.00	0.00
22.53	6.88	6.39	2.18	53.12	2.00	0.00	0.00	0.00
22.60	6.86	6.36	2.19	53.07	2.00	0.00	0.00	0.00
22.64	6.79	6.27	2.21	53.00	2.00	0.00	0.00	0.00
22.70	6.72	6.18	2.27	53.20	2.00	0.00	0.00	0.00
22.80	6.68	6.11	2.30	53.25	2.00	0.00	0.00	0.00
22.84	6.59	6.01	2.31	53.02	2.00	0.00	0.00	0.00
22.90	6.58	5.98	2.26	52.57	2.00	0.00	0.00	0.00
23.00	6.68	6.08	2.16	52.04	2.00	0.00	0.00	0.00
23.05	6.77	6.17	2.15	52.22	2.00	0.00	0.00	0.00
23.14	6.93	6.33	2.21	53.25	2.00	0.00	0.00	0.00
23.18	7.11	6.52	2.30	54.56	2.00	0.00	0.00	0.00
23.24	7.32	6.74	2.43	56.36	2.00	0.00	0.00	0.00
23.32	7.52	6.94	2.59	58.31	2.00	0.00	0.00	0.00
23.39	7.66	7.09	2.77	60.28	2.00	0.00	0.00	0.00
23.44	7.83	7.27	2.96	62.42	2.00	0.00	0.00	0.00
23.53	7.88	7.30	3.21	64.47	2.00	0.00	0.00	0.00
23.59	7.80	7.20	3.50	66.24	2.00	0.00	0.00	0.00
23.63	7.63	7.01	3.73	67.05	2.00	0.00	0.00	0.00
23.69	7.43	6.76	3.92	67.36	2.00	0.00	0.00	0.00
23.77	7.22	6.52	4.05	67.12	2.00	0.00	0.00	0.00
23.82	7.02	6.29	4.07	66.24	2.00	0.00	0.00	0.00
23.93	6.84	6.07	4.01	64.93	2.00	0.00	0.00	0.00
23.95	6.71	5.92	3.89	63.57	2.00	0.00	0.00	0.00
24.03	6.63	5.82	3.70	62.00	2.00	0.00	0.00	0.00
24.12	6.60	5.77	3.48	60.46	2.00	0.00	0.00	0.00
24.16	6.59	5.76	3.29	59.15	2.00	0.00	0.00	0.00
24.22	6.66	5.82	3.12	58.33	2.00	0.00	0.00	0.00
24.30	6.73	5.88	2.99	57.69	2.00	0.00	0.00	0.00
24.37	6.79	5.93	2.93	57.49	2.00	0.00	0.00	0.00
24.43	6.88	6.02	2.89	57.55	2.00	0.00	0.00	0.00
24.50	7.00	6.14	2.86	57.74	2.00	0.00	0.00	0.00
24.57	7.09	6.22	2.85	58.01	2.00	0.00	0.00	0.00
24.62	7.17	6.30	2.88	58.51	2.00	0.00	0.00	0.00
24.69	7.23	6.35	2.92	58.98	2.00	0.00	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
24.77	7.28	6.39	2.96	59.42	2.00	0.00	0.00	0.00
24.83	7.32	6.42	2.99	59.75	2.00	0.00	0.00	0.00
24.88	7.37	6.46	3.00	59.98	2.00	0.00	0.00	0.00
24.97	7.40	6.47	3.00	60.06	2.00	0.00	0.00	0.00
25.02	7.42	6.49	2.99	60.05	2.00	0.00	0.00	0.00
25.11	7.41	6.46	2.98	59.87	2.00	0.00	0.00	0.00
25.17	7.41	6.45	2.98	59.83	2.00	0.00	0.00	0.00
25.21	7.40	6.43	2.97	59.69	2.00	0.00	0.00	0.00
25.29	7.44	6.45	2.97	59.78	2.00	0.00	0.00	0.00
25.36	7.55	6.56	2.96	60.05	2.00	0.00	0.00	0.00
25.40	7.70	6.71	2.94	60.47	2.00	0.00	0.00	0.00
25.46	7.86	6.86	2.95	61.10	2.00	0.00	0.00	0.00
25.54	8.04	7.03	2.96	61.72	2.00	0.00	0.00	0.00
25.62	8.20	7.18	2.98	62.42	2.00	0.00	0.00	0.00
25.66	8.36	7.34	3.03	63.34	2.00	0.00	0.00	0.00
25.75	8.51	7.48	3.08	64.20	2.00	0.00	0.00	0.00
25.80	8.67	7.63	3.13	65.08	2.00	0.00	0.00	0.00
25.85	8.81	7.77	3.15	65.74	2.00	0.00	0.00	0.00
25.96	8.75	7.68	3.25	66.22	2.00	0.00	0.00	0.00
26.01	8.74	7.66	3.34	66.87	2.00	0.00	0.00	0.00
26.05	8.80	7.71	3.41	67.56	2.00	0.00	0.00	0.00
26.12	8.87	7.77	3.46	68.13	2.00	0.00	0.00	0.00
26.19	8.95	7.84	3.49	68.60	2.00	0.00	0.00	0.00
26.25	9.02	7.89	3.49	68.79	2.00	0.00	0.00	0.00
26.33	8.98	7.83	3.50	68.70	2.00	0.00	0.00	0.00
26.42	8.87	7.70	3.53	68.46	2.00	0.00	0.00	0.00
26.46	8.73	7.55	3.56	68.15	2.00	0.00	0.00	0.00
26.52	8.73	7.53	3.53	67.82	2.00	0.00	0.00	0.00
26.61	8.65	7.43	3.49	67.22	2.00	0.00	0.00	0.00
26.67	8.48	7.24	3.46	66.29	2.00	0.00	0.00	0.00
26.71	8.31	7.06	3.41	65.26	2.00	0.00	0.00	0.00
26.79	8.11	6.84	3.39	64.26	2.00	0.00	0.00	0.00
26.87	7.92	6.62	3.37	63.35	2.00	0.00	0.00	0.00
26.92	7.81	6.50	3.33	62.62	2.00	0.00	0.00	0.00
26.98	7.77	6.45	3.26	61.94	2.00	0.00	0.00	0.00
27.06	7.73	6.40	3.19	61.25	2.00	0.00	0.00	0.00
27.11	7.69	6.35	3.12	60.57	2.00	0.00	0.00	0.00
27.21	7.63	6.27	3.07	59.94	2.00	0.00	0.00	0.00
27.26	7.55	6.18	3.03	59.31	2.00	0.00	0.00	0.00
27.32	7.39	6.01	3.04	58.70	2.00	0.00	0.00	0.00
27.40	7.24	5.84	3.04	58.07	2.00	0.00	0.00	0.00
27.45	7.09	5.67	3.01	57.22	2.00	0.00	0.00	0.00
27.52	6.97	5.54	2.92	56.08	2.00	0.00	0.00	0.00
27.60	6.81	5.37	2.86	54.98	2.00	0.00	0.00	0.00
27.65	6.69	5.24	2.79	54.03	2.00	0.00	0.00	0.00
27.71	6.59	5.13	2.73	53.20	2.00	0.00	0.00	0.00
27.80	6.56	5.09	2.64	52.43	2.00	0.00	0.00	0.00
27.84	6.56	5.08	2.56	51.83	2.00	0.00	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
27.90	6.65	5.16	2.47	51.56	2.00	0.00	0.00	0.00
27.99	6.75	5.25	2.42	51.51	2.00	0.00	0.00	0.00
28.05	6.85	5.34	2.43	51.95	2.00	0.00	0.00	0.00
28.10	6.96	5.44	2.51	52.86	2.00	0.00	0.00	0.00
28.17	7.10	5.57	2.57	53.77	2.00	0.00	0.00	0.00
28.25	7.25	5.70	2.62	54.67	2.00	0.00	0.00	0.00
28.30	7.40	5.84	2.66	55.46	2.00	0.00	0.00	0.00
28.39	7.51	5.94	2.74	56.38	2.00	0.00	0.00	0.00
28.44	7.61	6.03	2.80	57.20	2.00	0.00	0.00	0.00
28.49	7.69	6.10	2.87	57.99	2.00	0.00	0.00	0.00
28.54	7.77	6.17	2.89	58.34	2.00	0.00	0.00	0.00
28.62	7.86	6.25	2.81	58.06	2.00	0.00	0.00	0.00
28.68	7.91	6.28	2.81	58.18	2.00	0.00	0.00	0.00
28.74	7.96	6.32	2.88	58.81	2.00	0.00	0.00	0.00
28.83	7.97	6.32	2.94	59.27	2.00	0.00	0.00	0.00
28.89	7.96	6.29	3.00	59.63	2.00	0.00	0.00	0.00
28.98	7.81	6.13	3.09	59.63	2.00	0.00	0.00	0.00
29.03	7.81	6.12	3.12	59.79	2.00	0.00	0.00	0.00
29.09	7.81	6.11	3.10	59.65	2.00	0.00	0.00	0.00
29.14	7.83	6.12	3.11	59.74	2.00	0.00	0.00	0.00
29.22	7.88	6.15	3.16	60.23	2.00	0.00	0.00	0.00
29.27	7.97	6.23	3.12	60.29	2.00	0.00	0.00	0.00
29.38	8.07	6.31	3.02	59.82	2.00	0.00	0.00	0.00
29.43	8.18	6.41	2.92	59.49	2.00	0.00	0.00	0.00
29.48	8.30	6.52	2.84	59.25	2.00	0.00	0.00	0.00
29.57	8.53	6.72	2.72	59.06	2.00	0.00	0.00	0.00
29.62	8.60	6.78	2.67	58.87	2.00	0.00	0.00	0.00
29.68	8.66	6.83	2.67	58.98	2.00	0.00	0.00	0.00
29.73	8.71	6.87	2.65	58.98	2.00	0.00	0.00	0.00
29.82	8.73	6.87	2.65	58.94	2.00	0.00	0.00	0.00
29.87	8.72	6.85	2.64	58.80	2.00	0.00	0.00	0.00
29.94	8.69	6.81	2.63	58.64	2.00	0.00	0.00	0.00
30.02	8.62	6.73	2.63	58.34	2.00	0.00	0.00	0.00
30.07	8.52	6.62	2.63	58.04	2.00	0.00	0.00	0.00
30.16	8.44	6.53	2.63	57.73	2.00	0.00	0.00	0.00
30.19	8.37	6.46	2.61	57.35	2.00	0.00	0.00	0.00
30.26	8.30	6.38	2.57	56.73	2.00	0.00	0.00	0.00
30.36	8.25	6.31	2.53	56.22	2.00	0.00	0.00	0.00
30.41	8.22	6.28	2.49	55.74	2.00	0.00	0.00	0.00
30.46	8.20	6.25	2.45	55.37	2.00	0.00	0.00	0.00
30.53	8.20	6.24	2.42	55.12	2.00	0.00	0.00	0.00
30.61	8.24	6.26	2.40	55.00	2.00	0.00	0.00	0.00
30.65	8.33	6.33	2.38	55.03	2.00	0.00	0.00	0.00
30.71	8.46	6.44	2.37	55.30	2.00	0.00	0.00	0.00
30.81	8.62	6.58	2.37	55.79	2.00	0.00	0.00	0.00
30.84	8.81	6.76	2.41	56.64	2.00	0.00	0.00	0.00
30.91	9.02	6.94	2.46	57.68	2.00	0.00	0.00	0.00
30.99	9.25	7.14	2.55	59.00	2.00	0.00	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
31.04	9.49	7.36	2.62	60.31	2.00	0.00	0.00	0.00
31.11	9.75	7.59	2.69	61.58	2.00	0.00	0.00	0.00
31.19	10.01	7.81	2.76	62.91	2.00	0.00	0.00	0.00
31.25	10.25	8.02	2.83	64.11	2.00	0.00	0.00	0.00
31.30	10.42	8.17	2.88	64.99	2.00	0.00	0.00	0.00
31.39	10.55	8.27	2.93	65.72	2.00	0.00	0.00	0.00
31.45	10.62	8.32	2.97	66.25	2.00	0.00	0.00	0.00
31.50	10.63	8.33	3.01	66.59	2.00	0.00	0.00	0.00
31.60	10.61	8.29	3.03	66.61	2.00	0.00	0.00	0.00
31.65	10.59	8.25	3.01	66.39	2.00	0.00	0.00	0.00
31.73	10.54	8.19	3.03	66.32	2.00	0.00	0.00	0.00
31.80	10.48	8.12	3.08	66.52	2.00	0.00	0.00	0.00
31.84	10.42	8.05	3.13	66.74	2.00	0.00	0.00	0.00
31.91	10.38	8.00	3.19	67.11	2.00	0.00	0.00	0.00
31.99	10.35	7.95	3.25	67.48	2.00	0.00	0.00	0.00
32.03	10.34	7.94	3.31	67.88	2.00	0.00	0.00	0.00
32.09	10.36	7.95	3.36	68.27	2.00	0.00	0.00	0.00
32.19	10.40	7.96	3.40	68.65	2.00	0.00	0.00	0.00
32.25	10.44	7.99	3.48	69.37	2.00	0.00	0.00	0.00
32.29	10.47	8.00	3.54	69.94	2.00	0.00	0.00	0.00
32.38	10.52	8.03	3.56	70.14	2.00	0.00	0.00	0.00
32.43	10.61	8.10	3.56	70.40	2.00	0.00	0.00	0.00
32.48	10.72	8.19	3.54	70.58	2.00	0.00	0.00	0.00
32.58	10.84	8.28	3.54	70.82	2.00	0.00	0.00	0.00
32.63	10.96	8.37	3.54	71.16	2.00	0.00	0.00	0.00
32.69	11.07	8.46	3.55	71.57	2.00	0.00	0.00	0.00
32.74	11.17	8.54	3.58	72.05	2.00	0.00	0.00	0.00
32.83	11.29	8.62	3.59	72.44	2.00	0.00	0.00	0.00
32.88	11.41	8.72	3.59	72.77	2.00	0.00	0.00	0.00
32.97	11.51	8.79	3.62	73.21	2.00	0.00	0.00	0.00
33.01	11.58	8.84	3.67	73.76	2.00	0.00	0.00	0.00
33.07	11.62	8.86	3.71	74.19	2.00	0.00	0.00	0.00
33.16	11.64	8.86	3.75	74.51	2.00	0.00	0.00	0.00
33.20	11.66	8.87	3.77	74.64	2.00	0.00	0.00	0.00
33.27	11.67	8.86	3.75	74.52	2.00	0.00	0.00	0.00
33.36	11.67	8.84	3.72	74.22	2.00	0.00	0.00	0.00
33.42	11.63	8.79	3.69	73.78	2.00	0.00	0.00	0.00
33.51	11.57	8.71	3.62	73.00	2.00	0.00	0.00	0.00
33.56	11.50	8.64	3.51	71.84	2.00	0.00	0.00	0.00
33.61	11.40	8.54	3.37	70.41	2.00	0.00	0.00	0.00
33.67	11.26	8.40	3.25	68.94	2.00	0.00	0.00	0.00
33.76	11.07	8.22	3.12	67.30	2.00	0.00	0.00	0.00
33.81	10.94	8.09	2.99	65.77	2.00	0.00	0.00	0.00
33.86	10.77	7.93	2.88	64.36	2.00	0.00	0.00	0.00
33.94	10.66	7.82	2.75	62.93	2.00	0.00	0.00	0.00
34.02	10.58	7.73	2.64	61.65	2.00	0.00	0.00	0.00
34.06	10.53	7.68	2.55	60.77	2.00	0.00	0.00	0.00
34.14	10.48	7.62	2.50	60.14	2.00	0.00	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
34.21	10.41	7.55	2.48	59.69	2.00	0.00	0.00	0.00
34.25	10.35	7.49	2.45	59.26	2.00	0.00	0.00	0.00
34.33	10.33	7.45	2.42	58.92	2.00	0.00	0.00	0.00
34.41	10.24	7.36	2.41	58.55	2.00	0.00	0.00	0.00
34.49	10.20	7.31	2.37	58.11	2.00	0.00	0.00	0.00
34.56	10.10	7.21	2.35	57.64	2.00	0.00	0.00	0.00
34.59	9.99	7.11	2.34	57.18	2.00	0.00	0.00	0.00
34.67	9.89	7.01	2.31	56.70	2.00	0.00	0.00	0.00
34.76	9.80	6.91	2.29	56.22	2.00	0.00	0.00	0.00
34.80	9.74	6.85	2.26	55.76	2.00	0.00	0.00	0.00
34.85	9.72	6.83	2.24	55.53	2.00	0.00	0.00	0.00
34.93	9.72	6.81	2.22	55.28	2.00	0.00	0.00	0.00
34.98	9.71	6.79	2.21	55.15	2.00	0.00	0.00	0.00
35.05	9.67	6.75	2.21	55.00	2.00	0.00	0.00	0.00
35.13	9.66	6.72	2.20	54.86	2.00	0.00	0.00	0.00
35.18	9.64	6.70	2.19	54.72	2.00	0.00	0.00	0.00
35.24	9.59	6.65	2.19	54.57	2.00	0.00	0.00	0.00
35.32	9.52	6.57	2.19	54.40	2.00	0.00	0.00	0.00
35.41	9.44	6.49	2.19	54.11	2.00	0.00	0.00	0.00
35.46	9.35	6.41	2.17	53.73	2.00	0.00	0.00	0.00
35.51	9.26	6.32	2.15	53.25	2.00	0.00	0.00	0.00
35.58	9.19	6.25	2.12	52.75	2.00	0.00	0.00	0.00
35.66	9.14	6.19	2.08	52.26	2.00	0.00	0.00	0.00
35.71	9.06	6.12	2.06	51.88	2.00	0.00	0.00	0.00
35.76	8.99	6.05	2.04	51.49	2.00	0.00	0.00	0.00
35.86	8.94	5.99	2.01	51.09	2.00	0.00	0.00	0.00
35.91	8.90	5.95	1.98	50.72	2.00	0.00	0.00	0.00
36.01	8.88	5.92	1.96	50.45	2.00	0.00	0.00	0.00
36.05	8.87	5.91	1.93	50.09	2.00	0.00	0.00	0.00
36.12	8.86	5.89	1.91	49.84	2.00	0.00	0.00	0.00
36.20	8.83	5.85	1.89	49.56	2.00	0.00	0.00	0.00
36.23	8.84	5.85	1.87	49.44	2.00	0.00	0.00	0.00
36.31	8.89	5.89	1.85	49.32	2.00	0.00	0.00	0.00
36.35	8.99	5.96	1.80	49.13	2.00	0.00	0.00	0.00
36.45	9.11	6.05	1.76	48.92	2.00	0.00	0.00	0.00
36.51	9.26	6.17	1.70	48.73	2.00	0.00	0.00	0.00
36.58	9.41	6.28	1.67	48.64	2.00	0.00	0.00	0.00
36.66	9.56	6.40	1.64	48.67	2.00	0.00	0.00	0.00
36.70	9.71	6.52	1.63	48.82	2.00	0.00	0.00	0.00
36.80	9.91	6.68	1.61	49.08	2.00	0.00	0.00	0.00
36.85	10.09	6.82	1.62	49.47	2.00	0.00	0.00	0.00
36.89	10.23	6.93	1.63	49.84	2.00	0.00	0.00	0.00
36.96	10.31	6.98	1.67	50.42	2.00	0.00	0.00	0.00
37.03	10.36	7.01	1.72	50.98	2.00	0.00	0.00	0.00
37.09	10.38	7.02	1.78	51.64	2.00	0.00	0.00	0.00
37.15	10.40	7.03	1.83	52.17	2.00	0.00	0.00	0.00
37.23	10.42	7.03	1.88	52.69	2.00	0.00	0.00	0.00
37.27	10.44	7.04	1.92	53.11	2.00	0.00	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
37.34	10.45	7.04	1.95	53.40	2.00	0.00	0.00	0.00
37.43	10.46	7.03	1.96	53.58	2.00	0.00	0.00	0.00
37.49	10.46	7.02	1.99	53.77	2.00	0.00	0.00	0.00
37.54	10.47	7.02	1.98	53.75	2.00	0.00	0.00	0.00
37.62	10.46	7.00	1.99	53.71	2.00	0.00	0.00	0.00
37.69	10.45	6.98	1.97	53.47	2.00	0.00	0.00	0.00
37.74	10.44	6.96	1.96	53.35	2.00	0.00	0.00	0.00
37.82	10.43	6.94	1.95	53.21	2.00	0.00	0.00	0.00
37.89	10.42	6.92	1.94	53.07	2.00	0.00	0.00	0.00
37.93	10.45	6.94	1.93	53.07	2.00	0.00	0.00	0.00
38.02	10.51	6.98	1.93	53.15	2.00	0.00	0.00	0.00
38.08	10.61	7.05	1.94	53.37	2.00	0.00	0.00	0.00
38.13	10.59	7.02	1.98	53.76	2.00	0.00	0.00	0.00
38.23	10.77	7.15	2.00	54.28	2.00	0.00	0.00	0.00
38.28	11.05	7.37	2.01	54.94	2.00	0.00	0.00	0.00
38.35	11.35	7.61	2.01	55.48	2.00	0.00	0.00	0.00
38.42	11.66	7.85	2.00	56.01	2.00	0.00	0.00	0.00
38.47	11.96	8.08	2.00	56.53	2.00	0.00	0.00	0.00
38.52	12.14	8.22	2.01	57.02	2.00	0.00	0.00	0.00
38.61	12.27	8.31	2.03	57.39	2.00	0.00	0.00	0.00
38.67	12.35	8.36	2.03	57.47	2.00	0.00	0.00	0.00
38.72	12.50	8.48	2.00	57.46	2.00	0.00	0.00	0.00
38.82	12.47	8.43	1.99	57.22	2.00	0.00	0.00	0.00
38.86	12.32	8.30	1.98	56.90	2.00	0.00	0.00	0.00
38.96	12.14	8.14	1.98	56.45	2.00	0.00	0.00	0.00
39.01	11.97	7.99	1.97	56.01	2.00	0.00	0.00	0.00
39.05	11.89	7.92	1.94	55.59	2.00	0.00	0.00	0.00
39.13	12.00	7.99	1.89	55.17	2.00	0.00	0.00	0.00
39.21	12.16	8.11	1.83	54.75	2.00	0.00	0.00	0.00
39.24	12.47	8.35	1.77	54.65	2.00	0.00	0.00	0.00
39.31	12.92	8.70	1.71	54.63	2.00	0.00	0.00	0.00
39.40	13.42	9.09	1.67	54.92	2.00	0.00	0.00	0.00
39.44	13.97	9.54	1.65	55.41	2.00	0.00	0.00	0.00
39.51	14.55	10.01	1.63	56.06	2.00	0.00	0.00	0.00
39.60	15.09	10.43	1.63	56.69	2.00	0.00	0.00	0.00
39.66	15.51	10.77	1.63	57.21	2.00	0.00	0.00	0.00
39.70	15.75	10.96	1.62	57.47	2.00	0.00	0.00	0.00
39.80	15.89	11.05	1.62	57.61	2.00	0.00	0.00	0.00
39.85	15.87	11.02	1.63	57.69	2.00	0.00	0.00	0.00
39.90	15.72	10.88	1.64	57.60	2.00	0.00	0.00	0.00
39.98	15.53	10.71	1.63	57.20	2.00	0.00	0.00	0.00
40.05	15.26	10.47	1.61	56.51	2.00	0.00	0.00	0.00
40.10	14.94	10.20	1.58	55.63	2.00	0.00	0.00	0.00
40.20	14.62	9.92	1.54	54.60	2.00	0.00	0.00	0.00
40.25	14.33	9.68	1.49	53.57	2.00	0.00	0.00	0.00
40.30	14.10	9.49	1.45	52.72	2.00	0.00	0.00	0.00
40.40	13.93	9.33	1.41	51.94	2.00	0.00	0.00	0.00
40.45	13.82	9.23	1.38	51.28	2.00	0.00	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
40.50	13.79	9.20	1.35	50.82	2.00	0.00	0.00	0.00
40.59	13.78	9.17	1.33	50.57	2.00	0.00	0.00	0.00
40.64	13.82	9.20	1.33	50.56	2.00	0.00	0.00	0.00
40.69	13.94	9.29	1.32	50.65	2.00	0.00	0.00	0.00
40.79	14.09	9.39	1.34	51.06	2.00	0.00	0.00	0.00
40.83	14.28	9.53	1.39	52.01	2.00	0.00	0.00	0.00
40.92	14.55	9.73	1.44	53.03	2.00	0.00	0.00	0.00
40.98	14.84	9.94	1.50	54.14	2.00	0.00	0.00	0.00
41.03	15.10	10.13	1.55	55.21	2.00	0.00	0.00	0.00
41.08	15.30	10.28	1.61	56.17	2.00	0.00	0.00	0.00
41.18	15.48	10.40	1.64	56.90	2.00	0.00	0.00	0.00
41.22	15.62	10.50	1.69	57.63	2.00	0.00	0.00	0.00
41.31	15.72	10.55	1.73	58.34	2.00	0.00	0.00	0.00
41.36	15.79	10.59	1.77	58.87	2.00	0.00	0.00	0.00
41.42	15.83	10.61	1.78	59.03	2.00	0.00	0.00	0.00
41.50	15.79	10.56	1.79	59.10	2.00	0.00	0.00	0.00
41.54	15.73	10.50	1.80	59.18	2.00	0.00	0.00	0.00
41.61	15.68	10.45	1.80	59.06	2.00	0.00	0.00	0.00
41.70	15.63	10.39	1.81	59.03	2.00	0.00	0.00	0.00
41.75	15.58	10.33	1.82	59.10	2.00	0.00	0.00	0.00
41.80	15.56	10.31	1.83	59.18	2.00	0.00	0.00	0.00
41.87	15.55	10.28	1.84	59.24	2.00	0.00	0.00	0.00
41.95	15.57	10.28	1.84	59.30	2.00	0.00	0.00	0.00
42.01	15.60	10.29	1.85	59.45	2.00	0.00	0.00	0.00
42.10	15.68	10.33	1.87	59.77	2.00	0.00	0.00	0.00
42.14	15.78	10.39	1.89	60.19	2.00	0.00	0.00	0.00
42.21	15.87	10.44	1.94	60.86	2.00	0.00	0.00	0.00
42.27	15.96	10.50	1.97	61.35	2.00	0.00	0.00	0.00
42.34	16.05	10.55	1.99	61.74	2.00	0.00	0.00	0.00
42.39	16.11	10.58	2.02	62.14	2.00	0.00	0.00	0.00
42.49	16.16	10.59	2.05	62.52	2.00	0.00	0.00	0.00
42.54	16.18	10.59	2.10	63.15	2.00	0.00	0.00	0.00
42.59	16.19	10.58	2.16	63.79	2.00	0.00	0.00	0.00
42.69	16.17	10.54	2.20	64.22	2.00	0.00	0.00	0.00
42.74	16.12	10.49	2.21	64.28	2.00	0.00	0.00	0.00
42.80	16.08	10.44	2.21	64.17	2.00	0.00	0.00	0.00
42.89	16.02	10.38	2.21	64.05	2.00	0.00	0.00	0.00
42.93	15.90	10.27	2.22	63.95	2.00	0.00	0.00	0.00
42.99	15.79	10.18	2.22	63.77	2.00	0.00	0.00	0.00
43.08	15.64	10.04	2.22	63.41	2.00	0.00	0.00	0.00
43.11	15.45	9.89	2.19	62.83	2.00	0.00	0.00	0.00
43.18	15.16	9.66	2.16	61.98	2.00	0.00	0.00	0.00
43.28	14.77	9.35	2.13	60.93	2.00	0.00	0.00	0.00
43.35	14.40	9.05	2.11	60.05	2.00	0.00	0.00	0.00
43.38	13.95	8.71	2.09	59.07	2.00	0.00	0.00	0.00
43.45	13.50	8.36	2.05	57.87	2.00	0.00	0.00	0.00
43.53	13.09	8.04	2.00	56.63	2.00	0.00	0.00	0.00
43.58	12.64	7.70	1.96	55.36	2.00	0.00	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
43.64	12.18	7.34	1.93	54.23	2.00	0.00	0.00	0.00
43.73	11.74	7.00	1.90	53.06	2.00	0.00	0.00	0.00
43.78	11.44	6.77	1.86	52.10	2.00	0.00	0.00	0.00
43.84	11.29	6.65	1.84	51.55	2.00	0.00	0.00	0.00
43.92	11.24	6.61	1.82	51.21	2.00	0.00	0.00	0.00
43.98	11.42	6.73	1.77	51.04	2.00	0.00	0.00	0.00
44.07	11.69	6.92	1.77	51.48	2.00	0.00	0.00	0.00
44.12	12.61	7.59	1.75	52.80	2.00	0.00	0.00	0.00
44.17	13.58	8.30	1.73	54.21	2.00	0.00	0.00	0.00
44.23	15.30	9.59	1.66	55.83	2.00	0.00	0.00	0.00
44.29	16.73	10.69	1.65	57.49	2.00	0.00	0.00	0.00
44.39	17.65	11.39	1.60	57.91	2.00	0.00	0.00	0.00
44.43	18.07	11.71	1.57	58.02	2.00	0.00	0.00	0.00
44.49	18.39	11.95	1.54	57.87	2.00	0.00	0.00	0.00
44.57	18.26	11.83	1.53	57.59	2.00	0.00	0.00	0.00
44.67	17.84	11.49	1.51	56.71	2.00	0.00	0.00	0.00
44.73	16.78	10.65	1.48	55.13	2.00	0.00	0.00	0.00
44.78	15.68	9.81	1.45	53.28	2.00	0.00	0.00	0.00
44.82	13.89	8.43	1.44	50.86	2.00	0.00	0.00	0.00
44.93	12.37	7.28	1.37	47.87	2.00	0.00	0.00	0.00
44.97	11.32	6.51	1.36	46.15	2.00	0.00	0.00	0.00
45.02	10.69	6.04	1.33	44.73	2.00	0.00	0.00	0.00
45.09	10.06	5.58	1.31	43.44	2.00	0.00	0.00	0.00
45.17	9.74	5.34	1.28	42.46	2.00	0.00	0.00	0.00
45.22	9.67	5.28	1.25	42.05	2.00	0.00	0.00	0.00
45.30	9.64	5.25	1.22	41.64	2.00	0.00	0.00	0.00
45.37	9.63	5.24	1.20	41.37	2.00	0.00	0.00	0.00
45.42	9.61	5.22	1.19	41.23	2.00	0.00	0.00	0.00
45.50	9.60	5.20	1.18	41.08	2.00	0.00	0.00	0.00
45.57	9.58	5.18	1.18	41.05	2.00	0.00	0.00	0.00
45.61	9.57	5.17	1.17	40.91	2.00	0.00	0.00	0.00
45.72	9.57	5.15	1.16	40.75	2.00	0.00	0.00	0.00
45.77	9.54	5.12	1.17	40.73	2.00	0.00	0.00	0.00
45.80	9.61	5.17	1.18	41.00	2.00	0.00	0.00	0.00
45.88	9.73	5.25	1.21	41.54	2.00	0.00	0.00	0.00
45.96	9.95	5.40	1.24	42.23	2.00	0.00	0.00	0.00
46.01	10.26	5.62	1.26	42.93	2.00	0.00	0.00	0.00
46.11	10.60	5.85	1.27	43.61	2.00	0.00	0.00	0.00
46.14	10.90	6.06	1.27	44.16	2.00	0.00	0.00	0.00
46.21	11.13	6.22	1.29	44.66	2.00	0.00	0.00	0.00
46.26	11.36	6.38	1.31	45.27	2.00	0.00	0.00	0.00
46.35	11.59	6.53	1.33	45.86	2.00	0.00	0.00	0.00
46.41	11.79	6.67	1.32	45.99	2.00	0.00	0.00	0.00
46.49	11.97	6.79	1.29	45.89	2.00	0.00	0.00	0.00
46.55	12.02	6.82	1.27	45.65	2.00	0.00	0.00	0.00
46.59	12.02	6.81	1.27	45.64	2.00	0.00	0.00	0.00
46.68	12.03	6.81	1.31	46.18	2.00	0.00	0.00	0.00
46.74	12.21	6.93	1.36	46.96	2.00	0.00	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
46.80	12.54	7.15	1.36	47.42	2.00	0.00	0.00	0.00
46.85	12.84	7.36	1.38	48.18	2.00	0.00	0.00	0.00
46.93	13.10	7.53	1.44	49.23	2.00	0.00	0.00	0.00
47.00	13.25	7.62	1.55	50.73	2.00	0.00	0.00	0.00
47.10	13.37	7.69	1.67	52.26	2.00	0.00	0.00	0.00
47.15	13.58	7.83	1.74	53.39	2.00	0.00	0.00	0.00
47.20	13.74	7.94	1.77	53.94	2.00	0.00	0.00	0.00
47.25	13.87	8.02	1.73	53.66	2.00	0.00	0.00	0.00
47.31	13.67	7.87	1.69	52.88	2.00	0.00	0.00	0.00
47.40	13.24	7.56	1.69	52.16	2.00	0.00	0.00	0.00
47.44	12.78	7.23	1.64	50.94	2.00	0.00	0.00	0.00
47.52	12.43	6.97	1.54	49.18	2.00	0.00	0.00	0.00
47.58	12.04	6.69	1.40	47.03	2.00	0.00	0.00	0.00
47.67	11.69	6.43	1.25	44.74	2.00	0.00	0.00	0.00
47.73	11.28	6.14	1.14	42.78	2.00	0.00	0.00	0.00
47.78	11.00	5.93	1.05	41.22	2.00	0.00	0.00	0.00
47.86	10.70	5.71	1.01	40.24	2.00	0.00	0.00	0.00
47.92	10.61	5.64	1.00	39.94	2.00	0.00	0.00	0.00
47.98	10.65	5.66	1.02	40.33	2.00	0.00	0.00	0.00
48.05	10.75	5.72	1.08	41.11	2.00	0.00	0.00	0.00
48.12	10.88	5.81	1.14	42.11	2.00	0.00	0.00	0.00
48.19	11.29	6.09	1.23	43.74	2.00	0.00	0.00	0.00
48.27	11.81	6.44	1.29	45.19	2.00	0.00	0.00	0.00
48.32	12.54	6.94	1.31	46.49	2.00	0.00	0.00	0.00
48.39	13.52	7.61	1.27	47.30	2.00	0.00	0.00	0.00
48.47	14.52	8.34	1.23	48.00	2.00	0.00	0.00	0.00
48.52	15.76	9.26	1.16	48.43	2.00	0.00	0.00	0.00
48.57	17.08	10.24	1.08	48.45	2.00	0.00	0.00	0.00
48.67	18.11	11.01	1.01	48.22	2.00	0.00	0.00	0.00
48.71	18.94	11.63	0.97	48.22	2.00	0.00	0.00	0.00
48.76	19.21	11.82	0.98	48.49	2.00	0.00	0.00	0.00
48.82	19.64	12.12	1.00	49.25	2.00	0.00	0.00	0.00
48.93	19.63	12.06	1.09	50.82	2.00	0.00	0.00	0.00
48.97	19.53	11.93	1.26	53.58	2.00	0.00	0.00	0.00
49.05	19.43	11.79	1.46	56.59	2.00	0.00	0.00	0.00
49.08	19.57	11.84	1.69	60.05	2.00	0.00	0.00	0.00
49.16	19.78	11.92	1.96	63.92	2.00	0.00	0.00	0.00
49.25	20.34	12.26	2.24	68.19	2.00	0.00	0.00	0.00
49.29	21.10	12.75	2.54	72.88	2.00	0.00	0.00	0.00
49.36	22.50	13.70	2.82	78.16	2.00	1.38	0.00	0.00
49.43	24.24	14.90	3.02	83.10	2.00	4.17	0.00	0.00
49.48	26.47	16.49	3.10	87.16	2.00	7.50	0.00	0.00
49.55	28.64	18.03	3.11	90.13	2.00	10.46	0.00	0.00
49.64	30.67	19.47	3.10	92.56	2.00	12.99	0.00	0.00
49.70	32.09	20.47	3.14	94.76	2.00	14.65	0.00	0.00
49.75	33.34	21.35	3.17	96.70	2.00	16.04	0.00	0.00
49.81	34.56	22.21	3.16	98.00	2.00	17.34	0.00	0.00
49.90	35.75	23.04	3.17	99.36	2.00	18.55	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
49.94	36.62	23.66	3.15	100.04	2.00	19.42	0.00	0.00
50.01	36.53	23.55	3.18	100.43	2.00	19.27	0.00	0.00
50.08	36.09	23.18	3.25	100.85	2.00	18.75	0.00	0.00
50.15	35.37	22.60	3.34	101.32	2.00	17.90	0.00	0.00
50.24	35.40	22.57	3.36	101.61	2.00	17.87	0.00	0.00
50.30	35.75	22.81	3.31	101.22	2.00	18.22	0.00	0.00
50.34	35.97	22.97	3.23	100.26	2.00	18.45	0.00	0.00
50.41	36.05	23.02	3.16	99.21	2.00	18.52	0.00	0.00
50.47	35.82	22.86	3.02	96.84	2.00	18.29	0.00	0.00
50.54	35.56	22.69	2.86	93.92	2.00	18.04	0.00	0.00
50.62	35.51	22.67	2.68	90.88	2.00	18.01	0.00	0.00
50.66	35.50	22.71	2.48	87.61	2.00	18.07	0.00	0.00
50.77	35.54	22.76	2.29	84.35	2.00	18.14	0.00	0.00
50.81	34.91	22.33	2.15	81.27	2.00	17.52	0.00	0.00
50.87	34.13	21.78	2.04	78.68	2.00	16.70	0.00	0.00
50.92	33.49	21.33	1.95	76.51	2.00	16.00	0.00	0.00
51.01	33.00	20.97	1.86	74.48	2.00	15.45	0.00	0.00
51.07	32.79	20.82	1.80	73.21	2.00	15.21	0.00	0.00
51.15	32.62	20.69	1.75	72.16	2.00	15.00	0.00	0.00
51.21	32.54	20.62	1.72	71.53	2.00	14.89	0.00	0.00
51.26	32.61	20.65	1.71	71.37	2.00	14.94	0.00	0.00
51.32	32.80	20.78	1.71	71.50	2.00	15.13	0.00	0.00
51.39	33.10	20.97	1.72	71.79	2.00	15.43	0.00	0.00
51.46	33.33	21.10	1.73	72.21	2.00	15.65	0.00	0.00
51.53	33.60	21.26	1.75	72.69	2.00	15.90	0.00	0.00
51.61	33.87	21.42	1.76	73.16	2.00	16.14	0.00	0.00
51.65	34.13	21.59	1.77	73.51	2.00	16.40	0.00	0.00
51.72	34.43	21.78	1.77	73.79	2.00	16.69	0.00	0.00
51.81	34.80	22.01	1.77	73.92	2.00	17.04	0.00	0.00
51.84	35.11	22.23	1.76	74.03	2.00	17.36	0.00	0.00
51.92	35.39	22.40	1.75	74.01	2.00	17.62	0.00	0.00
52.01	35.65	22.56	1.74	73.92	2.00	17.85	0.00	0.00
52.06	35.90	22.73	1.72	73.80	2.00	18.10	0.00	0.00
52.11	36.16	22.91	1.71	73.61	2.00	18.36	0.00	0.00
52.19	36.34	23.01	1.69	73.49	2.00	18.51	0.00	0.00
52.25	36.53	23.13	1.69	73.49	2.00	18.68	0.00	0.00
52.30	36.76	23.27	1.69	73.61	2.00	18.88	0.00	0.00
52.38	37.02	23.43	1.69	73.88	2.00	19.10	0.00	0.00
52.45	37.28	23.58	1.70	74.22	2.00	19.31	0.00	0.00
52.49	37.54	23.75	1.72	74.68	2.00	19.55	0.00	0.00
52.57	37.71	23.83	1.74	75.13	2.00	19.66	0.00	0.00
52.65	37.81	23.86	1.76	75.60	2.00	19.70	0.00	0.00
52.70	37.59	23.66	1.79	76.02	2.00	19.42	0.00	0.00
52.79	37.34	23.43	1.81	76.26	2.00	19.10	0.00	0.00
52.85	36.98	23.14	1.83	76.30	2.00	18.69	0.00	0.00
52.89	36.45	22.74	1.83	75.93	2.00	18.12	0.00	0.00
52.99	35.72	22.19	1.82	75.10	2.00	17.30	0.00	0.00
53.04	34.87	21.58	1.79	73.90	2.00	16.38	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
53.08	33.84	20.84	1.76	72.53	2.00	15.23	0.00	0.00
53.17	32.85	20.12	1.72	70.98	2.00	14.08	0.00	0.00
53.24	31.89	19.44	1.67	69.26	2.00	12.94	0.00	0.00
53.33	31.20	18.95	1.60	67.56	2.00	12.10	0.00	0.00
53.39	30.55	18.50	1.54	65.95	2.00	11.30	0.00	0.00
53.42	29.84	18.00	1.49	64.53	2.00	10.41	0.00	0.00
53.49	29.22	17.56	1.46	63.51	2.00	9.58	0.00	0.00
53.58	28.69	17.16	1.45	62.88	2.00	8.83	0.00	0.00
53.63	28.25	16.83	1.47	62.80	2.00	8.19	0.00	0.00
53.68	28.03	16.65	1.49	63.10	2.00	7.82	0.00	0.00
53.77	27.89	16.51	1.54	63.72	2.00	7.54	0.00	0.00
53.83	27.75	16.37	1.60	64.62	2.00	7.26	0.00	0.00
53.88	27.65	16.26	1.67	65.69	2.00	7.04	0.00	0.00
53.97	27.58	16.15	1.74	66.86	2.00	6.82	0.00	0.00
54.03	27.65	16.16	1.82	68.06	2.00	6.84	0.00	0.00
54.08	27.92	16.32	1.86	69.02	2.00	7.17	0.00	0.00
54.18	28.22	16.49	1.89	69.69	2.00	7.50	0.00	0.00
54.22	28.55	16.70	1.91	70.24	2.00	7.92	0.00	0.00
54.27	28.86	16.89	1.91	70.60	2.00	8.31	0.00	0.00
54.38	29.20	17.09	1.91	70.87	2.00	8.69	0.00	0.00
54.42	29.60	17.33	1.99	72.48	2.00	9.14	0.00	0.00
54.47	30.18	17.68	2.09	74.54	2.00	9.81	0.00	0.00
54.57	30.74	17.99	2.21	76.80	2.00	10.38	0.00	0.00
54.61	32.49	19.15	2.28	79.62	2.00	12.45	0.00	0.00
54.68	34.47	20.44	2.42	83.61	2.00	14.60	0.00	0.00
54.75	36.91	22.04	2.56	88.19	2.00	17.08	0.00	0.00
54.79	39.58	23.80	2.70	92.93	2.00	19.62	0.00	0.00
54.86	42.54	25.75	2.84	97.96	2.00	22.22	0.00	0.00
54.95	45.89	27.95	2.99	103.54	2.00	24.92	0.00	0.00
55.01	49.55	30.41	3.06	108.09	2.00	27.71	0.00	0.00
55.06	53.33	32.97	3.11	112.42	2.00	30.37	0.00	0.00
55.12	57.74	35.97	3.14	116.75	2.00	33.25	0.00	0.00
55.21	61.55	38.53	3.17	120.57	2.00	35.52	0.00	0.00
55.25	64.95	40.86	3.18	123.48	2.00	37.46	0.00	0.00
55.32	67.67	42.71	3.18	125.59	2.00	38.92	0.00	0.00
55.40	69.32	43.79	3.18	126.89	2.00	39.75	0.00	0.00
55.50	69.77	44.02	3.18	127.13	2.00	39.92	0.00	0.00
55.52	68.79	43.32	3.17	126.29	2.00	39.39	0.00	0.00
55.60	66.93	41.97	3.19	124.98	2.00	38.34	0.00	0.00
55.67	64.58	40.27	3.20	123.13	2.00	36.98	0.00	0.00
55.72	61.65	38.22	3.19	120.61	2.00	35.25	0.00	0.00
55.79	58.07	35.70	3.20	117.52	2.00	33.01	0.00	0.00
55.86	54.37	33.13	3.19	114.05	2.00	30.53	0.00	0.00
55.95	50.44	30.41	3.17	110.07	2.00	27.70	0.00	0.00
56.00	47.04	28.08	3.15	106.54	2.00	25.08	0.00	0.00
56.05	44.22	26.16	3.13	103.47	2.00	22.74	0.00	0.00
56.11	42.29	24.85	3.07	100.71	2.00	21.05	0.00	0.00
56.19	40.82	23.87	2.99	97.89	2.00	19.71	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
56.24	39.25	22.82	2.90	94.95	2.00	18.24	0.00	0.00
56.34	37.48	21.62	2.83	92.00	2.00	16.45	0.00	0.00
56.37	35.77	20.49	2.78	89.45	2.00	14.67	0.00	0.00
56.43	34.28	19.49	2.72	87.00	2.00	13.03	0.00	0.00
56.54	33.15	18.72	2.67	85.17	2.00	11.70	0.00	0.00
56.59	32.27	18.14	2.59	83.05	2.00	10.66	0.00	0.00
56.64	31.50	17.66	2.47	80.45	2.00	9.77	0.00	0.00
56.73	30.75	17.17	2.35	77.84	2.00	8.85	0.00	0.00
56.79	29.94	16.66	2.23	75.39	2.00	7.84	0.00	0.00
56.84	29.45	16.36	2.11	73.04	2.00	7.26	0.00	0.00
56.93	29.13	16.17	1.98	70.74	2.00	6.87	0.00	0.00
56.96	28.72	15.94	1.85	68.35	2.00	6.38	0.00	0.00
57.03	28.18	15.60	1.74	66.11	2.00	5.69	0.00	0.00
57.13	27.59	15.23	1.64	64.05	2.00	4.88	0.00	0.00
57.16	27.05	14.88	1.57	62.33	2.00	4.13	0.00	0.00
57.23	26.67	14.63	1.52	61.35	2.00	3.56	0.00	0.00
57.29	26.39	14.44	1.50	60.68	2.00	3.13	0.00	0.00
57.38	26.31	14.38	1.47	60.04	2.00	3.00	0.00	0.00
57.42	26.37	14.42	1.45	59.82	2.00	3.08	0.00	0.00
57.49	26.54	14.51	1.46	60.12	2.00	3.29	0.00	0.00
57.57	26.67	14.57	1.49	60.64	2.00	3.42	0.00	0.00
57.62	26.59	14.49	1.53	61.18	2.00	3.23	0.00	0.00
57.68	26.52	14.41	1.56	61.64	2.00	3.06	0.00	0.00
57.77	26.34	14.25	1.60	62.10	2.00	2.70	0.00	0.00
57.85	26.02	14.01	1.65	62.58	2.00	2.12	0.00	0.00
57.92	25.63	13.72	1.67	62.60	2.00	1.44	0.00	0.00
57.97	25.13	13.37	1.69	62.43	2.00	0.60	0.00	0.00
58.02	24.52	12.97	1.69	61.87	2.00	0.00	0.00	0.00
58.07	23.81	12.50	1.67	60.83	2.00	0.00	0.00	0.00
58.16	23.20	12.09	1.64	59.82	2.00	0.00	0.00	0.00
58.23	22.77	11.81	1.62	59.00	2.00	0.00	0.00	0.00
58.31	22.40	11.56	1.59	58.29	2.00	0.00	0.00	0.00
58.37	22.16	11.40	1.56	57.57	2.00	0.00	0.00	0.00
58.42	22.06	11.33	1.53	57.06	2.00	0.00	0.00	0.00
58.50	22.07	11.33	1.52	56.90	2.00	0.00	0.00	0.00
58.57	22.16	11.37	1.53	57.09	2.00	0.00	0.00	0.00
58.61	22.31	11.45	1.57	57.78	2.00	0.00	0.00	0.00
58.68	22.68	11.65	1.66	59.42	2.00	0.00	0.00	0.00
58.76	23.31	11.99	1.80	61.90	2.00	0.00	0.00	0.00
58.80	24.38	12.62	1.94	64.88	2.00	0.00	0.00	0.00
58.87	25.76	13.44	2.10	68.50	2.00	0.76	0.00	0.00
58.95	26.94	14.12	2.30	72.34	2.00	2.38	0.00	0.00
59.01	29.48	15.68	2.46	77.17	2.00	5.84	0.00	0.00
59.06	32.30	17.44	2.56	81.48	2.00	9.35	0.00	0.00
59.16	35.49	19.45	2.59	84.96	2.00	12.95	0.00	0.00
59.19	38.57	21.43	2.59	87.83	2.00	16.16	0.00	0.00
59.29	40.88	22.89	2.60	90.03	2.00	18.33	0.00	0.00
59.33	42.63	24.01	2.60	91.61	2.00	19.91	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
59.39	43.82	24.76	2.60	92.47	2.00	20.93	0.00	0.00
59.47	44.76	25.38	2.54	92.27	2.00	21.74	0.00	0.00
59.54	45.65	25.98	2.44	91.18	2.00	22.52	0.00	0.00
59.58	44.87	25.51	2.35	88.87	2.00	21.91	0.00	0.00
59.65	43.24	24.45	2.28	86.35	2.00	20.51	0.00	0.00
59.73	40.72	22.76	2.30	84.64	2.00	18.15	0.00	0.00
59.81	38.24	21.07	2.38	83.87	2.00	15.60	0.00	0.00
59.85	36.61	20.12	2.14	78.60	2.00	14.08	0.00	0.00
59.92	35.57	19.57	1.85	72.90	2.00	13.16	0.00	0.00
59.99	35.26	19.53	1.54	67.02	2.00	13.09	0.00	0.00
60.08	35.07	19.57	1.25	61.24	2.00	13.17	0.00	0.00
60.13	35.05	19.76	0.99	55.82	2.00	13.49	0.00	0.00
60.18	35.20	20.10	0.74	50.35	2.00	14.04	0.00	0.00
60.27	35.91	20.86	0.51	44.99	2.00	15.27	0.00	0.00
60.33	37.42	22.37	0.27	22.37	2.00	17.58	0.00	0.00
60.38	38.51	N/A	0.00	-1.00	2.00	0.00	0.00	0.00
60.47	38.91	N/A	0.00	-1.00	2.00	0.00	0.00	0.00

Total estimated displacement: 0.00

Abbreviations

q_t: Total cone resistance
Q_{tn}: Adjusted cone resistance to an effective overburden stress of 1 atm
R_f: Friction ration
$Q_{tn,cs}$: Adjusted and corrected cone resistance due to fines
FS: Calculated factor of safety against liquefaction
D_r: Calculated relative density
$Gamma_{max}$: Calculated maximum cyclic shear strain
Lat. disp.: Lateral displacement

:: Strength loss calculation (Robertson (2009) ::

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
0.10	66.47	106.79	1.00	106.79	1.53	N/A	N/A
0.16	86.45	138.87	1.00	138.87	1.43	N/A	N/A
0.23	106.22	170.64	1.00	170.64	1.36	N/A	N/A
0.30	105.13	168.88	1.00	168.88	1.43	N/A	N/A
0.34	103.27	165.88	1.00	165.88	1.49	N/A	N/A
0.40	111.18	178.59	1.00	178.59	1.51	N/A	N/A
0.50	114.67	184.19	1.00	184.19	1.56	N/A	N/A
0.54	109.80	176.35	1.00	176.09	1.64	N/A	N/A
0.60	102.06	163.92	1.06	174.37	1.74	N/A	N/A
0.68	93.31	149.86	1.13	170.05	1.84	N/A	N/A
0.73	85.63	137.51	1.21	166.98	1.93	N/A	N/A
0.80	77.42	124.31	1.31	162.91	2.01	N/A	N/A
0.87	68.51	109.99	1.45	159.28	2.10	N/A	N/A
0.95	59.06	94.79	1.65	156.57	2.19	N/A	N/A
0.99	51.06	81.93	1.89	154.68	2.28	N/A	N/A
1.09	43.83	70.32	2.17	152.86	2.36	N/A	N/A
1.14	37.48	60.11	2.52	151.36	2.45	N/A	N/A
1.22	33.30	53.38	2.79	148.94	2.50	N/A	N/A
1.29	30.41	48.74	2.99	145.59	2.54	N/A	N/A
1.33	27.94	44.77	3.17	141.81	2.57	N/A	N/A
1.39	26.55	42.53	3.25	138.36	2.59	N/A	N/A
1.48	25.16	40.28	3.36	135.34	2.61	N/A	N/A
1.52	23.90	38.26	3.47	132.83	2.62	N/A	N/A
1.59	22.67	36.27	3.59	130.17	2.64	N/A	N/A
1.66	21.45	34.31	3.71	127.25	2.66	N/A	N/A
1.73	20.34	32.51	3.82	124.27	2.68	N/A	N/A
1.78	19.30	30.85	3.93	121.23	2.69	N/A	N/A
1.84	18.28	29.19	4.05	118.09	2.71	N/A	N/A
1.93	17.32	27.65	4.16	115.10	2.72	N/A	N/A
1.98	16.62	26.51	4.23	112.12	2.73	N/A	N/A
2.04	16.02	25.54	4.27	109.19	2.74	N/A	N/A
2.13	15.55	24.78	4.28	106.17	2.74	N/A	N/A
2.18	15.21	24.24	4.28	103.74	2.74	N/A	N/A
2.25	14.92	23.76	4.27	101.54	2.74	N/A	N/A
2.30	14.59	23.22	4.28	99.44	2.74	N/A	N/A
2.38	14.19	22.57	4.32	97.46	2.74	N/A	N/A
2.44	13.77	21.89	4.36	95.56	2.75	N/A	N/A
2.51	13.43	21.34	4.39	93.67	2.75	N/A	N/A
2.57	12.91	20.51	4.49	91.99	2.76	N/A	N/A
2.66	12.46	19.76	4.56	90.22	2.77	N/A	N/A
2.72	11.95	18.94	4.69	88.81	2.79	N/A	N/A
2.76	11.46	18.15	4.83	87.61	2.80	N/A	N/A
2.84	11.04	17.48	4.95	86.59	2.82	N/A	N/A
2.92	10.76	17.02	5.04	85.86	2.83	N/A	N/A
2.95	10.61	16.78	5.11	85.81	2.84	N/A	N/A
3.07	10.55	16.67	5.16	86.11	2.84	N/A	N/A
3.11	10.53	16.64	5.21	86.64	2.85	N/A	N/A
3.16	10.59	16.73	5.23	87.50	2.85	N/A	N/A

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
3.26	10.65	16.82	5.27	88.61	2.85	N/A	N/A
3.30	10.69	16.88	5.32	89.72	2.86	N/A	N/A
3.36	10.69	16.87	5.38	90.83	2.87	N/A	N/A
3.44	10.63	16.77	5.48	91.84	2.88	N/A	N/A
3.50	10.53	16.60	5.58	92.62	2.89	N/A	N/A
3.56	10.42	16.42	5.66	92.91	2.90	N/A	N/A
3.62	10.33	16.27	5.70	92.71	2.90	N/A	N/A
3.71	10.23	16.10	5.74	92.40	2.90	N/A	N/A
3.76	10.16	15.98	5.76	92.07	2.91	N/A	N/A
3.82	10.09	15.87	5.80	91.98	2.91	N/A	N/A
3.90	10.01	15.73	5.84	91.90	2.91	N/A	N/A
3.95	9.95	15.63	5.87	91.68	2.92	N/A	N/A
4.00	9.91	15.56	5.92	92.18	2.92	N/A	N/A
4.09	9.91	15.55	5.96	92.78	2.93	N/A	N/A
4.16	9.90	15.52	6.01	93.26	2.93	N/A	N/A
4.20	9.88	15.49	6.07	93.97	2.94	N/A	N/A
4.27	9.84	15.42	6.13	94.57	2.94	N/A	N/A
4.34	9.78	15.32	6.20	94.94	2.95	N/A	N/A
4.44	9.81	15.36	6.19	95.05	2.95	N/A	N/A
4.48	9.87	15.45	6.17	95.38	2.95	N/A	N/A
4.58	9.94	15.55	6.16	95.82	2.95	N/A	N/A
4.63	10.01	15.66	6.12	95.80	2.94	N/A	N/A
4.68	10.05	15.72	6.09	95.79	2.94	N/A	N/A
4.73	10.11	15.81	6.07	96.00	2.94	N/A	N/A
4.80	10.09	15.77	6.10	96.24	2.94	N/A	N/A
4.86	10.05	15.71	6.13	96.36	2.94	N/A	N/A
4.93	9.96	15.56	6.18	96.16	2.95	N/A	N/A
5.00	9.76	15.23	6.26	95.42	2.96	N/A	N/A
5.07	9.55	14.89	6.32	94.09	2.96	N/A	N/A
5.12	9.29	14.45	6.40	92.51	2.97	N/A	N/A
5.20	8.98	13.95	6.50	90.66	2.98	N/A	N/A
5.27	8.60	13.34	6.64	88.54	2.99	N/A	N/A
5.33	8.15	12.61	6.82	86.10	3.01	N/A	N/A
5.41	7.76	11.98	6.96	83.44	3.02	N/A	N/A
5.45	7.40	11.40	7.09	80.81	3.03	N/A	N/A
5.52	7.10	10.90	7.19	78.36	3.04	N/A	N/A
5.60	6.84	10.48	7.30	76.53	3.05	N/A	N/A
5.67	6.62	10.12	7.43	75.22	3.06	N/A	N/A
5.71	6.54	9.99	7.47	74.64	3.06	N/A	N/A
5.80	6.55	10.00	7.43	74.36	3.06	N/A	N/A
5.85	6.66	10.17	7.33	74.53	3.05	N/A	N/A
5.91	6.84	10.45	7.20	75.27	3.04	N/A	N/A
6.01	7.03	10.75	7.10	76.28	3.03	N/A	N/A
6.06	7.21	11.05	7.01	77.41	3.02	N/A	N/A
6.11	7.45	11.42	6.87	78.52	3.01	N/A	N/A
6.18	7.68	11.78	6.73	79.34	3.00	N/A	N/A
6.26	7.96	12.22	6.53	79.86	2.98	N/A	N/A
6.30	8.20	12.60	6.33	79.82	2.96	N/A	N/A

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
6.37	8.40	12.92	6.17	79.64	2.95	N/A	N/A
6.45	8.58	13.22	6.00	79.31	2.93	N/A	N/A
6.51	8.76	13.50	5.84	78.83	2.91	N/A	N/A
6.60	8.92	13.75	5.71	78.49	2.90	N/A	N/A
6.64	9.07	13.99	5.60	78.29	2.89	N/A	N/A
6.70	9.17	14.14	5.54	78.39	2.88	N/A	N/A
6.80	9.25	14.26	5.52	78.78	2.88	N/A	N/A
6.83	9.26	14.27	5.56	79.34	2.89	N/A	N/A
6.90	9.24	14.24	5.62	80.05	2.89	N/A	N/A
6.98	9.23	14.21	5.68	80.74	2.90	N/A	N/A
7.04	9.25	14.23	5.72	81.42	2.90	N/A	N/A
7.09	9.31	14.32	5.73	82.07	2.90	N/A	N/A
7.16	9.38	14.43	5.73	82.72	2.90	N/A	N/A
7.24	9.45	14.53	5.75	83.49	2.90	N/A	N/A
7.30	9.50	14.61	5.75	84.00	2.91	N/A	N/A
7.39	9.54	14.67	5.73	83.98	2.90	N/A	N/A
7.43	9.55	14.68	5.74	84.24	2.90	N/A	N/A
7.50	9.53	14.65	5.83	85.43	2.91	N/A	N/A
7.59	9.48	14.56	5.95	86.60	2.93	N/A	N/A
7.63	9.40	14.43	6.08	87.77	2.94	N/A	N/A
7.70	9.18	14.07	6.30	88.70	2.96	N/A	N/A
7.78	8.96	13.71	6.53	89.48	2.98	N/A	N/A
7.83	8.81	13.45	6.68	89.86	2.99	N/A	N/A
7.89	8.62	13.14	6.88	90.36	3.01	N/A	N/A
7.95	8.42	12.82	7.11	91.06	3.03	N/A	N/A
8.02	8.21	12.47	7.32	91.27	3.05	N/A	N/A
8.11	7.99	12.12	7.46	90.42	3.06	N/A	N/A
8.16	7.78	11.78	7.58	89.31	3.07	N/A	N/A
8.21	7.58	11.45	7.69	88.06	3.08	N/A	N/A
8.30	7.48	11.29	7.69	86.84	3.08	N/A	N/A
8.36	7.40	11.16	7.67	85.60	3.08	N/A	N/A
8.41	7.34	11.04	7.64	84.34	3.08	N/A	N/A
8.47	7.34	11.04	7.53	83.09	3.07	N/A	N/A
8.56	7.38	11.09	7.40	82.08	3.06	N/A	N/A
8.61	7.46	11.22	7.27	81.58	3.05	N/A	N/A
8.70	7.58	11.40	7.13	81.34	3.03	N/A	N/A
8.75	7.71	11.61	7.02	81.48	3.02	N/A	N/A
8.81	7.85	11.83	6.91	81.75	3.01	N/A	N/A
8.90	8.00	12.06	6.80	82.01	3.01	N/A	N/A
8.94	8.12	12.26	6.71	82.26	3.00	N/A	N/A
9.01	8.19	12.37	6.67	82.52	2.99	1.11	1.11
9.09	8.22	12.41	6.67	82.78	2.99	1.10	1.10
9.13	8.21	12.39	6.68	82.78	2.99	1.10	1.10
9.20	8.17	12.32	6.69	82.39	2.99	1.08	1.08
9.27	8.09	12.17	6.73	81.87	3.00	1.06	1.06
9.35	7.98	11.99	6.76	81.08	3.00	1.04	1.04
9.39	7.84	11.76	6.80	80.02	3.01	1.01	1.01
9.45	7.69	11.52	6.85	78.94	3.01	0.99	0.99

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
9.54	7.54	11.27	6.89	77.70	3.01	0.96	0.96
9.59	7.39	11.03	6.94	76.58	3.02	0.93	0.93
9.65	7.26	10.82	6.96	75.30	3.02	0.91	0.91
9.73	7.13	10.59	6.99	73.99	3.02	0.88	0.88
9.81	6.99	10.36	7.01	72.66	3.02	0.86	0.86
9.85	6.89	10.20	7.01	71.46	3.02	0.84	0.84
9.94	6.81	10.06	7.00	70.39	3.02	0.82	0.82
10.00	6.75	9.96	6.99	69.61	3.02	0.36	0.81
10.04	6.74	9.94	6.94	68.99	3.02	0.35	0.80
10.12	6.81	10.05	6.87	69.00	3.01	0.34	0.81
10.19	6.96	10.28	6.77	69.63	3.00	0.34	0.82
10.24	7.18	10.63	6.67	70.86	2.99	0.84	0.84
10.31	7.51	11.15	6.54	72.96	2.98	0.88	0.88
10.39	7.85	11.70	6.42	75.13	2.97	0.92	0.92
10.48	8.26	12.35	6.24	77.07	2.95	0.96	0.96
10.53	8.69	13.04	6.08	79.21	2.94	1.01	1.01
10.63	9.14	13.75	5.95	81.80	2.93	1.05	1.05
10.67	9.60	14.48	5.86	84.82	2.92	1.10	1.10
10.71	10.01	15.13	5.78	87.48	2.91	1.15	1.15
10.79	10.33	15.64	5.74	89.85	2.90	1.18	1.18
10.83	10.50	15.91	5.77	91.85	2.91	1.19	1.19
10.93	10.75	16.31	5.71	93.18	2.90	1.21	1.21
10.98	11.01	16.72	5.66	94.60	2.90	1.24	1.24
11.06	11.19	17.00	5.66	96.27	2.90	1.25	1.25
11.11	11.33	17.22	5.67	97.70	2.90	1.26	1.26
11.16	11.42	17.37	5.68	98.57	2.90	1.27	1.27
11.23	11.42	17.36	5.70	98.91	2.90	1.26	1.26
11.31	11.37	17.21	5.75	98.90	2.90	1.24	1.24
11.36	11.30	17.04	5.78	98.56	2.91	1.23	1.23
11.42	11.29	16.93	5.79	98.01	2.91	1.22	1.22
11.51	11.10	16.53	5.90	97.52	2.92	1.19	1.19
11.56	10.86	16.11	6.01	96.84	2.93	1.16	1.16
11.65	10.63	15.65	6.12	95.79	2.94	1.12	1.12
11.71	10.44	15.29	6.19	94.68	2.95	1.09	1.09
11.75	10.23	14.92	6.27	93.61	2.96	1.07	1.07
11.84	10.11	14.60	6.31	92.08	2.96	1.04	1.04
11.89	10.00	14.37	6.30	90.56	2.96	1.03	1.03
11.96	9.97	14.23	6.23	88.71	2.95	1.02	1.02
12.03	9.99	14.17	6.13	86.82	2.94	1.01	1.01
12.11	10.04	14.16	5.99	84.80	2.93	1.02	1.02
12.16	10.16	14.28	5.82	83.13	2.91	1.03	1.03
12.21	10.35	14.49	5.63	81.63	2.89	1.05	1.05
12.30	10.54	14.68	5.47	80.34	2.88	1.06	1.06
12.35	10.78	14.96	5.31	79.44	2.86	1.09	1.09
12.41	10.95	15.15	5.23	79.26	2.85	1.10	1.10
12.49	11.12	15.34	5.19	79.58	2.85	1.12	1.12
12.56	11.24	15.48	5.20	80.48	2.85	1.13	1.13
12.60	11.35	15.63	5.22	81.65	2.85	1.14	1.14

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
12.67	11.48	15.78	5.25	82.89	2.85	1.15	1.15
12.75	11.63	15.96	5.26	83.95	2.85	1.16	1.16
12.80	11.76	16.12	5.28	85.04	2.86	1.17	1.17
12.90	11.84	16.20	5.32	86.09	2.86	1.18	1.18
12.95	11.93	16.30	5.34	87.05	2.86	1.18	1.18
13.02	12.03	16.41	5.35	87.86	2.86	1.19	1.19
13.06	12.13	16.53	5.35	88.44	2.86	1.20	1.20
13.14	12.22	16.60	5.35	88.87	2.86	1.20	1.20
13.19	12.29	16.67	5.35	89.23	2.86	1.21	1.21
13.29	12.33	16.67	5.37	89.55	2.87	1.21	1.21
13.33	12.32	16.64	5.41	89.97	2.87	1.20	1.20
13.39	12.30	16.58	5.44	90.15	2.87	1.20	1.20
13.48	12.31	16.54	5.45	90.15	2.87	1.20	1.20
13.54	12.39	16.62	5.44	90.48	2.87	1.20	1.20
13.59	12.53	16.78	5.42	90.88	2.87	1.21	1.21
13.67	12.75	17.02	5.36	91.29	2.86	1.23	1.23
13.72	12.96	17.27	5.32	91.86	2.86	1.25	1.25
13.78	13.12	17.46	5.30	92.55	2.86	1.27	1.27
13.86	13.28	17.63	5.29	93.31	2.86	1.28	1.28
13.93	13.44	17.80	5.29	94.19	2.86	1.29	1.29
14.01	13.55	17.91	5.31	95.18	2.86	1.30	1.30
14.05	13.62	17.99	5.35	96.24	2.86	1.30	1.30
14.14	13.62	17.94	5.40	96.86	2.87	1.30	1.30
14.21	13.57	17.84	5.45	97.32	2.87	1.29	1.29
14.24	13.41	17.63	5.55	97.81	2.88	1.27	1.27
14.31	13.27	17.41	5.64	98.13	2.89	1.25	1.25
14.39	13.17	17.24	5.70	98.30	2.90	1.24	1.24
14.44	13.06	17.07	5.76	98.31	2.91	1.23	1.23
14.54	12.93	16.84	5.83	98.16	2.91	1.21	1.21
14.59	12.82	16.67	5.88	98.07	2.92	1.20	1.20
14.64	12.73	16.52	5.92	97.86	2.92	1.19	1.19
14.70	12.62	16.34	5.98	97.64	2.93	1.17	1.17
14.79	12.49	16.12	6.04	97.30	2.93	1.15	1.15
14.83	12.35	15.91	6.09	96.83	2.94	1.14	1.14
14.93	12.16	15.61	6.16	96.10	2.95	1.12	1.12
14.98	11.95	15.29	6.24	95.44	2.95	1.09	1.09
15.03	11.68	14.89	6.36	94.64	2.96	1.06	1.06
15.10	11.42	14.50	6.47	93.80	2.98	1.04	1.04
15.18	11.13	14.06	6.60	92.84	2.99	1.00	1.00
15.23	10.82	13.61	6.75	91.81	3.00	0.97	0.97
15.33	10.52	13.15	6.89	90.69	3.01	0.94	0.94
15.37	10.18	12.68	7.08	89.73	3.03	0.91	0.91
15.44	9.83	12.17	7.29	88.70	3.05	0.87	0.87
15.52	9.47	11.65	7.53	87.73	3.07	0.83	0.83
15.56	9.15	11.19	7.74	86.58	3.09	0.80	0.80
15.63	8.84	10.74	7.96	85.48	3.10	0.77	0.77
15.71	8.52	10.28	8.19	84.22	3.12	0.73	0.73
15.77	8.24	9.89	8.39	82.98	3.14	0.71	0.71

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
15.82	7.99	9.53	8.58	81.84	3.15	0.68	0.68
15.89	7.76	9.20	8.75	80.56	3.16	0.66	0.66
15.97	7.60	8.95	8.85	79.20	3.17	0.64	0.64
16.02	7.48	8.78	8.90	78.11	3.17	0.63	0.63
16.10	7.44	8.70	8.87	77.14	3.17	0.62	0.62
16.17	7.44	8.67	8.80	76.32	3.17	0.62	0.62
16.22	7.52	8.76	8.62	75.56	3.15	0.63	0.63
16.28	7.65	8.91	8.41	74.93	3.14	0.64	0.64
16.37	7.84	9.15	8.15	74.50	3.12	0.65	0.65
16.42	8.08	9.44	7.86	74.22	3.09	0.67	0.67
16.52	8.33	9.74	7.59	73.87	3.07	0.70	0.70
16.55	8.58	10.05	7.33	73.67	3.05	0.72	0.72
16.62	8.83	10.35	7.09	73.40	3.03	0.74	0.74
16.70	9.06	10.62	6.89	73.23	3.01	0.76	0.76
16.74	9.49	11.17	6.55	73.19	2.98	0.80	0.80
16.82	10.11	11.93	6.13	73.13	2.94	0.85	0.85
16.91	10.53	12.39	5.88	72.87	2.92	0.89	0.89
16.94	10.72	12.62	5.75	72.51	2.90	0.91	0.91
17.01	10.87	12.76	5.65	72.13	2.90	0.92	0.92
17.10	11.00	12.88	5.58	71.87	2.89	0.93	0.93
17.15	11.13	13.01	5.51	71.64	2.88	0.94	0.94
17.21	11.54	13.47	5.29	71.26	2.86	0.97	0.97
17.30	11.94	13.90	5.09	70.72	2.83	1.01	1.01
17.34	11.76	13.66	5.16	70.54	2.84	0.99	0.99
17.41	11.25	13.04	5.42	70.64	2.87	0.94	0.94
17.49	10.96	12.66	5.59	70.73	2.89	0.91	0.91
17.53	10.95	12.64	5.60	70.83	2.89	0.91	0.91
17.59	10.82	12.46	5.68	70.73	2.90	0.90	0.90
17.67	10.63	12.20	5.79	70.63	2.91	0.88	0.88
17.73	10.45	11.97	5.88	70.41	2.92	0.86	0.86
17.79	10.07	11.49	6.11	70.27	2.94	0.82	0.82
17.87	9.70	11.01	6.36	70.05	2.96	0.79	0.79
17.92	9.63	10.90	6.40	69.77	2.97	0.33	0.78
17.99	9.66	10.91	6.34	69.22	2.96	0.31	0.78
18.07	9.81	11.07	6.20	68.63	2.95	0.31	0.79
18.14	9.80	11.03	6.17	68.07	2.95	0.31	0.79
18.19	9.97	11.20	6.04	67.72	2.93	0.31	0.80
18.26	10.14	11.38	5.92	67.35	2.92	0.30	0.82
18.34	10.13	11.33	5.92	67.04	2.92	0.30	0.81
18.38	9.99	11.15	5.98	66.67	2.93	0.30	0.80
18.45	9.85	10.96	6.06	66.41	2.94	0.30	0.78
18.53	9.72	10.78	6.13	66.14	2.94	0.30	0.77
18.60	9.58	10.60	6.23	66.01	2.95	0.28	0.76
18.68	9.26	10.18	6.47	65.85	2.98	0.27	0.73
18.72	8.93	9.75	6.73	65.57	3.00	0.28	0.70
18.79	8.50	9.20	7.08	65.11	3.03	0.28	0.66
18.84	8.10	8.69	7.42	64.48	3.06	0.28	0.62
18.92	7.83	8.34	7.65	63.84	3.08	0.28	0.60

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
18.98	7.61	8.06	7.84	63.20	3.09	0.27	0.58
19.06	7.40	7.77	8.02	62.28	3.11	0.26	0.55
19.11	7.23	7.55	8.13	61.39	3.12	0.24	0.54
19.18	7.07	7.34	8.24	60.47	3.12	0.23	0.52
19.25	6.92	7.14	8.36	59.68	3.13	0.22	0.51
19.33	6.83	7.02	8.41	59.04	3.14	0.21	0.50
19.37	6.81	6.98	8.41	58.73	3.14	0.21	0.50
19.47	6.80	6.95	8.42	58.53	3.14	0.21	0.50
19.52	6.83	6.97	8.39	58.52	3.14	0.22	0.50
19.57	6.85	6.99	8.39	58.63	3.14	0.22	0.50
19.62	6.84	6.96	8.45	58.85	3.14	0.23	0.50
19.71	6.81	6.91	8.55	59.04	3.15	0.23	0.49
19.77	6.74	6.81	8.71	59.33	3.16	0.23	0.49
19.82	6.58	6.61	8.97	59.29	3.18	0.23	0.47
19.91	6.46	6.44	9.15	58.99	3.19	0.23	0.46
19.96	6.31	6.25	9.36	58.55	3.21	0.23	0.45
20.02	6.19	6.09	9.55	58.11	3.22	0.24	0.43
20.11	6.06	5.91	9.73	57.52	3.23	0.23	0.42
20.18	5.93	5.75	9.91	56.93	3.25	0.20	0.41
20.23	5.83	5.62	10.01	56.25	3.25	0.20	0.40
20.28	5.74	5.50	10.08	55.46	3.26	0.20	0.39
20.37	5.70	5.44	10.03	54.57	3.25	0.19	0.39
20.42	5.74	5.48	9.85	53.93	3.24	0.19	0.39
20.48	5.73	5.45	9.83	53.62	3.24	0.18	0.39
20.56	5.74	5.45	9.78	53.31	3.24	0.17	0.39
20.63	5.76	5.46	9.71	53.02	3.23	0.16	0.39
20.67	5.80	5.50	9.62	52.91	3.23	0.16	0.39
20.74	5.86	5.56	9.50	52.80	3.22	0.18	0.40
20.83	5.92	5.61	9.41	52.82	3.21	0.18	0.40
20.90	5.98	5.67	9.34	52.98	3.21	0.18	0.41
20.97	6.03	5.72	9.30	53.14	3.20	0.18	0.41
21.02	6.11	5.80	9.19	53.33	3.20	0.18	0.41
21.10	6.22	5.91	9.05	53.53	3.19	0.17	0.42
21.17	6.35	6.05	8.90	53.88	3.17	0.17	0.43
21.22	6.49	6.20	8.74	54.25	3.16	0.17	0.44
21.27	6.64	6.37	8.60	54.75	3.15	0.17	0.45
21.37	6.79	6.52	8.47	55.21	3.14	0.19	0.47
21.43	6.95	6.69	8.32	55.69	3.13	0.20	0.48
21.46	7.09	6.86	8.19	56.17	3.12	0.20	0.49
21.55	7.24	7.01	8.06	56.47	3.11	0.21	0.50
21.62	7.36	7.13	7.96	56.76	3.10	0.21	0.51
21.66	7.42	7.19	7.87	56.63	3.10	0.21	0.51
21.74	7.41	7.16	7.84	56.18	3.09	0.21	0.51
21.81	7.37	7.10	7.84	55.71	3.09	0.19	0.51
21.85	7.30	7.01	7.86	55.11	3.09	0.19	0.50
21.93	7.21	6.89	7.88	54.32	3.10	0.17	0.49
22.00	7.13	6.78	7.90	53.54	3.10	0.16	0.48
22.07	7.06	6.69	7.91	52.89	3.10	0.16	0.48

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
22.16	6.98	6.58	7.96	52.37	3.10	0.16	0.47
22.19	6.91	6.49	8.01	52.03	3.11	0.15	0.46
22.26	6.87	6.43	8.10	52.11	3.11	0.15	0.46
22.33	6.86	6.41	8.19	52.50	3.12	0.16	0.46
22.40	6.86	6.39	8.27	52.89	3.13	0.16	0.46
22.45	6.88	6.41	8.30	53.16	3.13	0.17	0.46
22.53	6.88	6.39	8.31	53.12	3.13	0.18	0.46
22.60	6.86	6.36	8.35	53.07	3.13	0.19	0.45
22.64	6.79	6.27	8.45	53.00	3.14	0.19	0.45
22.70	6.72	6.18	8.61	53.20	3.15	0.18	0.44
22.80	6.68	6.11	8.71	53.25	3.16	0.15	0.44
22.84	6.59	6.01	8.83	53.02	3.17	0.15	0.43
22.90	6.58	5.98	8.78	52.57	3.17	0.16	0.43
23.00	6.68	6.08	8.56	52.04	3.15	0.18	0.43
23.05	6.77	6.17	8.47	52.22	3.14	0.18	0.44
23.14	6.93	6.33	8.42	53.25	3.14	0.17	0.45
23.18	7.11	6.52	8.37	54.56	3.13	0.16	0.47
23.24	7.32	6.74	8.36	56.36	3.13	0.14	0.48
23.32	7.52	6.94	8.40	58.31	3.14	0.19	0.50
23.39	7.66	7.09	8.50	60.28	3.14	0.22	0.51
23.44	7.83	7.27	8.59	62.42	3.15	0.24	0.52
23.53	7.88	7.30	8.83	64.47	3.17	0.30	0.52
23.59	7.80	7.20	9.20	66.24	3.20	0.34	0.51
23.63	7.63	7.01	9.57	67.05	3.22	0.35	0.50
23.69	7.43	6.76	9.96	67.36	3.25	0.36	0.48
23.77	7.22	6.52	10.30	67.12	3.27	0.36	0.47
23.82	7.02	6.29	10.54	66.24	3.29	0.34	0.45
23.93	6.84	6.07	10.70	64.93	3.30	0.30	0.43
23.95	6.71	5.92	10.73	63.57	3.30	0.28	0.42
24.03	6.63	5.82	10.65	62.00	3.30	0.25	0.42
24.12	6.60	5.77	10.47	60.46	3.28	0.23	0.41
24.16	6.59	5.76	10.28	59.15	3.27	0.23	0.41
24.22	6.66	5.82	10.02	58.33	3.25	0.22	0.42
24.30	6.73	5.88	9.81	57.69	3.24	0.21	0.42
24.37	6.79	5.93	9.69	57.49	3.23	0.21	0.42
24.43	6.88	6.02	9.56	57.55	3.22	0.21	0.43
24.50	7.00	6.14	9.41	57.74	3.21	0.21	0.44
24.57	7.09	6.22	9.33	58.01	3.21	0.22	0.44
24.62	7.17	6.30	9.29	58.51	3.20	0.23	0.45
24.69	7.23	6.35	9.29	58.98	3.20	0.23	0.45
24.77	7.28	6.39	9.31	59.42	3.20	0.24	0.46
24.83	7.32	6.42	9.31	59.75	3.20	0.24	0.46
24.88	7.37	6.46	9.29	59.98	3.20	0.25	0.46
24.97	7.40	6.47	9.28	60.06	3.20	0.25	0.46
25.02	7.42	6.49	9.26	60.05	3.20	0.25	0.46
25.11	7.41	6.46	9.27	59.87	3.20	0.23	0.46
25.17	7.41	6.45	9.28	59.83	3.20	0.23	0.46
25.21	7.40	6.43	9.28	59.69	3.20	0.23	0.46

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
25.29	7.44	6.45	9.26	59.78	3.20	0.22	0.46
25.36	7.55	6.56	9.16	60.05	3.19	0.22	0.47
25.40	7.70	6.71	9.02	60.47	3.18	0.23	0.48
25.46	7.86	6.86	8.90	61.10	3.17	0.23	0.49
25.54	8.04	7.03	8.77	61.72	3.17	0.25	0.50
25.62	8.20	7.18	8.69	62.42	3.16	0.26	0.51
25.66	8.36	7.34	8.63	63.34	3.15	0.26	0.52
25.75	8.51	7.48	8.58	64.20	3.15	0.28	0.53
25.80	8.67	7.63	8.53	65.08	3.15	0.28	0.55
25.85	8.81	7.77	8.46	65.74	3.14	0.28	0.55
25.96	8.75	7.68	8.62	66.22	3.15	0.30	0.55
26.01	8.74	7.66	8.73	66.87	3.16	0.31	0.55
26.05	8.80	7.71	8.76	67.56	3.16	0.31	0.55
26.12	8.87	7.77	8.77	68.13	3.16	0.31	0.55
26.19	8.95	7.84	8.75	68.60	3.16	0.32	0.56
26.25	9.02	7.89	8.71	68.79	3.16	0.33	0.56
26.33	8.98	7.83	8.77	68.70	3.16	0.35	0.56
26.42	8.87	7.70	8.89	68.46	3.17	0.34	0.55
26.46	8.73	7.55	9.03	68.15	3.18	0.33	0.54
26.52	8.73	7.53	9.00	67.82	3.18	0.32	0.54
26.61	8.65	7.43	9.05	67.22	3.19	0.31	0.53
26.67	8.48	7.24	9.15	66.29	3.19	0.30	0.52
26.71	8.31	7.06	9.25	65.26	3.20	0.29	0.50
26.79	8.11	6.84	9.40	64.26	3.21	0.29	0.49
26.87	7.92	6.62	9.56	63.35	3.22	0.28	0.47
26.92	7.81	6.50	9.63	62.62	3.23	0.27	0.46
26.98	7.77	6.45	9.60	61.94	3.23	0.24	0.46
27.06	7.73	6.40	9.58	61.25	3.22	0.24	0.46
27.11	7.69	6.35	9.54	60.57	3.22	0.24	0.45
27.21	7.63	6.27	9.56	59.94	3.22	0.24	0.45
27.26	7.55	6.18	9.60	59.31	3.22	0.23	0.44
27.32	7.39	6.01	9.77	58.70	3.24	0.22	0.43
27.40	7.24	5.84	9.94	58.07	3.25	0.22	0.42
27.45	7.09	5.67	10.09	57.22	3.26	0.22	0.41
27.52	6.97	5.54	10.12	56.08	3.26	0.21	0.40
27.60	6.81	5.37	10.24	54.98	3.27	0.20	0.38
27.65	6.69	5.24	10.31	54.03	3.27	0.20	0.37
27.71	6.59	5.13	10.37	53.20	3.28	0.18	0.37
27.80	6.56	5.09	10.31	52.43	3.27	0.15	0.36
27.84	6.56	5.08	10.20	51.83	3.27	0.15	0.36
27.90	6.65	5.16	9.99	51.56	3.25	0.15	0.37
27.99	6.75	5.25	9.82	51.51	3.24	0.16	0.37
28.05	6.85	5.34	9.73	51.95	3.23	0.16	0.38
28.10	6.96	5.44	9.72	52.86	3.23	0.16	0.39
28.17	7.10	5.57	9.66	53.77	3.23	0.17	0.40
28.25	7.25	5.70	9.59	54.67	3.22	0.19	0.41
28.30	7.40	5.84	9.49	55.46	3.22	0.21	0.42
28.39	7.51	5.94	9.50	56.38	3.22	0.22	0.42

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
28.44	7.61	6.03	9.49	57.20	3.22	0.22	0.43
28.49	7.69	6.10	9.50	57.99	3.22	0.22	0.44
28.54	7.77	6.17	9.45	58.34	3.21	0.22	0.44
28.62	7.86	6.25	9.29	58.06	3.20	0.24	0.45
28.68	7.91	6.28	9.26	58.18	3.20	0.23	0.45
28.74	7.96	6.32	9.30	58.81	3.20	0.24	0.45
28.83	7.97	6.32	9.39	59.27	3.21	0.22	0.45
28.89	7.96	6.29	9.47	59.63	3.22	0.18	0.45
28.98	7.81	6.13	9.72	59.63	3.23	0.23	0.44
29.03	7.81	6.12	9.77	59.79	3.24	0.27	0.44
29.09	7.81	6.11	9.77	59.65	3.24	0.26	0.44
29.14	7.83	6.12	9.76	59.74	3.24	0.25	0.44
29.22	7.88	6.15	9.79	60.23	3.24	0.25	0.44
29.27	7.97	6.23	9.67	60.29	3.23	0.24	0.45
29.38	8.07	6.31	9.48	59.82	3.22	0.22	0.45
29.43	8.18	6.41	9.28	59.49	3.20	0.22	0.46
29.48	8.30	6.52	9.09	59.25	3.19	0.22	0.47
29.57	8.53	6.72	8.79	59.06	3.17	0.22	0.48
29.62	8.60	6.78	8.68	58.87	3.16	0.22	0.48
29.68	8.66	6.83	8.63	58.98	3.15	0.22	0.49
29.73	8.71	6.87	8.58	58.98	3.15	0.22	0.49
29.82	8.73	6.87	8.58	58.94	3.15	0.22	0.49
29.87	8.72	6.85	8.58	58.80	3.15	0.22	0.49
29.94	8.69	6.81	8.61	58.64	3.15	0.23	0.49
30.02	8.62	6.73	8.67	58.34	3.16	0.22	0.48
30.07	8.52	6.62	8.76	58.04	3.16	0.22	0.47
30.16	8.44	6.53	8.84	57.73	3.17	0.21	0.47
30.19	8.37	6.46	8.88	57.35	3.17	0.21	0.46
30.26	8.30	6.38	8.89	56.73	3.17	0.20	0.46
30.36	8.25	6.31	8.90	56.22	3.17	0.20	0.45
30.41	8.22	6.28	8.88	55.74	3.17	0.20	0.45
30.46	8.20	6.25	8.86	55.37	3.17	0.19	0.45
30.53	8.20	6.24	8.84	55.12	3.17	0.18	0.45
30.61	8.24	6.26	8.78	55.00	3.17	0.18	0.45
30.65	8.33	6.33	8.69	55.03	3.16	0.18	0.45
30.71	8.46	6.44	8.58	55.30	3.15	0.18	0.46
30.81	8.62	6.58	8.48	55.79	3.14	0.19	0.47
30.84	8.81	6.76	8.38	56.64	3.14	0.19	0.48
30.91	9.02	6.94	8.31	57.68	3.13	0.20	0.50
30.99	9.25	7.14	8.26	59.00	3.13	0.22	0.51
31.04	9.49	7.36	8.20	60.31	3.12	0.23	0.53
31.11	9.75	7.59	8.12	61.58	3.11	0.24	0.54
31.19	10.01	7.81	8.05	62.91	3.11	0.26	0.56
31.25	10.25	8.02	7.99	64.11	3.11	0.29	0.57
31.30	10.42	8.17	7.95	64.99	3.10	0.29	0.58
31.39	10.55	8.27	7.95	65.72	3.10	0.30	0.59
31.45	10.62	8.32	7.96	66.25	3.10	0.31	0.59
31.50	10.63	8.33	7.99	66.59	3.11	0.31	0.59

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
31.60	10.61	8.29	8.04	66.61	3.11	0.30	0.59
31.65	10.59	8.25	8.05	66.39	3.11	0.30	0.59
31.73	10.54	8.19	8.10	66.32	3.11	0.30	0.58
31.80	10.48	8.12	8.20	66.52	3.12	0.30	0.58
31.84	10.42	8.05	8.29	66.74	3.13	0.30	0.58
31.91	10.38	8.00	8.39	67.11	3.14	0.27	0.57
31.99	10.35	7.95	8.48	67.48	3.14	0.29	0.57
32.03	10.34	7.94	8.55	67.88	3.15	0.33	0.57
32.09	10.36	7.95	8.59	68.27	3.15	0.33	0.57
32.19	10.40	7.96	8.62	68.65	3.15	0.34	0.57
32.25	10.44	7.99	8.69	69.37	3.16	0.34	0.57
32.29	10.47	8.00	8.74	69.94	3.16	0.34	0.57
32.38	10.52	8.03	8.73	70.14	3.16	0.57	0.57
32.43	10.61	8.10	8.69	70.40	3.16	0.58	0.58
32.48	10.72	8.19	8.62	70.58	3.15	0.59	0.59
32.58	10.84	8.28	8.55	70.82	3.15	0.59	0.59
32.63	10.96	8.37	8.50	71.16	3.14	0.60	0.60
32.69	11.07	8.46	8.46	71.57	3.14	0.60	0.60
32.74	11.17	8.54	8.44	72.05	3.14	0.61	0.61
32.83	11.29	8.62	8.40	72.44	3.14	0.62	0.62
32.88	11.41	8.72	8.34	72.77	3.13	0.62	0.62
32.97	11.51	8.79	8.33	73.21	3.13	0.63	0.63
33.01	11.58	8.84	8.34	73.76	3.13	0.63	0.63
33.07	11.62	8.86	8.37	74.19	3.13	0.63	0.63
33.16	11.64	8.86	8.41	74.51	3.14	0.63	0.63
33.20	11.66	8.87	8.42	74.64	3.14	0.63	0.63
33.27	11.67	8.86	8.41	74.52	3.14	0.63	0.63
33.36	11.67	8.84	8.40	74.22	3.14	0.63	0.63
33.42	11.63	8.79	8.39	73.78	3.14	0.63	0.63
33.51	11.57	8.71	8.38	73.00	3.14	0.62	0.62
33.56	11.50	8.64	8.31	71.84	3.13	0.62	0.62
33.61	11.40	8.54	8.24	70.41	3.12	0.61	0.61
33.67	11.26	8.40	8.20	68.94	3.12	0.34	0.60
33.76	11.07	8.22	8.19	67.30	3.12	0.30	0.59
33.81	10.94	8.09	8.13	65.77	3.12	0.27	0.58
33.86	10.77	7.93	8.11	64.36	3.11	0.26	0.57
33.94	10.66	7.82	8.05	62.93	3.11	0.25	0.56
34.02	10.58	7.73	7.97	61.65	3.10	0.24	0.55
34.06	10.53	7.68	7.91	60.77	3.10	0.23	0.55
34.14	10.48	7.62	7.89	60.14	3.10	0.23	0.54
34.21	10.41	7.55	7.91	59.69	3.10	0.22	0.54
34.25	10.35	7.49	7.92	59.26	3.10	0.22	0.53
34.33	10.33	7.45	7.90	58.92	3.10	0.22	0.53
34.41	10.24	7.36	7.96	58.55	3.10	0.22	0.53
34.49	10.20	7.31	7.95	58.11	3.10	0.22	0.52
34.56	10.10	7.21	8.00	57.64	3.11	0.21	0.51
34.59	9.99	7.11	8.04	57.18	3.11	0.21	0.51
34.67	9.89	7.01	8.09	56.70	3.11	0.20	0.50

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
34.76	9.80	6.91	8.13	56.22	3.12	0.19	0.49
34.80	9.74	6.85	8.14	55.76	3.12	0.18	0.49
34.85	9.72	6.83	8.13	55.53	3.12	0.18	0.49
34.93	9.72	6.81	8.11	55.28	3.11	0.18	0.49
34.98	9.71	6.79	8.12	55.15	3.12	0.18	0.49
35.05	9.67	6.75	8.15	55.00	3.12	0.18	0.48
35.13	9.66	6.72	8.16	54.86	3.12	0.19	0.48
35.18	9.64	6.70	8.17	54.72	3.12	0.19	0.48
35.24	9.59	6.65	8.21	54.57	3.12	0.19	0.47
35.32	9.52	6.57	8.27	54.40	3.13	0.18	0.47
35.41	9.44	6.49	8.34	54.11	3.13	0.17	0.46
35.46	9.35	6.41	8.39	53.73	3.14	0.17	0.46
35.51	9.26	6.32	8.42	53.25	3.14	0.17	0.45
35.58	9.19	6.25	8.44	52.75	3.14	0.17	0.45
35.66	9.14	6.19	8.44	52.26	3.14	0.16	0.44
35.71	9.06	6.12	8.48	51.88	3.14	0.16	0.44
35.76	8.99	6.05	8.51	51.49	3.15	0.15	0.43
35.86	8.94	5.99	8.53	51.09	3.15	0.15	0.43
35.91	8.90	5.95	8.52	50.72	3.15	0.14	0.43
36.01	8.88	5.92	8.52	50.45	3.15	0.14	0.42
36.05	8.87	5.91	8.48	50.09	3.14	0.14	0.42
36.12	8.86	5.89	8.47	49.84	3.14	0.14	0.42
36.20	8.83	5.85	8.47	49.56	3.14	0.14	0.42
36.23	8.84	5.85	8.45	49.44	3.14	0.14	0.42
36.31	8.89	5.89	8.38	49.32	3.14	0.14	0.42
36.35	8.99	5.96	8.24	49.13	3.12	0.14	0.43
36.45	9.11	6.05	8.09	48.92	3.11	0.14	0.43
36.51	9.26	6.17	7.90	48.73	3.10	0.14	0.44
36.58	9.41	6.28	7.74	48.64	3.09	0.13	0.45
36.66	9.56	6.40	7.61	48.67	3.07	0.13	0.46
36.70	9.71	6.52	7.49	48.82	3.06	0.13	0.47
36.80	9.91	6.68	7.35	49.08	3.05	0.13	0.48
36.85	10.09	6.82	7.26	49.47	3.04	0.13	0.49
36.89	10.23	6.93	7.19	49.84	3.04	0.13	0.49
36.96	10.31	6.98	7.22	50.42	3.04	0.14	0.50
37.03	10.36	7.01	7.27	50.98	3.05	0.15	0.50
37.09	10.38	7.02	7.35	51.64	3.05	0.16	0.50
37.15	10.40	7.03	7.42	52.17	3.06	0.16	0.50
37.23	10.42	7.03	7.49	52.69	3.06	0.17	0.50
37.27	10.44	7.04	7.54	53.11	3.07	0.17	0.50
37.34	10.45	7.04	7.59	53.40	3.07	0.17	0.50
37.43	10.46	7.03	7.62	53.58	3.08	0.17	0.50
37.49	10.46	7.02	7.66	53.77	3.08	0.17	0.50
37.54	10.47	7.02	7.66	53.75	3.08	0.17	0.50
37.62	10.46	7.00	7.67	53.71	3.08	0.17	0.50
37.69	10.45	6.98	7.66	53.47	3.08	0.17	0.50
37.74	10.44	6.96	7.66	53.35	3.08	0.17	0.50
37.82	10.43	6.94	7.66	53.21	3.08	0.17	0.50

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
37.89	10.42	6.92	7.67	53.07	3.08	0.16	0.49
37.93	10.45	6.94	7.65	53.07	3.08	0.16	0.50
38.02	10.51	6.98	7.62	53.15	3.08	0.16	0.50
38.08	10.61	7.05	7.57	53.37	3.07	0.16	0.50
38.13	10.59	7.02	7.65	53.76	3.08	0.16	0.50
38.23	10.77	7.15	7.59	54.28	3.07	0.17	0.51
38.28	11.05	7.37	7.45	54.94	3.06	0.18	0.53
38.35	11.35	7.61	7.29	55.48	3.05	0.19	0.54
38.42	11.66	7.85	7.14	56.01	3.03	0.20	0.56
38.47	11.96	8.08	6.99	56.53	3.02	0.20	0.58
38.52	12.14	8.22	6.94	57.02	3.02	0.20	0.59
38.61	12.27	8.31	6.91	57.39	3.01	0.20	0.59
38.67	12.35	8.36	6.88	57.47	3.01	0.20	0.60
38.72	12.50	8.48	6.78	57.46	3.00	0.20	0.61
38.82	12.47	8.43	6.79	57.22	3.00	0.21	0.60
38.86	12.32	8.30	6.86	56.90	3.01	0.21	0.59
38.96	12.14	8.14	6.94	56.45	3.02	0.19	0.58
39.01	11.97	7.99	7.01	56.01	3.02	0.19	0.57
39.05	11.89	7.92	7.02	55.59	3.02	0.19	0.57
39.13	12.00	7.99	6.90	55.17	3.01	0.18	0.57
39.21	12.16	8.11	6.75	54.75	3.00	0.17	0.58
39.24	12.47	8.35	6.54	54.65	2.98	0.17	0.60
39.31	12.92	8.70	6.28	54.63	2.96	0.17	0.62
39.40	13.42	9.09	6.04	54.92	2.93	0.18	0.65
39.44	13.97	9.54	5.81	55.41	2.91	0.18	0.68
39.51	14.55	10.01	5.60	56.06	2.89	0.18	0.71
39.60	15.09	10.43	5.44	56.69	2.87	0.19	0.74
39.66	15.51	10.77	5.31	57.21	2.86	0.21	0.76
39.70	15.75	10.96	5.25	57.47	2.85	0.22	0.78
39.80	15.89	11.05	5.22	57.61	2.85	0.22	0.78
39.85	15.87	11.02	5.24	57.69	2.85	0.22	0.78
39.90	15.72	10.88	5.29	57.60	2.86	0.21	0.77
39.98	15.53	10.71	5.34	57.20	2.86	0.20	0.76
40.05	15.26	10.47	5.40	56.51	2.87	0.19	0.74
40.10	14.94	10.20	5.46	55.63	2.87	0.19	0.72
40.20	14.62	9.92	5.50	54.60	2.88	0.18	0.71
40.25	14.33	9.68	5.53	53.57	2.88	0.17	0.69
40.30	14.10	9.49	5.56	52.72	2.89	0.16	0.67
40.40	13.93	9.33	5.57	51.94	2.89	0.15	0.66
40.45	13.82	9.23	5.56	51.28	2.89	0.14	0.66
40.50	13.79	9.20	5.52	50.82	2.88	0.13	0.65
40.59	13.78	9.17	5.51	50.57	2.88	0.13	0.65
40.64	13.82	9.20	5.50	50.56	2.88	0.13	0.65
40.69	13.94	9.29	5.45	50.65	2.87	0.14	0.66
40.79	14.09	9.39	5.44	51.06	2.87	0.15	0.67
40.83	14.28	9.53	5.46	52.01	2.87	0.16	0.68
40.92	14.55	9.73	5.45	53.03	2.87	0.16	0.69
40.98	14.84	9.94	5.45	54.14	2.87	0.16	0.71

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
41.03	15.10	10.13	5.45	55.21	2.87	0.17	0.72
41.08	15.30	10.28	5.47	56.17	2.88	0.20	0.73
41.18	15.48	10.40	5.47	56.90	2.88	0.21	0.74
41.22	15.62	10.50	5.49	57.63	2.88	0.22	0.75
41.31	15.72	10.55	5.53	58.34	2.88	0.23	0.75
41.36	15.79	10.59	5.56	58.87	2.89	0.23	0.75
41.42	15.83	10.61	5.56	59.03	2.89	0.22	0.75
41.50	15.79	10.56	5.60	59.10	2.89	0.22	0.75
41.54	15.73	10.50	5.64	59.18	2.89	0.22	0.75
41.61	15.68	10.45	5.65	59.06	2.90	0.22	0.74
41.70	15.63	10.39	5.68	59.03	2.90	0.22	0.74
41.75	15.58	10.33	5.72	59.10	2.90	0.22	0.74
41.80	15.56	10.31	5.74	59.18	2.90	0.22	0.73
41.87	15.55	10.28	5.76	59.24	2.91	0.22	0.73
41.95	15.57	10.28	5.77	59.30	2.91	0.22	0.73
42.01	15.60	10.29	5.78	59.45	2.91	0.22	0.73
42.10	15.68	10.33	5.79	59.77	2.91	0.22	0.74
42.14	15.78	10.39	5.79	60.19	2.91	0.22	0.74
42.21	15.87	10.44	5.83	60.86	2.91	0.22	0.74
42.27	15.96	10.50	5.84	61.35	2.91	0.23	0.75
42.34	16.05	10.55	5.85	61.74	2.92	0.24	0.75
42.39	16.11	10.58	5.87	62.14	2.92	0.26	0.75
42.49	16.16	10.59	5.90	62.52	2.92	0.27	0.75
42.54	16.18	10.59	5.96	63.15	2.93	0.27	0.76
42.59	16.19	10.58	6.03	63.79	2.93	0.26	0.75
42.69	16.17	10.54	6.09	64.22	2.94	0.26	0.75
42.74	16.12	10.49	6.13	64.28	2.94	0.26	0.75
42.80	16.08	10.44	6.15	64.17	2.94	0.28	0.75
42.89	16.02	10.38	6.17	64.05	2.95	0.29	0.74
42.93	15.90	10.27	6.23	63.95	2.95	0.29	0.73
42.99	15.79	10.18	6.27	63.77	2.96	0.26	0.73
43.08	15.64	10.04	6.31	63.41	2.96	0.26	0.72
43.11	15.45	9.89	6.35	62.83	2.96	0.26	0.71
43.18	15.16	9.66	6.41	61.98	2.97	0.25	0.69
43.28	14.77	9.35	6.52	60.93	2.98	0.24	0.67
43.35	14.40	9.05	6.63	60.05	2.99	0.22	0.65
43.38	13.95	8.71	6.78	59.07	3.00	0.22	0.62
43.45	13.50	8.36	6.92	57.87	3.02	0.21	0.60
43.53	13.09	8.04	7.04	56.63	3.03	0.19	0.57
43.58	12.64	7.70	7.19	55.36	3.04	0.19	0.55
43.64	12.18	7.34	7.39	54.23	3.06	0.18	0.52
43.73	11.74	7.00	7.58	53.06	3.07	0.16	0.50
43.78	11.44	6.77	7.69	52.10	3.08	0.15	0.48
43.84	11.29	6.65	7.75	51.55	3.09	0.14	0.48
43.92	11.24	6.61	7.75	51.21	3.09	0.14	0.47
43.98	11.42	6.73	7.58	51.04	3.07	0.14	0.48
44.07	11.69	6.92	7.44	51.48	3.06	0.14	0.49
44.12	12.61	7.59	6.96	52.80	3.02	0.16	0.54

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
44.17	13.58	8.30	6.53	54.21	2.98	0.16	0.59
44.23	15.30	9.59	5.82	55.83	2.91	0.16	0.68
44.29	16.73	10.69	5.38	57.49	2.87	0.18	0.76
44.39	17.65	11.39	5.08	57.91	2.83	0.24	0.80
44.43	18.07	11.71	4.96	58.02	2.82	0.24	0.83
44.49	18.39	11.95	4.84	57.87	2.81	0.26	0.84
44.57	18.26	11.83	4.87	57.59	2.81	0.28	0.83
44.67	17.84	11.49	4.94	56.71	2.82	0.18	0.81
44.73	16.78	10.65	5.18	55.13	2.84	0.17	0.75
44.78	15.68	9.81	5.43	53.28	2.87	0.15	0.70
44.82	13.89	8.43	6.03	50.86	2.93	0.14	0.60
44.93	12.37	7.28	6.57	47.87	2.98	0.11	0.52
44.97	11.32	6.51	7.09	46.15	3.03	0.10	0.46
45.02	10.69	6.04	7.40	44.73	3.06	0.09	0.43
45.09	10.06	5.58	7.79	43.44	3.09	0.09	0.40
45.17	9.74	5.34	7.95	42.46	3.10	0.08	0.38
45.22	9.67	5.28	7.96	42.05	3.10	0.08	0.38
45.30	9.64	5.25	7.93	41.64	3.10	0.09	0.38
45.37	9.63	5.24	7.90	41.37	3.10	0.09	0.37
45.42	9.61	5.22	7.90	41.23	3.10	0.09	0.37
45.50	9.60	5.20	7.90	41.08	3.10	0.09	0.37
45.57	9.58	5.18	7.92	41.05	3.10	0.08	0.37
45.61	9.57	5.17	7.92	40.91	3.10	0.08	0.37
45.72	9.57	5.15	7.91	40.75	3.10	0.08	0.37
45.77	9.54	5.12	7.95	40.73	3.10	0.07	0.37
45.80	9.61	5.17	7.93	41.00	3.10	0.08	0.37
45.88	9.73	5.25	7.91	41.54	3.10	0.08	0.37
45.96	9.95	5.40	7.81	42.23	3.09	0.08	0.39
46.01	10.26	5.62	7.64	42.93	3.08	0.09	0.40
46.11	10.60	5.85	7.45	43.61	3.06	0.10	0.42
46.14	10.90	6.06	7.28	44.16	3.05	0.11	0.43
46.21	11.13	6.22	7.18	44.66	3.04	0.11	0.44
46.26	11.36	6.38	7.10	45.27	3.03	0.11	0.46
46.35	11.59	6.53	7.02	45.86	3.02	0.11	0.47
46.41	11.79	6.67	6.90	45.99	3.01	0.11	0.48
46.49	11.97	6.79	6.76	45.89	3.00	0.11	0.48
46.55	12.02	6.82	6.70	45.65	3.00	0.11	0.49
46.59	12.02	6.81	6.70	45.64	3.00	0.12	0.49
46.68	12.03	6.81	6.79	46.18	3.00	0.11	0.49
46.74	12.21	6.93	6.78	46.96	3.00	0.10	0.49
46.80	12.54	7.15	6.63	47.42	2.99	0.10	0.51
46.85	12.84	7.36	6.55	48.18	2.98	0.11	0.53
46.93	13.10	7.53	6.54	49.23	2.98	0.14	0.54
47.00	13.25	7.62	6.66	50.73	2.99	0.16	0.54
47.10	13.37	7.69	6.79	52.26	3.00	0.13	0.55
47.15	13.58	7.83	6.82	53.39	3.01	0.16	0.56
47.20	13.74	7.94	6.80	53.94	3.00	0.19	0.57
47.25	13.87	8.02	6.69	53.66	3.00	0.21	0.57

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
47.31	13.67	7.87	6.72	52.88	3.00	0.21	0.56
47.40	13.24	7.56	6.90	52.16	3.01	0.18	0.54
47.44	12.78	7.23	7.05	50.94	3.03	0.15	0.52
47.52	12.43	6.97	7.06	49.18	3.03	0.12	0.50
47.58	12.04	6.69	7.03	47.03	3.03	0.10	0.48
47.67	11.69	6.43	6.96	44.74	3.02	0.08	0.46
47.73	11.28	6.14	6.97	42.78	3.02	0.08	0.44
47.78	11.00	5.93	6.95	41.22	3.02	0.07	0.42
47.86	10.70	5.71	7.05	40.24	3.03	0.07	0.41
47.92	10.61	5.64	7.08	39.94	3.03	0.07	0.40
47.98	10.65	5.66	7.12	40.33	3.03	0.07	0.40
48.05	10.75	5.72	7.18	41.11	3.04	0.07	0.41
48.12	10.88	5.81	7.25	42.11	3.04	0.07	0.42
48.19	11.29	6.09	7.18	43.74	3.04	0.08	0.43
48.27	11.81	6.44	7.02	45.19	3.02	0.10	0.46
48.32	12.54	6.94	6.70	46.49	3.00	0.12	0.50
48.39	13.52	7.61	6.21	47.30	2.95	0.13	0.54
48.47	14.52	8.34	5.76	48.00	2.91	0.16	0.59
48.52	15.76	9.26	5.23	48.43	2.85	0.15	0.65
48.57	17.08	10.24	4.73	48.45	2.79	0.15	0.72
48.67	18.11	11.01	4.38	48.22	2.75	0.12	0.77
48.71	18.94	11.63	4.15	48.22	2.72	0.11	0.81
48.76	19.21	11.82	4.10	48.49	2.71	0.11	0.82
48.82	19.64	12.12	4.06	49.25	2.71	0.11	0.84
48.93	19.63	12.06	4.21	50.82	2.73	0.11	0.84
48.97	19.53	11.93	4.49	53.58	2.76	0.13	0.83
49.05	19.43	11.79	4.80	56.59	2.80	0.18	0.83
49.08	19.57	11.84	5.07	60.05	2.83	0.21	0.83
49.16	19.78	11.92	5.36	63.92	2.86	0.25	0.84
49.25	20.34	12.26	5.56	68.19	2.89	0.32	0.87
49.29	21.10	12.75	5.71	72.88	2.90	0.91	0.91
49.36	22.50	13.70	5.71	78.16	2.90	0.97	0.97
49.43	24.24	14.90	5.58	83.10	2.89	1.06	1.06
49.48	26.47	16.49	5.29	87.16	2.86	1.16	1.16
49.55	28.64	18.03	5.00	90.13	2.82	1.27	1.27
49.64	30.67	19.47	4.75	92.56	2.80	1.36	1.36
49.70	32.09	20.47	4.63	94.76	2.78	1.43	1.43
49.75	33.34	21.35	4.53	96.70	2.77	1.49	1.49
49.81	34.56	22.21	4.41	98.00	2.75	1.55	1.55
49.90	35.75	23.04	4.31	99.36	2.74	1.60	1.60
49.94	36.62	23.66	4.23	100.04	2.73	1.64	1.64
50.01	36.53	23.55	4.26	100.43	2.74	1.64	1.64
50.08	36.09	23.18	4.35	100.85	2.75	1.61	1.61
50.15	35.37	22.60	4.48	101.32	2.76	1.58	1.58
50.24	35.40	22.57	4.50	101.61	2.77	1.57	1.57
50.30	35.75	22.81	4.44	101.22	2.76	1.59	1.59
50.34	35.97	22.97	4.36	100.26	2.75	1.60	1.60
50.41	36.05	23.02	4.31	99.21	2.74	1.60	1.60

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
50.47	35.82	22.86	4.24	96.84	2.73	1.59	1.59
50.54	35.56	22.69	4.14	93.92	2.72	1.57	1.57
50.62	35.51	22.67	4.01	90.88	2.70	1.57	1.57
50.66	35.50	22.71	3.86	87.61	2.68	1.56	1.56
50.77	35.54	22.76	3.71	84.35	2.66	1.56	1.56
50.81	34.91	22.33	3.64	81.27	2.65	1.53	1.53
50.87	34.13	21.78	3.61	78.68	2.64	1.49	1.49
50.92	33.49	21.33	3.59	76.51	2.64	1.46	1.46
51.01	33.00	20.97	3.55	74.48	2.64	1.44	1.44
51.07	32.79	20.82	3.52	73.21	2.63	1.42	1.42
51.15	32.62	20.69	3.49	72.16	2.63	1.41	1.41
51.21	32.54	20.62	3.47	71.53	2.62	1.41	1.41
51.26	32.61	20.65	3.46	71.37	2.62	1.41	1.41
51.32	32.80	20.78	3.44	71.50	2.62	1.42	1.42
51.39	33.10	20.97	3.42	71.79	2.62	1.43	1.43
51.46	33.33	21.10	3.42	72.21	2.62	1.44	1.44
51.53	33.60	21.26	3.42	72.69	2.61	1.45	1.45
51.61	33.87	21.42	3.42	73.16	2.61	1.46	1.46
51.65	34.13	21.59	3.41	73.51	2.61	1.47	1.47
51.72	34.43	21.78	3.39	73.79	2.61	1.48	1.48
51.81	34.80	22.01	3.36	73.92	2.61	1.50	1.50
51.84	35.11	22.23	3.33	74.03	2.60	1.51	1.51
51.92	35.39	22.40	3.30	74.01	2.60	0.64	0.64
52.01	35.65	22.56	3.28	73.92	2.59	0.64	0.64
52.06	35.90	22.73	3.25	73.80	2.59	0.64	0.64
52.11	36.16	22.91	3.21	73.61	2.58	0.64	0.64
52.19	36.34	23.01	3.19	73.49	2.58	0.64	0.64
52.25	36.53	23.13	3.18	73.49	2.58	0.64	0.64
52.30	36.76	23.27	3.16	73.61	2.57	0.64	0.64
52.38	37.02	23.43	3.15	73.88	2.57	0.64	0.64
52.45	37.28	23.58	3.15	74.22	2.57	0.64	0.64
52.49	37.54	23.75	3.14	74.68	2.57	0.64	0.64
52.57	37.71	23.83	3.15	75.13	2.57	0.64	0.64
52.65	37.81	23.86	3.17	75.60	2.57	0.64	0.64
52.70	37.59	23.66	3.21	76.02	2.58	0.64	0.64
52.79	37.34	23.43	3.25	76.26	2.59	0.64	0.64
52.85	36.98	23.14	3.30	76.30	2.60	0.64	0.64
52.89	36.45	22.74	3.34	75.93	2.60	1.54	1.54
52.99	35.72	22.19	3.38	75.10	2.61	1.51	1.51
53.04	34.87	21.58	3.42	73.90	2.62	1.47	1.47
53.08	33.84	20.84	3.48	72.53	2.62	1.42	1.42
53.17	32.85	20.12	3.53	70.98	2.63	1.37	1.37
53.24	31.89	19.44	3.56	69.26	2.64	0.33	1.32
53.33	31.20	18.95	3.57	67.56	2.64	0.29	1.29
53.39	30.55	18.50	3.57	65.95	2.64	0.28	1.26
53.42	29.84	18.00	3.58	64.53	2.64	0.27	1.23
53.49	29.22	17.56	3.62	63.51	2.65	0.25	1.20
53.58	28.69	17.16	3.66	62.88	2.65	0.25	1.17

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
53.63	28.25	16.83	3.73	62.80	2.66	0.25	1.15
53.68	28.03	16.65	3.79	63.10	2.67	0.25	1.14
53.77	27.89	16.51	3.86	63.72	2.68	0.26	1.13
53.83	27.75	16.37	3.95	64.62	2.69	0.27	1.12
53.88	27.65	16.26	4.04	65.69	2.71	0.28	1.12
53.97	27.58	16.15	4.14	66.86	2.72	0.30	1.11
54.03	27.65	16.16	4.21	68.06	2.73	0.32	1.12
54.08	27.92	16.32	4.23	69.02	2.73	0.33	1.13
54.18	28.22	16.49	4.23	69.69	2.73	0.35	1.14
54.22	28.55	16.70	4.21	70.24	2.73	1.15	1.15
54.27	28.86	16.89	4.18	70.60	2.72	1.16	1.16
54.38	29.20	17.09	4.15	70.87	2.72	1.18	1.18
54.42	29.60	17.33	4.18	72.48	2.73	1.19	1.19
54.47	30.18	17.68	4.22	74.54	2.73	1.22	1.22
54.57	30.74	17.99	4.27	76.80	2.74	1.24	1.24
54.61	32.49	19.15	4.16	79.62	2.72	1.32	1.32
54.68	34.47	20.44	4.09	83.61	2.71	1.41	1.41
54.75	36.91	22.04	4.00	88.19	2.70	1.51	1.51
54.79	39.58	23.80	3.90	92.93	2.69	1.63	1.63
54.86	42.54	25.75	3.80	97.96	2.67	1.76	1.76
54.95	45.89	27.95	3.70	103.54	2.66	1.90	1.90
55.01	49.55	30.41	3.55	108.09	2.64	2.06	2.06
55.06	53.33	32.97	3.41	112.42	2.61	2.23	2.23
55.12	57.74	35.97	3.25	116.75	2.59	0.69	0.69
55.21	61.55	38.53	3.13	120.57	2.57	0.70	0.70
55.25	64.95	40.86	3.02	123.48	2.55	0.71	0.71
55.32	67.67	42.71	2.94	125.59	2.53	0.71	0.71
55.40	69.32	43.79	2.90	126.89	2.52	0.72	0.72
55.50	69.77	44.02	2.89	127.13	2.52	0.72	0.72
55.52	68.79	43.32	2.91	126.29	2.53	0.72	0.72
55.60	66.93	41.97	2.98	124.98	2.54	0.71	0.71
55.67	64.58	40.27	3.06	123.13	2.55	0.71	0.71
55.72	61.65	38.22	3.16	120.61	2.57	0.70	0.70
55.79	58.07	35.70	3.29	117.52	2.59	0.69	0.69
55.86	54.37	33.13	3.44	114.05	2.62	2.24	2.24
55.95	50.44	30.41	3.62	110.07	2.65	2.06	2.06
56.00	47.04	28.08	3.79	106.54	2.67	1.91	1.91
56.05	44.22	26.16	3.96	103.47	2.69	1.79	1.79
56.11	42.29	24.85	4.05	100.71	2.71	1.70	1.70
56.19	40.82	23.87	4.10	97.89	2.71	1.64	1.64
56.24	39.25	22.82	4.16	94.95	2.72	1.57	1.57
56.34	37.48	21.62	4.25	92.00	2.73	1.49	1.49
56.37	35.77	20.49	4.37	89.45	2.75	1.41	1.41
56.43	34.28	19.49	4.46	87.00	2.76	1.35	1.35
56.54	33.15	18.72	4.55	85.17	2.77	1.30	1.30
56.59	32.27	18.14	4.58	83.05	2.78	1.26	1.26
56.64	31.50	17.66	4.56	80.45	2.77	1.22	1.22
56.73	30.75	17.17	4.53	77.84	2.77	1.19	1.19

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
56.79	29.94	16.66	4.53	75.39	2.77	1.15	1.15
56.84	29.45	16.36	4.46	73.04	2.76	1.13	1.13
56.93	29.13	16.17	4.37	70.74	2.75	1.12	1.12
56.96	28.72	15.94	4.29	68.35	2.74	0.30	1.10
57.03	28.18	15.60	4.24	66.11	2.73	0.29	1.07
57.13	27.59	15.23	4.21	64.05	2.73	0.26	1.05
57.16	27.05	14.88	4.19	62.33	2.73	0.25	1.02
57.23	26.67	14.63	4.19	61.35	2.73	0.23	1.00
57.29	26.39	14.44	4.20	60.68	2.73	0.21	0.99
57.38	26.31	14.38	4.17	60.04	2.72	0.21	0.99
57.42	26.37	14.42	4.15	59.82	2.72	0.21	0.99
57.49	26.54	14.51	4.14	60.12	2.72	0.21	0.99
57.57	26.67	14.57	4.16	60.64	2.72	0.24	1.00
57.62	26.59	14.49	4.22	61.18	2.73	0.23	0.99
57.68	26.52	14.41	4.28	61.64	2.74	0.24	0.99
57.77	26.34	14.25	4.36	62.10	2.75	0.28	0.98
57.85	26.02	14.01	4.47	62.58	2.76	0.27	0.97
57.92	25.63	13.72	4.56	62.60	2.77	0.26	0.95
57.97	25.13	13.37	4.67	62.43	2.79	0.25	0.93
58.02	24.52	12.97	4.77	61.87	2.80	0.25	0.90
58.07	23.81	12.50	4.87	60.83	2.81	0.25	0.87
58.16	23.20	12.09	4.95	59.82	2.82	0.24	0.84
58.23	22.77	11.81	5.00	59.00	2.82	0.21	0.82
58.31	22.40	11.56	5.04	58.29	2.83	0.19	0.81
58.37	22.16	11.40	5.05	57.57	2.83	0.18	0.80
58.42	22.06	11.33	5.03	57.06	2.83	0.18	0.79
58.50	22.07	11.33	5.02	56.90	2.83	0.19	0.79
58.57	22.16	11.37	5.02	57.09	2.83	0.19	0.79
58.61	22.31	11.45	5.05	57.78	2.83	0.19	0.80
58.68	22.68	11.65	5.10	59.42	2.84	0.21	0.81
58.76	23.31	11.99	5.16	61.90	2.84	0.22	0.84
58.80	24.38	12.62	5.14	64.88	2.84	0.23	0.88
58.87	25.76	13.44	5.10	68.50	2.84	0.24	0.94
58.95	26.94	14.12	5.12	72.34	2.84	0.99	0.99
59.01	29.48	15.68	4.92	77.17	2.82	1.09	1.09
59.06	32.30	17.44	4.67	81.48	2.79	1.21	1.21
59.16	35.49	19.45	4.37	84.96	2.75	1.34	1.34
59.19	38.57	21.43	4.10	87.83	2.71	1.46	1.46
59.29	40.88	22.89	3.93	90.03	2.69	1.56	1.56
59.33	42.63	24.01	3.82	91.61	2.67	1.63	1.63
59.39	43.82	24.76	3.73	92.47	2.66	1.68	1.68
59.47	44.76	25.38	3.64	92.27	2.65	1.71	1.71
59.54	45.65	25.98	3.51	91.18	2.63	1.75	1.75
59.58	44.87	25.51	3.48	88.87	2.63	1.71	1.71
59.65	43.24	24.45	3.53	86.35	2.63	1.64	1.64
59.73	40.72	22.76	3.72	84.64	2.66	1.54	1.54
59.81	38.24	21.07	3.98	83.87	2.70	1.43	1.43
59.85	36.61	20.12	3.91	78.60	2.69	1.37	1.37

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
59.92	35.57	19.57	3.73	72.90	2.66	1.32	1.32
59.99	35.26	19.53	3.43	67.02	2.62	0.43	1.31
60.08	35.07	19.57	3.13	61.24	2.57	0.10	0.62
60.13	35.05	19.76	2.82	55.82	2.51	0.07	0.62
60.18	35.20	20.10	2.51	50.35	2.44	0.06	0.62
60.27	35.91	20.86	2.16	44.99	2.36	0.05	0.63
60.33	37.42	22.37	1.00	22.37	2.23	0.03	0.64
60.38	38.51	-1.00	1.00	-1.00	-1.00	N/A	N/A
60.47	38.91	-1.00	1.00	-1.00	-1.00	N/A	N/A

Abbreviations

q_t:	Total cone resistance
K_c:	Cone resistance correction factor due to fines
$Q_{tn,cs}$:	Adjusted and corrected cone resistance due to fines
I_c:	Soil behavior type index
$S_{u(liq)}/\sigma'_v$:	Calculated liquefied undrained strength ratio
$S_{u(peak)}/\sigma'_v$:	Calculated peak undrained strength ratio

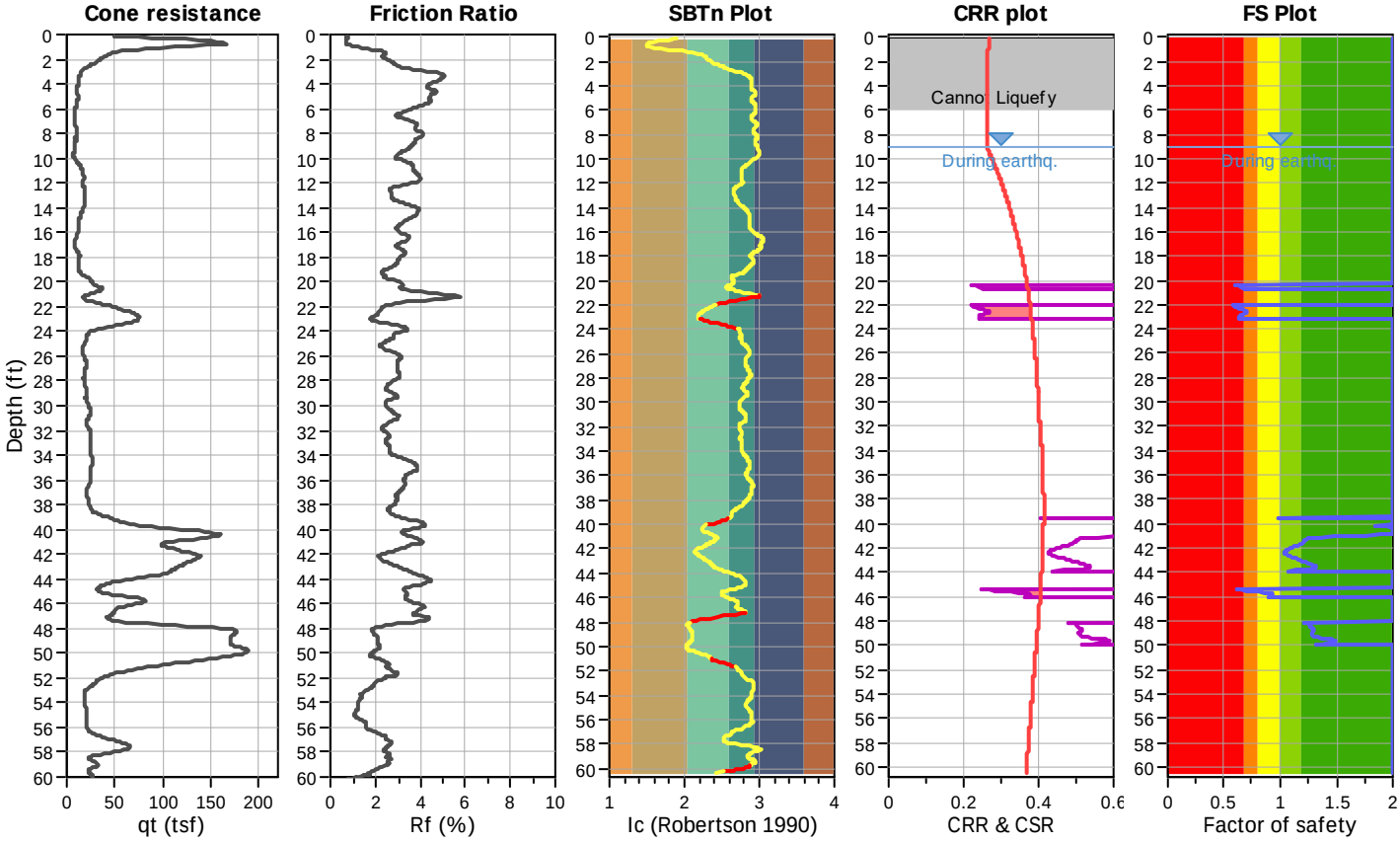
LIQUEFACTION ANALYSIS REPORT

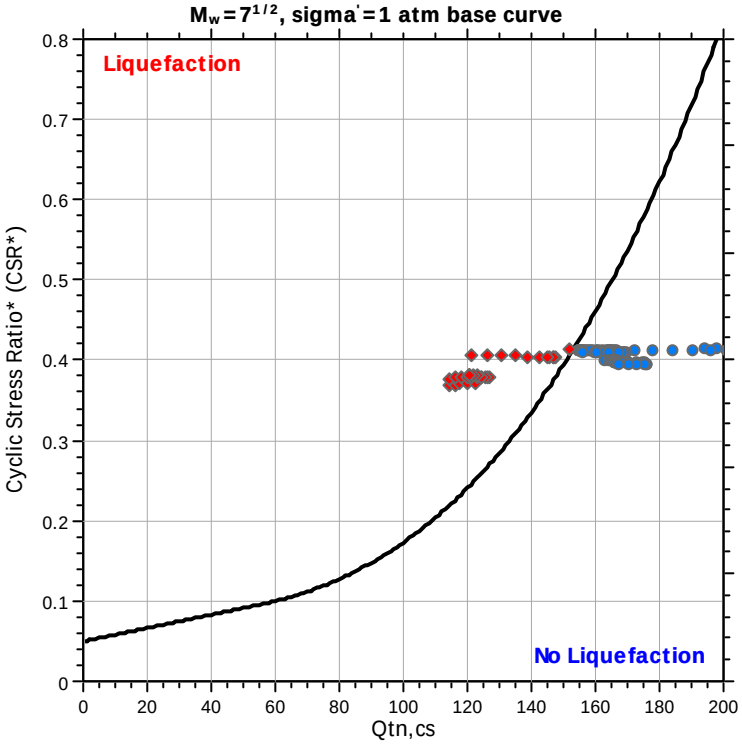
Project title : W1301-06-01 **Location : Perry Street**

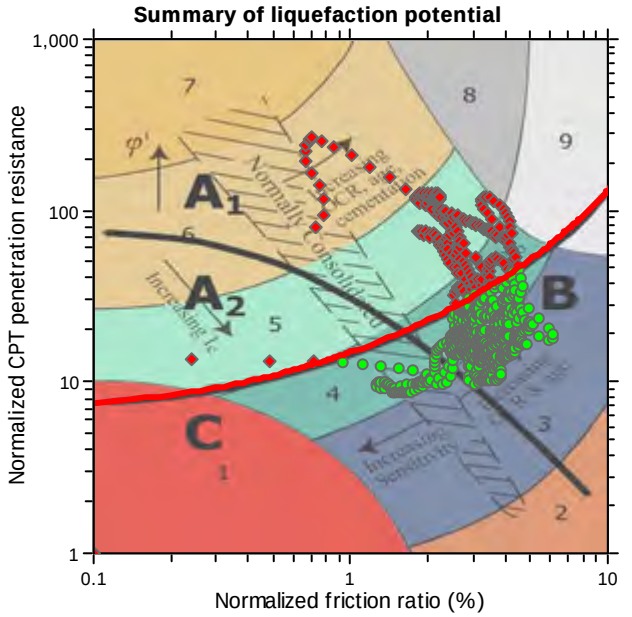
CPT file : CPT-5

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	12.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	9.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	.	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	6.68	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.55	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

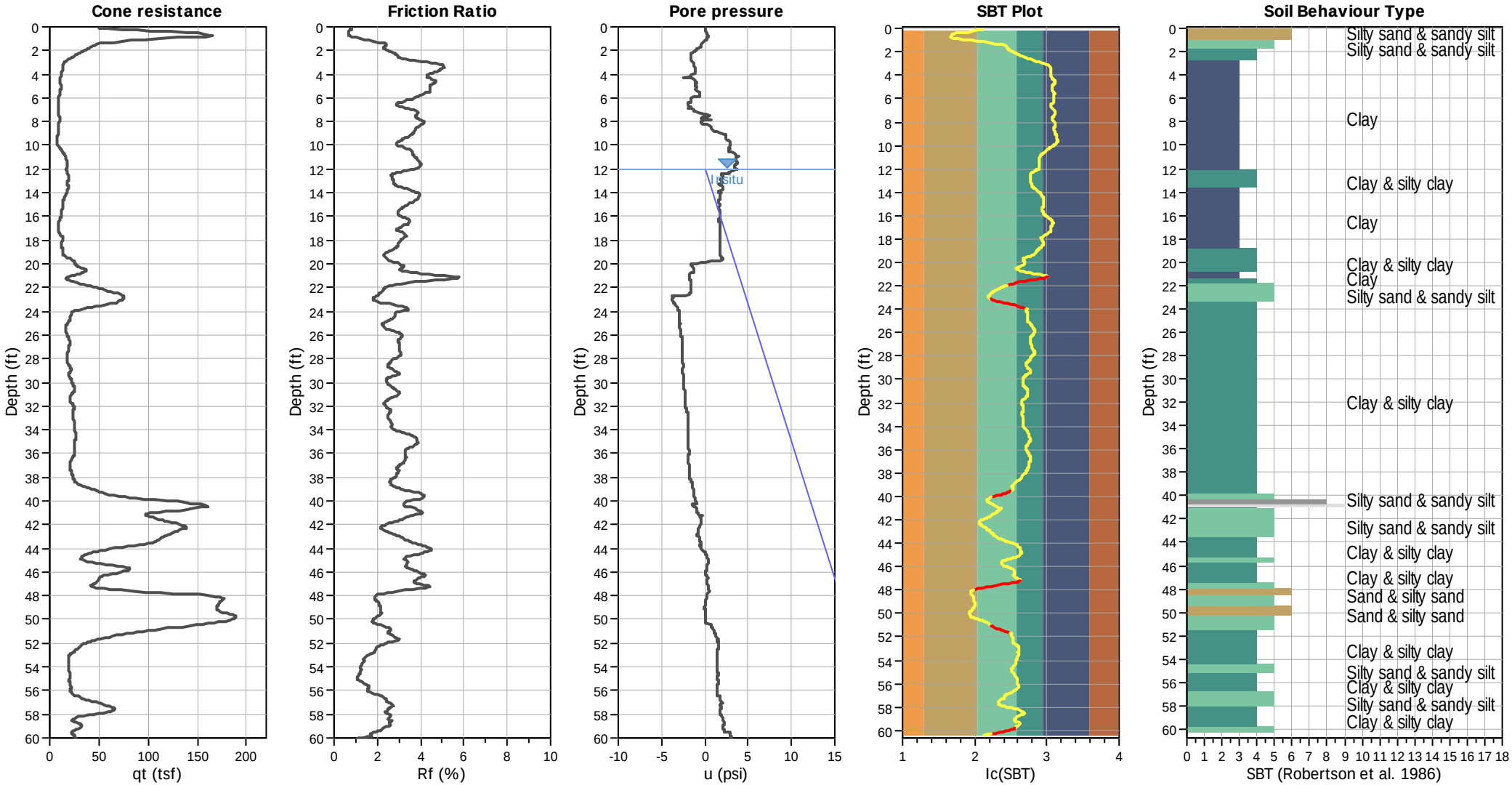






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



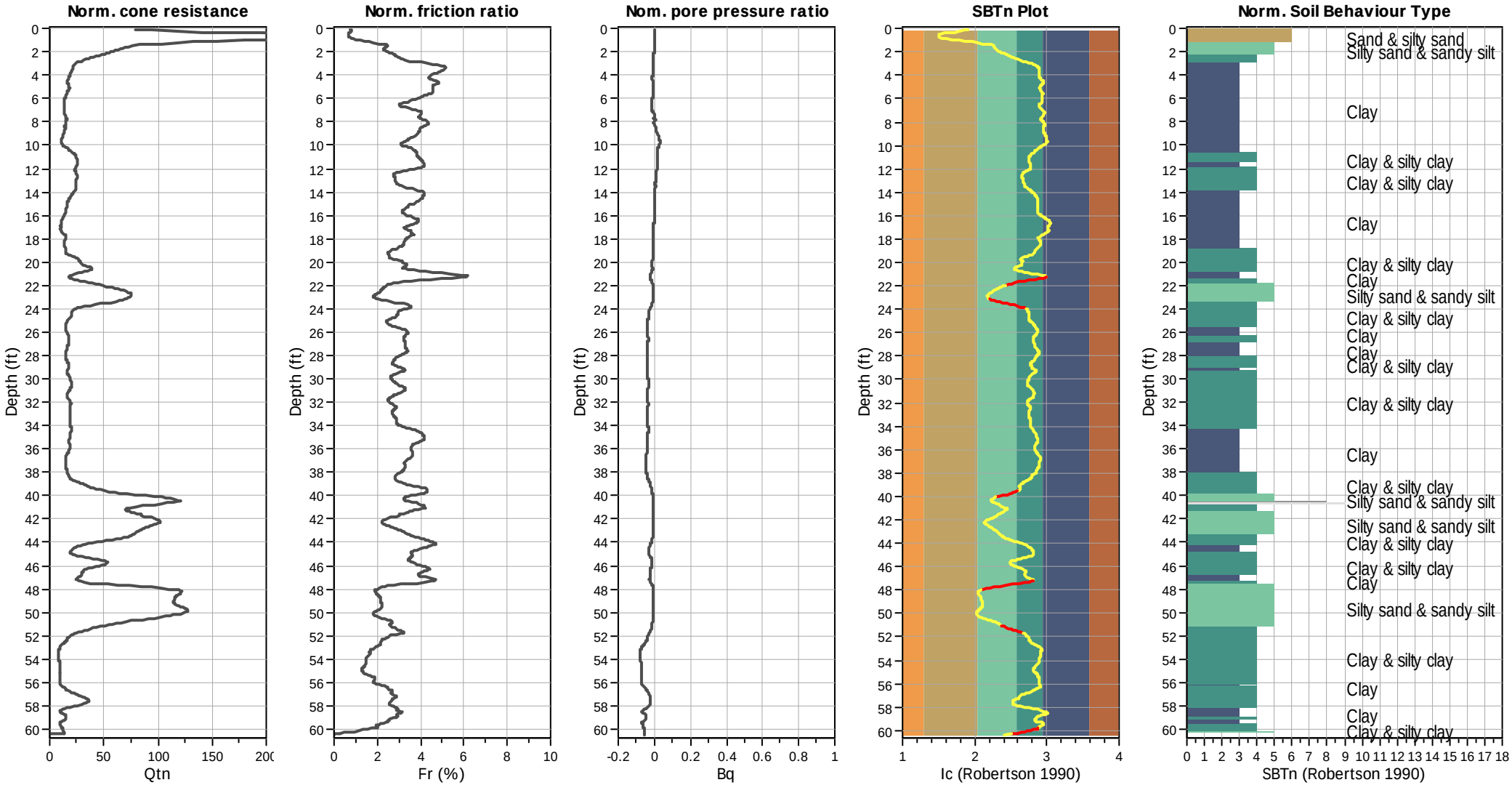
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	9.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	.	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.68	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	12.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

CPT basic interpretation plots (normalized)



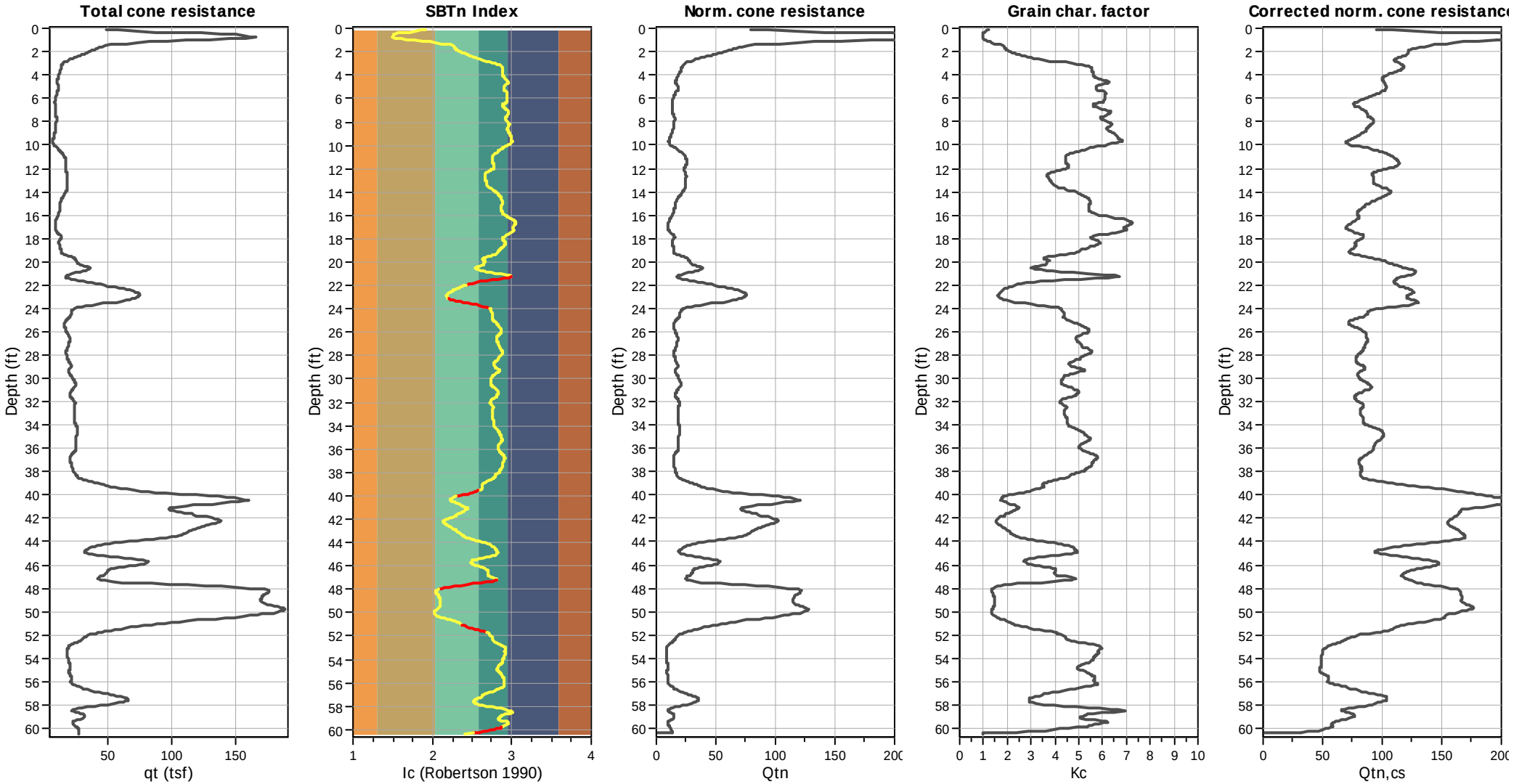
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	9.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	.	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.68	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	12.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

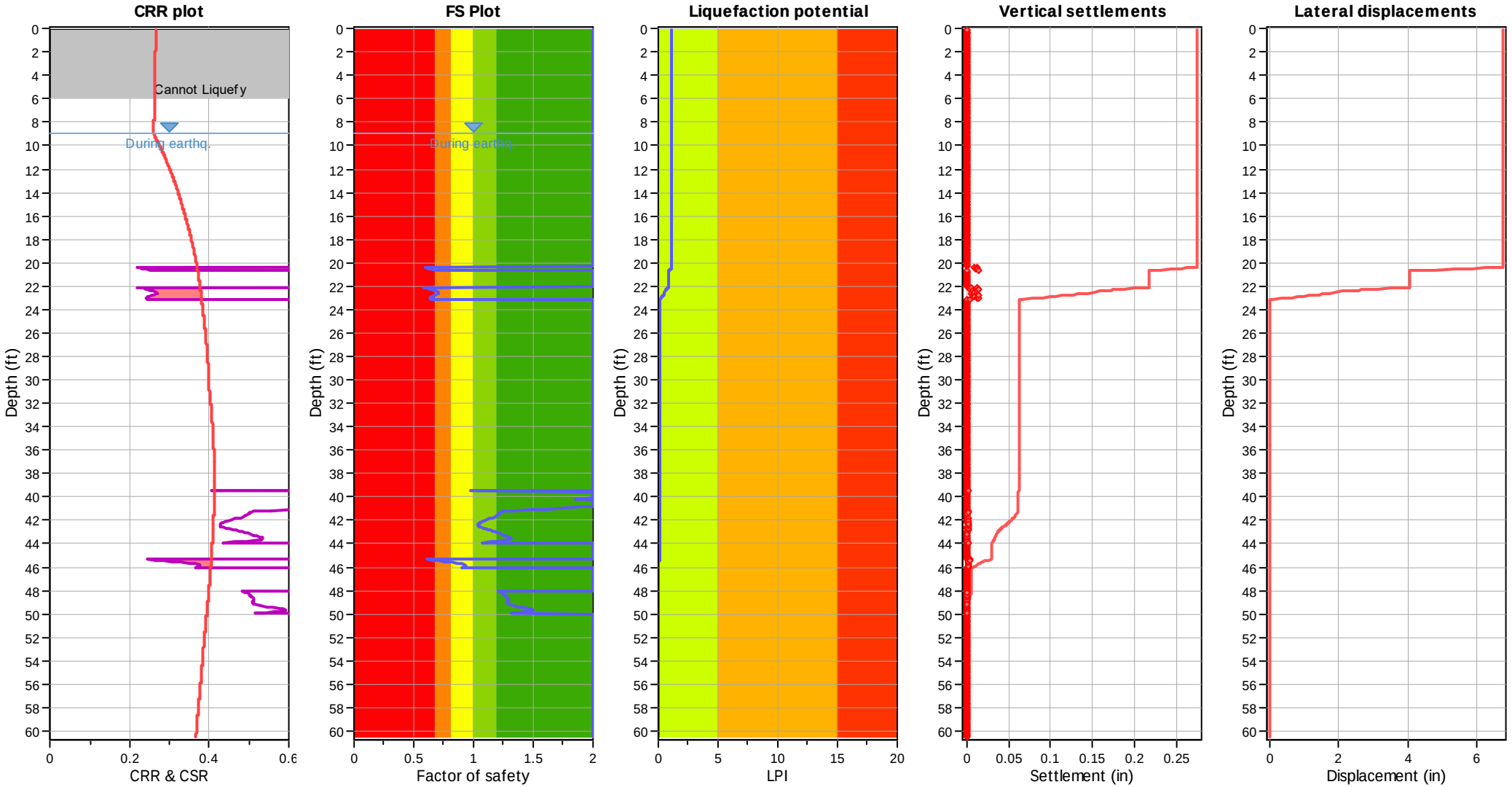
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	9.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	.	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.68	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	12.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	9.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	.	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.68	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	12.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

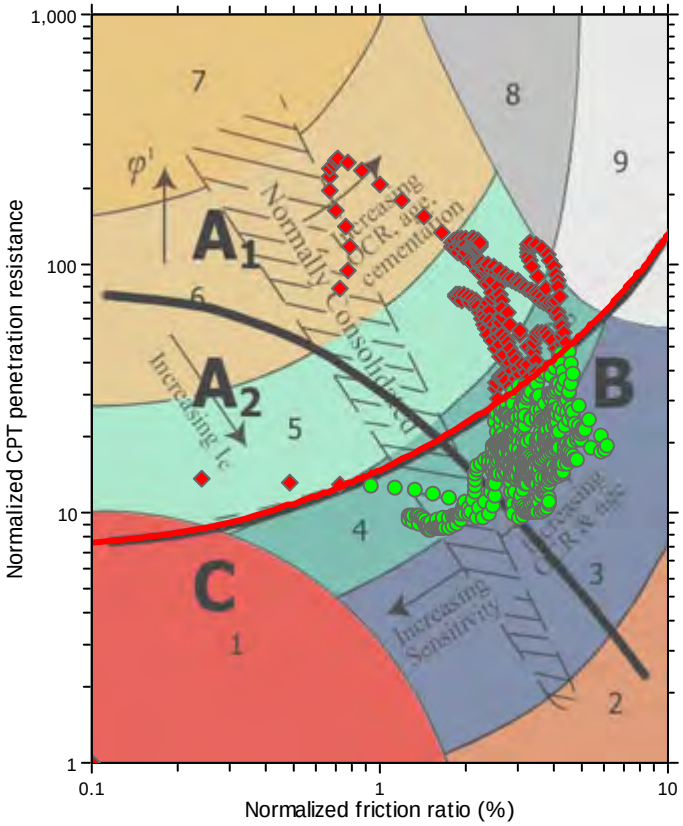
F.S. color scheme

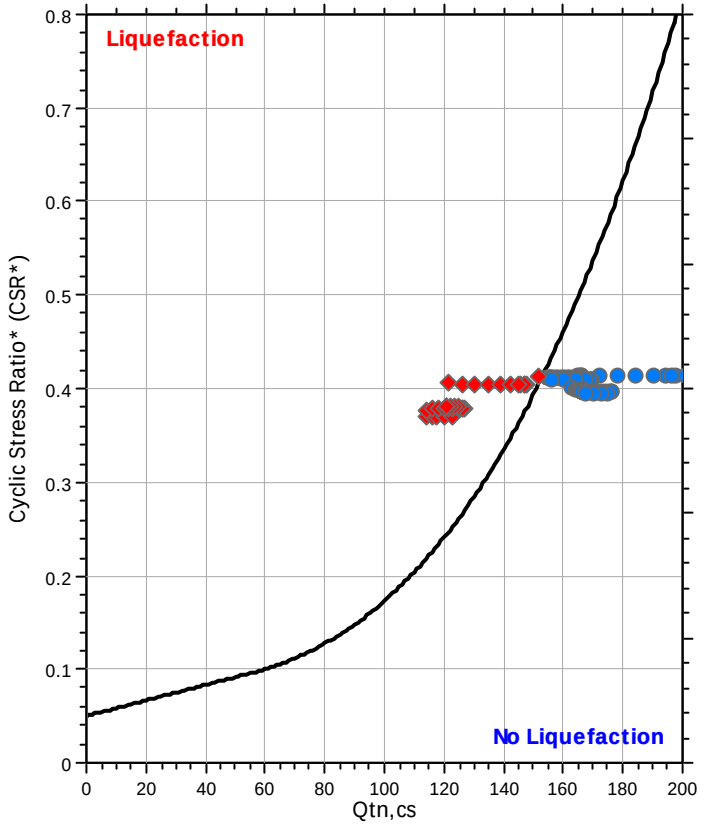
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

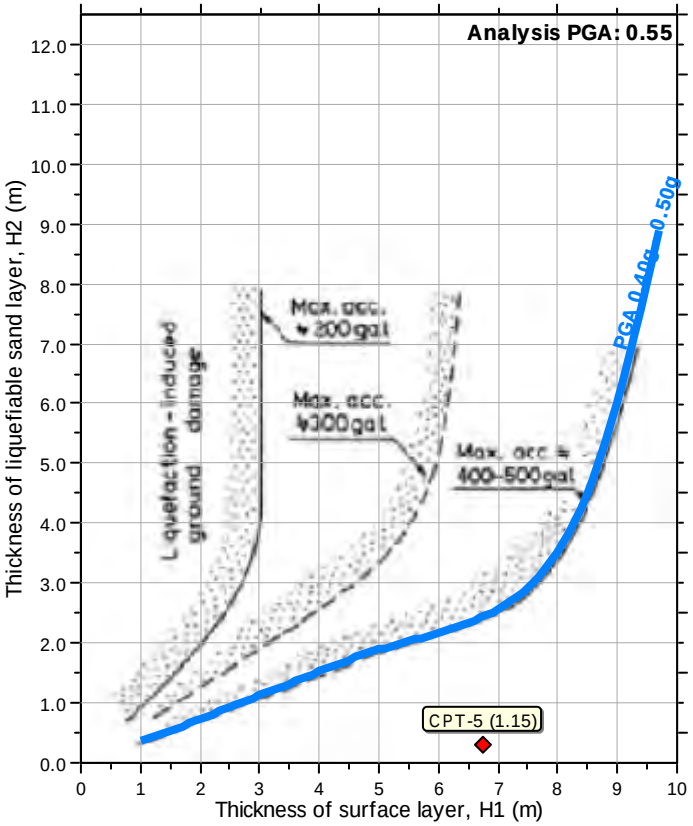
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



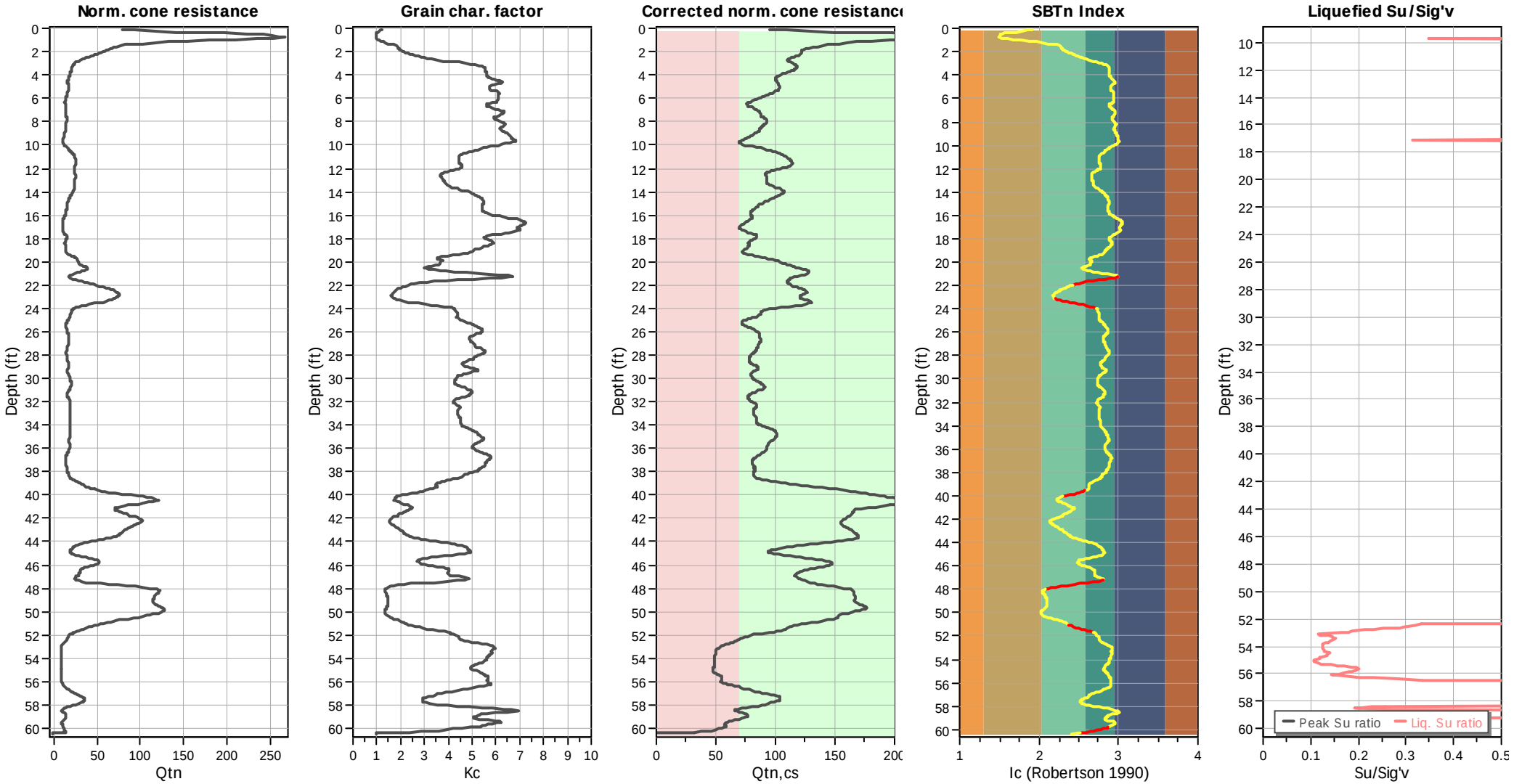




Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	9.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	.	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.68	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	12.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

Check for strength loss plots (Robertson (2010))



Input parameters and analysis data

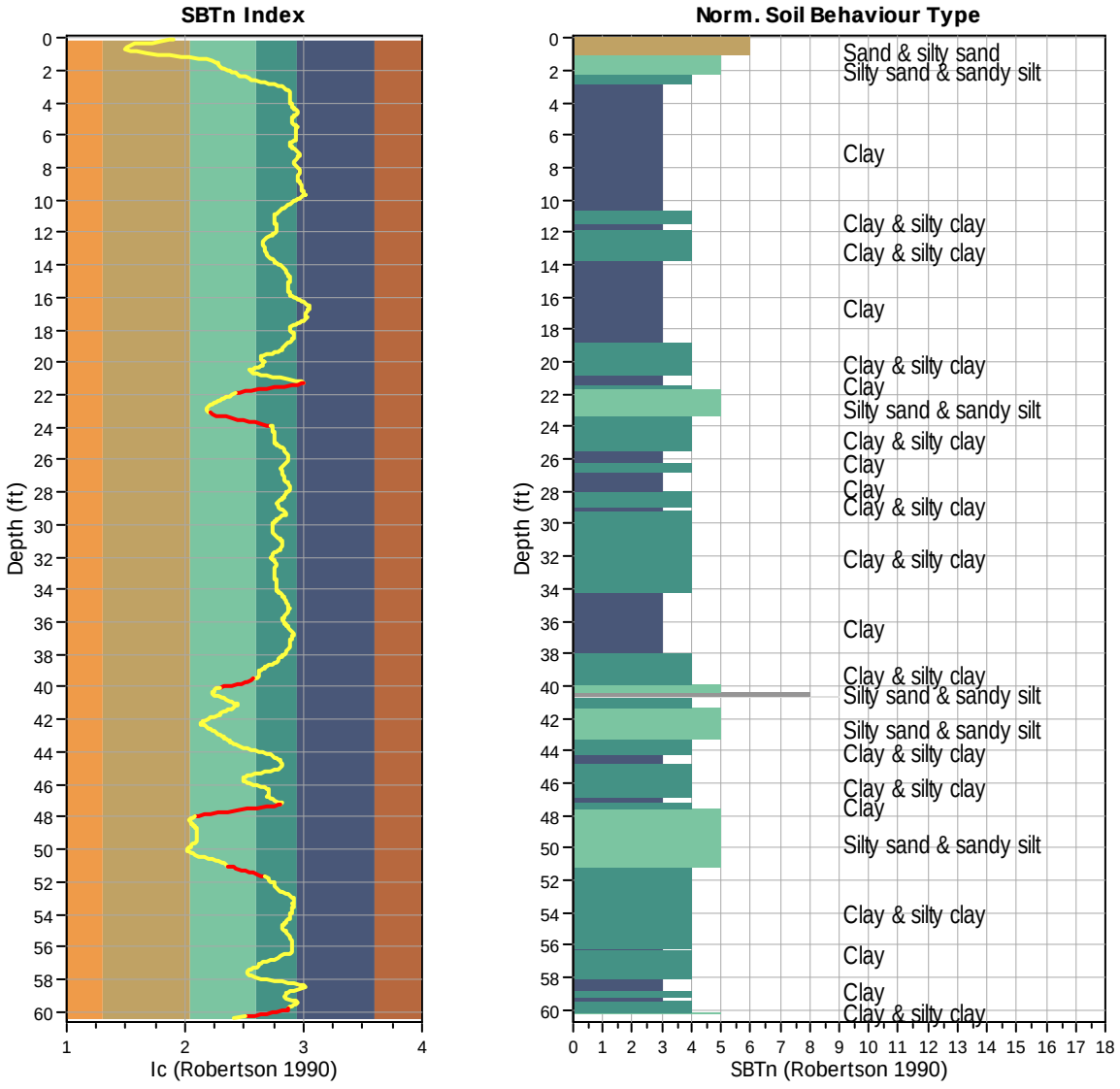
Analysis method:	NCEER (1998)	Depth to water table (erthq.):	9.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	.	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.68	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.55	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	12.00 ft	Fill height:	N/A	Limit depth:	50.00 ft

TRANSITION LAYER DETECTION ALGORITHM REPORT
Summary Details & Plots

Short description

The software will delete data when the cone is in transition from either clay to sand or vise-versa. To do this the software requires a range of I_c values over which the transition will be defined (typically somewhere between 1.80 < I_c < 3.0) and a rate of change of I_c. Transitions typically occur when the rate of change of I_c is fast (i.e. delta I_c is small).

The SBT_n plot below, displays in red the detected transition layers based on the parameters listed below the graphs.



Transition layer algorithm properties		General statistics	
I_c minimum check value:	1.70	Total points in CPT file:	922
I_c maximum check value:	3.00	Total points excluded:	67
I_c change ratio value:	0.0250	Exclusion percentage:	7.27%
Minimum number of points in layer:	4	Number of layers detected:	6

Transition layer No	Number of points	Depth	SBT_n number	SBT_n description
Transition layer 1	12	Start depth: 21.26 (ft)	3	Clay
		End depth: 22.01 (ft)	5	Silty sand & sandy silt
Transition layer 2	13	Start depth: 23.18 (ft)	5	Silty sand & sandy silt
		End depth: 23.96 (ft)	4	Clay & silty clay
Transition layer 3	9	Start depth: 39.60 (ft)	4	Clay & silty clay
		End depth: 40.11 (ft)	5	Silty sand & sandy silt
Transition layer 4	13	Start depth: 47.28 (ft)	3	Clay
		End depth: 48.04 (ft)	5	Silty sand & sandy silt
Transition layer 5	11	Start depth: 51.09 (ft)	5	Silty sand & sandy silt
		End depth: 51.73 (ft)	4	Clay & silty clay
Transition layer 6	9	Start depth: 59.87 (ft)	4	Clay & silty clay
		End depth: 60.40 (ft)	5	Silty sand & sandy silt

Start depth: Depth where the transition layer begins
End depth: Depth where the transition layer ends

:: Field input data ::

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
1	0.10	36.51	0.22	0.10	10.56	112.36
2	0.15	49.40	0.26	0.10	9.61	114.37
3	0.23	63.09	0.45	0.10	7.92	116.73
4	0.30	75.89	0.67	0.10	6.50	118.27
5	0.34	75.08	0.78	0.10	5.12	119.15
6	0.39	74.72	0.91	0.10	3.95	120.55
7	0.50	158.13	1.01	0.29	3.32	121.70
8	0.53	182.65	1.07	0.29	3.00	122.56
9	0.60	207.98	1.10	0.29	2.90	123.12
10	0.69	214.78	1.14	0.48	2.82	123.56
11	0.72	192.58	1.17	0.48	2.78	123.92
12	0.80	167.26	1.24	0.38	3.39	124.07
13	0.87	133.34	1.25	0.29	4.29	124.13
14	0.92	124.30	1.27	0.29	5.70	124.09
15	1.00	110.97	1.33	0.19	7.64	123.90
16	1.08	86.45	1.41	0.19	9.81	123.65
17	1.12	76.96	1.44	0.00	12.06	123.30
18	1.20	64.25	1.49	-0.10	14.06	122.93
19	1.30	52.44	1.43	-0.19	16.25	122.49
20	1.34	50.20	1.36	-0.29	18.41	121.99
21	1.40	48.33	1.26	-0.29	19.85	121.45
22	1.49	46.00	1.14	-0.38	21.03	120.87
23	1.54	44.21	1.07	-0.48	21.61	120.25
24	1.59	43.31	1.01	-0.48	21.73	119.72
25	1.68	41.70	0.92	-0.48	21.92	119.23
26	1.74	40.45	0.87	-0.67	22.21	118.82
27	1.79	39.73	0.83	-0.77	22.60	118.52
28	1.87	38.21	0.84	-0.96	23.18	118.29
29	1.94	36.51	0.86	-0.96	23.86	118.11
30	1.98	35.62	0.88	-1.05	24.64	118.00
31	2.04	34.54	0.89	-1.15	25.48	117.88
32	2.13	32.13	0.91	-1.34	26.44	117.75
33	2.17	31.50	0.91	-1.44	27.31	117.57
34	2.24	30.61	0.89	-1.63	28.26	117.28
35	2.33	28.91	0.83	-1.63	29.13	116.95
36	2.36	27.56	0.80	-1.63	30.23	116.54
37	2.43	26.67	0.75	-1.63	31.29	116.05
38	2.52	23.27	0.68	-1.53	32.43	115.56
39	2.56	23.27	0.66	-1.53	33.70	115.07
40	2.64	19.96	0.63	-1.53	35.18	114.63
41	2.74	17.90	0.59	-1.63	36.96	114.27
42	2.78	17.63	0.60	-1.63	39.08	114.01
43	2.83	17.09	0.61	-1.63	41.13	113.88
44	2.90	15.75	0.60	-1.44	43.58	113.78
45	2.98	14.77	0.65	-1.44	45.50	113.76
46	3.03	14.32	0.68	-1.34	47.06	113.82
47	3.10	13.60	0.70	-1.34	48.41	113.84
48	3.18	13.16	0.71	-1.25	49.54	113.86

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
49	3.23	13.16	0.71	-1.25	50.34	113.91
50	3.29	13.24	0.70	-1.25	50.80	113.89
51	3.38	13.69	0.68	-1.15	51.07	113.84
52	3.42	13.96	0.68	-1.15	51.09	113.71
53	3.51	13.78	0.67	-1.15	51.04	113.56
54	3.58	13.42	0.66	-1.15	51.01	113.39
55	3.62	13.24	0.65	-1.15	51.05	113.18
56	3.69	12.71	0.61	-1.15	51.21	112.94
57	3.77	12.35	0.60	-1.15	51.42	112.63
58	3.82	12.17	0.59	-1.15	51.47	112.29
59	3.89	11.81	0.56	-1.05	51.33	111.96
60	3.97	11.72	0.52	-1.15	51.36	111.61
61	4.03	11.54	0.49	-1.69	51.46	111.32
62	4.10	11.63	0.46	-1.69	51.71	111.06
63	4.15	11.90	0.46	-1.69	52.01	110.85
64	4.24	11.19	0.45	-2.04	52.34	110.70
65	4.29	10.83	0.45	-2.39	52.83	110.63
66	4.35	10.38	0.47	-1.63	53.43	110.61
67	4.44	10.38	0.49	-1.25	54.16	110.63
68	4.48	10.29	0.49	-1.15	54.98	110.62
69	4.54	10.29	0.50	-1.05	55.46	110.67
70	4.61	10.20	0.50	-1.05	55.64	110.73
71	4.69	10.20	0.49	-0.96	55.31	110.81
72	4.74	10.20	0.48	-0.96	54.45	110.92
73	4.82	10.47	0.49	-1.05	53.55	111.05
74	4.86	10.83	0.49	-1.05	52.79	111.17
75	4.94	11.45	0.50	-1.05	52.34	111.26
76	5.02	12.71	0.52	-1.05	52.16	111.32
77	5.09	12.89	0.53	-0.96	52.05	111.37
78	5.13	12.62	0.54	-0.96	52.05	111.35
79	5.23	11.72	0.53	-1.05	52.19	111.27
80	5.28	11.01	0.52	-1.05	52.54	111.14
81	5.33	10.74	0.50	-1.05	53.25	110.89
82	5.39	10.38	0.48	-0.86	53.98	110.59
83	5.48	10.11	0.45	-0.67	54.59	110.28
84	5.52	9.93	0.44	-0.67	54.81	109.97
85	5.58	9.84	0.41	-0.67	54.58	109.67
86	5.67	9.84	0.40	-0.57	54.43	109.37
87	5.73	9.84	0.40	-0.57	54.35	109.07
88	5.78	9.84	0.39	-0.57	54.42	108.73
89	5.88	10.02	0.37	-0.67	54.59	108.40
90	5.92	9.66	0.36	-1.25	54.63	108.09
91	5.97	9.22	0.35	-1.53	54.64	107.74
92	6.08	8.50	0.31	-1.63	54.54	107.36
93	6.11	8.23	0.31	-1.63	54.34	106.93
94	6.18	8.46	0.29	-1.63	54.25	106.54
95	6.27	8.41	0.27	-1.63	54.01	106.16
96	6.33	8.50	0.26	-1.63	53.55	105.85

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
97	6.38	8.50	0.24	-1.72	52.94	105.72
98	6.44	8.68	0.24	-1.92	52.10	105.59
99	6.50	8.68	0.24	-1.92	51.55	105.55
100	6.57	8.86	0.25	-1.92	51.37	105.67
101	6.67	9.04	0.26	-1.92	51.49	105.88
102	6.72	9.22	0.26	-1.82	51.79	106.17
103	6.76	9.31	0.27	-1.63	52.32	106.50
104	6.83	9.22	0.30	-1.92	52.99	106.84
105	6.92	9.13	0.32	-1.53	53.76	107.13
106	6.97	9.13	0.33	-1.34	54.53	107.34
107	7.04	9.04	0.35	-1.25	55.29	107.55
108	7.12	8.86	0.36	-1.34	55.88	107.71
109	7.16	8.68	0.36	-1.15	56.05	107.81
110	7.25	8.59	0.35	-0.77	55.94	107.87
111	7.32	8.77	0.35	-0.10	55.73	107.91
112	7.37	8.95	0.34	0.10	55.35	107.99
113	7.43	9.31	0.34	0.57	54.81	108.10
114	7.52	9.58	0.34	0.57	54.16	108.22
115	7.56	9.66	0.34	0.29	53.66	108.43
116	7.63	10.02	0.37	-0.29	53.31	108.65
117	7.71	10.29	0.39	-0.38	53.21	108.86
118	7.75	10.38	0.39	-0.24	53.29	109.02
119	7.83	10.43	0.42	0.77	53.69	109.14
120	7.88	10.47	0.43	-0.24	54.27	109.22
121	7.97	10.11	0.42	-0.29	54.91	109.21
122	8.01	9.93	0.41	-0.38	55.49	109.11
123	8.08	9.40	0.40	-0.38	55.95	108.99
124	8.18	8.95	0.39	-0.19	56.17	108.81
125	8.22	8.77	0.38	-0.10	56.30	108.61
126	8.28	8.77	0.36	0.29	56.12	108.45
127	8.35	9.04	0.35	0.57	55.94	108.31
128	8.43	9.31	0.35	0.67	55.64	108.20
129	8.48	9.40	0.35	0.67	55.28	108.09
130	8.56	9.75	0.35	0.67	55.02	108.00
131	8.63	9.66	0.35	0.67	55.01	107.95
132	8.68	9.49	0.35	0.86	55.18	107.89
133	8.76	9.13	0.34	0.96	55.48	107.79
134	8.80	8.86	0.34	1.15	55.64	107.62
135	8.88	8.59	0.34	1.34	55.99	107.40
136	8.94	8.50	0.33	1.72	56.33	107.15
137	8.99	8.41	0.32	1.82	56.68	106.90
138	9.07	8.41	0.29	2.20	56.99	106.64
139	9.14	8.32	0.28	2.39	57.34	106.34
140	9.22	8.14	0.27	2.39	57.58	106.00
141	9.27	7.96	0.27	2.39	57.75	105.66
142	9.37	7.70	0.26	2.39	57.74	105.27
143	9.42	7.25	0.25	2.39	57.92	104.93
144	9.47	7.07	0.24	2.49	58.20	104.57

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
145	9.52	7.07	0.23	2.59	58.64	104.23
146	9.62	7.16	0.21	2.78	59.03	103.88
147	9.67	7.07	0.20	2.87	59.10	103.53
148	9.73	6.80	0.19	2.87	58.43	103.48
149	9.82	6.53	0.19	2.87	57.56	103.58
150	9.86	6.44	0.19	2.87	56.52	103.77
151	9.92	6.62	0.18	2.87	55.39	104.30
152	10.02	7.96	0.23	2.87	54.38	104.95
153	10.06	8.50	0.25	2.97	53.43	105.74
154	10.12	9.04	0.26	2.97	52.41	106.64
155	10.21	10.47	0.32	2.78	51.52	107.51
156	10.25	10.83	0.35	2.87	50.62	108.39
157	10.31	11.19	0.39	2.78	49.79	109.12
158	10.41	11.81	0.44	2.78	48.98	109.76
159	10.45	11.81	0.46	2.78	48.08	110.36
160	10.52	12.44	0.48	2.78	47.33	110.89
161	10.61	13.33	0.50	3.16	46.55	111.35
162	10.64	13.69	0.50	3.35	45.77	111.77
163	10.71	14.59	0.51	3.45	45.06	112.13
164	10.81	15.48	0.55	3.54	44.50	112.47
165	10.85	15.84	0.56	3.64	44.05	112.77
166	10.91	16.20	0.59	3.64	43.83	113.04
167	10.96	16.33	0.61	3.93	43.64	113.30
168	11.03	16.47	0.63	3.64	43.57	113.56
169	11.10	16.47	0.64	3.64	43.59	113.76
170	11.20	16.47	0.65	3.64	43.67	113.97
171	11.24	16.65	0.65	3.64	43.61	114.15
172	11.30	17.27	0.67	3.64	43.59	114.33
173	11.36	17.45	0.68	3.73	43.61	114.50
174	11.43	17.81	0.70	3.83	43.70	114.63
175	11.50	18.17	0.71	3.73	43.86	114.71
176	11.58	18.26	0.73	3.64	44.05	114.73
177	11.63	18.17	0.75	3.64	44.19	114.71
178	11.70	17.72	0.74	3.45	44.39	114.67
179	11.79	16.91	0.71	3.45	44.55	114.56
180	11.84	16.56	0.67	3.45	44.61	114.37
181	11.90	16.87	0.66	3.45	44.65	114.11
182	11.98	16.65	0.65	3.73	44.29	113.79
183	12.02	16.82	0.62	3.64	43.69	113.44
184	12.09	16.65	0.57	3.26	42.90	113.12
185	12.14	16.29	0.54	3.06	42.08	112.86
186	12.21	17.54	0.51	2.87	41.25	112.60
187	12.29	17.45	0.48	2.78	40.24	112.37
188	12.34	17.72	0.47	2.68	39.44	112.22
189	12.44	17.90	0.47	1.92	38.86	112.17
190	12.49	18.43	0.47	1.92	38.28	112.18
191	12.57	19.42	0.48	2.01	38.16	112.24
192	12.64	19.24	0.50	2.01	38.14	112.33

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
193	12.68	19.24	0.52	2.01	38.16	112.41
194	12.73	19.24	0.52	2.01	38.27	112.48
195	12.84	18.79	0.53	1.82	38.48	112.50
196	12.89	18.61	0.53	1.92	38.71	112.49
197	12.98	18.43	0.51	1.92	38.89	112.44
198	13.00	18.08	0.51	1.92	39.00	112.36
199	13.08	17.99	0.49	2.01	39.15	112.30
200	13.14	18.35	0.48	2.01	39.34	112.28
201	13.23	18.26	0.48	1.82	39.52	112.31
202	13.27	18.08	0.48	1.63	39.69	112.43
203	13.34	18.26	0.49	1.72	39.82	112.60
204	13.43	17.99	0.53	1.92	40.03	112.82
205	13.47	18.26	0.55	2.01	40.32	113.07
206	13.54	18.79	0.58	2.01	40.90	113.36
207	13.63	19.15	0.61	2.01	41.67	113.66
208	13.67	19.15	0.62	2.01	42.42	113.92
209	13.72	19.33	0.64	2.01	43.09	114.13
210	13.83	18.35	0.68	1.63	43.82	114.25
211	13.88	17.45	0.70	1.63	44.53	114.30
212	13.94	17.45	0.70	1.63	45.27	114.30
213	13.98	17.00	0.70	1.92	46.08	114.24
214	14.06	16.56	0.67	1.82	47.01	114.14
215	14.14	16.47	0.65	1.82	47.58	113.98
216	14.18	16.29	0.64	1.82	47.86	113.78
217	14.26	15.66	0.62	1.82	48.24	113.53
218	14.33	15.30	0.61	1.82	48.60	113.25
219	14.37	15.21	0.59	1.82	48.95	113.00
220	14.45	15.03	0.57	1.82	49.50	112.74
221	14.54	14.50	0.55	1.82	49.99	112.47
222	14.61	13.96	0.53	1.82	50.28	112.20
223	14.65	13.69	0.52	1.63	50.42	111.91
224	14.74	13.16	0.51	1.63	50.59	111.63
225	14.80	13.16	0.49	1.63	50.72	111.36
226	14.85	13.16	0.47	1.63	50.77	111.11
227	14.90	13.16	0.45	1.63	50.76	110.90
228	15.00	13.16	0.44	1.72	50.70	110.68
229	15.05	13.16	0.43	1.72	50.46	110.47
230	15.10	12.98	0.42	1.72	50.33	110.27
231	15.17	12.80	0.42	1.63	50.25	110.08
232	15.25	12.80	0.41	1.63	50.21	109.90
233	15.30	12.71	0.40	1.63	50.15	109.73
234	15.36	12.44	0.39	1.63	50.15	109.54
235	15.45	12.44	0.38	1.72	50.13	109.36
236	15.49	12.44	0.37	1.72	50.14	109.16
237	15.57	12.44	0.36	1.72	50.25	108.98
238	15.64	12.26	0.35	1.72	50.41	108.85
239	15.69	12.17	0.34	1.72	50.59	108.76
240	15.77	11.81	0.34	1.72	50.91	108.69

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
241	15.85	11.72	0.34	1.72	51.53	108.66
242	15.89	11.72	0.35	1.72	52.19	108.62
243	15.99	11.63	0.36	1.72	53.04	108.60
244	16.05	11.45	0.36	1.72	54.05	108.59
245	16.09	10.92	0.37	1.72	54.98	108.57
246	16.16	10.74	0.36	1.72	56.09	108.50
247	16.24	10.38	0.36	1.63	57.30	108.39
248	16.30	10.02	0.36	1.63	58.39	108.23
249	16.34	9.75	0.35	1.63	59.45	108.02
250	16.44	9.31	0.34	1.63	60.21	107.76
251	16.48	9.04	0.33	1.72	60.84	107.51
252	16.54	9.04	0.32	1.72	61.30	107.26
253	16.63	8.77	0.30	1.72	61.55	107.02
254	16.69	8.77	0.29	1.72	61.55	106.78
255	16.74	8.77	0.28	1.72	61.22	106.55
256	16.82	8.77	0.28	1.72	60.87	106.35
257	16.90	8.86	0.28	1.72	60.56	106.14
258	16.94	8.95	0.27	1.72	59.99	106.00
259	17.03	9.04	0.26	1.72	59.58	105.89
260	17.07	8.95	0.26	1.72	59.28	105.77
261	17.13	8.86	0.25	1.82	59.51	105.80
262	17.21	9.22	0.25	1.82	60.04	105.94
263	17.26	9.13	0.25	1.82	60.25	106.30
264	17.33	8.86	0.24	1.82	59.79	106.84
265	17.41	8.59	0.29	1.82	58.81	107.43
266	17.48	8.68	0.33	1.82	57.32	108.11
267	17.53	10.02	0.38	1.82	56.26	108.74
268	17.61	11.90	0.42	1.82	55.21	109.32
269	17.67	13.07	0.44	1.82	54.15	109.87
270	17.72	14.50	0.46	1.82	52.82	110.19
271	17.82	14.23	0.47	1.82	51.58	110.38
272	17.88	14.23	0.46	1.82	50.88	110.40
273	17.92	14.23	0.45	1.82	50.71	110.26
274	18.02	13.69	0.40	1.82	51.01	110.03
275	18.07	13.16	0.38	1.82	51.47	109.73
276	18.14	12.17	0.37	1.82	52.23	109.40
277	18.20	11.63	0.35	1.72	52.62	109.09
278	18.27	11.10	0.34	1.82	52.89	108.82
279	18.32	11.68	0.34	1.72	53.06	108.71
280	18.38	10.65	0.35	1.82	53.23	108.68
281	18.47	11.72	0.34	1.82	53.15	108.71
282	18.51	12.35	0.35	1.82	52.67	108.79
283	18.57	12.80	0.36	1.82	52.08	108.91
284	18.67	12.71	0.37	1.72	51.65	108.96
285	18.71	12.71	0.38	1.72	50.71	108.97
286	18.81	13.24	0.37	1.72	50.07	108.94
287	18.86	13.24	0.37	1.72	49.41	108.83
288	18.91	13.24	0.35	1.72	48.87	108.62

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
289	18.97	13.16	0.33	1.82	48.38	108.41
290	19.06	13.42	0.31	1.82	47.85	108.19
291	19.11	13.60	0.29	1.82	47.49	108.10
292	19.21	13.24	0.27	1.82	46.84	108.12
293	19.27	12.98	0.28	1.82	46.13	108.40
294	19.31	13.16	0.29	1.82	45.11	108.99
295	19.41	13.87	0.33	1.92	43.72	109.93
296	19.46	15.39	0.36	1.92	42.18	110.99
297	19.51	17.09	0.43	1.92	40.10	111.99
298	19.56	20.05	0.52	2.01	38.26	112.88
299	19.63	24.52	0.64	2.01	37.43	113.63
300	19.71	27.21	0.70	1.82	36.94	114.30
301	19.80	30.52	0.68	0.67	37.08	114.90
302	19.82	30.34	0.68	0.10	37.42	115.44
303	19.91	25.42	0.69	-0.48	38.66	115.83
304	19.95	24.07	0.72	-0.86	38.28	116.25
305	20.02	21.57	0.77	-1.63	37.99	116.59
306	20.11	21.30	0.84	-1.63	38.01	116.96
307	20.15	17.36	0.89	-1.36	38.01	117.36
308	20.24	31.86	0.95	-1.36	37.41	117.81
309	20.29	33.56	0.97	-1.36	36.44	118.32
310	20.36	35.35	1.00	-1.34	35.13	118.88
311	20.41	35.62	1.04	-1.34	33.89	119.38
312	20.48	35.98	1.08	-1.34	32.57	119.84
313	20.56	38.57	1.15	-1.34	33.12	120.13
314	20.66	40.72	1.25	-1.34	34.33	120.33
315	20.71	40.45	1.28	-1.34	35.87	120.45
316	20.74	38.39	1.30	-1.63	37.71	120.42
317	20.82	31.95	1.35	-1.72	39.84	120.24
318	20.91	25.95	1.34	-1.72	42.53	119.91
319	20.95	23.63	1.31	-1.72	45.95	119.39
320	21.03	19.87	1.20	-1.72	50.00	118.77
321	21.11	17.09	1.04	-1.72	54.40	118.12
322	21.15	15.75	0.97	-1.72	57.33	117.50
323	21.22	13.96	0.88	-1.72	58.13	117.00
324	21.26	13.60	0.84	-1.72	57.68	116.61
325	21.34	14.05	0.84	-1.72	55.24	116.49
326	21.41	16.47	0.84	-1.63	52.03	116.63
327	21.48	19.51	0.85	-1.63	47.67	116.98
328	21.52	21.92	0.88	-1.63	43.41	117.42
329	21.61	26.76	0.95	-1.63	39.61	117.87
330	21.66	29.71	0.98	-1.63	36.14	118.33
331	21.76	37.14	1.04	-1.63	33.35	118.81
332	21.81	39.82	1.03	-1.63	31.04	119.30
333	21.85	42.15	1.02	-1.63	29.08	119.77
334	21.92	45.37	1.03	-1.63	27.51	120.19
335	22.01	48.06	1.10	-1.63	26.21	120.64
336	22.09	51.28	1.17	-1.63	25.30	121.01

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
337	22.12	53.16	1.20	-1.63	24.45	121.43
338	22.20	56.20	1.27	-1.63	23.69	121.84
339	22.29	58.80	1.36	-1.63	22.94	122.24
340	22.31	60.59	1.38	-1.63	22.13	122.59
341	22.40	64.88	1.45	-1.63	21.46	122.90
342	22.45	67.39	1.46	-1.72	20.86	123.20
343	22.51	71.95	1.47	-1.72	20.41	123.48
344	22.60	75.71	1.48	-1.82	19.93	123.62
345	22.64	76.25	1.50	-2.20	19.30	123.54
346	22.75	77.86	1.56	-3.83	18.81	123.41
347	22.80	77.50	1.61	-3.64	18.48	123.26
348	22.85	76.87	1.49	-3.64	18.30	123.10
349	22.91	75.17	1.15	-3.74	18.25	122.93
350	22.99	74.01	1.15	-3.74	18.44	122.92
351	23.08	71.77	1.18	-3.74	18.75	122.92
352	23.10	71.32	1.19	-3.74	19.34	122.94
353	23.18	71.10	1.23	-3.59	20.13	123.05
354	23.26	70.88	1.51	-3.59	21.30	123.32
355	23.30	69.98	1.61	-3.46	22.66	123.54
356	23.37	62.46	1.74	-3.46	24.31	123.59
357	23.46	60.85	1.78	-3.46	26.22	123.46
358	23.51	56.38	1.75	-3.35	28.40	123.17
359	23.56	51.10	1.74	-3.35	30.58	122.57
360	23.63	39.20	1.53	-3.16	32.91	121.82
361	23.72	32.22	1.28	-3.16	34.95	120.91
362	23.79	27.74	1.09	-3.06	37.22	119.84
363	23.87	25.15	0.85	-3.06	39.47	118.67
364	23.91	25.15	0.77	-3.06	41.35	117.41
365	23.96	23.54	0.68	-2.97	42.20	116.31
366	24.02	22.19	0.63	-2.97	42.33	115.46
367	24.11	21.66	0.59	-2.97	42.31	114.80
368	24.20	22.24	0.59	-2.97	42.44	114.43
369	24.22	21.30	0.59	-2.87	42.77	114.15
370	24.31	22.28	0.60	-2.97	43.05	114.00
371	24.39	21.21	0.60	-2.97	43.25	113.94
372	24.42	21.03	0.60	-2.97	43.29	113.91
373	24.51	20.85	0.60	-2.97	43.38	113.83
374	24.55	20.94	0.59	-2.87	43.13	113.71
375	24.63	20.94	0.60	-2.87	43.10	113.47
376	24.71	21.21	0.57	-2.87	43.06	113.19
377	24.75	21.30	0.54	-2.87	43.09	112.82
378	24.81	21.39	0.50	-2.87	43.30	112.41
379	24.90	20.40	0.45	-2.87	43.59	111.96
380	24.94	19.06	0.43	-2.97	43.77	111.42
381	25.01	17.72	0.39	-2.87	44.10	110.93
382	25.07	16.47	0.38	-2.78	44.56	110.47
383	25.15	16.02	0.36	-2.87	45.33	110.11
384	25.20	15.93	0.34	-2.87	46.22	109.91

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
385	25.28	16.20	0.35	-2.87	47.02	109.82
386	25.35	16.20	0.35	-2.87	47.64	109.85
387	25.40	16.11	0.37	-2.87	47.91	109.96
388	25.48	15.93	0.39	-2.78	48.23	110.23
389	25.55	15.84	0.41	-2.78	48.74	110.65
390	25.60	16.02	0.42	-2.78	49.19	111.08
391	25.67	16.38	0.43	-2.78	49.62	111.50
392	25.75	16.91	0.48	-2.78	50.01	111.89
393	25.79	17.27	0.54	-2.78	50.37	112.22
394	25.90	17.72	0.56	-2.78	50.28	112.53
395	25.95	17.90	0.57	-2.78	50.06	112.82
396	26.01	17.72	0.58	-2.73	49.90	113.08
397	26.09	17.18	0.58	-2.73	49.67	113.26
398	26.13	18.70	0.58	-2.73	49.20	113.34
399	26.19	19.06	0.58	-2.68	48.75	113.40
400	26.27	19.06	0.58	-2.68	48.22	113.48
401	26.34	19.33	0.58	-2.68	47.65	113.57
402	26.39	19.69	0.57	-2.68	46.91	113.68
403	26.47	20.05	0.58	-2.68	46.67	113.76
404	26.54	20.76	0.60	-2.68	46.56	113.83
405	26.58	20.85	0.61	-2.68	46.55	113.90
406	26.67	21.21	0.62	-2.68	46.67	113.94
407	26.73	20.58	0.62	-2.68	46.84	113.98
408	26.78	20.31	0.62	-2.68	47.01	113.97
409	26.85	19.78	0.62	-2.68	47.20	113.90
410	26.93	19.42	0.61	-2.68	47.39	113.81
411	26.98	19.42	0.60	-2.68	47.70	113.72
412	27.03	19.42	0.58	-2.68	47.92	113.63
413	27.13	19.51	0.56	-2.68	48.13	113.54
414	27.17	19.51	0.56	-2.68	48.28	113.47
415	27.24	19.24	0.57	-2.59	48.45	113.38
416	27.33	19.06	0.57	-2.59	48.82	113.29
417	27.36	18.97	0.57	-2.59	49.28	113.23
418	27.43	18.70	0.58	-2.59	49.80	113.17
419	27.53	18.17	0.56	-2.59	50.35	113.11
420	27.60	17.54	0.56	-2.59	50.73	113.01
421	27.63	17.27	0.56	-2.59	50.97	112.86
422	27.72	17.27	0.54	-2.59	51.14	112.70
423	27.77	17.27	0.54	-2.59	51.07	112.53
424	27.84	17.27	0.52	-2.59	50.75	112.42
425	27.93	17.18	0.49	-2.59	50.22	112.31
426	27.97	17.36	0.48	-2.59	49.60	112.20
427	28.02	17.81	0.48	-2.59	49.10	112.12
428	28.12	18.52	0.48	-2.59	48.66	112.04
429	28.17	18.70	0.48	-2.59	48.15	111.96
430	28.22	18.70	0.48	-2.59	47.80	111.90
431	28.32	18.52	0.48	-2.59	47.78	111.89
432	28.36	18.43	0.48	-2.59	47.50	111.91

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
433	28.42	18.61	0.46	-2.49	46.77	112.05
434	28.48	18.17	0.45	-2.49	46.08	112.17
435	28.57	17.54	0.47	-2.49	45.43	112.29
436	28.62	19.06	0.48	-2.49	44.84	112.54
437	28.72	22.55	0.53	-2.49	44.49	112.80
438	28.75	22.55	0.52	-2.49	44.55	113.11
439	28.82	22.55	0.52	-2.59	44.89	113.45
440	28.87	23.18	0.59	-2.68	45.00	113.73
441	28.95	22.46	0.61	-2.68	45.32	113.93
442	29.02	21.21	0.64	-2.68	46.08	113.95
443	29.07	19.87	0.66	-2.62	46.91	113.93
444	29.16	19.78	0.65	-2.62	47.80	113.91
445	29.21	19.69	0.62	-2.55	48.59	113.77
446	29.29	19.51	0.57	-2.49	48.98	113.59
447	29.36	18.88	0.54	-2.49	48.88	113.38
448	29.40	18.88	0.54	-2.49	47.95	113.17
449	29.47	18.88	0.53	-2.39	46.96	113.00
450	29.56	19.60	0.51	-2.49	46.00	112.89
451	29.60	19.96	0.50	-2.39	45.13	112.88
452	29.71	21.84	0.50	-2.49	44.46	112.94
453	29.75	22.46	0.51	-2.39	43.85	113.04
454	29.79	22.91	0.52	-2.39	43.32	113.16
455	29.86	23.18	0.53	-2.39	43.08	113.33
456	29.95	22.64	0.55	-2.39	42.92	113.53
457	30.04	22.60	0.57	-2.39	42.85	113.72
458	30.06	22.60	0.58	-2.39	42.69	113.91
459	30.15	22.55	0.60	-2.39	42.61	114.11
460	30.20	22.91	0.61	-2.39	42.52	114.35
461	30.28	24.25	0.61	-2.39	42.46	114.65
462	30.35	25.15	0.62	-2.39	42.47	114.93
463	30.39	25.59	0.64	-2.39	42.47	115.17
464	30.45	26.22	0.68	-2.39	42.49	115.36
465	30.54	26.31	0.75	-2.49	42.63	115.52
466	30.60	25.68	0.76	-2.39	43.18	115.66
467	30.67	25.33	0.75	-2.30	43.89	115.73
468	30.74	24.70	0.74	-2.30	44.61	115.75
469	30.79	24.25	0.74	-2.30	45.42	115.70
470	30.86	22.91	0.74	-2.30	45.96	115.45
471	30.95	22.37	0.71	-2.30	46.40	115.16
472	30.99	22.19	0.69	-2.30	46.82	114.83
473	31.05	21.75	0.68	-2.30	47.20	114.49
474	31.14	21.21	0.58	-2.30	47.39	114.12
475	31.19	20.85	0.56	-2.30	47.38	113.74
476	31.26	20.31	0.53	-2.30	47.21	113.40
477	31.34	19.78	0.51	-2.30	46.96	113.06
478	31.39	20.27	0.50	-2.30	46.58	112.76
479	31.45	19.60	0.49	-2.20	46.49	112.68
480	31.54	20.22	0.49	-2.20	46.24	112.60

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
481	31.57	20.49	0.48	-2.20	45.49	112.54
482	31.63	20.76	0.49	-2.20	44.57	112.64
483	31.73	21.03	0.53	-2.30	43.79	112.82
484	31.77	21.48	0.51	-2.20	42.90	113.11
485	31.84	23.00	0.47	-2.30	42.23	113.42
486	31.93	24.79	0.53	-2.20	42.18	113.73
487	31.98	25.68	0.57	-2.20	42.06	114.01
488	32.05	26.67	0.62	-2.20	41.94	114.20
489	32.09	26.76	0.64	-2.20	42.01	114.39
490	32.17	24.07	0.66	-2.15	42.38	114.63
491	32.22	24.43	0.66	-2.15	42.95	114.72
492	32.32	23.80	0.64	-2.15	43.44	114.75
493	32.35	23.27	0.64	-2.11	43.87	114.70
494	32.43	23.71	0.64	-2.11	44.20	114.60
495	32.52	22.91	0.62	-2.11	43.99	114.52
496	32.57	23.63	0.61	-2.01	43.86	114.42
497	32.62	23.98	0.60	-2.01	43.67	114.35
498	32.71	24.34	0.59	-2.01	43.44	114.27
499	32.76	24.43	0.59	-2.01	43.24	114.20
500	32.82	24.25	0.59	-2.01	43.09	114.19
501	32.90	24.07	0.58	-2.01	43.08	114.21
502	32.96	23.89	0.58	-2.01	43.14	114.25
503	33.02	24.07	0.58	-2.01	43.27	114.36
504	33.11	23.80	0.61	-2.01	43.45	114.47
505	33.17	24.07	0.62	-2.01	43.55	114.60
506	33.22	24.25	0.63	-2.01	43.63	114.72
507	33.31	24.88	0.66	-2.01	43.78	114.82
508	33.34	24.88	0.67	-2.01	43.91	114.90
509	33.41	25.24	0.68	-2.01	43.96	114.91
510	33.49	25.15	0.67	-2.01	44.08	114.93
511	33.57	24.34	0.65	-2.01	44.21	114.94
512	33.61	24.25	0.64	-2.01	44.26	114.90
513	33.68	23.89	0.62	-2.01	44.24	114.87
514	33.76	23.89	0.64	-1.92	44.25	114.87
515	33.81	23.89	0.64	-1.92	44.28	114.94
516	33.88	24.25	0.63	-1.92	44.29	115.11
517	33.95	24.88	0.65	-1.92	44.39	115.37
518	34.01	25.42	0.68	-1.92	44.53	115.69
519	34.06	25.86	0.72	-1.92	44.75	116.01
520	34.13	26.22	0.77	-1.92	45.09	116.33
521	34.21	26.67	0.83	-1.92	45.62	116.71
522	34.25	26.85	0.87	-1.92	46.14	117.04
523	34.35	26.40	0.90	-2.01	46.68	117.33
524	34.40	25.95	0.92	-1.92	47.18	117.57
525	34.49	25.95	0.98	-2.01	47.62	117.75
526	34.53	26.13	0.98	-1.92	48.02	117.87
527	34.60	26.22	0.98	-1.92	48.39	117.96
528	34.65	26.22	0.98	-2.01	48.74	118.03

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
529	34.74	26.22	0.97	-2.01	49.06	118.12
530	34.80	26.22	0.98	-2.01	49.21	118.13
531	34.85	26.13	0.98	-2.01	49.41	118.09
532	34.93	25.68	1.00	-2.01	49.67	118.04
533	34.98	25.59	1.03	-2.01	50.04	117.99
534	35.05	25.50	1.00	-2.01	50.32	117.92
535	35.15	24.79	0.95	-2.01	50.56	117.84
536	35.20	24.57	0.94	-1.96	50.67	117.74
537	35.25	23.89	0.94	-1.96	50.50	117.61
538	35.33	24.34	0.92	-1.96	50.22	117.44
539	35.40	24.34	0.90	-1.92	49.98	117.29
540	35.44	24.70	0.89	-1.92	49.59	117.21
541	35.50	25.06	0.85	-1.92	49.14	117.13
542	35.59	25.24	0.84	-1.92	48.53	117.06
543	35.64	25.15	0.84	-1.92	48.06	117.00
544	35.70	25.86	0.85	-1.82	47.72	116.97
545	35.79	26.04	0.84	-1.82	47.54	116.95
546	35.83	26.22	0.83	-1.82	47.57	116.97
547	35.94	26.13	0.84	-1.82	47.64	116.96
548	35.98	25.86	0.85	-1.82	47.66	116.93
549	36.03	25.59	0.86	-1.82	47.83	116.85
550	36.09	25.24	0.87	-1.92	48.14	116.76
551	36.17	25.06	0.83	-1.92	48.65	116.64
552	36.23	24.79	0.81	-1.92	49.20	116.49
553	36.29	24.25	0.79	-1.92	49.78	116.30
554	36.38	23.63	0.77	-1.92	50.32	116.07
555	36.44	22.64	0.75	-1.92	50.83	115.81
556	36.49	22.10	0.74	-1.92	51.37	115.56
557	36.59	21.30	0.71	-1.92	51.90	115.32
558	36.63	21.03	0.69	-1.92	52.36	115.08
559	36.69	20.58	0.68	-1.92	52.71	114.88
560	36.78	20.40	0.65	-1.92	52.79	114.70
561	36.82	20.58	0.64	-1.92	52.65	114.54
562	36.88	20.31	0.63	-1.82	52.35	114.42
563	36.98	20.58	0.63	-1.82	52.08	114.32
564	37.02	20.94	0.62	-1.82	51.75	114.24
565	37.11	21.30	0.62	-1.82	51.51	114.18
566	37.18	21.48	0.61	-1.82	51.32	114.13
567	37.22	21.39	0.61	-1.82	51.13	114.13
568	37.28	21.21	0.61	-1.82	51.06	114.20
569	37.38	21.03	0.60	-1.82	51.07	114.32
570	37.42	21.03	0.60	-1.82	51.00	114.47
571	37.48	21.12	0.62	-1.82	50.96	114.63
572	37.57	21.57	0.67	-1.82	50.70	114.72
573	37.62	22.19	0.70	-1.82	50.18	114.73
574	37.68	23.00	0.72	-1.72	49.78	114.77
575	37.77	23.27	0.72	-1.72	49.55	114.87
576	37.82	23.45	0.66	-1.72	49.29	114.96

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
577	37.88	23.63	0.60	-1.72	49.00	114.98
578	37.96	23.18	0.61	-1.72	48.90	114.96
579	38.00	23.18	0.66	-1.72	48.43	114.94
580	38.08	23.18	0.67	-1.72	47.58	114.91
581	38.12	23.18	0.67	-1.72	46.78	114.92
582	38.20	22.64	0.68	-1.60	46.04	114.97
583	38.27	25.06	0.69	-1.60	45.54	115.03
584	38.36	27.03	0.66	-1.60	45.09	115.06
585	38.40	27.38	0.63	-1.53	44.88	115.19
586	38.46	27.92	0.60	-1.44	44.41	115.57
587	38.56	26.49	0.63	-1.44	43.41	116.01
588	38.59	26.04	0.66	-1.44	42.12	116.59
589	38.66	25.77	0.75	-1.44	41.03	117.28
590	38.76	30.07	0.93	-1.44	40.01	118.13
591	38.79	33.74	0.97	-1.44	39.28	118.98
592	38.87	40.09	1.09	-1.44	38.58	119.81
593	38.91	43.49	1.19	-1.44	37.95	120.69
594	39.00	47.16	1.36	-1.34	37.20	121.50
595	39.04	46.80	1.42	-1.34	36.56	122.20
596	39.11	46.53	1.51	-1.34	36.35	122.97
597	39.20	47.79	1.70	-1.34	36.59	123.71
598	39.24	48.95	1.77	-1.34	36.83	124.40
599	39.31	51.55	1.90	-1.34	36.90	125.19
600	39.38	53.43	2.18	-1.34	36.61	126.02
601	39.46	54.95	2.40	-1.25	35.65	126.89
602	39.51	57.81	2.54	-1.25	34.43	127.77
603	39.60	66.94	3.01	-1.25	33.29	128.59
604	39.66	73.47	3.27	-1.25	32.11	129.31
605	39.71	85.64	3.49	-1.15	30.93	129.92
606	39.79	95.04	3.86	-1.15	29.80	130.48
607	39.85	97.81	3.96	-1.15	28.13	131.08
608	39.91	101.84	3.92	-1.15	25.89	131.73
609	39.99	103.54	3.94	-1.15	23.75	132.32
610	40.05	106.32	4.07	-1.05	22.31	132.82
611	40.11	130.21	4.31	-0.96	21.42	133.20
612	40.20	167.88	4.79	-0.96	20.77	133.54
613	40.25	184.17	4.91	-1.15	20.35	133.87
614	40.30	176.92	5.04	-1.44	20.06	134.21
615	40.40	162.52	5.17	-1.44	19.87	134.57
616	40.43	155.45	5.21	-1.34	19.95	134.86
617	40.49	150.25	5.29	-1.25	20.49	134.97
618	40.55	148.29	5.50	-1.05	21.49	134.98
619	40.64	149.00	5.82	-0.96	22.67	134.93
620	40.69	153.12	5.95	-0.96	23.50	134.58
621	40.80	148.38	5.71	-0.96	24.47	134.22
622	40.84	133.52	5.57	-0.96	25.39	133.81
623	40.89	116.25	5.43	-0.96	26.20	133.33
624	40.96	97.63	3.70	-0.86	26.94	132.77

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
625	41.04	87.88	3.73	-0.77	28.25	132.10
626	41.10	85.46	3.57	-0.77	28.21	131.57
627	41.15	87.52	3.44	-0.77	27.74	131.08
628	41.24	89.85	3.44	-0.64	27.01	130.65
629	41.28	74.72	3.42	-0.19	26.55	130.66
630	41.38	120.54	3.40	-0.64	25.84	130.70
631	41.41	121.08	3.44	-0.57	25.12	130.77
632	41.49	114.55	3.54	-0.48	24.49	130.84
633	41.54	111.24	3.58	-0.48	23.72	130.88
634	41.61	111.60	3.62	-0.48	22.54	130.95
635	41.69	111.60	3.57	-0.38	22.17	130.92
636	41.77	111.95	3.46	-0.38	21.51	130.88
637	41.84	117.95	3.30	-0.38	20.63	130.83
638	41.88	121.80	3.24	-0.48	19.64	130.78
639	41.94	133.52	3.17	-0.48	18.72	130.70
640	42.04	144.62	3.05	-0.57	18.02	130.56
641	42.08	147.21	3.03	-0.57	17.43	130.44
642	42.17	150.43	3.02	-0.57	17.11	130.35
643	42.19	148.38	2.98	-0.67	16.93	130.30
644	42.28	136.20	2.84	-0.77	17.00	130.26
645	42.33	132.71	2.84	-0.77	17.33	130.26
646	42.39	129.14	2.90	-0.77	17.75	130.29
647	42.48	127.08	3.00	-0.77	18.27	130.32
648	42.53	127.97	3.07	-0.77	18.86	130.37
649	42.59	128.02	3.17	-0.77	19.41	130.48
650	42.67	128.87	3.27	-0.77	19.96	130.60
651	42.73	128.06	3.30	-0.77	20.54	130.70
652	42.81	124.84	3.36	-0.86	21.10	130.80
653	42.88	119.83	3.41	-0.77	21.65	130.90
654	42.92	116.96	3.42	-0.86	22.20	130.99
655	43.00	111.86	3.46	-0.77	22.75	131.06
656	43.08	111.86	3.56	-0.57	23.28	131.13
657	43.12	112.85	3.61	-0.57	23.80	131.19
658	43.21	112.58	3.69	-0.57	24.28	131.24
659	43.27	113.74	3.73	-0.67	24.76	131.29
660	43.32	113.56	3.76	-0.67	25.22	131.35
661	43.39	110.70	3.78	-0.67	25.70	131.40
662	43.47	106.76	3.77	-0.48	26.25	131.43
663	43.52	104.44	3.78	-0.48	26.93	131.38
664	43.59	100.50	3.85	-0.48	27.80	131.27
665	43.67	99.78	3.93	-0.48	29.01	131.07
666	43.72	98.08	3.91	-0.57	30.28	130.79
667	43.80	89.76	3.75	-0.48	31.54	130.33
668	43.85	82.87	3.59	-0.57	33.00	129.76
669	43.92	70.70	3.37	-0.48	34.54	129.14
670	43.97	65.42	3.11	-0.38	36.40	128.43
671	44.04	56.56	2.40	-0.38	38.38	127.63
672	44.13	49.85	2.16	-0.19	40.06	126.81

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
673	44.17	47.25	2.13	-0.19	41.47	125.92
674	44.24	43.22	2.08	-0.10	42.31	125.04
675	44.31	43.04	1.93	0.00	43.28	124.12
676	44.37	44.12	1.79	0.10	44.46	123.38
677	44.45	42.87	1.57	0.10	45.29	122.67
678	44.50	40.54	1.46	0.10	45.87	121.88
679	44.56	35.53	1.31	0.19	46.05	121.05
680	44.65	30.78	1.11	0.19	46.31	120.26
681	44.71	29.62	0.99	0.29	46.71	119.56
682	44.76	28.64	0.89	0.29	47.07	119.13
683	44.85	27.92	0.85	0.38	47.19	118.89
684	44.88	28.73	0.87	0.38	46.86	118.99
685	44.96	31.14	0.95	0.38	46.20	119.45
686	45.05	34.54	1.09	0.38	45.39	120.13
687	45.10	36.60	1.19	0.38	43.65	121.00
688	45.17	39.02	1.40	0.38	41.45	122.06
689	45.25	41.97	1.60	0.38	39.19	123.07
690	45.30	45.55	1.75	0.38	37.07	124.04
691	45.37	56.11	1.91	0.29	35.10	124.96
692	45.45	66.04	2.18	0.29	33.49	125.84
693	45.49	72.13	2.27	0.29	32.10	126.62
694	45.54	77.95	2.42	0.19	31.06	127.31
695	45.61	84.57	2.61	0.19	30.38	127.93
696	45.68	86.81	2.81	0.19	30.18	128.42
697	45.75	87.70	2.97	0.19	30.40	128.73
698	45.80	86.18	3.13	0.19	30.89	128.86
699	45.89	82.96	3.25	0.19	31.69	128.82
700	45.93	80.72	3.26	0.10	32.73	128.63
701	46.01	74.64	3.16	0.10	34.03	128.30
702	46.08	67.65	2.79	0.10	35.55	127.88
703	46.15	59.96	2.47	0.10	37.18	127.39
704	46.20	57.01	2.28	0.10	38.65	126.81
705	46.29	51.10	2.11	0.19	39.99	126.20
706	46.34	47.97	2.08	0.19	40.64	125.62
707	46.41	45.37	2.06	0.29	40.85	125.19
708	46.49	45.37	1.98	0.38	40.71	124.90
709	46.53	46.98	1.94	0.38	40.64	124.68
710	46.60	51.82	1.87	0.29	40.51	124.48
711	46.69	54.41	1.83	0.29	40.36	124.30
712	46.73	54.77	1.83	0.29	40.25	124.12
713	46.79	52.35	1.79	0.29	40.60	123.96
714	46.89	48.15	1.69	0.29	41.16	123.79
715	46.94	45.46	1.69	0.29	42.31	123.67
716	46.99	42.60	1.70	0.29	43.81	123.66
717	47.09	37.94	1.70	0.38	45.31	123.71
718	47.13	37.85	1.69	0.38	46.71	123.79
719	47.19	38.03	1.78	0.38	46.24	124.09
720	47.28	40.72	2.00	0.38	45.31	124.42

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
721	47.34	42.87	2.09	0.38	43.39	124.89
722	47.38	42.60	2.12	0.38	39.77	125.58
723	47.50	58.26	2.22	0.38	35.97	126.30
724	47.51	60.67	2.24	0.38	31.66	127.12
725	47.60	71.23	2.45	0.57	27.92	127.84
726	47.69	93.79	2.69	0.48	24.55	128.54
727	47.70	108.46	2.75	0.38	21.64	129.22
728	47.80	135.85	3.00	0.29	19.53	129.80
729	47.84	147.39	3.08	0.29	17.73	130.33
730	47.91	163.41	3.16	0.19	16.29	130.74
731	48.00	174.24	3.25	0.19	15.28	131.04
732	48.04	178.36	3.28	0.19	14.57	131.28
733	48.11	181.76	3.26	0.19	14.20	131.41
734	48.19	181.13	3.23	0.19	14.02	131.52
735	48.23	180.32	3.23	0.19	14.03	131.62
736	48.30	177.10	3.25	0.10	14.20	131.70
737	48.40	174.24	3.30	0.10	14.42	131.78
738	48.45	172.18	3.37	0.00	14.70	131.86
739	48.50	171.20	3.48	0.00	14.99	131.96
740	48.59	170.48	3.60	0.00	15.24	132.04
741	48.66	170.84	3.67	0.00	15.43	132.11
742	48.69	170.30	3.69	0.00	15.56	132.16
743	48.78	170.21	3.69	0.00	15.65	132.19
744	48.85	171.64	3.65	0.00	15.69	132.20
745	48.89	171.64	3.59	0.00	15.71	132.19
746	48.98	170.66	3.54	-0.10	15.73	132.17
747	49.03	170.03	3.54	0.00	15.76	132.16
748	49.09	170.39	3.54	-0.10	15.78	132.18
749	49.19	168.42	3.57	0.00	15.82	132.23
750	49.23	167.97	3.59	0.00	15.87	132.32
751	49.28	167.71	3.64	0.00	15.85	132.48
752	49.39	171.91	3.80	0.00	15.80	132.66
753	49.42	174.24	3.84	0.10	15.74	132.85
754	49.49	177.01	3.95	0.10	15.60	133.01
755	49.59	187.75	4.16	0.10	15.36	133.08
756	49.62	190.79	4.20	0.10	15.10	133.10
757	49.69	193.03	4.27	0.10	14.86	133.07
758	49.74	194.73	4.19	0.10	14.53	132.92
759	49.83	192.58	3.74	0.10	14.14	132.66
760	49.88	189.18	3.59	0.10	13.83	132.32
761	49.93	187.30	3.53	0.10	13.64	131.98
762	50.03	184.26	3.06	0.10	13.51	131.63
763	50.13	180.68	2.69	0.10	13.55	131.31
764	50.14	177.91	2.71	0.10	13.80	131.12
765	50.23	172.18	2.89	0.10	14.16	130.99
766	50.27	168.96	2.95	0.10	14.61	130.89
767	50.34	161.35	3.12	0.10	15.39	130.92
768	50.43	156.16	3.24	0.77	16.45	131.02

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
769	50.49	152.22	3.31	0.77	17.57	131.07
770	50.53	147.48	3.39	0.77	18.63	130.97
771	50.62	137.01	3.47	0.77	19.81	130.80
772	50.68	125.47	3.44	0.86	20.90	130.55
773	50.73	119.65	3.33	0.86	21.89	130.16
774	50.82	110.07	2.95	0.96	22.85	129.65
775	50.88	101.12	2.79	1.05	23.73	129.06
776	50.93	97.46	2.68	1.05	24.41	128.40
777	51.02	91.73	2.26	1.15	24.99	127.72
778	51.09	86.99	2.00	1.15	25.65	127.06
779	51.12	85.02	1.88	1.15	26.55	126.48
780	51.19	81.53	1.78	1.25	27.73	125.93
781	51.28	76.25	1.79	1.25	29.26	125.45
782	51.32	72.22	1.86	1.25	30.88	125.03
783	51.39	62.82	1.79	1.25	32.29	124.59
784	51.48	53.25	1.82	1.34	33.78	124.15
785	51.53	49.04	1.95	1.44	35.53	123.71
786	51.62	47.70	1.67	1.44	37.37	123.13
787	51.68	49.85	1.36	1.53	39.16	122.43
788	51.73	49.94	1.28	1.44	40.50	121.72
789	51.82	45.55	1.22	1.53	41.13	120.90
790	51.87	39.02	1.01	1.44	41.02	119.87
791	51.92	36.51	0.93	1.53	41.15	118.95
792	51.97	34.36	0.85	1.63	41.99	118.17
793	52.04	31.41	0.74	1.63	43.00	117.38
794	52.12	31.14	0.66	1.63	43.61	116.61
795	52.18	30.78	0.66	1.63	43.77	116.05
796	52.23	30.78	0.63	1.63	43.82	115.53
797	52.31	30.78	0.60	1.63	43.81	115.09
798	52.37	30.78	0.60	1.63	44.01	114.75
799	52.44	30.70	0.58	1.53	44.64	114.40
800	52.53	29.62	0.55	1.53	45.33	113.97
801	52.57	29.08	0.54	1.44	46.33	113.50
802	52.64	26.13	0.52	1.44	47.55	112.96
803	52.72	23.54	0.46	1.44	48.89	112.37
804	52.78	22.28	0.42	1.44	50.37	111.72
805	52.83	20.49	0.39	1.44	51.45	110.92
806	52.93	19.42	0.34	1.44	52.56	110.08
807	52.96	19.06	0.33	1.44	53.16	109.34
808	53.04	18.70	0.30	1.44	53.44	108.78
809	53.12	18.70	0.21	1.44	53.64	108.32
810	53.17	18.70	0.22	1.44	53.49	107.98
811	53.22	18.70	0.25	1.44	53.24	107.76
812	53.29	18.88	0.27	1.44	52.83	107.54
813	53.37	18.70	0.27	1.44	52.54	107.42
814	53.42	18.79	0.28	1.44	52.76	107.55
815	53.49	18.88	0.27	1.44	52.89	107.61
816	53.58	19.06	0.26	1.44	52.81	107.55

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
817	53.63	18.97	0.26	1.44	52.60	107.42
818	53.68	18.88	0.25	1.44	52.37	107.29
819	53.78	18.79	0.24	1.44	52.09	107.13
820	53.84	18.70	0.23	1.44	51.88	106.99
821	53.88	18.79	0.23	1.44	51.75	106.89
822	53.94	18.70	0.23	1.44	51.55	106.78
823	54.03	18.79	0.23	1.44	51.42	106.75
824	54.08	18.79	0.23	1.44	51.27	106.76
825	54.16	18.88	0.23	1.44	51.28	106.88
826	54.20	19.06	0.23	1.44	51.19	107.00
827	54.28	19.24	0.24	1.44	50.77	107.10
828	54.35	19.42	0.24	1.44	50.14	107.20
829	54.43	19.51	0.26	1.44	49.44	107.31
830	54.48	19.87	0.26	1.53	48.72	107.35
831	54.55	20.85	0.25	1.53	48.22	107.35
832	54.63	21.75	0.25	1.53	47.81	107.30
833	54.67	22.10	0.25	1.53	47.57	107.24
834	54.74	21.84	0.23	1.44	47.18	107.03
835	54.82	20.94	0.22	1.44	46.90	106.82
836	54.87	20.58	0.22	1.44	46.89	106.62
837	54.92	19.96	0.22	1.44	47.23	106.48
838	55.02	19.69	0.20	1.44	47.75	106.37
839	55.06	19.60	0.20	1.44	48.59	106.49
840	55.14	19.60	0.20	1.53	49.28	106.73
841	55.22	19.60	0.22	1.53	49.96	107.08
842	55.27	19.60	0.23	1.53	50.29	107.54
843	55.37	19.60	0.27	1.53	50.62	108.10
844	55.42	20.22	0.29	1.53	50.87	108.66
845	55.47	20.58	0.32	1.44	51.18	109.15
846	55.53	21.92	0.35	1.44	51.50	109.51
847	55.58	22.55	0.37	1.44	51.77	109.79
848	55.67	22.73	0.38	1.44	51.82	109.92
849	55.72	22.10	0.37	1.44	51.80	109.95
850	55.81	21.12	0.35	1.44	51.69	109.88
851	55.86	20.85	0.34	1.44	51.62	109.67
852	55.92	20.58	0.32	1.44	51.73	109.56
853	56.01	20.58	0.30	1.44	51.93	109.55
854	56.05	20.58	0.29	1.44	51.83	109.75
855	56.11	20.67	0.27	1.44	51.74	110.27
856	56.21	21.39	0.33	1.44	52.45	110.96
857	56.26	22.10	0.38	1.34	52.51	111.81
858	56.32	23.98	0.44	1.34	51.84	112.81
859	56.41	25.59	0.55	1.34	50.69	113.80
860	56.46	23.80	0.64	1.34	49.37	114.72
861	56.50	27.47	0.71	1.72	47.76	115.44
862	56.59	32.13	0.79	1.82	46.42	116.14
863	56.65	35.17	0.82	1.82	45.50	116.78
864	56.70	36.60	0.81	1.82	45.11	117.48

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
865	56.78	38.03	0.77	1.82	43.36	118.28
866	56.85	38.30	0.84	1.82	41.52	119.08
867	56.89	38.03	0.91	1.92	39.64	119.90
868	56.98	38.03	1.14	1.92	38.22	120.67
869	57.04	48.06	1.29	2.01	37.23	121.43
870	57.09	55.04	1.41	1.92	36.74	122.19
871	57.16	63.27	1.56	1.72	36.34	122.87
872	57.24	64.43	1.63	1.92	35.69	123.46
873	57.29	63.36	1.70	1.82	34.18	123.85
874	57.37	61.39	1.80	1.92	33.05	124.09
875	57.42	59.87	1.83	1.92	32.26	124.22
876	57.49	61.75	1.80	1.92	31.97	124.24
877	57.59	69.62	1.63	1.82	31.83	124.21
878	57.64	71.95	1.56	1.82	31.85	124.07
879	57.69	71.41	1.53	1.82	32.07	123.77
880	57.77	68.64	1.55	1.82	32.27	123.34
881	57.82	66.22	1.55	1.82	32.97	122.78
882	57.89	58.88	1.46	1.82	34.71	122.12
883	57.97	49.04	1.31	1.82	37.10	121.39
884	58.03	44.39	1.14	1.82	40.03	120.50
885	58.09	36.15	1.01	1.92	43.22	119.41
886	58.17	29.08	0.84	1.92	46.83	118.15
887	58.21	26.49	0.77	1.92	50.30	116.81
888	58.28	23.09	0.64	2.01	53.05	115.50
889	58.37	21.48	0.50	2.01	55.93	114.49
890	58.40	21.12	0.45	2.11	57.94	113.81
891	58.48	20.67	0.40	2.11	59.77	113.77
892	58.53	20.67	0.38	2.11	59.68	114.24
893	58.63	21.84	0.52	2.20	56.74	114.93
894	58.67	21.84	0.64	2.20	53.60	115.67
895	58.73	21.92	0.87	2.20	51.26	116.31
896	58.82	30.87	1.07	2.30	49.88	116.88
897	58.89	41.34	1.01	2.20	49.34	117.25
898	58.93	42.96	0.93	2.11	49.11	117.34
899	59.00	39.55	0.86	2.01	48.86	117.28
900	59.06	34.90	0.81	2.11	47.97	116.90
901	59.13	28.55	0.68	2.01	47.79	116.10
902	59.22	24.43	0.59	2.11	49.44	115.18
903	59.28	22.64	0.57	2.20	51.77	114.23
904	59.33	22.28	0.50	2.20	53.92	113.30
905	59.41	21.84	0.41	2.20	55.08	112.42
906	59.47	21.66	0.39	2.30	55.16	111.80
907	59.52	21.66	0.38	2.87	54.26	111.42
908	59.61	21.48	0.36	2.87	52.83	111.14
909	59.67	22.73	0.36	2.97	51.73	111.06
910	59.72	23.18	0.37	2.97	51.04	111.30
911	59.78	24.70	0.39	2.97	50.45	111.66
912	59.87	25.77	0.41	2.97	49.85	111.99

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
913	59.92	25.95	0.44	3.06	47.09	111.35
914	60.00	26.76	0.50	2.97	44.67	110.62
915	60.05	27.38	0.54	3.06	42.16	109.76
916	60.11	27.38	0.52	2.97	39.88	108.69
917	60.21	28.19	0.00	3.06	37.59	107.34
918	60.25	27.74	0.00	3.06	34.86	105.53
919	60.31	28.28	0.00	3.06	31.28	102.72
920	60.40	27.38	0.00	3.06	26.86	97.50
921	60.43	26.94	0.00	3.06	N/A	87.36
922	60.51	27.12	0.00	3.16	N/A	87.36

Abbreviations

Depth: Depth from free surface, at which CPT was performed (ft)
q_c: Measured cone resistance (tsf)
f_s: Sleeve friction resistance (tsf)
u: Pore pressure (tsf)
Fines content: Percentage of fines in soil (%)
Unit weight: Bulk soil unit weight (pcf)

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data ::

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
1	0.10	0.01	0.00	0.01	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
2	0.15	0.01	0.00	0.01	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
3	0.23	0.01	0.00	0.01	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
4	0.30	0.02	0.00	0.02	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
5	0.34	0.02	0.00	0.02	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
6	0.39	0.02	0.00	0.02	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
7	0.50	0.03	0.00	0.03	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
8	0.53	0.03	0.00	0.03	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
9	0.60	0.04	0.00	0.04	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
10	0.69	0.04	0.00	0.04	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
11	0.72	0.04	0.00	0.04	1.00	0.358	1.34	0.266	1.00	1.00	2.000	No
12	0.80	0.05	0.00	0.05	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
13	0.87	0.05	0.00	0.05	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
14	0.92	0.06	0.00	0.06	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
15	1.00	0.06	0.00	0.06	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
16	1.08	0.07	0.00	0.07	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
17	1.12	0.07	0.00	0.07	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
18	1.20	0.07	0.00	0.07	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
19	1.30	0.08	0.00	0.08	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
20	1.34	0.08	0.00	0.08	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
21	1.40	0.08	0.00	0.08	1.00	0.357	1.34	0.266	1.00	1.00	2.000	No
22	1.49	0.09	0.00	0.09	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
23	1.54	0.09	0.00	0.09	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
24	1.59	0.10	0.00	0.10	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
25	1.68	0.10	0.00	0.10	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
26	1.74	0.11	0.00	0.11	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
27	1.79	0.11	0.00	0.11	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
28	1.87	0.11	0.00	0.11	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
29	1.94	0.12	0.00	0.12	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
30	1.98	0.12	0.00	0.12	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
31	2.04	0.12	0.00	0.12	1.00	0.357	1.34	0.265	1.00	1.00	2.000	No
32	2.13	0.13	0.00	0.13	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
33	2.17	0.13	0.00	0.13	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
34	2.24	0.13	0.00	0.13	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
35	2.33	0.14	0.00	0.14	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
36	2.36	0.14	0.00	0.14	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
37	2.43	0.15	0.00	0.15	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
38	2.52	0.15	0.00	0.15	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
39	2.56	0.15	0.00	0.15	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
40	2.64	0.16	0.00	0.16	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
41	2.74	0.16	0.00	0.16	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
42	2.78	0.17	0.00	0.17	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
43	2.83	0.17	0.00	0.17	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
44	2.90	0.17	0.00	0.17	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
45	2.98	0.18	0.00	0.18	1.00	0.356	1.34	0.265	1.00	1.00	2.000	No
46	3.03	0.18	0.00	0.18	0.99	0.356	1.34	0.265	1.00	1.00	2.000	No
47	3.10	0.18	0.00	0.18	0.99	0.356	1.34	0.264	1.00	1.00	2.000	No
48	3.18	0.19	0.00	0.19	0.99	0.356	1.34	0.264	1.00	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
49	3.23	0.19	0.00	0.19	0.99	0.356	1.34	0.264	1.00	1.00	2.000	No
50	3.29	0.19	0.00	0.19	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
51	3.38	0.20	0.00	0.20	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
52	3.42	0.20	0.00	0.20	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
53	3.51	0.21	0.00	0.21	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
54	3.58	0.21	0.00	0.21	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
55	3.62	0.21	0.00	0.21	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
56	3.69	0.22	0.00	0.22	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
57	3.77	0.22	0.00	0.22	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
58	3.82	0.22	0.00	0.22	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
59	3.89	0.23	0.00	0.23	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
60	3.97	0.23	0.00	0.23	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
61	4.03	0.24	0.00	0.24	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
62	4.10	0.24	0.00	0.24	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
63	4.15	0.24	0.00	0.24	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
64	4.24	0.25	0.00	0.25	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
65	4.29	0.25	0.00	0.25	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
66	4.35	0.25	0.00	0.25	0.99	0.355	1.34	0.264	1.00	1.00	2.000	No
67	4.44	0.26	0.00	0.26	0.99	0.354	1.34	0.264	1.00	1.00	2.000	No
68	4.48	0.26	0.00	0.26	0.99	0.354	1.34	0.264	1.00	1.00	2.000	No
69	4.54	0.26	0.00	0.26	0.99	0.354	1.34	0.264	1.00	1.00	2.000	No
70	4.61	0.27	0.00	0.27	0.99	0.354	1.34	0.264	1.00	1.00	2.000	No
71	4.69	0.27	0.00	0.27	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
72	4.74	0.28	0.00	0.28	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
73	4.82	0.28	0.00	0.28	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
74	4.86	0.28	0.00	0.28	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
75	4.94	0.29	0.00	0.29	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
76	5.02	0.29	0.00	0.29	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
77	5.09	0.30	0.00	0.30	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
78	5.13	0.30	0.00	0.30	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
79	5.23	0.30	0.00	0.30	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
80	5.28	0.31	0.00	0.31	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
81	5.33	0.31	0.00	0.31	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
82	5.39	0.31	0.00	0.31	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
83	5.48	0.32	0.00	0.32	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
84	5.52	0.32	0.00	0.32	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
85	5.58	0.32	0.00	0.32	0.99	0.354	1.34	0.263	1.00	1.00	2.000	No
86	5.67	0.33	0.00	0.33	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
87	5.73	0.33	0.00	0.33	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
88	5.78	0.33	0.00	0.33	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
89	5.88	0.34	0.00	0.34	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
90	5.92	0.34	0.00	0.34	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
91	5.97	0.34	0.00	0.34	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
92	6.08	0.35	0.00	0.35	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
93	6.11	0.35	0.00	0.35	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
94	6.18	0.35	0.00	0.35	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
95	6.27	0.36	0.00	0.36	0.99	0.353	1.34	0.263	1.00	1.00	2.000	No
96	6.33	0.36	0.00	0.36	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
97	6.38	0.37	0.00	0.37	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
98	6.44	0.37	0.00	0.37	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
99	6.50	0.37	0.00	0.37	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
100	6.57	0.38	0.00	0.38	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
101	6.67	0.38	0.00	0.38	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
102	6.72	0.38	0.00	0.38	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
103	6.76	0.39	0.00	0.39	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
104	6.83	0.39	0.00	0.39	0.99	0.353	1.34	0.262	1.00	1.00	2.000	No
105	6.92	0.39	0.00	0.39	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
106	6.97	0.40	0.00	0.40	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
107	7.04	0.40	0.00	0.40	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
108	7.12	0.40	0.00	0.40	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
109	7.16	0.41	0.00	0.41	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
110	7.25	0.41	0.00	0.41	0.99	0.352	1.34	0.262	1.00	1.00	2.000	No
111	7.32	0.42	0.00	0.42	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
112	7.37	0.42	0.00	0.42	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
113	7.43	0.42	0.00	0.42	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
114	7.52	0.43	0.00	0.43	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
115	7.56	0.43	0.00	0.43	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
116	7.63	0.43	0.00	0.43	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
117	7.71	0.44	0.00	0.44	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
118	7.75	0.44	0.00	0.44	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
119	7.83	0.44	0.00	0.44	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
120	7.88	0.45	0.00	0.45	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
121	7.97	0.45	0.00	0.45	0.98	0.352	1.34	0.262	1.00	1.00	2.000	No
122	8.01	0.45	0.00	0.45	0.98	0.352	1.34	0.261	1.00	1.00	2.000	No
123	8.08	0.46	0.00	0.46	0.98	0.352	1.34	0.261	1.00	1.00	2.000	No
124	8.18	0.46	0.00	0.46	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
125	8.22	0.46	0.00	0.46	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
126	8.28	0.47	0.00	0.47	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
127	8.35	0.47	0.00	0.47	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
128	8.43	0.48	0.00	0.48	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
129	8.48	0.48	0.00	0.48	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
130	8.56	0.48	0.00	0.48	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
131	8.63	0.49	0.00	0.49	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
132	8.68	0.49	0.00	0.49	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
133	8.76	0.49	0.00	0.49	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
134	8.80	0.50	0.00	0.50	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
135	8.88	0.50	0.00	0.50	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
136	8.94	0.50	0.00	0.50	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
137	8.99	0.51	0.00	0.51	0.98	0.351	1.34	0.261	1.00	1.00	2.000	No
138	9.07	0.51	0.00	0.51	0.98	0.352	1.34	0.262	1.00	1.00	0.262	No
139	9.14	0.51	0.00	0.51	0.98	0.354	1.34	0.263	1.00	1.00	0.263	No
140	9.22	0.52	0.01	0.51	0.98	0.355	1.34	0.264	1.00	1.00	0.264	No
141	9.27	0.52	0.01	0.51	0.98	0.356	1.34	0.265	1.00	1.00	0.265	No
142	9.37	0.53	0.01	0.51	0.98	0.358	1.34	0.267	1.00	1.00	0.267	No
143	9.42	0.53	0.01	0.52	0.98	0.359	1.34	0.267	1.00	1.00	0.267	No
144	9.47	0.53	0.01	0.52	0.98	0.360	1.34	0.268	1.00	1.00	0.268	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
145	9.52	0.53	0.02	0.52	0.98	0.361	1.34	0.269	1.00	1.00	0.269	No
146	9.62	0.54	0.02	0.52	0.98	0.363	1.34	0.270	1.00	1.00	0.270	No
147	9.67	0.54	0.02	0.52	0.98	0.364	1.34	0.271	1.00	1.00	0.271	No
148	9.73	0.55	0.02	0.52	0.98	0.366	1.34	0.272	1.00	1.00	0.272	No
149	9.82	0.55	0.03	0.52	0.98	0.367	1.34	0.273	1.00	1.00	0.273	No
150	9.86	0.55	0.03	0.52	0.98	0.368	1.34	0.274	1.00	1.00	0.274	No
151	9.92	0.55	0.03	0.53	0.98	0.369	1.34	0.275	1.00	1.00	0.275	No
152	10.02	0.56	0.03	0.53	0.98	0.371	1.34	0.276	1.00	1.00	0.276	No
153	10.06	0.56	0.03	0.53	0.98	0.372	1.34	0.277	1.00	1.00	0.277	No
154	10.12	0.57	0.03	0.53	0.98	0.373	1.34	0.277	1.00	1.00	0.277	No
155	10.21	0.57	0.04	0.53	0.98	0.375	1.34	0.279	1.00	1.00	0.279	No
156	10.25	0.57	0.04	0.53	0.98	0.375	1.34	0.279	1.00	1.00	0.279	No
157	10.31	0.58	0.04	0.53	0.98	0.377	1.34	0.280	1.00	1.00	0.280	No
158	10.41	0.58	0.04	0.54	0.98	0.378	1.34	0.281	1.00	1.00	0.281	No
159	10.45	0.58	0.05	0.54	0.98	0.379	1.34	0.282	1.00	1.00	0.282	No
160	10.52	0.59	0.05	0.54	0.98	0.380	1.34	0.283	1.00	1.00	0.283	No
161	10.61	0.59	0.05	0.54	0.98	0.382	1.34	0.284	1.00	1.00	0.284	No
162	10.64	0.59	0.05	0.54	0.98	0.383	1.34	0.284	1.00	1.00	0.284	No
163	10.71	0.60	0.05	0.54	0.98	0.384	1.34	0.285	1.00	1.00	0.285	No
164	10.81	0.60	0.06	0.55	0.98	0.385	1.34	0.287	1.00	1.00	0.287	No
165	10.85	0.61	0.06	0.55	0.98	0.386	1.34	0.287	1.00	1.00	0.287	No
166	10.91	0.61	0.06	0.55	0.98	0.387	1.34	0.288	1.00	1.00	0.288	No
167	10.96	0.61	0.06	0.55	0.98	0.388	1.34	0.289	1.00	1.00	0.289	No
168	11.03	0.62	0.06	0.55	0.98	0.389	1.34	0.290	1.00	1.00	0.290	No
169	11.10	0.62	0.07	0.55	0.98	0.390	1.34	0.290	1.00	1.00	0.290	No
170	11.20	0.63	0.07	0.56	0.98	0.392	1.34	0.292	1.00	1.00	0.292	No
171	11.24	0.63	0.07	0.56	0.98	0.393	1.34	0.292	1.00	1.00	0.292	No
172	11.30	0.63	0.07	0.56	0.98	0.394	1.34	0.293	1.00	1.00	0.293	No
173	11.36	0.63	0.07	0.56	0.98	0.395	1.34	0.294	1.00	1.00	0.294	No
174	11.43	0.64	0.08	0.56	0.98	0.396	1.34	0.294	1.00	1.00	0.294	No
175	11.50	0.64	0.08	0.56	0.98	0.397	1.34	0.295	1.00	1.00	0.295	No
176	11.58	0.65	0.08	0.57	0.98	0.398	1.34	0.296	1.00	1.00	0.296	No
177	11.63	0.65	0.08	0.57	0.98	0.399	1.34	0.297	1.00	1.00	0.297	No
178	11.70	0.65	0.08	0.57	0.98	0.400	1.34	0.298	1.00	1.00	0.298	No
179	11.79	0.66	0.09	0.57	0.98	0.402	1.34	0.299	1.00	1.00	0.299	No
180	11.84	0.66	0.09	0.57	0.98	0.402	1.34	0.299	1.00	1.00	0.299	No
181	11.90	0.67	0.09	0.58	0.98	0.403	1.34	0.300	1.00	1.00	0.300	No
182	11.98	0.67	0.09	0.58	0.97	0.405	1.34	0.301	1.00	1.00	0.301	No
183	12.02	0.67	0.09	0.58	0.97	0.405	1.34	0.301	1.00	1.00	0.301	No
184	12.09	0.68	0.10	0.58	0.97	0.406	1.34	0.302	1.00	1.00	0.302	No
185	12.14	0.68	0.10	0.58	0.97	0.407	1.34	0.303	1.00	1.00	0.303	No
186	12.21	0.68	0.10	0.58	0.97	0.408	1.34	0.304	1.00	1.00	0.304	No
187	12.29	0.69	0.10	0.59	0.97	0.409	1.34	0.305	1.00	1.00	0.305	No
188	12.34	0.69	0.10	0.59	0.97	0.410	1.34	0.305	1.00	1.00	0.305	No
189	12.44	0.70	0.11	0.59	0.97	0.412	1.34	0.306	1.00	1.00	0.306	No
190	12.49	0.70	0.11	0.59	0.97	0.412	1.34	0.307	1.00	1.00	0.307	No
191	12.57	0.70	0.11	0.59	0.97	0.414	1.34	0.308	1.00	1.00	0.308	No
192	12.64	0.71	0.11	0.59	0.97	0.415	1.34	0.308	1.00	1.00	0.308	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
193	12.68	0.71	0.11	0.59	0.97	0.415	1.34	0.309	1.00	1.00	0.309	No
194	12.73	0.71	0.12	0.60	0.97	0.416	1.34	0.309	1.00	1.00	0.309	No
195	12.84	0.72	0.12	0.60	0.97	0.417	1.34	0.311	1.00	1.00	0.311	No
196	12.89	0.72	0.12	0.60	0.97	0.418	1.34	0.311	1.00	1.00	0.311	No
197	12.98	0.73	0.12	0.60	0.97	0.419	1.34	0.312	1.00	1.00	0.312	No
198	13.00	0.73	0.12	0.60	0.97	0.420	1.34	0.312	1.00	1.00	0.312	No
199	13.08	0.73	0.13	0.60	0.97	0.421	1.34	0.313	1.00	1.00	0.313	No
200	13.14	0.74	0.13	0.61	0.97	0.422	1.34	0.314	1.00	1.00	0.314	No
201	13.23	0.74	0.13	0.61	0.97	0.423	1.34	0.315	1.00	1.00	0.315	No
202	13.27	0.74	0.13	0.61	0.97	0.424	1.34	0.315	1.00	1.00	0.315	No
203	13.34	0.75	0.14	0.61	0.97	0.424	1.34	0.316	1.00	1.00	0.316	No
204	13.43	0.75	0.14	0.61	0.97	0.426	1.34	0.317	1.00	1.00	0.317	No
205	13.47	0.75	0.14	0.61	0.97	0.426	1.34	0.317	1.00	1.00	0.317	No
206	13.54	0.76	0.14	0.62	0.97	0.427	1.34	0.318	1.00	1.00	0.318	No
207	13.63	0.76	0.14	0.62	0.97	0.428	1.34	0.319	1.00	1.00	0.319	No
208	13.67	0.77	0.15	0.62	0.97	0.429	1.34	0.319	1.00	1.00	0.319	No
209	13.72	0.77	0.15	0.62	0.97	0.430	1.34	0.319	1.00	1.00	0.319	No
210	13.83	0.77	0.15	0.62	0.97	0.431	1.34	0.321	1.00	1.00	0.321	No
211	13.88	0.78	0.15	0.63	0.97	0.432	1.34	0.321	1.00	1.00	0.321	No
212	13.94	0.78	0.15	0.63	0.97	0.432	1.34	0.322	1.00	1.00	0.322	No
213	13.98	0.78	0.16	0.63	0.97	0.433	1.34	0.322	1.00	1.00	0.322	No
214	14.06	0.79	0.16	0.63	0.97	0.434	1.34	0.323	1.00	1.00	0.323	No
215	14.14	0.79	0.16	0.63	0.97	0.435	1.34	0.323	1.00	1.00	0.323	No
216	14.18	0.79	0.16	0.63	0.97	0.435	1.34	0.324	1.00	1.00	0.324	No
217	14.26	0.80	0.16	0.64	0.97	0.436	1.34	0.325	1.00	1.00	0.325	No
218	14.33	0.80	0.17	0.64	0.97	0.437	1.34	0.325	1.00	1.00	0.325	No
219	14.37	0.81	0.17	0.64	0.97	0.438	1.34	0.326	1.00	1.00	0.326	No
220	14.45	0.81	0.17	0.64	0.97	0.439	1.34	0.326	1.00	1.00	0.326	No
221	14.54	0.81	0.17	0.64	0.97	0.440	1.34	0.327	1.00	1.00	0.327	No
222	14.61	0.82	0.18	0.64	0.97	0.441	1.34	0.328	1.00	1.00	0.328	No
223	14.65	0.82	0.18	0.64	0.97	0.441	1.34	0.328	1.00	1.00	0.328	No
224	14.74	0.83	0.18	0.65	0.97	0.442	1.34	0.329	1.00	1.00	0.329	No
225	14.80	0.83	0.18	0.65	0.97	0.443	1.34	0.330	1.00	1.00	0.330	No
226	14.85	0.83	0.18	0.65	0.97	0.444	1.34	0.330	1.00	1.00	0.330	No
227	14.90	0.84	0.18	0.65	0.97	0.444	1.34	0.330	1.00	1.00	0.330	No
228	15.00	0.84	0.19	0.65	0.97	0.445	1.34	0.331	1.00	1.00	0.331	No
229	15.05	0.84	0.19	0.65	0.97	0.446	1.34	0.332	1.00	1.00	0.332	No
230	15.10	0.85	0.19	0.66	0.97	0.447	1.34	0.332	1.00	1.00	0.332	No
231	15.17	0.85	0.19	0.66	0.97	0.447	1.34	0.333	1.00	1.00	0.333	No
232	15.25	0.85	0.20	0.66	0.97	0.448	1.34	0.334	1.00	1.00	0.334	No
233	15.30	0.86	0.20	0.66	0.97	0.449	1.34	0.334	1.00	1.00	0.334	No
234	15.36	0.86	0.20	0.66	0.97	0.450	1.34	0.334	1.00	1.00	0.334	No
235	15.45	0.87	0.20	0.66	0.97	0.451	1.34	0.335	1.00	1.00	0.335	No
236	15.49	0.87	0.20	0.66	0.97	0.451	1.34	0.336	1.00	1.00	0.336	No
237	15.57	0.87	0.20	0.67	0.97	0.452	1.34	0.336	1.00	1.00	0.336	No
238	15.64	0.88	0.21	0.67	0.97	0.453	1.34	0.337	1.00	1.00	0.337	No
239	15.69	0.88	0.21	0.67	0.97	0.453	1.34	0.337	1.00	1.00	0.337	No
240	15.77	0.88	0.21	0.67	0.97	0.454	1.34	0.338	1.00	1.00	0.338	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
241	15.85	0.89	0.21	0.67	0.97	0.455	1.34	0.339	1.00	1.00	0.339	No
242	15.89	0.89	0.21	0.67	0.97	0.456	1.34	0.339	1.00	1.00	0.339	No
243	15.99	0.89	0.22	0.68	0.97	0.457	1.34	0.340	1.00	1.00	0.340	No
244	16.05	0.90	0.22	0.68	0.97	0.458	1.34	0.340	1.00	1.00	0.340	No
245	16.09	0.90	0.22	0.68	0.97	0.458	1.34	0.341	1.00	1.00	0.341	No
246	16.16	0.90	0.22	0.68	0.97	0.459	1.34	0.341	1.00	1.00	0.341	No
247	16.24	0.91	0.23	0.68	0.97	0.460	1.34	0.342	1.00	1.00	0.342	No
248	16.30	0.91	0.23	0.68	0.97	0.460	1.34	0.342	1.00	1.00	0.342	No
249	16.34	0.91	0.23	0.68	0.97	0.461	1.34	0.343	1.00	1.00	0.343	No
250	16.44	0.92	0.23	0.69	0.97	0.462	1.34	0.343	1.00	1.00	0.343	No
251	16.48	0.92	0.23	0.69	0.97	0.462	1.34	0.344	1.00	1.00	0.344	No
252	16.54	0.92	0.24	0.69	0.97	0.463	1.34	0.344	1.00	1.00	0.344	No
253	16.63	0.93	0.24	0.69	0.96	0.464	1.34	0.345	1.00	1.00	0.345	No
254	16.69	0.93	0.24	0.69	0.96	0.464	1.34	0.345	1.00	1.00	0.345	No
255	16.74	0.94	0.24	0.69	0.96	0.465	1.34	0.346	1.00	1.00	0.346	No
256	16.82	0.94	0.24	0.70	0.96	0.466	1.34	0.346	1.00	1.00	0.346	No
257	16.90	0.94	0.25	0.70	0.96	0.467	1.34	0.347	1.00	1.00	0.347	No
258	16.94	0.95	0.25	0.70	0.96	0.467	1.34	0.347	1.00	1.00	0.347	No
259	17.03	0.95	0.25	0.70	0.96	0.468	1.34	0.348	1.00	1.00	0.348	No
260	17.07	0.95	0.25	0.70	0.96	0.468	1.34	0.348	1.00	1.00	0.348	No
261	17.13	0.96	0.25	0.70	0.96	0.469	1.34	0.349	1.00	1.00	0.349	No
262	17.21	0.96	0.26	0.70	0.96	0.470	1.34	0.349	1.00	1.00	0.349	No
263	17.26	0.96	0.26	0.70	0.96	0.470	1.34	0.350	1.00	1.00	0.350	No
264	17.33	0.97	0.26	0.71	0.96	0.471	1.34	0.350	1.00	1.00	0.350	No
265	17.41	0.97	0.26	0.71	0.96	0.472	1.34	0.351	1.00	1.00	0.351	No
266	17.48	0.97	0.26	0.71	0.96	0.473	1.34	0.351	1.00	1.00	0.351	No
267	17.53	0.98	0.27	0.71	0.96	0.473	1.34	0.352	1.00	1.00	0.352	No
268	17.61	0.98	0.27	0.71	0.96	0.474	1.34	0.352	1.00	1.00	0.352	No
269	17.67	0.98	0.27	0.71	0.96	0.474	1.34	0.353	1.00	1.00	0.353	No
270	17.72	0.99	0.27	0.72	0.96	0.475	1.34	0.353	1.00	1.00	0.353	No
271	17.82	0.99	0.28	0.72	0.96	0.476	1.34	0.354	1.00	1.00	0.354	No
272	17.88	1.00	0.28	0.72	0.96	0.476	1.34	0.354	1.00	1.00	0.354	No
273	17.92	1.00	0.28	0.72	0.96	0.477	1.34	0.355	1.00	1.00	0.355	No
274	18.02	1.00	0.28	0.72	0.96	0.478	1.34	0.355	1.00	1.00	0.355	No
275	18.07	1.01	0.28	0.72	0.96	0.478	1.34	0.356	1.00	1.00	0.356	No
276	18.14	1.01	0.29	0.73	0.96	0.479	1.34	0.356	1.00	1.00	0.356	No
277	18.20	1.01	0.29	0.73	0.96	0.479	1.34	0.357	1.00	1.00	0.357	No
278	18.27	1.02	0.29	0.73	0.96	0.480	1.34	0.357	1.00	1.00	0.357	No
279	18.32	1.02	0.29	0.73	0.96	0.480	1.34	0.357	1.00	1.00	0.357	No
280	18.38	1.02	0.29	0.73	0.96	0.481	1.34	0.358	1.00	1.00	0.358	No
281	18.47	1.03	0.30	0.73	0.96	0.482	1.34	0.358	1.00	1.00	0.358	No
282	18.51	1.03	0.30	0.73	0.96	0.482	1.34	0.359	1.00	1.00	0.359	No
283	18.57	1.03	0.30	0.74	0.96	0.483	1.34	0.359	1.00	1.00	0.359	No
284	18.67	1.04	0.30	0.74	0.96	0.484	1.34	0.360	1.00	1.00	0.360	No
285	18.71	1.04	0.30	0.74	0.96	0.484	1.34	0.360	1.00	1.00	0.360	No
286	18.81	1.05	0.31	0.74	0.96	0.485	1.34	0.361	1.00	1.00	0.361	No
287	18.86	1.05	0.31	0.74	0.96	0.485	1.34	0.361	1.00	1.00	0.361	No
288	18.91	1.05	0.31	0.74	0.96	0.486	1.34	0.361	1.00	1.00	0.361	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
289	18.97	1.06	0.31	0.74	0.96	0.486	1.34	0.362	1.00	1.00	0.362	No
290	19.06	1.06	0.31	0.75	0.96	0.487	1.34	0.362	1.00	1.00	0.362	No
291	19.11	1.06	0.32	0.75	0.96	0.487	1.34	0.363	1.00	1.00	0.363	No
292	19.21	1.07	0.32	0.75	0.96	0.488	1.34	0.363	1.00	1.00	0.363	No
293	19.27	1.07	0.32	0.75	0.96	0.489	1.34	0.364	1.00	1.00	0.364	No
294	19.31	1.07	0.32	0.75	0.96	0.489	1.34	0.364	1.00	1.00	0.364	No
295	19.41	1.08	0.32	0.75	0.96	0.490	1.34	0.364	1.00	1.00	0.364	No
296	19.46	1.08	0.33	0.76	0.96	0.490	1.34	0.365	1.00	1.00	0.365	No
297	19.51	1.09	0.33	0.76	0.96	0.491	1.34	0.365	1.00	1.00	0.365	No
298	19.56	1.09	0.33	0.76	0.96	0.491	1.34	0.365	1.00	1.00	0.365	No
299	19.63	1.09	0.33	0.76	0.96	0.492	1.34	0.366	1.00	1.00	0.366	No
300	19.71	1.10	0.33	0.76	0.96	0.492	1.34	0.366	1.00	1.00	0.366	No
301	19.80	1.10	0.34	0.76	0.96	0.493	1.34	0.367	1.00	1.00	0.367	No
302	19.82	1.10	0.34	0.77	0.96	0.493	1.34	0.367	1.00	1.00	0.367	No
303	19.91	1.11	0.34	0.77	0.96	0.494	1.34	0.367	1.00	1.00	0.367	No
304	19.95	1.11	0.34	0.77	0.96	0.494	1.34	0.368	1.00	1.00	0.368	No
305	20.02	1.11	0.34	0.77	0.96	0.495	1.34	0.368	1.00	1.00	0.368	No
306	20.11	1.12	0.35	0.77	0.96	0.495	1.34	0.368	1.00	1.00	0.368	No
307	20.15	1.12	0.35	0.77	0.96	0.496	1.34	0.369	1.00	1.00	0.369	No
308	20.24	1.13	0.35	0.78	0.96	0.496	1.34	0.369	1.00	1.00	0.369	No
309	20.29	1.13	0.35	0.78	0.96	0.497	1.34	0.369	1.00	1.00	0.369	No
310	20.36	1.13	0.35	0.78	0.96	0.497	1.34	0.370	1.00	1.00	0.370	No
311	20.41	1.14	0.36	0.78	0.96	0.497	1.34	0.370	1.00	1.00	0.370	No
312	20.48	1.14	0.36	0.78	0.96	0.498	1.34	0.370	1.00	1.00	0.370	No
313	20.56	1.15	0.36	0.79	0.96	0.498	1.34	0.371	1.00	1.00	0.371	No
314	20.66	1.15	0.36	0.79	0.96	0.499	1.34	0.371	1.00	1.00	0.371	No
315	20.71	1.16	0.37	0.79	0.96	0.499	1.34	0.371	1.00	1.00	0.371	No
316	20.74	1.16	0.37	0.79	0.95	0.499	1.34	0.371	1.00	1.00	0.371	No
317	20.82	1.16	0.37	0.79	0.95	0.500	1.34	0.372	1.00	1.00	0.372	No
318	20.91	1.17	0.37	0.80	0.95	0.500	1.34	0.372	1.00	1.00	0.372	No
319	20.95	1.17	0.37	0.80	0.95	0.501	1.34	0.372	1.00	1.00	0.372	No
320	21.03	1.17	0.38	0.80	0.95	0.501	1.34	0.373	1.00	1.00	0.373	No
321	21.11	1.18	0.38	0.80	0.95	0.502	1.34	0.373	1.00	1.00	0.373	No
322	21.15	1.18	0.38	0.80	0.95	0.502	1.34	0.373	1.00	1.00	0.373	No
323	21.22	1.19	0.38	0.80	0.95	0.502	1.34	0.374	1.00	1.00	0.374	No
324	21.26	1.19	0.38	0.81	0.95	0.503	1.34	0.374	1.00	1.00	2.000	Yes
325	21.34	1.19	0.39	0.81	0.95	0.503	1.34	0.374	1.00	1.00	2.000	Yes
326	21.41	1.20	0.39	0.81	0.95	0.504	1.34	0.375	1.00	1.00	2.000	Yes
327	21.48	1.20	0.39	0.81	0.95	0.504	1.34	0.375	1.00	1.00	2.000	Yes
328	21.52	1.20	0.39	0.81	0.95	0.504	1.34	0.375	1.00	1.00	2.000	Yes
329	21.61	1.21	0.39	0.82	0.95	0.505	1.34	0.375	1.00	1.00	2.000	Yes
330	21.66	1.21	0.39	0.82	0.95	0.505	1.34	0.376	1.00	1.00	2.000	Yes
331	21.76	1.22	0.40	0.82	0.95	0.506	1.34	0.376	1.00	1.00	2.000	Yes
332	21.81	1.22	0.40	0.82	0.95	0.506	1.34	0.376	1.00	1.00	2.000	Yes
333	21.85	1.22	0.40	0.82	0.95	0.506	1.34	0.377	1.00	1.00	2.000	Yes
334	21.92	1.23	0.40	0.82	0.95	0.507	1.34	0.377	1.00	1.00	2.000	Yes
335	22.01	1.23	0.41	0.83	0.95	0.507	1.34	0.377	1.00	1.00	2.000	Yes
336	22.09	1.24	0.41	0.83	0.95	0.508	1.34	0.377	1.00	1.00	0.377	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
337	22.12	1.24	0.41	0.83	0.95	0.508	1.34	0.378	1.00	1.00	0.378	No
338	22.20	1.24	0.41	0.83	0.95	0.508	1.34	0.378	1.00	1.00	0.378	No
339	22.29	1.25	0.41	0.84	0.95	0.509	1.34	0.378	1.00	1.00	0.378	No
340	22.31	1.25	0.42	0.84	0.95	0.509	1.34	0.378	1.00	1.00	0.378	No
341	22.40	1.26	0.42	0.84	0.95	0.509	1.34	0.379	1.00	1.00	0.379	No
342	22.45	1.26	0.42	0.84	0.95	0.509	1.34	0.379	1.00	1.00	0.379	No
343	22.51	1.26	0.42	0.84	0.95	0.510	1.34	0.379	1.00	1.00	0.379	No
344	22.60	1.27	0.42	0.84	0.95	0.510	1.34	0.379	1.00	1.00	0.379	No
345	22.64	1.27	0.43	0.85	0.95	0.510	1.34	0.380	1.00	1.00	0.380	No
346	22.75	1.28	0.43	0.85	0.95	0.511	1.34	0.380	1.00	1.00	0.380	No
347	22.80	1.28	0.43	0.85	0.95	0.511	1.34	0.380	1.00	1.00	0.380	No
348	22.85	1.28	0.43	0.85	0.95	0.511	1.34	0.380	1.00	1.00	0.380	No
349	22.91	1.29	0.43	0.85	0.95	0.512	1.34	0.380	1.00	1.00	0.380	No
350	22.99	1.29	0.44	0.86	0.95	0.512	1.34	0.381	1.00	1.00	0.381	No
351	23.08	1.30	0.44	0.86	0.95	0.512	1.34	0.381	1.00	1.00	0.381	No
352	23.10	1.30	0.44	0.86	0.95	0.512	1.34	0.381	1.00	1.00	0.381	No
353	23.18	1.30	0.44	0.86	0.95	0.513	1.34	0.381	1.00	1.00	2.000	Yes
354	23.26	1.31	0.44	0.86	0.95	0.513	1.34	0.382	1.00	1.00	2.000	Yes
355	23.30	1.31	0.45	0.87	0.95	0.513	1.34	0.382	1.00	1.00	2.000	Yes
356	23.37	1.32	0.45	0.87	0.95	0.514	1.34	0.382	1.00	1.00	2.000	Yes
357	23.46	1.32	0.45	0.87	0.95	0.514	1.34	0.382	1.00	1.00	2.000	Yes
358	23.51	1.32	0.45	0.87	0.95	0.514	1.34	0.382	1.00	1.00	2.000	Yes
359	23.56	1.33	0.45	0.87	0.95	0.514	1.34	0.383	1.00	1.00	2.000	Yes
360	23.63	1.33	0.46	0.88	0.95	0.515	1.34	0.383	1.00	1.00	2.000	Yes
361	23.72	1.34	0.46	0.88	0.95	0.515	1.34	0.383	1.00	1.00	2.000	Yes
362	23.79	1.34	0.46	0.88	0.95	0.515	1.34	0.383	1.00	1.00	2.000	Yes
363	23.87	1.35	0.46	0.88	0.95	0.516	1.34	0.384	1.00	1.00	2.000	Yes
364	23.91	1.35	0.47	0.88	0.95	0.516	1.34	0.384	1.00	1.00	2.000	Yes
365	23.96	1.35	0.47	0.89	0.95	0.516	1.34	0.384	1.00	1.00	2.000	Yes
366	24.02	1.36	0.47	0.89	0.95	0.516	1.34	0.384	1.00	1.00	0.384	No
367	24.11	1.36	0.47	0.89	0.94	0.517	1.34	0.384	1.00	1.00	0.384	No
368	24.20	1.37	0.47	0.89	0.94	0.517	1.34	0.385	1.00	1.00	0.385	No
369	24.22	1.37	0.47	0.89	0.94	0.517	1.34	0.385	1.00	1.00	0.385	No
370	24.31	1.37	0.48	0.89	0.94	0.518	1.34	0.385	1.00	1.00	0.385	No
371	24.39	1.38	0.48	0.90	0.94	0.518	1.34	0.385	1.00	1.00	0.385	No
372	24.42	1.38	0.48	0.90	0.94	0.518	1.34	0.386	1.00	1.00	0.386	No
373	24.51	1.38	0.48	0.90	0.94	0.519	1.34	0.386	1.00	1.00	0.386	No
374	24.55	1.39	0.49	0.90	0.94	0.519	1.34	0.386	1.00	1.00	0.386	No
375	24.63	1.39	0.49	0.90	0.94	0.519	1.34	0.386	1.00	1.00	0.386	No
376	24.71	1.39	0.49	0.90	0.94	0.520	1.34	0.387	1.00	1.00	0.387	No
377	24.75	1.40	0.49	0.91	0.94	0.520	1.34	0.387	1.00	1.00	0.387	No
378	24.81	1.40	0.49	0.91	0.94	0.520	1.34	0.387	1.00	1.00	0.387	No
379	24.90	1.41	0.50	0.91	0.94	0.521	1.34	0.387	1.00	1.00	0.387	No
380	24.94	1.41	0.50	0.91	0.94	0.521	1.34	0.387	1.00	1.00	0.387	No
381	25.01	1.41	0.50	0.91	0.94	0.521	1.34	0.388	1.00	1.00	0.388	No
382	25.07	1.41	0.50	0.91	0.94	0.521	1.34	0.388	1.00	1.00	0.388	No
383	25.15	1.42	0.50	0.92	0.94	0.522	1.34	0.388	1.00	1.00	0.388	No
384	25.20	1.42	0.51	0.92	0.94	0.522	1.34	0.388	1.00	1.00	0.388	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
385	25.28	1.43	0.51	0.92	0.94	0.522	1.34	0.389	1.00	1.00	0.389	No
386	25.35	1.43	0.51	0.92	0.94	0.523	1.34	0.389	1.00	1.00	0.389	No
387	25.40	1.43	0.51	0.92	0.94	0.523	1.34	0.389	1.00	1.00	0.389	No
388	25.48	1.44	0.51	0.92	0.94	0.523	1.34	0.389	1.00	1.00	0.389	No
389	25.55	1.44	0.52	0.92	0.94	0.524	1.34	0.389	1.00	1.00	0.389	No
390	25.60	1.44	0.52	0.93	0.94	0.524	1.34	0.390	1.00	1.00	0.390	No
391	25.67	1.45	0.52	0.93	0.94	0.524	1.34	0.390	1.00	1.00	0.390	No
392	25.75	1.45	0.52	0.93	0.94	0.524	1.34	0.390	1.00	1.00	0.390	No
393	25.79	1.45	0.52	0.93	0.94	0.525	1.34	0.390	1.00	1.00	0.390	No
394	25.90	1.46	0.53	0.93	0.94	0.525	1.34	0.391	1.00	1.00	0.391	No
395	25.95	1.46	0.53	0.93	0.94	0.525	1.34	0.391	1.00	1.00	0.391	No
396	26.01	1.47	0.53	0.94	0.94	0.525	1.34	0.391	1.00	1.00	0.391	No
397	26.09	1.47	0.53	0.94	0.94	0.526	1.34	0.391	1.00	1.00	0.391	No
398	26.13	1.47	0.53	0.94	0.94	0.526	1.34	0.391	1.00	1.00	0.391	No
399	26.19	1.48	0.54	0.94	0.94	0.526	1.34	0.391	1.00	1.00	0.391	No
400	26.27	1.48	0.54	0.94	0.94	0.526	1.34	0.392	1.00	1.00	0.392	No
401	26.34	1.49	0.54	0.94	0.94	0.527	1.34	0.392	1.00	1.00	0.392	No
402	26.39	1.49	0.54	0.95	0.94	0.527	1.34	0.392	1.00	1.00	0.392	No
403	26.47	1.49	0.55	0.95	0.94	0.527	1.34	0.392	1.00	1.00	0.392	No
404	26.54	1.50	0.55	0.95	0.94	0.527	1.34	0.392	1.00	1.00	0.392	No
405	26.58	1.50	0.55	0.95	0.94	0.528	1.34	0.392	1.00	1.00	0.392	No
406	26.67	1.50	0.55	0.95	0.94	0.528	1.34	0.393	1.00	1.00	0.393	No
407	26.73	1.51	0.55	0.95	0.94	0.528	1.34	0.393	1.00	1.00	0.393	No
408	26.78	1.51	0.55	0.96	0.94	0.528	1.34	0.393	1.00	1.00	0.393	No
409	26.85	1.51	0.56	0.96	0.93	0.529	1.34	0.393	1.00	1.00	0.393	No
410	26.93	1.52	0.56	0.96	0.93	0.529	1.34	0.393	1.00	1.00	0.393	No
411	26.98	1.52	0.56	0.96	0.93	0.529	1.34	0.393	1.00	1.00	0.393	No
412	27.03	1.53	0.56	0.96	0.93	0.529	1.34	0.394	1.00	1.00	0.394	No
413	27.13	1.53	0.57	0.97	0.93	0.529	1.34	0.394	1.00	1.00	0.394	No
414	27.17	1.53	0.57	0.97	0.93	0.530	1.34	0.394	1.00	1.00	0.394	No
415	27.24	1.54	0.57	0.97	0.93	0.530	1.34	0.394	1.00	1.00	0.394	No
416	27.33	1.54	0.57	0.97	0.93	0.530	1.34	0.394	1.00	1.00	0.394	No
417	27.36	1.54	0.57	0.97	0.93	0.530	1.34	0.394	1.00	1.00	0.394	No
418	27.43	1.55	0.58	0.97	0.93	0.530	1.34	0.395	1.00	1.00	0.395	No
419	27.53	1.55	0.58	0.98	0.93	0.531	1.34	0.395	1.00	1.00	0.395	No
420	27.60	1.56	0.58	0.98	0.93	0.531	1.34	0.395	1.00	1.00	0.395	No
421	27.63	1.56	0.58	0.98	0.93	0.531	1.34	0.395	1.00	1.00	0.395	No
422	27.72	1.56	0.58	0.98	0.93	0.531	1.34	0.395	1.00	1.00	0.395	No
423	27.77	1.57	0.59	0.98	0.93	0.531	1.34	0.395	1.00	1.00	0.395	No
424	27.84	1.57	0.59	0.98	0.93	0.532	1.34	0.395	1.00	1.00	0.395	No
425	27.93	1.58	0.59	0.99	0.93	0.532	1.34	0.396	1.00	1.00	0.396	No
426	27.97	1.58	0.59	0.99	0.93	0.532	1.34	0.396	1.00	1.00	0.396	No
427	28.02	1.58	0.59	0.99	0.93	0.532	1.34	0.396	1.00	1.00	0.396	No
428	28.12	1.59	0.60	0.99	0.93	0.533	1.34	0.396	1.00	1.00	0.396	No
429	28.17	1.59	0.60	0.99	0.93	0.533	1.34	0.396	1.00	1.00	0.396	No
430	28.22	1.59	0.60	0.99	0.93	0.533	1.34	0.396	1.00	1.00	0.396	No
431	28.32	1.60	0.60	0.99	0.93	0.533	1.34	0.396	1.00	1.00	0.396	No
432	28.36	1.60	0.60	1.00	0.93	0.533	1.34	0.397	1.00	1.00	0.397	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
433	28.42	1.60	0.61	1.00	0.93	0.533	1.34	0.397	1.00	1.00	0.397	No
434	28.48	1.61	0.61	1.00	0.93	0.534	1.34	0.397	1.00	1.00	0.397	No
435	28.57	1.61	0.61	1.00	0.93	0.534	1.34	0.397	1.00	1.00	0.397	No
436	28.62	1.61	0.61	1.00	0.93	0.534	1.34	0.397	1.00	1.00	0.397	No
437	28.72	1.62	0.62	1.00	0.93	0.534	1.34	0.397	1.00	1.00	0.397	No
438	28.75	1.62	0.62	1.01	0.93	0.534	1.34	0.397	1.00	1.00	0.397	No
439	28.82	1.63	0.62	1.01	0.93	0.534	1.34	0.397	1.00	1.00	0.397	No
440	28.87	1.63	0.62	1.01	0.93	0.535	1.34	0.398	1.00	1.00	0.398	No
441	28.95	1.63	0.62	1.01	0.93	0.535	1.34	0.398	1.00	1.00	0.398	No
442	29.02	1.64	0.62	1.01	0.93	0.535	1.34	0.398	1.00	1.00	0.398	No
443	29.07	1.64	0.63	1.01	0.93	0.535	1.34	0.398	1.00	1.00	0.398	No
444	29.16	1.65	0.63	1.02	0.92	0.535	1.34	0.398	1.00	1.00	0.398	No
445	29.21	1.65	0.63	1.02	0.92	0.535	1.34	0.398	1.00	1.00	0.398	No
446	29.29	1.65	0.63	1.02	0.92	0.535	1.34	0.398	1.00	1.00	0.398	No
447	29.36	1.66	0.64	1.02	0.92	0.536	1.34	0.398	1.00	1.00	0.398	No
448	29.40	1.66	0.64	1.02	0.92	0.536	1.34	0.398	1.00	1.00	0.398	No
449	29.47	1.66	0.64	1.02	0.92	0.536	1.34	0.399	1.00	1.00	0.399	No
450	29.56	1.67	0.64	1.03	0.92	0.536	1.34	0.399	1.00	1.00	0.399	No
451	29.60	1.67	0.64	1.03	0.92	0.536	1.34	0.399	1.00	1.00	0.399	No
452	29.71	1.68	0.65	1.03	0.92	0.536	1.34	0.399	1.00	1.00	0.399	No
453	29.75	1.68	0.65	1.03	0.92	0.536	1.34	0.399	1.00	1.00	0.399	No
454	29.79	1.68	0.65	1.03	0.92	0.537	1.34	0.399	1.00	1.00	0.399	No
455	29.86	1.68	0.65	1.03	0.92	0.537	1.34	0.399	1.00	1.00	0.399	No
456	29.95	1.69	0.65	1.04	0.92	0.537	1.34	0.399	1.00	1.00	0.399	No
457	30.04	1.70	0.66	1.04	0.92	0.537	1.34	0.399	1.00	1.00	0.399	No
458	30.06	1.70	0.66	1.04	0.92	0.537	1.34	0.399	1.00	1.00	0.399	No
459	30.15	1.70	0.66	1.04	0.92	0.537	1.34	0.400	1.00	1.00	0.400	No
460	30.20	1.70	0.66	1.04	0.92	0.537	1.34	0.400	1.00	1.00	0.400	No
461	30.28	1.71	0.66	1.04	0.92	0.537	1.34	0.400	1.00	1.00	0.400	No
462	30.35	1.71	0.67	1.05	0.92	0.538	1.34	0.400	1.00	1.00	0.400	No
463	30.39	1.72	0.67	1.05	0.92	0.538	1.34	0.400	1.00	1.00	0.400	No
464	30.45	1.72	0.67	1.05	0.92	0.538	1.34	0.400	1.00	1.00	0.400	No
465	30.54	1.72	0.67	1.05	0.92	0.538	1.34	0.400	1.00	1.00	0.400	No
466	30.60	1.73	0.67	1.05	0.92	0.538	1.34	0.400	1.00	1.00	0.400	No
467	30.67	1.73	0.68	1.06	0.92	0.538	1.34	0.400	1.00	1.00	0.400	No
468	30.74	1.74	0.68	1.06	0.92	0.538	1.34	0.400	1.00	1.00	0.400	No
469	30.79	1.74	0.68	1.06	0.92	0.538	1.34	0.400	1.00	1.00	0.400	No
470	30.86	1.74	0.68	1.06	0.92	0.538	1.34	0.400	1.00	1.00	0.400	No
471	30.95	1.75	0.68	1.06	0.92	0.538	1.34	0.400	1.00	1.00	0.401	No
472	30.99	1.75	0.69	1.06	0.92	0.538	1.34	0.400	1.00	1.00	0.401	No
473	31.05	1.75	0.69	1.07	0.92	0.538	1.34	0.400	1.00	1.00	0.401	No
474	31.14	1.76	0.69	1.07	0.91	0.539	1.34	0.401	1.00	1.00	0.401	No
475	31.19	1.76	0.69	1.07	0.91	0.539	1.34	0.401	1.00	1.00	0.402	No
476	31.26	1.77	0.69	1.07	0.91	0.539	1.34	0.401	1.00	1.00	0.402	No
477	31.34	1.77	0.70	1.07	0.91	0.539	1.34	0.401	1.00	1.00	0.402	No
478	31.39	1.77	0.70	1.07	0.91	0.539	1.34	0.401	1.00	1.00	0.402	No
479	31.45	1.78	0.70	1.08	0.91	0.539	1.34	0.401	1.00	1.00	0.402	No
480	31.54	1.78	0.70	1.08	0.91	0.539	1.34	0.401	1.00	1.00	0.403	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
481	31.57	1.78	0.70	1.08	0.91	0.539	1.34	0.401	1.00	1.00	0.403	No
482	31.63	1.79	0.71	1.08	0.91	0.539	1.34	0.401	1.00	1.00	0.403	No
483	31.73	1.79	0.71	1.08	0.91	0.539	1.34	0.401	0.99	1.00	0.403	No
484	31.77	1.79	0.71	1.08	0.91	0.539	1.34	0.401	0.99	1.00	0.403	No
485	31.84	1.80	0.71	1.09	0.91	0.539	1.34	0.401	0.99	1.00	0.403	No
486	31.93	1.80	0.72	1.09	0.91	0.539	1.34	0.401	0.99	1.00	0.404	No
487	31.98	1.81	0.72	1.09	0.91	0.539	1.34	0.401	0.99	1.00	0.404	No
488	32.05	1.81	0.72	1.09	0.91	0.540	1.34	0.401	0.99	1.00	0.404	No
489	32.09	1.81	0.72	1.09	0.91	0.540	1.34	0.401	0.99	1.00	0.404	No
490	32.17	1.82	0.72	1.09	0.91	0.540	1.34	0.401	0.99	1.00	0.404	No
491	32.22	1.82	0.72	1.10	0.91	0.540	1.34	0.401	0.99	1.00	0.405	No
492	32.32	1.83	0.73	1.10	0.91	0.540	1.34	0.401	0.99	1.00	0.405	No
493	32.35	1.83	0.73	1.10	0.91	0.540	1.34	0.401	0.99	1.00	0.405	No
494	32.43	1.83	0.73	1.10	0.91	0.540	1.34	0.401	0.99	1.00	0.405	No
495	32.52	1.84	0.73	1.10	0.91	0.540	1.34	0.401	0.99	1.00	0.405	No
496	32.57	1.84	0.74	1.10	0.91	0.540	1.34	0.401	0.99	1.00	0.405	No
497	32.62	1.84	0.74	1.11	0.91	0.540	1.34	0.402	0.99	1.00	0.406	No
498	32.71	1.85	0.74	1.11	0.91	0.540	1.34	0.402	0.99	1.00	0.406	No
499	32.76	1.85	0.74	1.11	0.91	0.540	1.34	0.402	0.99	1.00	0.406	No
500	32.82	1.85	0.74	1.11	0.90	0.540	1.34	0.402	0.99	1.00	0.406	No
501	32.90	1.86	0.75	1.11	0.90	0.540	1.34	0.402	0.99	1.00	0.406	No
502	32.96	1.86	0.75	1.11	0.90	0.540	1.34	0.402	0.99	1.00	0.406	No
503	33.02	1.87	0.75	1.12	0.90	0.540	1.34	0.402	0.99	1.00	0.407	No
504	33.11	1.87	0.75	1.12	0.90	0.540	1.34	0.402	0.99	1.00	0.407	No
505	33.17	1.87	0.75	1.12	0.90	0.540	1.34	0.402	0.99	1.00	0.407	No
506	33.22	1.88	0.76	1.12	0.90	0.540	1.34	0.402	0.99	1.00	0.407	No
507	33.31	1.88	0.76	1.12	0.90	0.540	1.34	0.402	0.99	1.00	0.407	No
508	33.34	1.88	0.76	1.12	0.90	0.540	1.34	0.402	0.99	1.00	0.407	No
509	33.41	1.89	0.76	1.13	0.90	0.540	1.34	0.402	0.99	1.00	0.407	No
510	33.49	1.89	0.76	1.13	0.90	0.540	1.34	0.402	0.99	1.00	0.408	No
511	33.57	1.90	0.77	1.13	0.90	0.540	1.34	0.402	0.98	1.00	0.408	No
512	33.61	1.90	0.77	1.13	0.90	0.540	1.34	0.402	0.98	1.00	0.408	No
513	33.68	1.90	0.77	1.13	0.90	0.540	1.34	0.402	0.98	1.00	0.408	No
514	33.76	1.91	0.77	1.14	0.90	0.540	1.34	0.402	0.98	1.00	0.408	No
515	33.81	1.91	0.77	1.14	0.90	0.540	1.34	0.402	0.98	1.00	0.408	No
516	33.88	1.91	0.78	1.14	0.90	0.540	1.34	0.402	0.98	1.00	0.408	No
517	33.95	1.92	0.78	1.14	0.90	0.540	1.34	0.402	0.98	1.00	0.409	No
518	34.01	1.92	0.78	1.14	0.90	0.540	1.34	0.402	0.98	1.00	0.409	No
519	34.06	1.93	0.78	1.14	0.90	0.540	1.34	0.402	0.98	1.00	0.409	No
520	34.13	1.93	0.78	1.15	0.90	0.540	1.34	0.402	0.98	1.00	0.409	No
521	34.21	1.93	0.79	1.15	0.90	0.540	1.34	0.402	0.98	1.00	0.409	No
522	34.25	1.94	0.79	1.15	0.90	0.540	1.34	0.402	0.98	1.00	0.409	No
523	34.35	1.94	0.79	1.15	0.90	0.540	1.34	0.402	0.98	1.00	0.409	No
524	34.40	1.94	0.79	1.15	0.89	0.540	1.34	0.401	0.98	1.00	0.409	No
525	34.49	1.95	0.80	1.15	0.89	0.540	1.34	0.401	0.98	1.00	0.410	No
526	34.53	1.95	0.80	1.16	0.89	0.540	1.34	0.401	0.98	1.00	0.410	No
527	34.60	1.96	0.80	1.16	0.89	0.540	1.34	0.401	0.98	1.00	0.410	No
528	34.65	1.96	0.80	1.16	0.89	0.540	1.34	0.401	0.98	1.00	0.410	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
529	34.74	1.97	0.80	1.16	0.89	0.540	1.34	0.401	0.98	1.00	0.410	No
530	34.80	1.97	0.80	1.16	0.89	0.539	1.34	0.401	0.98	1.00	0.410	No
531	34.85	1.97	0.81	1.17	0.89	0.539	1.34	0.401	0.98	1.00	0.410	No
532	34.93	1.98	0.81	1.17	0.89	0.539	1.34	0.401	0.98	1.00	0.410	No
533	34.98	1.98	0.81	1.17	0.89	0.539	1.34	0.401	0.98	1.00	0.410	No
534	35.05	1.98	0.81	1.17	0.89	0.539	1.34	0.401	0.98	1.00	0.410	No
535	35.15	1.99	0.82	1.17	0.89	0.539	1.34	0.401	0.98	1.00	0.411	No
536	35.20	1.99	0.82	1.17	0.89	0.539	1.34	0.401	0.98	1.00	0.411	No
537	35.25	2.00	0.82	1.18	0.89	0.539	1.34	0.401	0.98	1.00	0.411	No
538	35.33	2.00	0.82	1.18	0.89	0.539	1.34	0.401	0.98	1.00	0.411	No
539	35.40	2.00	0.82	1.18	0.89	0.539	1.34	0.401	0.98	1.00	0.411	No
540	35.44	2.01	0.82	1.18	0.89	0.539	1.34	0.401	0.97	1.00	0.411	No
541	35.50	2.01	0.83	1.18	0.89	0.539	1.34	0.401	0.97	1.00	0.411	No
542	35.59	2.02	0.83	1.19	0.89	0.539	1.34	0.401	0.97	1.00	0.411	No
543	35.64	2.02	0.83	1.19	0.89	0.539	1.34	0.401	0.97	1.00	0.411	No
544	35.70	2.02	0.83	1.19	0.89	0.539	1.34	0.401	0.97	1.00	0.411	No
545	35.79	2.03	0.84	1.19	0.88	0.538	1.34	0.400	0.97	1.00	0.412	No
546	35.83	2.03	0.84	1.19	0.88	0.538	1.34	0.400	0.97	1.00	0.412	No
547	35.94	2.04	0.84	1.19	0.88	0.538	1.34	0.400	0.97	1.00	0.412	No
548	35.98	2.04	0.84	1.20	0.88	0.538	1.34	0.400	0.97	1.00	0.412	No
549	36.03	2.04	0.84	1.20	0.88	0.538	1.34	0.400	0.97	1.00	0.412	No
550	36.09	2.04	0.85	1.20	0.88	0.538	1.34	0.400	0.97	1.00	0.412	No
551	36.17	2.05	0.85	1.20	0.88	0.538	1.34	0.400	0.97	1.00	0.412	No
552	36.23	2.05	0.85	1.20	0.88	0.538	1.34	0.400	0.97	1.00	0.412	No
553	36.29	2.06	0.85	1.20	0.88	0.538	1.34	0.400	0.97	1.00	0.412	No
554	36.38	2.06	0.85	1.21	0.88	0.538	1.34	0.400	0.97	1.00	0.412	No
555	36.44	2.06	0.86	1.21	0.88	0.538	1.34	0.400	0.97	1.00	0.412	No
556	36.49	2.07	0.86	1.21	0.88	0.538	1.34	0.400	0.97	1.00	0.412	No
557	36.59	2.07	0.86	1.21	0.88	0.537	1.34	0.400	0.97	1.00	0.412	No
558	36.63	2.08	0.86	1.21	0.88	0.537	1.34	0.400	0.97	1.00	0.412	No
559	36.69	2.08	0.86	1.22	0.88	0.537	1.34	0.400	0.97	1.00	0.412	No
560	36.78	2.08	0.87	1.22	0.88	0.537	1.34	0.399	0.97	1.00	0.413	No
561	36.82	2.09	0.87	1.22	0.88	0.537	1.34	0.399	0.97	1.00	0.413	No
562	36.88	2.09	0.87	1.22	0.88	0.537	1.34	0.399	0.97	1.00	0.413	No
563	36.98	2.10	0.87	1.22	0.88	0.537	1.34	0.399	0.97	1.00	0.413	No
564	37.02	2.10	0.87	1.22	0.88	0.537	1.34	0.399	0.97	1.00	0.413	No
565	37.11	2.10	0.88	1.23	0.88	0.537	1.34	0.399	0.97	1.00	0.413	No
566	37.18	2.11	0.88	1.23	0.87	0.537	1.34	0.399	0.97	1.00	0.413	No
567	37.22	2.11	0.88	1.23	0.87	0.536	1.34	0.399	0.97	1.00	0.413	No
568	37.28	2.11	0.88	1.23	0.87	0.536	1.34	0.399	0.97	1.00	0.413	No
569	37.38	2.12	0.89	1.23	0.87	0.536	1.34	0.399	0.97	1.00	0.413	No
570	37.42	2.12	0.89	1.23	0.87	0.536	1.34	0.399	0.97	1.00	0.413	No
571	37.48	2.12	0.89	1.24	0.87	0.536	1.34	0.399	0.96	1.00	0.413	No
572	37.57	2.13	0.89	1.24	0.87	0.536	1.34	0.399	0.96	1.00	0.413	No
573	37.62	2.13	0.89	1.24	0.87	0.536	1.34	0.398	0.96	1.00	0.413	No
574	37.68	2.14	0.89	1.24	0.87	0.536	1.34	0.398	0.96	1.00	0.413	No
575	37.77	2.14	0.90	1.24	0.87	0.535	1.34	0.398	0.96	1.00	0.413	No
576	37.82	2.14	0.90	1.24	0.87	0.535	1.34	0.398	0.96	1.00	0.413	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
577	37.88	2.15	0.90	1.25	0.87	0.535	1.34	0.398	0.96	1.00	0.413	No
578	37.96	2.15	0.90	1.25	0.87	0.535	1.34	0.398	0.96	1.00	0.413	No
579	38.00	2.15	0.90	1.25	0.87	0.535	1.34	0.398	0.96	1.00	0.413	No
580	38.08	2.16	0.91	1.25	0.87	0.535	1.34	0.398	0.96	1.00	0.413	No
581	38.12	2.16	0.91	1.25	0.87	0.535	1.34	0.398	0.96	1.00	0.413	No
582	38.20	2.17	0.91	1.25	0.87	0.535	1.34	0.398	0.96	1.00	0.414	No
583	38.27	2.17	0.91	1.26	0.87	0.534	1.34	0.398	0.96	1.00	0.414	No
584	38.36	2.17	0.92	1.26	0.87	0.534	1.34	0.397	0.96	1.00	0.414	No
585	38.40	2.18	0.92	1.26	0.86	0.534	1.34	0.397	0.96	1.00	0.414	No
586	38.46	2.18	0.92	1.26	0.86	0.534	1.34	0.397	0.96	1.00	0.414	No
587	38.56	2.19	0.92	1.26	0.86	0.534	1.34	0.397	0.96	1.00	0.414	No
588	38.59	2.19	0.92	1.26	0.86	0.534	1.34	0.397	0.96	1.00	0.414	No
589	38.66	2.19	0.93	1.27	0.86	0.534	1.34	0.397	0.96	1.00	0.414	No
590	38.76	2.20	0.93	1.27	0.86	0.533	1.34	0.397	0.96	1.00	0.414	No
591	38.79	2.20	0.93	1.27	0.86	0.533	1.34	0.397	0.96	1.00	0.414	No
592	38.87	2.20	0.93	1.27	0.86	0.533	1.34	0.396	0.96	1.00	0.414	No
593	38.91	2.21	0.93	1.27	0.86	0.533	1.34	0.396	0.96	1.00	0.414	No
594	39.00	2.21	0.94	1.28	0.86	0.533	1.34	0.396	0.96	1.00	0.414	No
595	39.04	2.21	0.94	1.28	0.86	0.533	1.34	0.396	0.96	1.00	0.414	No
596	39.11	2.22	0.94	1.28	0.86	0.532	1.34	0.396	0.96	1.00	0.414	No
597	39.20	2.22	0.94	1.28	0.86	0.532	1.34	0.396	0.96	1.00	0.414	No
598	39.24	2.23	0.94	1.28	0.86	0.532	1.34	0.396	0.96	1.00	0.414	No
599	39.31	2.23	0.95	1.29	0.86	0.532	1.34	0.395	0.96	1.00	0.414	No
600	39.38	2.24	0.95	1.29	0.86	0.531	1.34	0.395	0.96	1.00	0.414	No
601	39.46	2.24	0.95	1.29	0.86	0.531	1.34	0.395	0.96	1.00	0.414	No
602	39.51	2.24	0.95	1.29	0.86	0.531	1.34	0.395	0.96	1.00	0.414	No
603	39.60	2.25	0.95	1.30	0.85	0.531	1.34	0.395	0.95	1.00	2.000	Yes
604	39.66	2.25	0.96	1.30	0.85	0.530	1.34	0.394	0.95	1.00	2.000	Yes
605	39.71	2.26	0.96	1.30	0.85	0.530	1.34	0.394	0.95	1.00	2.000	Yes
606	39.79	2.26	0.96	1.30	0.85	0.530	1.34	0.394	0.95	1.00	2.000	Yes
607	39.85	2.27	0.96	1.30	0.85	0.530	1.34	0.394	0.95	1.00	2.000	Yes
608	39.91	2.27	0.96	1.31	0.85	0.529	1.34	0.394	0.95	1.00	2.000	Yes
609	39.99	2.28	0.97	1.31	0.85	0.529	1.34	0.393	0.95	1.00	2.000	Yes
610	40.05	2.28	0.97	1.31	0.85	0.529	1.34	0.393	0.95	1.00	2.000	Yes
611	40.11	2.28	0.97	1.31	0.85	0.529	1.34	0.393	0.95	1.00	2.000	Yes
612	40.20	2.29	0.97	1.32	0.85	0.528	1.34	0.393	0.95	1.00	0.413	No
613	40.25	2.29	0.98	1.32	0.85	0.528	1.34	0.393	0.95	1.00	0.413	No
614	40.30	2.30	0.98	1.32	0.85	0.528	1.34	0.392	0.95	1.00	0.413	No
615	40.40	2.30	0.98	1.32	0.85	0.527	1.34	0.392	0.95	1.00	0.413	No
616	40.43	2.31	0.98	1.32	0.85	0.527	1.34	0.392	0.95	1.00	0.413	No
617	40.49	2.31	0.98	1.33	0.85	0.527	1.34	0.392	0.95	1.00	0.413	No
618	40.55	2.31	0.98	1.33	0.85	0.527	1.34	0.392	0.95	1.00	0.413	No
619	40.64	2.32	0.99	1.33	0.85	0.526	1.34	0.391	0.95	1.00	0.413	No
620	40.69	2.32	0.99	1.33	0.84	0.526	1.34	0.391	0.95	1.00	0.413	No
621	40.80	2.33	0.99	1.34	0.84	0.525	1.34	0.391	0.95	1.00	0.412	No
622	40.84	2.33	0.99	1.34	0.84	0.525	1.34	0.391	0.95	1.00	0.412	No
623	40.89	2.34	0.99	1.34	0.84	0.525	1.34	0.390	0.95	1.00	0.412	No
624	40.96	2.34	1.00	1.34	0.84	0.525	1.34	0.390	0.95	1.00	0.412	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
625	41.04	2.35	1.00	1.35	0.84	0.524	1.34	0.390	0.95	1.00	0.412	No
626	41.10	2.35	1.00	1.35	0.84	0.524	1.34	0.390	0.95	1.00	0.412	No
627	41.15	2.35	1.00	1.35	0.84	0.524	1.34	0.390	0.95	1.00	0.412	No
628	41.24	2.36	1.01	1.35	0.84	0.523	1.34	0.389	0.94	1.00	0.412	No
629	41.28	2.36	1.01	1.35	0.84	0.523	1.34	0.389	0.94	1.00	0.412	No
630	41.38	2.37	1.01	1.36	0.84	0.523	1.34	0.389	0.94	1.00	0.412	No
631	41.41	2.37	1.01	1.36	0.84	0.523	1.34	0.389	0.94	1.00	0.412	No
632	41.49	2.38	1.01	1.36	0.84	0.522	1.34	0.388	0.94	1.00	0.412	No
633	41.54	2.38	1.02	1.36	0.84	0.522	1.34	0.388	0.94	1.00	0.412	No
634	41.61	2.38	1.02	1.37	0.84	0.522	1.34	0.388	0.94	1.00	0.412	No
635	41.69	2.39	1.02	1.37	0.84	0.521	1.34	0.388	0.94	1.00	0.411	No
636	41.77	2.39	1.02	1.37	0.83	0.521	1.34	0.388	0.94	1.00	0.411	No
637	41.84	2.40	1.02	1.37	0.83	0.521	1.34	0.387	0.94	1.00	0.411	No
638	41.88	2.40	1.03	1.38	0.83	0.521	1.34	0.387	0.94	1.00	0.411	No
639	41.94	2.40	1.03	1.38	0.83	0.520	1.34	0.387	0.94	1.00	0.411	No
640	42.04	2.41	1.03	1.38	0.83	0.520	1.34	0.387	0.94	1.00	0.411	No
641	42.08	2.41	1.03	1.38	0.83	0.520	1.34	0.386	0.94	1.00	0.411	No
642	42.17	2.42	1.03	1.38	0.83	0.519	1.34	0.386	0.94	1.00	0.411	No
643	42.19	2.42	1.04	1.39	0.83	0.519	1.34	0.386	0.94	1.00	0.411	No
644	42.28	2.43	1.04	1.39	0.83	0.519	1.34	0.386	0.94	1.00	0.411	No
645	42.33	2.43	1.04	1.39	0.83	0.518	1.34	0.386	0.94	1.00	0.411	No
646	42.39	2.43	1.04	1.39	0.83	0.518	1.34	0.385	0.94	1.00	0.411	No
647	42.48	2.44	1.04	1.40	0.83	0.518	1.34	0.385	0.94	1.00	0.410	No
648	42.53	2.44	1.05	1.40	0.83	0.518	1.34	0.385	0.94	1.00	0.410	No
649	42.59	2.45	1.05	1.40	0.83	0.517	1.34	0.385	0.94	1.00	0.410	No
650	42.67	2.45	1.05	1.40	0.83	0.517	1.34	0.384	0.94	1.00	0.410	No
651	42.73	2.46	1.05	1.40	0.83	0.517	1.34	0.384	0.94	1.00	0.410	No
652	42.81	2.46	1.05	1.41	0.83	0.516	1.34	0.384	0.94	1.00	0.410	No
653	42.88	2.47	1.06	1.41	0.82	0.516	1.34	0.384	0.94	1.00	0.410	No
654	42.92	2.47	1.06	1.41	0.82	0.516	1.34	0.384	0.94	1.00	0.410	No
655	43.00	2.47	1.06	1.41	0.82	0.515	1.34	0.383	0.94	1.00	0.410	No
656	43.08	2.48	1.06	1.42	0.82	0.515	1.34	0.383	0.94	1.00	0.409	No
657	43.12	2.48	1.06	1.42	0.82	0.515	1.34	0.383	0.93	1.00	0.409	No
658	43.21	2.49	1.07	1.42	0.82	0.514	1.34	0.382	0.93	1.00	0.409	No
659	43.27	2.49	1.07	1.42	0.82	0.514	1.34	0.382	0.93	1.00	0.409	No
660	43.32	2.50	1.07	1.42	0.82	0.514	1.34	0.382	0.93	1.00	0.409	No
661	43.39	2.50	1.07	1.43	0.82	0.513	1.34	0.382	0.93	1.00	0.409	No
662	43.47	2.50	1.08	1.43	0.82	0.513	1.34	0.381	0.93	1.00	0.409	No
663	43.52	2.51	1.08	1.43	0.82	0.513	1.34	0.381	0.93	1.00	0.409	No
664	43.59	2.51	1.08	1.43	0.82	0.512	1.34	0.381	0.93	1.00	0.409	No
665	43.67	2.52	1.08	1.44	0.82	0.512	1.34	0.381	0.93	1.00	0.408	No
666	43.72	2.52	1.08	1.44	0.82	0.512	1.34	0.381	0.93	1.00	0.408	No
667	43.80	2.53	1.09	1.44	0.82	0.511	1.34	0.380	0.93	1.00	0.408	No
668	43.85	2.53	1.09	1.44	0.82	0.511	1.34	0.380	0.93	1.00	0.408	No
669	43.92	2.53	1.09	1.44	0.81	0.511	1.34	0.380	0.93	1.00	0.408	No
670	43.97	2.54	1.09	1.45	0.81	0.510	1.34	0.380	0.93	1.00	0.408	No
671	44.04	2.54	1.09	1.45	0.81	0.510	1.34	0.379	0.93	1.00	0.408	No
672	44.13	2.55	1.10	1.45	0.81	0.510	1.34	0.379	0.93	1.00	0.408	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
673	44.17	2.55	1.10	1.45	0.81	0.509	1.34	0.379	0.93	1.00	0.408	No
674	44.24	2.55	1.10	1.46	0.81	0.509	1.34	0.379	0.93	1.00	0.407	No
675	44.31	2.56	1.10	1.46	0.81	0.509	1.34	0.378	0.93	1.00	0.407	No
676	44.37	2.56	1.10	1.46	0.81	0.509	1.34	0.378	0.93	1.00	0.407	No
677	44.45	2.57	1.11	1.46	0.81	0.508	1.34	0.378	0.93	1.00	0.407	No
678	44.50	2.57	1.11	1.46	0.81	0.508	1.34	0.378	0.93	1.00	0.407	No
679	44.56	2.57	1.11	1.46	0.81	0.508	1.34	0.378	0.93	1.00	0.407	No
680	44.65	2.58	1.11	1.47	0.81	0.507	1.34	0.377	0.93	1.00	0.407	No
681	44.71	2.58	1.11	1.47	0.81	0.507	1.34	0.377	0.93	1.00	0.407	No
682	44.76	2.59	1.12	1.47	0.81	0.507	1.34	0.377	0.93	1.00	0.407	No
683	44.85	2.59	1.12	1.47	0.81	0.506	1.34	0.377	0.93	1.00	0.406	No
684	44.88	2.59	1.12	1.47	0.80	0.506	1.34	0.377	0.93	1.00	0.406	No
685	44.96	2.60	1.12	1.48	0.80	0.506	1.34	0.376	0.93	1.00	0.406	No
686	45.05	2.60	1.12	1.48	0.80	0.506	1.34	0.376	0.93	1.00	0.406	No
687	45.10	2.61	1.13	1.48	0.80	0.505	1.34	0.376	0.93	1.00	0.406	No
688	45.17	2.61	1.13	1.48	0.80	0.505	1.34	0.376	0.93	1.00	0.406	No
689	45.25	2.62	1.13	1.48	0.80	0.505	1.34	0.375	0.93	1.00	0.406	No
690	45.30	2.62	1.13	1.49	0.80	0.504	1.34	0.375	0.92	1.00	0.406	No
691	45.37	2.62	1.13	1.49	0.80	0.504	1.34	0.375	0.92	1.00	0.405	No
692	45.45	2.63	1.14	1.49	0.80	0.504	1.34	0.375	0.92	1.00	0.405	No
693	45.49	2.63	1.14	1.49	0.80	0.503	1.34	0.374	0.92	1.00	0.405	No
694	45.54	2.63	1.14	1.49	0.80	0.503	1.34	0.374	0.92	1.00	0.405	No
695	45.61	2.64	1.14	1.50	0.80	0.503	1.34	0.374	0.92	1.00	0.405	No
696	45.68	2.64	1.14	1.50	0.80	0.502	1.34	0.374	0.92	1.00	0.405	No
697	45.75	2.65	1.15	1.50	0.80	0.502	1.34	0.373	0.92	1.00	0.405	No
698	45.80	2.65	1.15	1.50	0.80	0.502	1.34	0.373	0.92	1.00	0.405	No
699	45.89	2.66	1.15	1.51	0.79	0.501	1.34	0.373	0.92	1.00	0.404	No
700	45.93	2.66	1.15	1.51	0.79	0.501	1.34	0.373	0.92	1.00	0.404	No
701	46.01	2.66	1.15	1.51	0.79	0.501	1.34	0.372	0.92	1.00	0.404	No
702	46.08	2.67	1.16	1.51	0.79	0.500	1.34	0.372	0.92	1.00	0.404	No
703	46.15	2.67	1.16	1.51	0.79	0.500	1.34	0.372	0.92	1.00	0.404	No
704	46.20	2.68	1.16	1.52	0.79	0.500	1.34	0.372	0.92	1.00	0.404	No
705	46.29	2.68	1.16	1.52	0.79	0.499	1.34	0.371	0.92	1.00	0.403	No
706	46.34	2.69	1.17	1.52	0.79	0.499	1.34	0.371	0.92	1.00	0.403	No
707	46.41	2.69	1.17	1.52	0.79	0.499	1.34	0.371	0.92	1.00	0.403	No
708	46.49	2.69	1.17	1.52	0.79	0.498	1.34	0.371	0.92	1.00	0.403	No
709	46.53	2.70	1.17	1.53	0.79	0.498	1.34	0.370	0.92	1.00	0.403	No
710	46.60	2.70	1.17	1.53	0.79	0.498	1.34	0.370	0.92	1.00	0.403	No
711	46.69	2.71	1.18	1.53	0.79	0.497	1.34	0.370	0.92	1.00	0.403	No
712	46.73	2.71	1.18	1.53	0.79	0.497	1.34	0.370	0.92	1.00	0.402	No
713	46.79	2.71	1.18	1.53	0.79	0.497	1.34	0.369	0.92	1.00	0.402	No
714	46.89	2.72	1.18	1.54	0.78	0.496	1.34	0.369	0.92	1.00	0.402	No
715	46.94	2.72	1.18	1.54	0.78	0.496	1.34	0.369	0.92	1.00	0.402	No
716	46.99	2.73	1.19	1.54	0.78	0.496	1.34	0.369	0.92	1.00	0.402	No
717	47.09	2.73	1.19	1.54	0.78	0.495	1.34	0.368	0.92	1.00	0.402	No
718	47.13	2.73	1.19	1.54	0.78	0.495	1.34	0.368	0.92	1.00	0.402	No
719	47.19	2.74	1.19	1.55	0.78	0.495	1.34	0.368	0.92	1.00	0.401	No
720	47.28	2.74	1.19	1.55	0.78	0.494	1.34	0.368	0.92	1.00	2.000	Yes

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
721	47.34	2.75	1.20	1.55	0.78	0.494	1.34	0.367	0.92	1.00	2.000	Yes
722	47.38	2.75	1.20	1.55	0.78	0.494	1.34	0.367	0.92	1.00	2.000	Yes
723	47.50	2.76	1.20	1.56	0.78	0.493	1.34	0.367	0.92	1.00	2.000	Yes
724	47.51	2.76	1.20	1.56	0.78	0.493	1.34	0.367	0.92	1.00	2.000	Yes
725	47.60	2.76	1.20	1.56	0.78	0.492	1.34	0.366	0.91	1.00	2.000	Yes
726	47.69	2.77	1.21	1.56	0.78	0.492	1.34	0.366	0.91	1.00	2.000	Yes
727	47.70	2.77	1.21	1.56	0.78	0.492	1.34	0.366	0.91	1.00	2.000	Yes
728	47.80	2.78	1.21	1.57	0.78	0.491	1.34	0.365	0.91	1.00	2.000	Yes
729	47.84	2.78	1.21	1.57	0.77	0.491	1.34	0.365	0.91	1.00	2.000	Yes
730	47.91	2.78	1.21	1.57	0.77	0.491	1.34	0.365	0.91	1.00	2.000	Yes
731	48.00	2.79	1.22	1.57	0.77	0.490	1.34	0.365	0.91	1.00	2.000	Yes
732	48.04	2.79	1.22	1.57	0.77	0.490	1.34	0.364	0.91	1.00	2.000	Yes
733	48.11	2.80	1.22	1.58	0.77	0.490	1.34	0.364	0.91	1.00	0.399	No
734	48.19	2.80	1.22	1.58	0.77	0.489	1.34	0.364	0.91	1.00	0.399	No
735	48.23	2.80	1.22	1.58	0.77	0.489	1.34	0.364	0.91	1.00	0.399	No
736	48.30	2.81	1.23	1.58	0.77	0.489	1.34	0.363	0.91	1.00	0.399	No
737	48.40	2.82	1.23	1.59	0.77	0.488	1.34	0.363	0.91	1.00	0.398	No
738	48.45	2.82	1.23	1.59	0.77	0.488	1.34	0.363	0.91	1.00	0.398	No
739	48.50	2.82	1.23	1.59	0.77	0.487	1.34	0.362	0.91	1.00	0.398	No
740	48.59	2.83	1.24	1.59	0.77	0.487	1.34	0.362	0.91	1.00	0.398	No
741	48.66	2.83	1.24	1.60	0.77	0.486	1.34	0.362	0.91	1.00	0.398	No
742	48.69	2.84	1.24	1.60	0.77	0.486	1.34	0.362	0.91	1.00	0.398	No
743	48.78	2.84	1.24	1.60	0.77	0.486	1.34	0.361	0.91	1.00	0.397	No
744	48.85	2.85	1.24	1.60	0.76	0.485	1.34	0.361	0.91	1.00	0.397	No
745	48.89	2.85	1.24	1.60	0.76	0.485	1.34	0.361	0.91	1.00	0.397	No
746	48.98	2.85	1.25	1.61	0.76	0.485	1.34	0.360	0.91	1.00	0.397	No
747	49.03	2.86	1.25	1.61	0.76	0.484	1.34	0.360	0.91	1.00	0.397	No
748	49.09	2.86	1.25	1.61	0.76	0.484	1.34	0.360	0.91	1.00	0.396	No
749	49.19	2.87	1.25	1.61	0.76	0.483	1.34	0.360	0.91	1.00	0.396	No
750	49.23	2.87	1.26	1.62	0.76	0.483	1.34	0.359	0.91	1.00	0.396	No
751	49.28	2.87	1.26	1.62	0.76	0.483	1.34	0.359	0.91	1.00	0.396	No
752	49.39	2.88	1.26	1.62	0.76	0.482	1.34	0.359	0.91	1.00	0.396	No
753	49.42	2.88	1.26	1.62	0.76	0.482	1.34	0.359	0.91	1.00	0.396	No
754	49.49	2.89	1.26	1.62	0.76	0.482	1.34	0.358	0.91	1.00	0.395	No
755	49.59	2.89	1.27	1.63	0.76	0.481	1.34	0.358	0.91	1.00	0.395	No
756	49.62	2.90	1.27	1.63	0.76	0.481	1.34	0.358	0.91	1.00	0.395	No
757	49.69	2.90	1.27	1.63	0.76	0.480	1.34	0.357	0.91	1.00	0.395	No
758	49.74	2.90	1.27	1.63	0.76	0.480	1.34	0.357	0.90	1.00	0.395	No
759	49.83	2.91	1.27	1.64	0.75	0.480	1.34	0.357	0.90	1.00	0.394	No
760	49.88	2.91	1.28	1.64	0.75	0.479	1.34	0.357	0.90	1.00	0.394	No
761	49.93	2.92	1.28	1.64	0.75	0.479	1.34	0.356	0.90	1.00	0.394	No
762	50.03	2.92	1.28	1.64	0.75	0.478	1.34	0.356	0.90	1.00	2.000	No
763	50.13	2.93	1.28	1.65	0.75	0.478	1.34	0.355	0.90	1.00	2.000	No
764	50.14	2.93	1.28	1.65	0.75	0.478	1.34	0.355	0.90	1.00	2.000	No
765	50.23	2.94	1.29	1.65	0.75	0.477	1.34	0.355	0.90	1.00	2.000	No
766	50.27	2.94	1.29	1.65	0.75	0.477	1.34	0.355	0.90	1.00	2.000	No
767	50.34	2.94	1.29	1.65	0.75	0.477	1.34	0.355	0.90	1.00	2.000	No
768	50.43	2.95	1.29	1.66	0.75	0.476	1.34	0.354	0.90	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
769	50.49	2.95	1.29	1.66	0.75	0.476	1.34	0.354	0.90	1.00	2.000	No
770	50.53	2.96	1.30	1.66	0.75	0.476	1.34	0.354	0.90	1.00	2.000	No
771	50.62	2.96	1.30	1.66	0.75	0.475	1.34	0.353	0.90	1.00	2.000	No
772	50.68	2.97	1.30	1.67	0.75	0.475	1.34	0.353	0.90	1.00	2.000	No
773	50.73	2.97	1.30	1.67	0.75	0.474	1.34	0.353	0.90	1.00	2.000	No
774	50.82	2.98	1.30	1.67	0.74	0.474	1.34	0.352	0.90	1.00	2.000	No
775	50.88	2.98	1.31	1.67	0.74	0.474	1.34	0.352	0.90	1.00	2.000	No
776	50.93	2.98	1.31	1.67	0.74	0.473	1.34	0.352	0.90	1.00	2.000	No
777	51.02	2.99	1.31	1.68	0.74	0.473	1.34	0.352	0.90	1.00	2.000	No
778	51.09	2.99	1.31	1.68	0.74	0.472	1.34	0.351	0.90	1.00	2.000	Yes
779	51.12	2.99	1.31	1.68	0.74	0.472	1.34	0.351	0.90	1.00	2.000	Yes
780	51.19	3.00	1.32	1.68	0.74	0.472	1.34	0.351	0.90	1.00	2.000	Yes
781	51.28	3.00	1.32	1.69	0.74	0.471	1.34	0.351	0.90	1.00	2.000	Yes
782	51.32	3.01	1.32	1.69	0.74	0.471	1.34	0.350	0.90	1.00	2.000	Yes
783	51.39	3.01	1.32	1.69	0.74	0.471	1.34	0.350	0.90	1.00	2.000	Yes
784	51.48	3.02	1.33	1.69	0.74	0.470	1.34	0.350	0.90	1.00	2.000	Yes
785	51.53	3.02	1.33	1.69	0.74	0.470	1.34	0.350	0.90	1.00	2.000	Yes
786	51.62	3.03	1.33	1.70	0.74	0.470	1.34	0.349	0.90	1.00	2.000	Yes
787	51.68	3.03	1.33	1.70	0.74	0.469	1.34	0.349	0.90	1.00	2.000	Yes
788	51.73	3.03	1.33	1.70	0.74	0.469	1.34	0.349	0.90	1.00	2.000	Yes
789	51.82	3.04	1.34	1.70	0.73	0.469	1.34	0.349	0.90	1.00	2.000	No
790	51.87	3.04	1.34	1.70	0.73	0.468	1.34	0.348	0.90	1.00	2.000	No
791	51.92	3.04	1.34	1.70	0.73	0.468	1.34	0.348	0.90	1.00	2.000	No
792	51.97	3.05	1.34	1.71	0.73	0.468	1.34	0.348	0.90	1.00	2.000	No
793	52.04	3.05	1.34	1.71	0.73	0.467	1.34	0.348	0.90	1.00	2.000	No
794	52.12	3.06	1.35	1.71	0.73	0.467	1.34	0.347	0.90	1.00	2.000	No
795	52.18	3.06	1.35	1.71	0.73	0.467	1.34	0.347	0.90	1.00	2.000	No
796	52.23	3.06	1.35	1.71	0.73	0.467	1.34	0.347	0.90	1.00	2.000	No
797	52.31	3.07	1.35	1.72	0.73	0.466	1.34	0.347	0.89	1.00	2.000	No
798	52.37	3.07	1.35	1.72	0.73	0.466	1.34	0.347	0.89	1.00	2.000	No
799	52.44	3.07	1.36	1.72	0.73	0.466	1.34	0.346	0.89	1.00	2.000	No
800	52.53	3.08	1.36	1.72	0.73	0.465	1.34	0.346	0.89	1.00	2.000	No
801	52.57	3.08	1.36	1.72	0.73	0.465	1.34	0.346	0.89	1.00	2.000	No
802	52.64	3.09	1.36	1.72	0.73	0.465	1.34	0.346	0.89	1.00	2.000	No
803	52.72	3.09	1.36	1.73	0.73	0.464	1.34	0.345	0.89	1.00	2.000	No
804	52.78	3.09	1.37	1.73	0.72	0.464	1.34	0.345	0.89	1.00	2.000	No
805	52.83	3.10	1.37	1.73	0.72	0.464	1.34	0.345	0.89	1.00	2.000	No
806	52.93	3.10	1.37	1.73	0.72	0.463	1.34	0.345	0.89	1.00	2.000	No
807	52.96	3.10	1.37	1.73	0.72	0.463	1.34	0.345	0.89	1.00	2.000	No
808	53.04	3.11	1.37	1.73	0.72	0.463	1.34	0.344	0.89	1.00	2.000	No
809	53.12	3.11	1.38	1.74	0.72	0.462	1.34	0.344	0.89	1.00	2.000	No
810	53.17	3.11	1.38	1.74	0.72	0.462	1.34	0.344	0.89	1.00	2.000	No
811	53.22	3.12	1.38	1.74	0.72	0.462	1.34	0.344	0.89	1.00	2.000	No
812	53.29	3.12	1.38	1.74	0.72	0.462	1.34	0.343	0.89	1.00	2.000	No
813	53.37	3.13	1.38	1.74	0.72	0.461	1.34	0.343	0.89	1.00	2.000	No
814	53.42	3.13	1.39	1.74	0.72	0.461	1.34	0.343	0.89	1.00	2.000	No
815	53.49	3.13	1.39	1.74	0.72	0.461	1.34	0.343	0.89	1.00	2.000	No
816	53.58	3.14	1.39	1.75	0.72	0.461	1.34	0.343	0.89	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
817	53.63	3.14	1.39	1.75	0.72	0.460	1.34	0.342	0.89	1.00	2.000	No
818	53.68	3.14	1.39	1.75	0.72	0.460	1.34	0.342	0.89	1.00	2.000	No
819	53.78	3.15	1.40	1.75	0.71	0.460	1.34	0.342	0.89	1.00	2.000	No
820	53.84	3.15	1.40	1.75	0.71	0.459	1.34	0.342	0.89	1.00	2.000	No
821	53.88	3.15	1.40	1.75	0.71	0.459	1.34	0.342	0.89	1.00	2.000	No
822	53.94	3.16	1.40	1.75	0.71	0.459	1.34	0.341	0.89	1.00	2.000	No
823	54.03	3.16	1.40	1.76	0.71	0.459	1.34	0.341	0.89	1.00	2.000	No
824	54.08	3.16	1.41	1.76	0.71	0.458	1.34	0.341	0.89	1.00	2.000	No
825	54.16	3.17	1.41	1.76	0.71	0.458	1.34	0.341	0.89	1.00	2.000	No
826	54.20	3.17	1.41	1.76	0.71	0.458	1.34	0.341	0.89	1.00	2.000	No
827	54.28	3.17	1.41	1.76	0.71	0.458	1.34	0.340	0.89	1.00	2.000	No
828	54.35	3.18	1.41	1.76	0.71	0.457	1.34	0.340	0.89	1.00	2.000	No
829	54.43	3.18	1.42	1.76	0.71	0.457	1.34	0.340	0.89	1.00	2.000	No
830	54.48	3.18	1.42	1.77	0.71	0.457	1.34	0.340	0.89	1.00	2.000	No
831	54.55	3.19	1.42	1.77	0.71	0.456	1.34	0.339	0.89	1.00	2.000	No
832	54.63	3.19	1.42	1.77	0.71	0.456	1.34	0.339	0.89	1.00	2.000	No
833	54.67	3.20	1.42	1.77	0.71	0.456	1.34	0.339	0.89	1.00	2.000	No
834	54.74	3.20	1.43	1.77	0.71	0.456	1.34	0.339	0.89	1.00	2.000	No
835	54.82	3.20	1.43	1.77	0.71	0.455	1.34	0.339	0.89	1.00	2.000	No
836	54.87	3.21	1.43	1.77	0.70	0.455	1.34	0.338	0.89	1.00	2.000	No
837	54.92	3.21	1.43	1.78	0.70	0.455	1.34	0.338	0.89	1.00	2.000	No
838	55.02	3.21	1.44	1.78	0.70	0.454	1.34	0.338	0.89	1.00	2.000	No
839	55.06	3.22	1.44	1.78	0.70	0.454	1.34	0.338	0.89	1.00	2.000	No
840	55.14	3.22	1.44	1.78	0.70	0.454	1.34	0.338	0.89	1.00	2.000	No
841	55.22	3.22	1.44	1.78	0.70	0.454	1.34	0.337	0.89	1.00	2.000	No
842	55.27	3.23	1.44	1.78	0.70	0.453	1.34	0.337	0.89	1.00	2.000	No
843	55.37	3.23	1.45	1.79	0.70	0.453	1.34	0.337	0.89	1.00	2.000	No
844	55.42	3.24	1.45	1.79	0.70	0.453	1.34	0.337	0.89	1.00	2.000	No
845	55.47	3.24	1.45	1.79	0.70	0.452	1.34	0.337	0.89	1.00	2.000	No
846	55.53	3.24	1.45	1.79	0.70	0.452	1.34	0.336	0.89	1.00	2.000	No
847	55.58	3.24	1.45	1.79	0.70	0.452	1.34	0.336	0.89	1.00	2.000	No
848	55.67	3.25	1.46	1.79	0.70	0.452	1.34	0.336	0.89	1.00	2.000	No
849	55.72	3.25	1.46	1.79	0.70	0.451	1.34	0.336	0.89	1.00	2.000	No
850	55.81	3.26	1.46	1.80	0.70	0.451	1.34	0.335	0.89	1.00	2.000	No
851	55.86	3.26	1.46	1.80	0.70	0.451	1.34	0.335	0.89	1.00	2.000	No
852	55.92	3.26	1.46	1.80	0.69	0.451	1.34	0.335	0.89	1.00	2.000	No
853	56.01	3.27	1.47	1.80	0.69	0.450	1.34	0.335	0.88	1.00	2.000	No
854	56.05	3.27	1.47	1.80	0.69	0.450	1.34	0.335	0.88	1.00	2.000	No
855	56.11	3.27	1.47	1.80	0.69	0.450	1.34	0.334	0.88	1.00	2.000	No
856	56.21	3.28	1.47	1.81	0.69	0.449	1.34	0.334	0.88	1.00	2.000	No
857	56.26	3.28	1.47	1.81	0.69	0.449	1.34	0.334	0.88	1.00	2.000	No
858	56.32	3.28	1.48	1.81	0.69	0.449	1.34	0.334	0.88	1.00	2.000	No
859	56.41	3.29	1.48	1.81	0.69	0.448	1.34	0.333	0.88	1.00	2.000	No
860	56.46	3.29	1.48	1.81	0.69	0.448	1.34	0.333	0.88	1.00	2.000	No
861	56.50	3.30	1.48	1.81	0.69	0.448	1.34	0.333	0.88	1.00	2.000	No
862	56.59	3.30	1.48	1.82	0.69	0.448	1.34	0.333	0.88	1.00	2.000	No
863	56.65	3.30	1.49	1.82	0.69	0.447	1.34	0.333	0.88	1.00	2.000	No
864	56.70	3.31	1.49	1.82	0.69	0.447	1.34	0.332	0.88	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
865	56.78	3.31	1.49	1.82	0.69	0.447	1.34	0.332	0.88	1.00	2.000	No
866	56.85	3.32	1.49	1.82	0.69	0.446	1.34	0.332	0.88	1.00	2.000	No
867	56.89	3.32	1.49	1.82	0.69	0.446	1.34	0.332	0.88	1.00	2.000	No
868	56.98	3.32	1.50	1.83	0.69	0.446	1.34	0.331	0.88	1.00	2.000	No
869	57.04	3.33	1.50	1.83	0.68	0.445	1.34	0.331	0.88	1.00	2.000	No
870	57.09	3.33	1.50	1.83	0.68	0.445	1.34	0.331	0.88	1.00	2.000	No
871	57.16	3.33	1.50	1.83	0.68	0.445	1.34	0.331	0.88	1.00	2.000	No
872	57.24	3.34	1.51	1.83	0.68	0.444	1.34	0.330	0.88	1.00	2.000	No
873	57.29	3.34	1.51	1.84	0.68	0.444	1.34	0.330	0.88	1.00	2.000	No
874	57.37	3.35	1.51	1.84	0.68	0.444	1.34	0.330	0.88	1.00	2.000	No
875	57.42	3.35	1.51	1.84	0.68	0.443	1.34	0.330	0.88	1.00	2.000	No
876	57.49	3.35	1.51	1.84	0.68	0.443	1.34	0.330	0.88	1.00	2.000	No
877	57.59	3.36	1.52	1.85	0.68	0.443	1.34	0.329	0.88	1.00	2.000	No
878	57.64	3.36	1.52	1.85	0.68	0.442	1.34	0.329	0.88	1.00	2.000	No
879	57.69	3.37	1.52	1.85	0.68	0.442	1.34	0.329	0.88	1.00	2.000	No
880	57.77	3.37	1.52	1.85	0.68	0.442	1.34	0.329	0.88	1.00	2.000	No
881	57.82	3.38	1.52	1.85	0.68	0.441	1.34	0.328	0.88	1.00	2.000	No
882	57.89	3.38	1.53	1.85	0.68	0.441	1.34	0.328	0.88	1.00	2.000	No
883	57.97	3.38	1.53	1.86	0.68	0.441	1.34	0.328	0.88	1.00	2.000	No
884	58.03	3.39	1.53	1.86	0.68	0.440	1.34	0.328	0.88	1.00	2.000	No
885	58.09	3.39	1.53	1.86	0.68	0.440	1.34	0.327	0.88	1.00	2.000	No
886	58.17	3.40	1.53	1.86	0.67	0.440	1.34	0.327	0.88	1.00	2.000	No
887	58.21	3.40	1.54	1.86	0.67	0.440	1.34	0.327	0.88	1.00	2.000	No
888	58.28	3.40	1.54	1.87	0.67	0.439	1.34	0.327	0.88	1.00	2.000	No
889	58.37	3.41	1.54	1.87	0.67	0.439	1.34	0.326	0.88	1.00	2.000	No
890	58.40	3.41	1.54	1.87	0.67	0.439	1.34	0.326	0.88	1.00	2.000	No
891	58.48	3.41	1.54	1.87	0.67	0.438	1.34	0.326	0.88	1.00	2.000	No
892	58.53	3.42	1.55	1.87	0.67	0.438	1.34	0.326	0.88	1.00	2.000	No
893	58.63	3.42	1.55	1.87	0.67	0.438	1.34	0.326	0.88	1.00	2.000	No
894	58.67	3.43	1.55	1.88	0.67	0.438	1.34	0.326	0.88	1.00	2.000	No
895	58.73	3.43	1.55	1.88	0.67	0.437	1.34	0.325	0.88	1.00	2.000	No
896	58.82	3.43	1.55	1.88	0.67	0.437	1.34	0.325	0.88	1.00	2.000	No
897	58.89	3.44	1.56	1.88	0.67	0.437	1.34	0.325	0.88	1.00	2.000	No
898	58.93	3.44	1.56	1.88	0.67	0.437	1.34	0.325	0.88	1.00	2.000	No
899	59.00	3.44	1.56	1.88	0.67	0.436	1.34	0.324	0.88	1.00	2.000	No
900	59.06	3.45	1.56	1.89	0.67	0.436	1.34	0.324	0.88	1.00	2.000	No
901	59.13	3.45	1.56	1.89	0.67	0.436	1.34	0.324	0.88	1.00	2.000	No
902	59.22	3.46	1.57	1.89	0.67	0.435	1.34	0.324	0.88	1.00	2.000	No
903	59.28	3.46	1.57	1.89	0.67	0.435	1.34	0.324	0.87	1.00	2.000	No
904	59.33	3.46	1.57	1.89	0.66	0.435	1.34	0.323	0.87	1.00	2.000	No
905	59.41	3.47	1.57	1.90	0.66	0.434	1.34	0.323	0.87	1.00	2.000	No
906	59.47	3.47	1.57	1.90	0.66	0.434	1.34	0.323	0.87	1.00	2.000	No
907	59.52	3.47	1.58	1.90	0.66	0.434	1.34	0.323	0.87	1.00	2.000	No
908	59.61	3.48	1.58	1.90	0.66	0.434	1.34	0.323	0.87	1.00	2.000	No
909	59.67	3.48	1.58	1.90	0.66	0.433	1.34	0.322	0.87	1.00	2.000	No
910	59.72	3.49	1.58	1.90	0.66	0.433	1.34	0.322	0.87	1.00	2.000	No
911	59.78	3.49	1.58	1.90	0.66	0.433	1.34	0.322	0.87	1.00	2.000	No
912	59.87	3.49	1.59	1.91	0.66	0.433	1.34	0.322	0.87	1.00	2.000	Yes

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
913	59.92	3.50	1.59	1.91	0.66	0.432	1.34	0.322	0.87	1.00	2.000	Yes
914	60.00	3.50	1.59	1.91	0.66	0.432	1.34	0.321	0.87	1.00	2.000	Yes
915	60.05	3.50	1.59	1.91	0.66	0.432	1.34	0.321	0.87	1.00	2.000	Yes
916	60.11	3.51	1.59	1.91	0.66	0.432	1.34	0.321	0.87	1.00	2.000	Yes
917	60.21	3.51	1.60	1.91	0.66	0.431	1.34	0.321	0.87	1.00	2.000	Yes
918	60.25	3.51	1.60	1.92	0.66	0.431	1.34	0.321	0.87	1.00	2.000	Yes
919	60.31	3.52	1.60	1.92	0.66	0.431	1.34	0.320	0.87	1.00	2.000	Yes
920	60.40	3.52	1.60	1.92	0.66	0.431	1.34	0.320	0.87	1.00	2.000	Yes
921	60.43	3.52	1.60	1.92	0.66	0.431	1.34	0.320	0.87	1.00	2.000	No
922	60.51	3.53	1.61	1.92	0.66	0.430	1.34	0.320	0.87	1.00	2.000	No

Abbreviations

Depth: Depth from free surface, at which CPT was performed (ft)
σ_v: Total overburden pressure at test point (tsf)
u_0: Water pressure at test point (tsf)
σ_v': Effective overburden pressure based on GWT during earthquake (tsf)
r_d: Nonlinear shear mass factor
CSR: Cyclic Stress Ratio
MSF: Magnitude Scaling Factor
CSR_{eq}: CSR adjusted for M=7.5
K_σ: Effective overburden stress factor
CSR^*: CSR fully adjusted

:: Cyclic Resistance Ratio (CRR) calculation data ::

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
1	0.10	49.56	1.91	0.73	0.60	79.61	1.20	95.18	4.000	No	No	2.00
2	0.15	58.10	1.87	0.78	0.59	93.33	1.16	108.18	4.000	No	No	2.00
3	0.23	73.22	1.79	0.79	0.56	117.62	1.10	129.38	4.000	No	No	2.00
4	0.30	87.93	1.72	0.76	0.53	141.25	1.05	148.50	4.000	No	No	2.00
5	0.34	102.61	1.64	0.70	0.50	164.82	1.00	164.76	4.000	No	No	2.00
6	0.39	122.42	1.57	0.67	0.50	196.64	1.00	196.64	4.000	No	No	2.00
7	0.50	138.33	1.53	0.67	0.50	222.19	1.00	222.19	4.000	No	No	2.00
8	0.53	149.90	1.51	0.67	0.50	240.79	1.00	240.79	4.000	No	No	2.00
9	0.60	156.28	1.50	0.69	0.50	251.04	1.00	251.04	4.000	No	No	2.00
10	0.69	161.75	1.50	0.70	0.50	259.81	1.00	259.81	4.000	No	No	2.00
11	0.72	165.78	1.50	0.71	0.50	266.28	1.00	266.28	4.000	No	No	2.00
12	0.80	157.82	1.54	0.77	0.50	253.48	1.00	253.48	4.000	No	No	2.00
13	0.87	146.07	1.60	0.86	0.50	234.60	1.00	234.60	4.000	No	No	2.00
14	0.92	130.10	1.68	1.00	0.51	208.94	1.02	213.65	4.000	No	No	2.00
15	1.00	112.06	1.78	1.19	0.55	179.95	1.09	196.18	4.000	No	No	2.00
16	1.08	96.24	1.88	1.41	0.59	154.52	1.17	180.26	4.000	No	No	2.00
17	1.12	83.03	1.97	1.64	0.62	133.29	1.26	167.79	4.000	No	No	2.00
18	1.20	73.32	2.04	1.84	0.65	117.68	1.36	159.61	4.000	No	No	2.00
19	1.30	64.42	2.11	2.06	0.68	103.38	1.48	153.19	4.000	No	No	2.00
20	1.34	56.90	2.18	2.27	0.71	91.29	1.62	148.32	4.000	No	No	2.00
21	1.40	51.93	2.23	2.38	0.72	83.30	1.73	144.16	4.000	No	No	2.00
22	1.49	47.87	2.26	2.45	0.74	76.77	1.82	140.01	4.000	No	No	2.00
23	1.54	45.15	2.28	2.44	0.74	72.38	1.87	135.47	4.000	No	No	2.00
24	1.59	43.56	2.28	2.38	0.74	69.84	1.88	131.38	4.000	No	No	2.00
25	1.68	42.04	2.28	2.33	0.75	67.38	1.90	127.84	4.000	No	No	2.00
26	1.74	40.63	2.29	2.31	0.75	65.11	1.92	125.10	4.000	No	No	2.00
27	1.79	39.35	2.30	2.31	0.75	63.05	1.96	123.29	4.000	No	No	2.00
28	1.87	38.01	2.32	2.35	0.76	60.89	2.01	122.18	4.000	No	No	2.00
29	1.94	36.70	2.34	2.40	0.77	58.77	2.07	121.55	4.000	No	No	2.00
30	1.98	35.46	2.36	2.48	0.77	56.78	2.14	121.52	4.000	No	No	2.00
31	2.04	34.18	2.38	2.56	0.78	54.71	2.22	121.49	4.000	No	No	2.00
32	2.13	32.82	2.40	2.65	0.79	52.53	2.32	121.63	4.000	No	No	2.00
33	2.17	31.54	2.42	2.73	0.80	50.47	2.40	121.32	4.000	No	No	2.00
34	2.24	30.07	2.44	2.80	0.81	48.09	2.50	120.38	4.000	No	No	2.00
35	2.33	28.70	2.46	2.85	0.81	45.88	2.60	119.10	4.000	No	No	2.00
36	2.36	27.08	2.49	2.91	0.82	43.27	2.72	117.61	4.000	No	No	2.00
37	2.43	25.49	2.51	2.95	0.83	40.73	2.84	115.57	4.000	No	No	2.00
38	2.52	23.95	2.54	3.00	0.84	38.24	2.97	113.59	4.000	No	No	2.00
39	2.56	22.45	2.57	3.06	0.85	35.82	3.12	111.86	4.000	No	No	2.00
40	2.64	20.99	2.60	3.16	0.86	33.47	3.30	110.58	4.000	No	No	2.00
41	2.74	19.57	2.63	3.30	0.88	31.18	3.53	110.08	4.000	No	Yes	2.00
42	2.78	18.20	2.67	3.51	0.89	28.97	3.81	110.38	4.000	No	Yes	2.00
43	2.83	17.12	2.71	3.75	0.91	27.24	4.09	111.38	4.000	No	Yes	2.00
44	2.90	16.00	2.76	4.05	0.93	25.43	4.43	112.72	4.000	No	Yes	2.00
45	2.98	15.24	2.79	4.31	0.94	24.21	4.71	114.07	4.000	No	Yes	2.00
46	3.03	14.73	2.82	4.55	0.95	23.37	4.94	115.52	4.000	No	Yes	2.00
47	3.10	14.29	2.84	4.76	0.96	22.66	5.14	116.59	4.000	No	Yes	2.00
48	3.18	13.94	2.86	4.94	0.96	22.10	5.32	117.49	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
49	3.23	13.72	2.87	5.07	0.97	21.74	5.44	118.30	4.000	No	Yes	2.00
50	3.29	13.57	2.88	5.14	0.97	21.50	5.51	118.48	4.000	No	Yes	2.00
51	3.38	13.45	2.89	5.16	0.97	21.30	5.55	118.25	4.000	No	Yes	2.00
52	3.42	13.36	2.89	5.13	0.97	21.13	5.56	117.44	4.000	No	Yes	2.00
53	3.51	13.27	2.88	5.07	0.97	20.98	5.55	116.42	4.000	No	Yes	2.00
54	3.58	13.16	2.88	5.01	0.97	20.80	5.54	115.30	4.000	No	Yes	2.00
55	3.62	13.00	2.88	4.95	0.97	20.54	5.55	114.00	4.000	No	Yes	2.00
56	3.69	12.78	2.89	4.90	0.98	20.18	5.57	112.51	4.000	No	Yes	2.00
57	3.77	12.51	2.89	4.84	0.98	19.74	5.61	110.72	4.000	No	Yes	2.00
58	3.82	12.27	2.89	4.74	0.98	19.35	5.62	108.69	4.000	No	Yes	2.00
59	3.89	12.10	2.89	4.62	0.98	19.07	5.59	106.68	4.000	No	Yes	2.00
60	3.97	11.87	2.89	4.53	0.98	18.70	5.60	104.67	4.000	No	Yes	2.00
61	4.03	11.66	2.89	4.45	0.98	18.35	5.61	103.05	4.000	No	Yes	2.00
62	4.10	11.44	2.90	4.41	0.98	17.99	5.65	101.73	4.000	No	Yes	2.00
63	4.15	11.24	2.90	4.39	0.98	17.67	5.70	100.72	4.000	No	Yes	2.00
64	4.24	11.07	2.91	4.39	0.98	17.39	5.75	100.03	4.000	No	Yes	2.00
65	4.29	10.91	2.91	4.44	0.99	17.13	5.83	99.87	4.000	No	Yes	2.00
66	4.35	10.77	2.92	4.51	0.99	16.89	5.92	100.05	4.000	No	Yes	2.00
67	4.44	10.61	2.93	4.62	0.99	16.63	6.04	100.44	4.000	No	Yes	2.00
68	4.48	10.42	2.95	4.73	1.00	16.32	6.17	100.73	4.000	No	Yes	2.00
69	4.54	10.34	2.95	4.81	1.00	16.19	6.25	101.19	4.000	No	Yes	2.00
70	4.61	10.34	2.96	4.85	1.00	16.19	6.28	101.63	4.000	No	Yes	2.00
71	4.69	10.46	2.95	4.83	1.00	16.37	6.22	101.92	4.000	No	Yes	2.00
72	4.74	10.72	2.94	4.74	0.99	16.78	6.09	102.16	4.000	No	Yes	2.00
73	4.82	11.01	2.92	4.66	0.99	17.24	5.94	102.49	4.000	No	Yes	2.00
74	4.86	11.27	2.91	4.59	0.98	17.65	5.82	102.81	4.000	No	Yes	2.00
75	4.94	11.44	2.91	4.55	0.98	17.92	5.75	103.07	4.000	No	Yes	2.00
76	5.02	11.53	2.90	4.55	0.98	18.06	5.72	103.35	4.000	No	Yes	2.00
77	5.09	11.59	2.90	4.55	0.98	18.15	5.71	103.54	4.000	No	Yes	2.00
78	5.13	11.58	2.90	4.54	0.98	18.13	5.71	103.44	4.000	No	Yes	2.00
79	5.23	11.50	2.90	4.53	0.98	17.99	5.73	103.05	4.000	No	Yes	2.00
80	5.28	11.33	2.91	4.54	0.98	17.72	5.78	102.47	4.000	No	Yes	2.00
81	5.33	11.01	2.92	4.57	0.99	17.20	5.90	101.40	4.000	No	Yes	2.00
82	5.39	10.68	2.93	4.58	0.99	16.65	6.01	100.10	4.000	No	Yes	2.00
83	5.48	10.37	2.94	4.57	1.00	16.15	6.11	98.65	4.000	No	Yes	2.00
84	5.52	10.16	2.94	4.51	1.00	15.81	6.14	97.14	4.000	No	Yes	2.00
85	5.58	10.05	2.94	4.39	1.00	15.63	6.11	95.46	4.000	No	Yes	2.00
86	5.67	9.93	2.94	4.28	0.99	15.43	6.08	93.87	4.000	No	Yes	2.00
87	5.73	9.80	2.94	4.19	0.99	15.21	6.07	92.37	4.000	No	Yes	2.00
88	5.78	9.62	2.94	4.10	0.99	14.92	6.08	90.75	4.000	No	Yes	2.00
89	5.88	9.43	2.94	4.03	1.00	14.60	6.11	89.22	4.000	No	Yes	2.00
90	5.92	9.27	2.94	3.96	1.00	14.35	6.12	87.78	4.000	No	Yes	2.00
91	5.97	9.11	2.94	3.86	1.00	14.09	6.12	86.19	4.000	No	Yes	2.00
92	6.08	8.96	2.94	3.75	1.00	13.84	6.10	84.43	4.000	No	Yes	2.00
93	6.11	8.81	2.94	3.62	0.99	13.59	6.07	82.50	4.000	No	Yes	2.00
94	6.18	8.66	2.94	3.52	0.99	13.35	6.05	80.80	4.000	No	Yes	2.00
95	6.27	8.55	2.93	3.40	0.99	13.16	6.02	79.18	4.000	No	Yes	2.00
96	6.33	8.51	2.92	3.29	0.99	13.09	5.94	77.79	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
97	6.38	8.57	2.91	3.20	0.99	13.18	5.85	77.06	4.000	No	Yes	2.00
98	6.44	8.68	2.90	3.09	0.98	13.35	5.71	76.30	4.000	No	Yes	2.00
99	6.50	8.77	2.89	3.03	0.98	13.50	5.63	75.97	4.000	No	Yes	2.00
100	6.57	8.86	2.89	3.04	0.98	13.64	5.60	76.38	4.000	No	Yes	2.00
101	6.67	8.93	2.89	3.09	0.98	13.74	5.62	77.22	4.000	No	Yes	2.00
102	6.72	9.00	2.90	3.18	0.98	13.85	5.67	78.47	4.000	No	Yes	2.00
103	6.76	9.05	2.91	3.31	0.98	13.91	5.75	79.99	4.000	No	Yes	2.00
104	6.83	9.07	2.92	3.46	0.99	13.94	5.85	81.62	4.000	No	Yes	2.00
105	6.92	9.05	2.93	3.61	0.99	13.90	5.98	83.10	4.000	No	Yes	2.00
106	6.97	9.00	2.94	3.75	1.00	13.82	6.10	84.30	4.000	No	Yes	2.00
107	7.04	8.95	2.95	3.88	1.00	13.74	6.22	85.48	4.000	No	Yes	2.00
108	7.12	8.92	2.96	4.00	1.00	13.67	6.32	86.38	4.000	No	Yes	2.00
109	7.16	8.93	2.96	4.04	1.00	13.69	6.35	86.88	4.000	No	Yes	2.00
110	7.25	8.98	2.96	4.04	1.00	13.77	6.33	87.12	4.000	No	Yes	2.00
111	7.32	9.04	2.96	4.03	1.00	13.86	6.29	87.24	4.000	No	Yes	2.00
112	7.37	9.15	2.95	4.01	1.00	14.04	6.23	87.46	4.000	No	Yes	2.00
113	7.43	9.31	2.94	3.97	1.00	14.29	6.14	87.79	4.000	No	Yes	2.00
114	7.52	9.51	2.93	3.93	0.99	14.59	6.04	88.11	4.000	No	Yes	2.00
115	7.56	9.71	2.93	3.93	0.99	14.92	5.96	88.91	4.000	No	Yes	2.00
116	7.63	9.90	2.92	3.94	0.99	15.21	5.91	89.83	4.000	No	Yes	2.00
117	7.71	10.03	2.92	3.98	0.99	15.41	5.89	90.76	4.000	No	Yes	2.00
118	7.75	10.10	2.92	4.04	0.99	15.52	5.90	91.59	4.000	No	Yes	2.00
119	7.83	10.07	2.93	4.12	0.99	15.47	5.97	92.32	4.000	No	Yes	2.00
120	7.88	10.00	2.94	4.21	0.99	15.34	6.06	92.94	4.000	No	Yes	2.00
121	7.97	9.86	2.95	4.29	1.00	15.11	6.16	93.11	4.000	No	Yes	2.00
122	8.01	9.69	2.95	4.33	1.00	14.84	6.25	92.80	4.000	No	Yes	2.00
123	8.08	9.54	2.96	4.35	1.00	14.59	6.33	92.37	4.000	No	Yes	2.00
124	8.18	9.42	2.97	4.33	1.00	14.39	6.36	91.57	4.000	No	Yes	2.00
125	8.22	9.30	2.97	4.29	1.00	14.19	6.39	90.63	4.000	No	Yes	2.00
126	8.28	9.26	2.96	4.22	1.00	14.13	6.36	89.79	4.000	No	Yes	2.00
127	8.35	9.23	2.96	4.16	1.00	14.08	6.33	89.07	4.000	No	Yes	2.00
128	8.43	9.24	2.96	4.09	1.00	14.09	6.28	88.45	4.000	No	Yes	2.00
129	8.48	9.27	2.95	4.02	1.00	14.12	6.22	87.82	4.000	No	Yes	2.00
130	8.56	9.28	2.95	3.97	1.00	14.13	6.18	87.32	4.000	No	Yes	2.00
131	8.63	9.26	2.95	3.95	1.00	14.10	6.18	87.07	4.000	No	Yes	2.00
132	8.68	9.20	2.95	3.95	1.00	14.00	6.20	86.84	4.000	No	Yes	2.00
133	8.76	9.10	2.95	3.96	1.00	13.83	6.25	86.49	4.000	No	Yes	2.00
134	8.80	9.00	2.96	3.93	1.00	13.66	6.28	85.75	4.000	No	Yes	2.00
135	8.88	8.84	2.96	3.92	1.00	13.40	6.34	84.89	4.000	No	Yes	2.00
136	8.94	8.67	2.97	3.89	1.00	13.13	6.39	83.89	4.000	No	Yes	2.00
137	8.99	8.51	2.97	3.86	1.00	12.85	6.45	82.88	4.000	No	Yes	2.00
138	9.07	8.35	2.98	3.83	1.00	12.59	6.50	81.85	4.000	No	Yes	2.00
139	9.14	8.17	2.98	3.79	1.00	12.30	6.56	80.67	4.000	No	Yes	2.00
140	9.22	8.01	2.99	3.72	1.00	12.03	6.59	79.33	4.000	No	Yes	2.00
141	9.27	7.85	2.99	3.65	1.00	11.77	6.62	77.97	4.000	No	Yes	2.00
142	9.37	7.71	2.99	3.56	1.00	11.54	6.62	76.43	4.000	No	Yes	2.00
143	9.42	7.56	2.99	3.49	1.00	11.30	6.65	75.16	4.000	No	Yes	2.00
144	9.47	7.39	3.00	3.43	1.00	11.03	6.70	73.85	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
145	9.52	7.22	3.00	3.39	1.00	10.74	6.77	72.68	4.000	No	Yes	2.00
146	9.62	7.05	3.01	3.35	1.00	10.46	6.83	71.47	4.000	No	Yes	2.00
147	9.67	6.93	3.01	3.27	1.00	10.26	6.85	70.25	4.000	No	Yes	2.00
148	9.73	7.01	3.00	3.20	1.00	10.39	6.73	69.94	4.000	No	Yes	2.00
149	9.82	7.17	2.99	3.14	1.00	10.63	6.59	70.09	4.000	No	Yes	2.00
150	9.86	7.39	2.97	3.09	1.00	10.98	6.42	70.54	4.000	No	Yes	2.00
151	9.92	7.76	2.95	3.10	1.00	11.57	6.24	72.17	4.000	No	Yes	2.00
152	10.02	8.17	2.94	3.15	0.99	12.23	6.08	74.33	4.000	No	Yes	2.00
153	10.06	8.66	2.92	3.24	0.99	13.01	5.92	77.10	4.000	No	Yes	2.00
154	10.12	9.25	2.91	3.34	0.98	13.95	5.76	80.39	4.000	No	Yes	2.00
155	10.21	9.84	2.89	3.45	0.98	14.90	5.62	83.79	4.000	No	Yes	2.00
156	10.25	10.49	2.88	3.56	0.97	15.94	5.48	87.38	4.000	No	Yes	2.00
157	10.31	11.09	2.86	3.65	0.97	16.89	5.36	90.46	4.000	No	Yes	2.00
158	10.41	11.67	2.85	3.71	0.96	17.81	5.23	93.18	4.000	No	Yes	2.00
159	10.45	12.28	2.84	3.75	0.96	18.80	5.10	95.78	4.000	No	Yes	2.00
160	10.52	12.84	2.82	3.79	0.95	19.69	4.98	98.11	4.000	No	Yes	2.00
161	10.61	13.40	2.81	3.81	0.95	20.57	4.87	100.13	4.000	No	Yes	2.00
162	10.64	13.96	2.80	3.82	0.94	21.47	4.75	101.99	4.000	No	Yes	2.00
163	10.71	14.46	2.78	3.82	0.94	22.27	4.65	103.52	4.000	No	Yes	2.00
164	10.81	14.98	2.77	3.81	0.93	22.93	4.57	104.69	4.000	No	Yes	2.00
165	10.85	15.43	2.77	3.82	0.93	23.52	4.50	105.85	4.000	No	Yes	2.00
166	10.91	15.78	2.76	3.84	0.93	23.92	4.47	106.92	4.000	No	Yes	2.00
167	10.96	16.11	2.76	3.86	0.93	24.32	4.44	108.02	4.000	No	Yes	2.00
168	11.03	16.41	2.76	3.91	0.93	24.63	4.43	109.16	4.000	No	Yes	2.00
169	11.10	16.63	2.76	3.94	0.93	24.81	4.43	110.05	4.000	No	Yes	2.00
170	11.20	16.84	2.76	3.99	0.93	24.94	4.45	110.91	4.000	No	Yes	2.00
171	11.24	17.06	2.76	4.02	0.93	25.18	4.44	111.77	4.000	No	Yes	2.00
172	11.30	17.28	2.76	4.05	0.93	25.38	4.43	112.54	4.000	No	Yes	2.00
173	11.36	17.47	2.76	4.08	0.93	25.53	4.44	113.33	4.000	No	Yes	2.00
174	11.43	17.60	2.76	4.11	0.93	25.59	4.45	113.92	4.000	No	Yes	2.00
175	11.50	17.65	2.76	4.14	0.93	25.53	4.47	114.20	4.000	No	Yes	2.00
176	11.58	17.64	2.77	4.16	0.93	25.35	4.50	114.11	4.000	No	Yes	2.00
177	11.63	17.60	2.77	4.16	0.93	25.19	4.52	113.88	4.000	No	Yes	2.00
178	11.70	17.51	2.77	4.17	0.93	24.92	4.55	113.42	4.000	No	Yes	2.00
179	11.79	17.40	2.77	4.14	0.93	24.59	4.57	112.43	4.000	No	Yes	2.00
180	11.84	17.23	2.78	4.09	0.93	24.24	4.58	111.06	4.000	No	Yes	2.00
181	11.90	17.01	2.78	4.02	0.93	23.80	4.59	109.21	4.000	No	Yes	2.00
182	11.98	16.94	2.77	3.87	0.93	23.51	4.54	106.65	4.000	No	Yes	2.00
183	12.02	16.91	2.76	3.70	0.93	23.37	4.45	103.99	4.000	No	Yes	2.00
184	12.09	17.00	2.75	3.52	0.92	23.38	4.34	101.38	4.000	No	Yes	2.00
185	12.14	17.14	2.73	3.35	0.92	23.48	4.22	99.12	4.000	No	Yes	2.00
186	12.21	17.31	2.71	3.19	0.91	23.60	4.11	96.91	4.000	No	Yes	2.00
187	12.29	17.62	2.70	3.03	0.90	23.89	3.97	94.76	4.000	No	Yes	2.00
188	12.34	17.88	2.68	2.90	0.90	24.16	3.86	93.21	4.000	No	Yes	2.00
189	12.44	18.17	2.67	2.82	0.89	24.43	3.78	92.34	4.000	No	Yes	2.00
190	12.49	18.50	2.66	2.76	0.89	24.79	3.70	91.81	4.000	No	Yes	2.00
191	12.57	18.63	2.66	2.75	0.89	24.90	3.69	91.83	4.000	No	Yes	2.00
192	12.64	18.76	2.66	2.76	0.89	25.02	3.69	92.19	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
193	12.68	18.84	2.66	2.78	0.89	25.09	3.69	92.51	4.000	No	Yes	2.00
194	12.73	18.86	2.66	2.80	0.89	25.08	3.70	92.86	4.000	No	Yes	2.00
195	12.84	18.81	2.66	2.82	0.89	24.93	3.73	92.99	4.000	No	Yes	2.00
196	12.89	18.69	2.67	2.84	0.89	24.74	3.76	93.03	4.000	No	Yes	2.00
197	12.98	18.58	2.67	2.84	0.89	24.53	3.78	92.82	4.000	No	Yes	2.00
198	13.00	18.45	2.67	2.84	0.89	24.34	3.80	92.48	4.000	No	Yes	2.00
199	13.08	18.34	2.68	2.84	0.89	24.13	3.82	92.17	4.000	No	Yes	2.00
200	13.14	18.25	2.68	2.85	0.90	23.98	3.84	92.18	4.000	No	Yes	2.00
201	13.23	18.22	2.68	2.87	0.90	23.86	3.87	92.33	4.000	No	Yes	2.00
202	13.27	18.26	2.69	2.91	0.90	23.89	3.89	92.99	4.000	No	Yes	2.00
203	13.34	18.38	2.69	2.96	0.90	24.01	3.91	93.85	4.000	No	Yes	2.00
204	13.43	18.50	2.69	3.02	0.90	24.12	3.94	94.98	4.000	No	Yes	2.00
205	13.47	18.61	2.70	3.10	0.90	24.25	3.98	96.47	4.000	No	Yes	2.00
206	13.54	18.62	2.71	3.22	0.91	24.25	4.06	98.37	4.000	No	Yes	2.00
207	13.63	18.55	2.72	3.37	0.91	24.12	4.16	100.47	4.000	No	Yes	2.00
208	13.67	18.46	2.74	3.52	0.92	24.02	4.27	102.51	4.000	No	Yes	2.00
209	13.72	18.35	2.75	3.65	0.92	23.87	4.36	104.15	4.000	No	Yes	2.00
210	13.83	18.16	2.76	3.77	0.93	23.56	4.47	105.29	4.000	No	Yes	2.00
211	13.88	17.91	2.77	3.87	0.93	23.21	4.57	106.09	4.000	No	Yes	2.00
212	13.94	17.59	2.79	3.97	0.94	22.77	4.68	106.54	4.000	No	Yes	2.00
213	13.98	17.20	2.80	4.06	0.94	22.26	4.80	106.80	4.000	No	Yes	2.00
214	14.06	16.75	2.82	4.16	0.95	21.64	4.93	106.76	4.000	No	Yes	2.00
215	14.14	16.40	2.83	4.19	0.95	21.13	5.02	106.09	4.000	No	Yes	2.00
216	14.18	16.13	2.83	4.17	0.95	20.75	5.06	105.03	4.000	No	Yes	2.00
217	14.26	15.81	2.84	4.15	0.96	20.27	5.12	103.76	4.000	No	Yes	2.00
218	14.33	15.47	2.84	4.11	0.96	19.77	5.17	102.31	4.000	No	Yes	2.00
219	14.37	15.15	2.85	4.09	0.96	19.33	5.23	101.05	4.000	No	Yes	2.00
220	14.45	14.78	2.86	4.09	0.96	18.80	5.31	99.86	4.000	No	Yes	2.00
221	14.54	14.43	2.87	4.07	0.97	18.29	5.39	98.53	4.000	No	Yes	2.00
222	14.61	14.15	2.87	4.03	0.97	17.89	5.43	97.16	4.000	No	Yes	2.00
223	14.65	13.92	2.87	3.97	0.97	17.55	5.45	95.67	4.000	No	Yes	2.00
224	14.74	13.69	2.88	3.91	0.97	17.19	5.48	94.20	4.000	No	Yes	2.00
225	14.80	13.48	2.88	3.86	0.97	16.88	5.50	92.84	4.000	No	Yes	2.00
226	14.85	13.31	2.88	3.79	0.97	16.63	5.51	91.55	4.000	No	Yes	2.00
227	14.90	13.18	2.88	3.73	0.97	16.42	5.51	90.43	4.000	No	Yes	2.00
228	15.00	13.08	2.88	3.67	0.97	16.23	5.50	89.23	4.000	No	Yes	2.00
229	15.05	13.03	2.88	3.58	0.97	16.13	5.46	88.03	4.000	No	Yes	2.00
230	15.10	12.95	2.87	3.51	0.97	15.99	5.44	86.96	4.000	No	Yes	2.00
231	15.17	12.87	2.87	3.46	0.97	15.84	5.43	85.96	4.000	No	Yes	2.00
232	15.25	12.79	2.87	3.41	0.97	15.69	5.42	85.06	4.000	No	Yes	2.00
233	15.30	12.71	2.87	3.35	0.97	15.56	5.41	84.17	4.000	No	Yes	2.00
234	15.36	12.61	2.87	3.31	0.97	15.39	5.41	83.29	4.000	No	Yes	2.00
235	15.45	12.52	2.87	3.26	0.97	15.23	5.41	82.36	4.000	No	Yes	2.00
236	15.49	12.41	2.87	3.21	0.97	15.06	5.41	81.49	4.000	No	Yes	2.00
237	15.57	12.29	2.87	3.18	0.97	14.87	5.43	80.69	4.000	No	Yes	2.00
238	15.64	12.18	2.87	3.16	0.97	14.70	5.45	80.12	4.000	No	Yes	2.00
239	15.69	12.09	2.88	3.16	0.97	14.56	5.48	79.78	4.000	No	Yes	2.00
240	15.77	11.98	2.88	3.17	0.97	14.39	5.53	79.54	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
241	15.85	11.82	2.89	3.22	0.98	14.15	5.62	79.57	4.000	No	Yes	2.00
242	15.89	11.63	2.90	3.28	0.98	13.90	5.73	79.64	4.000	No	Yes	2.00
243	15.99	11.42	2.92	3.36	0.99	13.60	5.86	79.77	4.000	No	Yes	2.00
244	16.05	11.18	2.93	3.46	0.99	13.29	6.02	80.06	4.000	No	Yes	2.00
245	16.09	10.95	2.95	3.55	1.00	13.00	6.17	80.24	4.000	No	Yes	2.00
246	16.16	10.68	2.96	3.65	1.00	12.63	6.35	80.24	4.000	No	Yes	2.00
247	16.24	10.38	2.98	3.74	1.00	12.21	6.55	79.98	4.000	No	Yes	2.00
248	16.30	10.10	3.00	3.81	1.00	11.82	6.73	79.51	4.000	No	Yes	2.00
249	16.34	9.80	3.01	3.86	1.00	11.42	6.90	78.82	4.000	No	Yes	2.00
250	16.44	9.56	3.03	3.87	1.00	11.07	7.03	77.83	4.000	No	Yes	2.00
251	16.48	9.34	3.03	3.87	1.00	10.78	7.14	76.90	4.000	No	Yes	2.00
252	16.54	9.16	3.04	3.84	1.00	10.52	7.21	75.93	4.000	No	Yes	2.00
253	16.63	9.03	3.04	3.80	1.00	10.33	7.26	74.93	4.000	No	Yes	2.00
254	16.69	8.94	3.04	3.73	1.00	10.19	7.26	73.96	4.000	No	Yes	2.00
255	16.74	8.91	3.04	3.63	1.00	10.14	7.20	72.99	4.000	No	Yes	2.00
256	16.82	8.90	3.03	3.54	1.00	10.10	7.14	72.11	4.000	No	Yes	2.00
257	16.90	8.88	3.03	3.46	1.00	10.04	7.09	71.21	4.000	No	Yes	2.00
258	16.94	8.94	3.02	3.37	1.00	10.09	6.99	70.59	4.000	No	Yes	2.00
259	17.03	8.98	3.02	3.30	1.00	10.11	6.93	70.04	4.000	No	Yes	2.00
260	17.07	8.99	3.01	3.24	1.00	10.11	6.88	69.52	4.000	No	Yes	2.00
261	17.13	8.97	3.02	3.26	1.00	10.07	6.91	69.59	4.000	No	Yes	2.00
262	17.21	8.95	3.02	3.34	1.00	10.01	7.00	70.13	4.000	No	Yes	2.00
263	17.26	9.06	3.03	3.44	1.00	10.15	7.04	71.40	4.000	No	Yes	2.00
264	17.33	9.38	3.02	3.52	1.00	10.52	6.96	73.22	4.000	No	Yes	2.00
265	17.41	9.84	3.00	3.57	1.00	11.06	6.80	75.19	4.000	No	Yes	2.00
266	17.48	10.47	2.98	3.58	1.00	11.81	6.55	77.41	4.000	No	Yes	2.00
267	17.53	11.02	2.97	3.63	1.00	12.49	6.38	79.66	4.000	No	Yes	2.00
268	17.61	11.59	2.95	3.66	1.00	13.15	6.21	81.69	4.000	No	Yes	2.00
269	17.67	12.19	2.93	3.67	0.99	13.84	6.04	83.58	4.000	No	Yes	2.00
270	17.72	12.75	2.91	3.60	0.99	14.48	5.83	84.41	4.000	No	Yes	2.00
271	17.82	13.25	2.89	3.50	0.98	15.02	5.63	84.59	4.000	No	Yes	2.00
272	17.88	13.49	2.88	3.42	0.97	15.26	5.52	84.31	4.000	No	Yes	2.00
273	17.92	13.46	2.88	3.37	0.97	15.20	5.50	83.57	4.000	No	Yes	2.00
274	18.02	13.24	2.88	3.34	0.97	14.89	5.54	82.55	4.000	No	Yes	2.00
275	18.07	12.93	2.89	3.32	0.98	14.50	5.62	81.41	4.000	No	Yes	2.00
276	18.14	12.53	2.90	3.32	0.98	14.00	5.73	80.27	4.000	No	Yes	2.00
277	18.20	12.25	2.91	3.28	0.98	13.64	5.80	79.05	4.000	No	Yes	2.00
278	18.27	12.04	2.91	3.25	0.99	13.36	5.84	78.00	4.000	No	Yes	2.00
279	18.32	11.94	2.92	3.23	0.99	13.22	5.87	77.57	4.000	No	Yes	2.00
280	18.38	11.89	2.92	3.24	0.99	13.14	5.89	77.43	4.000	No	Yes	2.00
281	18.47	11.95	2.92	3.23	0.99	13.17	5.88	77.44	4.000	No	Yes	2.00
282	18.51	12.13	2.91	3.20	0.98	13.36	5.80	77.55	4.000	No	Yes	2.00
283	18.57	12.37	2.90	3.17	0.98	13.61	5.71	77.73	4.000	No	Yes	2.00
284	18.67	12.54	2.89	3.13	0.98	13.76	5.64	77.68	4.000	No	Yes	2.00
285	18.71	12.82	2.88	3.04	0.97	14.06	5.50	77.30	4.000	No	Yes	2.00
286	18.81	13.01	2.87	2.96	0.97	14.23	5.40	76.81	4.000	No	Yes	2.00
287	18.86	13.15	2.86	2.87	0.96	14.35	5.30	76.04	4.000	No	Yes	2.00
288	18.91	13.20	2.85	2.78	0.96	14.38	5.22	74.98	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
289	18.97	13.23	2.84	2.69	0.96	14.38	5.14	73.92	4.000	No	Yes	2.00
290	19.06	13.28	2.83	2.60	0.95	14.39	5.06	72.81	4.000	No	Yes	2.00
291	19.11	13.35	2.83	2.55	0.95	14.44	5.01	72.28	4.000	No	Yes	2.00
292	19.21	13.59	2.81	2.49	0.95	14.66	4.91	71.98	4.000	No	Yes	2.00
293	19.27	14.02	2.80	2.48	0.94	15.12	4.80	72.63	4.000	No	Yes	2.00
294	19.31	14.78	2.78	2.50	0.94	15.97	4.65	74.33	4.000	No	Yes	2.00
295	19.41	16.02	2.76	2.54	0.93	17.32	4.45	77.15	4.000	No	Yes	2.00
296	19.46	17.53	2.73	2.58	0.92	19.00	4.24	80.48	4.000	No	Yes	2.00
297	19.51	19.45	2.69	2.56	0.90	21.12	3.95	83.35	4.000	No	Yes	2.00
298	19.56	21.37	2.66	2.54	0.89	23.23	3.70	85.96	4.000	No	Yes	2.00
299	19.63	22.73	2.64	2.58	0.88	24.70	3.59	88.73	4.000	No	Yes	2.00
300	19.71	23.86	2.63	2.65	0.88	25.91	3.53	91.41	4.000	No	Yes	2.00
301	19.80	24.54	2.63	2.76	0.88	26.62	3.55	94.40	4.000	No	Yes	2.00
302	19.82	25.00	2.64	2.90	0.88	27.14	3.59	97.46	4.000	No	Yes	2.00
303	19.91	24.70	2.67	3.11	0.89	26.78	3.75	100.50	4.000	No	Yes	2.00
304	19.95	25.51	2.66	3.15	0.89	27.65	3.70	102.41	4.000	No	Yes	2.00
305	20.02	26.21	2.65	3.18	0.89	28.37	3.67	103.99	4.000	No	Yes	2.00
306	20.11	26.74	2.65	3.26	0.89	28.89	3.67	105.99	4.000	No	Yes	2.00
307	20.15	27.33	2.65	3.34	0.89	29.52	3.67	108.26	4.000	No	Yes	2.00
308	20.24	28.50	2.64	3.35	0.88	30.73	3.59	110.30	4.000	No	Yes	2.00
309	20.29	30.11	2.62	3.33	0.87	32.44	3.46	112.35	4.000	No	Yes	2.00
310	20.36	32.24	2.60	3.28	0.86	34.68	3.30	114.39	0.219	No	No	0.59
311	20.41	34.37	2.57	3.21	0.85	36.93	3.15	116.15	0.226	No	No	0.61
312	20.48	36.70	2.54	3.13	0.84	39.36	2.99	117.57	0.231	No	No	0.62
313	20.56	36.71	2.55	3.26	0.85	39.31	3.05	120.01	0.241	No	No	0.65
314	20.66	35.87	2.58	3.45	0.86	38.33	3.20	122.64	0.252	No	No	0.68
315	20.71	34.56	2.61	3.69	0.87	36.92	3.39	125.21	4.000	No	Yes	2.00
316	20.74	32.81	2.65	3.95	0.88	35.04	3.63	127.16	4.000	No	Yes	2.00
317	20.82	30.71	2.69	4.22	0.90	32.73	3.91	128.02	4.000	No	Yes	2.00
318	20.91	28.18	2.74	4.54	0.92	29.93	4.29	128.26	4.000	No	Yes	2.00
319	20.95	25.20	2.80	4.93	0.94	26.71	4.78	127.59	4.000	No	Yes	2.00
320	21.03	22.22	2.87	5.40	0.97	23.43	5.39	126.25	4.000	No	Yes	2.00
321	21.11	19.51	2.94	5.92	0.99	20.46	6.08	124.37	4.000	No	Yes	2.00
322	21.15	17.79	2.98	6.19	1.00	18.53	6.55	121.46	4.000	No	Yes	2.00
323	21.22	17.08	2.99	6.13	1.00	17.69	6.69	118.28	4.000	No	Yes	2.00
324	21.26	16.89	2.99	5.90	1.00	17.46	6.61	115.41	4.000	Yes	Yes	2.00
325	21.34	17.65	2.95	5.46	1.00	18.26	6.21	113.47	4.000	Yes	Yes	2.00
326	21.41	19.06	2.90	5.00	0.98	19.71	5.70	112.40	4.000	Yes	Yes	2.00
327	21.48	21.43	2.83	4.45	0.95	22.18	5.03	111.65	4.000	Yes	Yes	2.00
328	21.52	24.31	2.75	3.97	0.92	25.19	4.41	111.09	4.000	Yes	Yes	2.00
329	21.61	27.48	2.68	3.57	0.90	28.46	3.88	110.44	4.000	Yes	Yes	2.00
330	21.66	30.96	2.62	3.22	0.87	32.05	3.43	109.80	4.000	Yes	Yes	2.00
331	21.76	34.47	2.56	2.97	0.85	35.62	3.08	109.70	4.000	Yes	No	2.00
332	21.81	38.00	2.51	2.78	0.83	39.23	2.81	110.19	4.000	Yes	No	2.00
333	21.85	41.47	2.46	2.63	0.81	42.78	2.59	110.86	4.000	Yes	No	2.00
334	21.92	44.74	2.43	2.51	0.80	46.08	2.42	111.70	4.000	Yes	No	2.00
335	22.01	47.97	2.39	2.43	0.79	49.30	2.29	113.00	4.000	Yes	No	2.00
336	22.09	50.58	2.37	2.38	0.78	51.88	2.20	114.29	0.219	No	No	0.58

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
337	22.12	53.36	2.35	2.34	0.77	54.70	2.12	116.09	0.225	No	No	0.60
338	22.20	56.17	2.33	2.31	0.76	57.47	2.05	117.96	0.233	No	No	0.62
339	22.29	59.12	2.31	2.28	0.76	60.36	1.99	119.83	0.240	No	No	0.63
340	22.31	62.19	2.29	2.23	0.75	63.46	1.91	121.53	0.247	No	No	0.65
341	22.40	64.97	2.27	2.19	0.74	66.14	1.86	122.95	0.253	No	No	0.67
342	22.45	67.71	2.25	2.16	0.73	68.85	1.81	124.62	0.260	No	No	0.69
343	22.51	70.07	2.24	2.14	0.73	71.14	1.77	126.20	0.267	No	No	0.70
344	22.60	72.08	2.23	2.10	0.72	73.01	1.74	126.79	0.270	No	No	0.71
345	22.64	73.69	2.21	2.02	0.72	74.54	1.69	125.89	0.266	No	No	0.70
346	22.75	74.70	2.19	1.95	0.71	75.33	1.65	124.57	0.260	No	No	0.68
347	22.80	75.19	2.18	1.89	0.71	75.71	1.63	123.38	0.255	No	No	0.67
348	22.85	75.11	2.18	1.85	0.71	75.52	1.62	122.10	0.249	No	No	0.66
349	22.91	74.60	2.18	1.83	0.70	74.89	1.61	120.84	0.244	No	No	0.64
350	22.99	74.00	2.18	1.84	0.71	74.15	1.63	120.66	0.243	No	No	0.64
351	23.08	73.13	2.19	1.87	0.71	73.14	1.65	120.60	0.243	No	No	0.64
352	23.10	71.45	2.21	1.94	0.72	71.45	1.69	120.90	0.244	No	No	0.64
353	23.18	69.67	2.23	2.04	0.73	69.57	1.75	121.90	4.000	Yes	No	2.00
354	23.26	67.59	2.27	2.20	0.74	67.40	1.85	124.40	4.000	Yes	No	2.00
355	23.30	65.04	2.30	2.39	0.75	64.84	1.96	127.10	4.000	Yes	No	2.00
356	23.37	61.42	2.35	2.60	0.77	61.15	2.11	128.98	4.000	Yes	No	2.00
357	23.46	57.08	2.40	2.82	0.79	56.69	2.29	130.03	4.000	Yes	No	2.00
358	23.51	52.26	2.45	3.06	0.81	51.82	2.52	130.48	4.000	Yes	No	2.00
359	23.56	47.18	2.50	3.24	0.83	46.67	2.76	128.64	4.000	Yes	No	2.00
360	23.63	42.20	2.55	3.41	0.85	41.60	3.03	125.94	4.000	Yes	No	2.00
361	23.72	37.88	2.59	3.49	0.86	37.16	3.28	121.71	4.000	Yes	No	2.00
362	23.79	33.58	2.64	3.56	0.88	32.77	3.56	116.82	4.000	Yes	Yes	2.00
363	23.87	29.73	2.68	3.59	0.90	28.83	3.86	111.37	4.000	Yes	Yes	2.00
364	23.91	26.52	2.72	3.54	0.91	25.57	4.12	105.33	4.000	Yes	Yes	2.00
365	23.96	24.53	2.73	3.39	0.92	23.53	4.24	99.72	4.000	Yes	Yes	2.00
366	24.02	23.43	2.73	3.22	0.92	22.37	4.26	95.24	4.000	No	Yes	2.00
367	24.11	22.70	2.73	3.07	0.92	21.59	4.25	91.81	4.000	No	Yes	2.00
368	24.20	22.25	2.74	3.01	0.92	21.07	4.27	90.02	4.000	No	Yes	2.00
369	24.22	21.77	2.74	2.98	0.92	20.58	4.32	88.89	4.000	No	Yes	2.00
370	24.31	21.48	2.75	2.98	0.92	20.25	4.36	88.24	4.000	No	Yes	2.00
371	24.39	21.34	2.75	2.98	0.92	20.06	4.39	88.00	4.000	No	Yes	2.00
372	24.42	21.29	2.75	2.98	0.92	20.00	4.39	87.84	4.000	No	Yes	2.00
373	24.51	21.19	2.75	2.97	0.92	19.85	4.40	87.42	4.000	No	Yes	2.00
374	24.55	21.20	2.75	2.92	0.92	19.83	4.37	86.67	4.000	No	Yes	2.00
375	24.63	20.99	2.75	2.86	0.92	19.58	4.37	85.49	4.000	No	Yes	2.00
376	24.71	20.75	2.75	2.80	0.92	19.30	4.36	84.15	4.000	No	Yes	2.00
377	24.75	20.38	2.75	2.73	0.92	18.92	4.36	82.54	4.000	No	Yes	2.00
378	24.81	19.90	2.75	2.67	0.92	18.40	4.39	80.85	4.000	No	Yes	2.00
379	24.90	19.35	2.76	2.61	0.93	17.82	4.44	79.04	4.000	No	Yes	2.00
380	24.94	18.79	2.76	2.53	0.93	17.25	4.46	76.96	4.000	No	Yes	2.00
381	25.01	18.24	2.77	2.47	0.93	16.67	4.51	75.15	4.000	No	Yes	2.00
382	25.07	17.67	2.77	2.43	0.93	16.09	4.57	73.59	4.000	No	Yes	2.00
383	25.15	17.08	2.79	2.43	0.94	15.48	4.69	72.54	4.000	No	Yes	2.00
384	25.20	16.59	2.80	2.46	0.94	14.97	4.82	72.13	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
385	25.28	16.23	2.82	2.51	0.95	14.59	4.94	72.03	4.000	No	Yes	2.00
386	25.35	16.04	2.83	2.56	0.95	14.38	5.03	72.34	4.000	No	Yes	2.00
387	25.40	16.03	2.83	2.60	0.95	14.36	5.07	72.78	4.000	No	Yes	2.00
388	25.48	16.13	2.84	2.68	0.96	14.42	5.12	73.82	4.000	No	Yes	2.00
389	25.55	16.28	2.85	2.80	0.96	14.54	5.19	75.56	4.000	No	Yes	2.00
390	25.60	16.45	2.85	2.93	0.96	14.69	5.26	77.34	4.000	No	Yes	2.00
391	25.67	16.64	2.86	3.05	0.97	14.85	5.33	79.14	4.000	No	Yes	2.00
392	25.75	16.81	2.87	3.17	0.97	15.00	5.39	80.81	4.000	No	Yes	2.00
393	25.79	16.95	2.87	3.28	0.97	15.12	5.45	82.31	4.000	No	Yes	2.00
394	25.90	17.27	2.87	3.33	0.97	15.38	5.43	83.51	4.000	No	Yes	2.00
395	25.95	17.61	2.87	3.37	0.97	15.69	5.40	84.65	4.000	No	Yes	2.00
396	26.01	17.91	2.87	3.41	0.97	15.95	5.37	85.69	4.000	No	Yes	2.00
397	26.09	18.18	2.86	3.43	0.97	16.17	5.34	86.33	4.000	No	Yes	2.00
398	26.13	18.45	2.85	3.39	0.96	16.42	5.27	86.44	4.000	No	Yes	2.00
399	26.19	18.70	2.85	3.35	0.96	16.64	5.20	86.46	4.000	No	Yes	2.00
400	26.27	19.02	2.84	3.31	0.96	16.91	5.12	86.51	4.000	No	Yes	2.00
401	26.34	19.37	2.83	3.27	0.95	17.21	5.03	86.57	4.000	No	Yes	2.00
402	26.39	19.82	2.82	3.21	0.95	17.61	4.92	86.67	4.000	No	Yes	2.00
403	26.47	20.03	2.81	3.20	0.95	17.78	4.88	86.84	4.000	No	Yes	2.00
404	26.54	20.17	2.81	3.20	0.95	17.88	4.87	87.04	4.000	No	Yes	2.00
405	26.58	20.25	2.81	3.21	0.95	17.94	4.87	87.28	4.000	No	Yes	2.00
406	26.67	20.26	2.81	3.23	0.95	17.90	4.88	87.44	4.000	No	Yes	2.00
407	26.73	20.23	2.81	3.25	0.95	17.85	4.91	87.63	4.000	No	Yes	2.00
408	26.78	20.16	2.82	3.27	0.95	17.76	4.93	87.62	4.000	No	Yes	2.00
409	26.85	20.02	2.82	3.27	0.95	17.59	4.96	87.31	4.000	No	Yes	2.00
410	26.93	19.87	2.82	3.26	0.95	17.41	4.99	86.92	4.000	No	Yes	2.00
411	26.98	19.65	2.83	3.27	0.95	17.18	5.04	86.58	4.000	No	Yes	2.00
412	27.03	19.48	2.83	3.27	0.95	17.00	5.07	86.22	4.000	No	Yes	2.00
413	27.13	19.33	2.84	3.27	0.96	16.82	5.10	85.81	4.000	No	Yes	2.00
414	27.17	19.21	2.84	3.27	0.96	16.68	5.13	85.52	4.000	No	Yes	2.00
415	27.24	19.07	2.84	3.26	0.96	16.52	5.15	85.13	4.000	No	Yes	2.00
416	27.33	18.86	2.85	3.28	0.96	16.29	5.21	84.82	4.000	No	Yes	2.00
417	27.36	18.63	2.86	3.31	0.96	16.05	5.28	84.72	4.000	No	Yes	2.00
418	27.43	18.38	2.86	3.35	0.97	15.79	5.36	84.58	4.000	No	Yes	2.00
419	27.53	18.13	2.87	3.39	0.97	15.51	5.44	84.43	4.000	No	Yes	2.00
420	27.60	17.91	2.88	3.40	0.97	15.28	5.50	84.05	4.000	No	Yes	2.00
421	27.63	17.70	2.88	3.39	0.97	15.07	5.54	83.47	4.000	No	Yes	2.00
422	27.72	17.52	2.89	3.36	0.97	14.87	5.57	82.75	4.000	No	Yes	2.00
423	27.77	17.42	2.89	3.31	0.97	14.76	5.55	81.96	4.000	No	Yes	2.00
424	27.84	17.46	2.88	3.25	0.97	14.77	5.50	81.27	4.000	No	Yes	2.00
425	27.93	17.59	2.87	3.17	0.97	14.85	5.42	80.54	4.000	No	Yes	2.00
426	27.97	17.75	2.86	3.09	0.97	14.99	5.33	79.83	4.000	No	Yes	2.00
427	28.02	17.89	2.85	3.02	0.96	15.10	5.25	79.27	4.000	No	Yes	2.00
428	28.12	18.02	2.85	2.96	0.96	15.18	5.18	78.68	4.000	No	Yes	2.00
429	28.17	18.17	2.84	2.89	0.96	15.30	5.11	78.11	4.000	No	Yes	2.00
430	28.22	18.28	2.83	2.84	0.95	15.38	5.05	77.72	4.000	No	Yes	2.00
431	28.32	18.30	2.83	2.83	0.95	15.36	5.05	77.57	4.000	No	Yes	2.00
432	28.36	18.44	2.83	2.81	0.95	15.47	5.01	77.50	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
433	28.42	18.88	2.81	2.77	0.95	15.86	4.90	77.73	4.000	No	Yes	2.00
434	28.48	19.31	2.80	2.73	0.94	16.24	4.80	77.88	4.000	No	Yes	2.00
435	28.57	19.74	2.79	2.69	0.94	16.59	4.70	78.01	4.000	No	Yes	2.00
436	28.62	20.26	2.78	2.68	0.93	17.05	4.62	78.69	4.000	No	Yes	2.00
437	28.72	20.70	2.77	2.70	0.93	17.42	4.56	79.51	4.000	No	Yes	2.00
438	28.75	20.99	2.77	2.76	0.93	17.67	4.57	80.80	4.000	No	Yes	2.00
439	28.82	21.18	2.78	2.85	0.93	17.81	4.62	82.31	4.000	No	Yes	2.00
440	28.87	21.43	2.78	2.92	0.94	18.01	4.64	83.55	4.000	No	Yes	2.00
441	28.95	21.50	2.79	2.99	0.94	18.04	4.69	84.52	4.000	No	Yes	2.00
442	29.02	21.16	2.80	3.06	0.94	17.70	4.80	84.88	4.000	No	Yes	2.00
443	29.07	20.75	2.82	3.14	0.95	17.30	4.92	85.13	4.000	No	Yes	2.00
444	29.16	20.35	2.83	3.22	0.95	16.89	5.05	85.34	4.000	No	Yes	2.00
445	29.21	19.87	2.84	3.27	0.96	16.43	5.17	85.00	4.000	No	Yes	2.00
446	29.29	19.55	2.85	3.27	0.96	16.11	5.23	84.30	4.000	No	Yes	2.00
447	29.36	19.41	2.85	3.20	0.96	15.96	5.22	83.25	4.000	No	Yes	2.00
448	29.40	19.63	2.83	3.07	0.95	16.15	5.08	81.96	4.000	No	Yes	2.00
449	29.47	19.93	2.82	2.93	0.95	16.39	4.93	80.76	4.000	No	Yes	2.00
450	29.56	20.29	2.80	2.82	0.94	16.68	4.78	79.82	4.000	No	Yes	2.00
451	29.60	20.70	2.78	2.73	0.94	17.04	4.66	79.35	4.000	No	Yes	2.00
452	29.71	21.12	2.77	2.68	0.93	17.37	4.56	79.22	4.000	No	Yes	2.00
453	29.75	21.53	2.76	2.64	0.93	17.73	4.47	79.29	4.000	No	Yes	2.00
454	29.79	21.94	2.75	2.62	0.92	18.08	4.40	79.51	4.000	No	Yes	2.00
455	29.86	22.27	2.75	2.62	0.92	18.35	4.36	80.05	4.000	No	Yes	2.00
456	29.95	22.60	2.75	2.64	0.92	18.60	4.34	80.71	4.000	No	Yes	2.00
457	30.04	22.87	2.74	2.67	0.92	18.80	4.33	81.39	4.000	No	Yes	2.00
458	30.06	23.16	2.74	2.69	0.92	19.06	4.31	82.09	4.000	No	Yes	2.00
459	30.15	23.46	2.74	2.71	0.92	19.28	4.30	82.82	4.000	No	Yes	2.00
460	30.20	23.80	2.74	2.75	0.92	19.56	4.28	83.76	4.000	No	Yes	2.00
461	30.28	24.21	2.74	2.80	0.92	19.88	4.28	85.00	4.000	No	Yes	2.00
462	30.35	24.55	2.74	2.85	0.92	20.15	4.28	86.18	4.000	No	Yes	2.00
463	30.39	24.85	2.74	2.89	0.92	20.40	4.28	87.23	4.000	No	Yes	2.00
464	30.45	25.09	2.74	2.93	0.92	20.58	4.28	88.07	4.000	No	Yes	2.00
465	30.54	25.24	2.74	2.97	0.92	20.67	4.30	88.84	4.000	No	Yes	2.00
466	30.60	25.09	2.75	3.05	0.92	20.50	4.38	89.73	4.000	No	Yes	2.00
467	30.67	24.78	2.76	3.14	0.93	20.19	4.48	90.39	4.000	No	Yes	2.00
468	30.74	24.41	2.78	3.22	0.93	19.81	4.58	90.80	4.000	No	Yes	2.00
469	30.79	23.91	2.79	3.29	0.94	19.35	4.70	90.92	4.000	No	Yes	2.00
470	30.86	23.34	2.80	3.29	0.94	18.82	4.78	89.92	4.000	No	Yes	2.00
471	30.95	22.81	2.81	3.27	0.94	18.30	4.84	88.68	4.000	No	Yes	2.00
472	30.99	22.25	2.81	3.24	0.95	17.80	4.91	87.32	4.000	No	Yes	2.00
473	31.05	21.70	2.82	3.20	0.95	17.29	4.96	85.85	4.000	No	Yes	2.00
474	31.14	21.26	2.82	3.13	0.95	16.87	4.99	84.23	4.000	No	Yes	2.00
475	31.19	20.89	2.82	3.05	0.95	16.53	4.99	82.51	4.000	No	Yes	2.00
476	31.26	20.65	2.82	2.96	0.95	16.30	4.96	80.93	4.000	No	Yes	2.00
477	31.34	20.47	2.82	2.86	0.95	16.11	4.93	79.38	4.000	No	Yes	2.00
478	31.39	20.36	2.81	2.77	0.95	16.00	4.87	77.95	4.000	No	Yes	2.00
479	31.45	20.34	2.81	2.74	0.95	15.96	4.86	77.54	4.000	No	Yes	2.00
480	31.54	20.41	2.80	2.70	0.94	15.99	4.82	77.08	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
481	31.57	20.70	2.79	2.62	0.94	16.25	4.71	76.52	4.000	No	Yes	2.00
482	31.63	21.26	2.78	2.56	0.93	16.71	4.58	76.48	4.000	No	Yes	2.00
483	31.73	21.86	2.76	2.52	0.93	17.20	4.46	76.78	4.000	No	Yes	2.00
484	31.77	22.65	2.75	2.50	0.92	17.87	4.34	77.50	4.000	No	Yes	2.00
485	31.84	23.37	2.73	2.49	0.92	18.47	4.24	78.35	4.000	No	Yes	2.00
486	31.93	23.77	2.73	2.54	0.92	18.77	4.24	79.51	4.000	No	Yes	2.00
487	31.98	24.18	2.73	2.58	0.92	19.10	4.22	80.58	4.000	No	Yes	2.00
488	32.05	24.49	2.73	2.60	0.91	19.34	4.20	81.23	4.000	No	Yes	2.00
489	32.09	24.69	2.73	2.64	0.91	19.49	4.21	82.07	4.000	No	Yes	2.00
490	32.17	24.77	2.74	2.71	0.92	19.51	4.26	83.19	4.000	No	Yes	2.00
491	32.22	24.56	2.75	2.78	0.92	19.30	4.34	83.85	4.000	No	Yes	2.00
492	32.32	24.33	2.75	2.83	0.92	19.06	4.41	84.14	4.000	No	Yes	2.00
493	32.35	24.03	2.76	2.86	0.93	18.79	4.47	84.07	4.000	No	Yes	2.00
494	32.43	23.76	2.77	2.87	0.93	18.52	4.52	83.76	4.000	No	Yes	2.00
495	32.52	23.80	2.76	2.83	0.93	18.52	4.49	83.20	4.000	No	Yes	2.00
496	32.57	23.78	2.76	2.79	0.93	18.49	4.47	82.69	4.000	No	Yes	2.00
497	32.62	23.81	2.76	2.76	0.93	18.49	4.45	82.23	4.000	No	Yes	2.00
498	32.71	23.88	2.75	2.72	0.92	18.52	4.41	81.74	4.000	No	Yes	2.00
499	32.76	23.92	2.75	2.69	0.92	18.53	4.39	81.27	4.000	No	Yes	2.00
500	32.82	24.02	2.75	2.67	0.92	18.59	4.36	81.13	4.000	No	Yes	2.00
501	32.90	24.07	2.75	2.67	0.92	18.60	4.36	81.14	4.000	No	Yes	2.00
502	32.96	24.10	2.75	2.68	0.92	18.60	4.37	81.31	4.000	No	Yes	2.00
503	33.02	24.16	2.75	2.71	0.92	18.62	4.39	81.74	4.000	No	Yes	2.00
504	33.11	24.21	2.76	2.75	0.92	18.62	4.42	82.23	4.000	No	Yes	2.00
505	33.17	24.32	2.76	2.78	0.93	18.69	4.43	82.78	4.000	No	Yes	2.00
506	33.22	24.44	2.76	2.81	0.93	18.77	4.44	83.33	4.000	No	Yes	2.00
507	33.31	24.49	2.76	2.84	0.93	18.77	4.46	83.74	4.000	No	Yes	2.00
508	33.34	24.51	2.76	2.86	0.93	18.77	4.48	84.12	4.000	No	Yes	2.00
509	33.41	24.52	2.76	2.87	0.93	18.75	4.49	84.14	4.000	No	Yes	2.00
510	33.49	24.50	2.77	2.88	0.93	18.69	4.51	84.23	4.000	No	Yes	2.00
511	33.57	24.46	2.77	2.89	0.93	18.63	4.52	84.25	4.000	No	Yes	2.00
512	33.61	24.39	2.77	2.88	0.93	18.55	4.53	84.05	4.000	No	Yes	2.00
513	33.68	24.39	2.77	2.88	0.93	18.52	4.53	83.87	4.000	No	Yes	2.00
514	33.76	24.41	2.77	2.87	0.93	18.50	4.53	83.81	4.000	No	Yes	2.00
515	33.81	24.49	2.77	2.89	0.93	18.55	4.53	84.09	4.000	No	Yes	2.00
516	33.88	24.70	2.77	2.92	0.93	18.69	4.54	84.79	4.000	No	Yes	2.00
517	33.95	24.97	2.77	2.98	0.93	18.88	4.55	85.91	4.000	No	Yes	2.00
518	34.01	25.30	2.77	3.06	0.93	19.12	4.57	87.39	4.000	No	Yes	2.00
519	34.06	25.58	2.78	3.14	0.93	19.32	4.60	88.93	4.000	No	Yes	2.00
520	34.13	25.81	2.78	3.24	0.94	19.47	4.65	90.56	4.000	No	Yes	2.00
521	34.21	25.99	2.79	3.38	0.94	19.58	4.73	92.59	4.000	No	Yes	2.00
522	34.25	26.13	2.80	3.51	0.94	19.66	4.81	94.49	4.000	No	Yes	2.00
523	34.35	26.22	2.81	3.64	0.95	19.68	4.89	96.14	4.000	No	Yes	2.00
524	34.40	26.26	2.82	3.75	0.95	19.68	4.96	97.59	4.000	No	Yes	2.00
525	34.49	26.26	2.83	3.84	0.95	19.62	5.03	98.65	4.000	No	Yes	2.00
526	34.53	26.21	2.83	3.92	0.96	19.56	5.09	99.47	4.000	No	Yes	2.00
527	34.60	26.13	2.84	3.98	0.96	19.45	5.14	100.04	4.000	No	Yes	2.00
528	34.65	26.05	2.85	4.04	0.96	19.36	5.19	100.56	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
529	34.74	26.01	2.85	4.10	0.96	19.28	5.24	101.09	4.000	No	Yes	2.00
530	34.80	25.96	2.85	4.12	0.96	19.21	5.27	101.16	4.000	No	Yes	2.00
531	34.85	25.81	2.86	4.13	0.96	19.06	5.30	100.98	4.000	No	Yes	2.00
532	34.93	25.63	2.86	4.15	0.97	18.87	5.34	100.73	4.000	No	Yes	2.00
533	34.98	25.37	2.87	4.18	0.97	18.64	5.39	100.52	4.000	No	Yes	2.00
534	35.05	25.16	2.87	4.19	0.97	18.43	5.44	100.22	4.000	No	Yes	2.00
535	35.15	24.95	2.88	4.19	0.97	18.22	5.47	99.73	4.000	No	Yes	2.00
536	35.20	24.79	2.88	4.18	0.97	18.07	5.49	99.23	4.000	No	Yes	2.00
537	35.25	24.73	2.88	4.12	0.97	18.00	5.47	98.37	4.000	No	Yes	2.00
538	35.33	24.69	2.87	4.03	0.97	17.94	5.42	97.25	4.000	No	Yes	2.00
539	35.40	24.65	2.87	3.96	0.97	17.88	5.39	96.31	4.000	No	Yes	2.00
540	35.44	24.77	2.86	3.89	0.97	17.97	5.33	95.69	4.000	No	Yes	2.00
541	35.50	24.93	2.85	3.82	0.96	18.08	5.26	95.04	4.000	No	Yes	2.00
542	35.59	25.19	2.84	3.72	0.96	18.26	5.16	94.29	4.000	No	Yes	2.00
543	35.64	25.39	2.84	3.65	0.96	18.41	5.09	93.74	4.000	No	Yes	2.00
544	35.70	25.56	2.83	3.60	0.95	18.52	5.04	93.37	4.000	No	Yes	2.00
545	35.79	25.66	2.83	3.57	0.95	18.57	5.01	93.11	4.000	No	Yes	2.00
546	35.83	25.68	2.83	3.58	0.95	18.57	5.02	93.19	4.000	No	Yes	2.00
547	35.94	25.66	2.83	3.58	0.95	18.50	5.03	93.05	4.000	No	Yes	2.00
548	35.98	25.62	2.83	3.57	0.95	18.45	5.03	92.86	4.000	No	Yes	2.00
549	36.03	25.44	2.83	3.57	0.95	18.29	5.06	92.51	4.000	No	Yes	2.00
550	36.09	25.17	2.84	3.58	0.96	18.05	5.10	92.12	4.000	No	Yes	2.00
551	36.17	24.77	2.85	3.60	0.96	17.69	5.18	91.67	4.000	No	Yes	2.00
552	36.23	24.32	2.85	3.63	0.96	17.31	5.27	91.14	4.000	No	Yes	2.00
553	36.29	23.82	2.86	3.64	0.97	16.88	5.35	90.37	4.000	No	Yes	2.00
554	36.38	23.31	2.87	3.64	0.97	16.44	5.44	89.39	4.000	No	Yes	2.00
555	36.44	22.79	2.88	3.63	0.97	16.01	5.52	88.30	4.000	No	Yes	2.00
556	36.49	22.27	2.89	3.62	0.98	15.58	5.60	87.26	4.000	No	Yes	2.00
557	36.59	21.81	2.90	3.61	0.98	15.17	5.68	86.23	4.000	No	Yes	2.00
558	36.63	21.37	2.91	3.61	0.98	14.82	5.76	85.28	4.000	No	Yes	2.00
559	36.69	21.03	2.91	3.59	0.98	14.53	5.81	84.42	4.000	No	Yes	2.00
560	36.78	20.84	2.91	3.55	0.98	14.35	5.82	83.57	4.000	No	Yes	2.00
561	36.82	20.75	2.91	3.49	0.98	14.28	5.80	82.81	4.000	No	Yes	2.00
562	36.88	20.77	2.91	3.43	0.98	14.28	5.75	82.14	4.000	No	Yes	2.00
563	36.98	20.81	2.90	3.38	0.98	14.28	5.71	81.57	4.000	No	Yes	2.00
564	37.02	20.88	2.90	3.32	0.98	14.33	5.66	81.09	4.000	No	Yes	2.00
565	37.11	20.95	2.89	3.28	0.98	14.36	5.62	80.71	4.000	No	Yes	2.00
566	37.18	21.00	2.89	3.25	0.98	14.38	5.59	80.40	4.000	No	Yes	2.00
567	37.22	21.09	2.89	3.23	0.97	14.44	5.56	80.31	4.000	No	Yes	2.00
568	37.28	21.20	2.88	3.24	0.97	14.50	5.55	80.51	4.000	No	Yes	2.00
569	37.38	21.34	2.89	3.26	0.97	14.58	5.55	80.94	4.000	No	Yes	2.00
570	37.42	21.53	2.88	3.29	0.97	14.71	5.54	81.52	4.000	No	Yes	2.00
571	37.48	21.73	2.88	3.32	0.97	14.84	5.54	82.15	4.000	No	Yes	2.00
572	37.57	21.96	2.88	3.31	0.97	14.99	5.50	82.37	4.000	No	Yes	2.00
573	37.62	22.23	2.87	3.26	0.97	15.19	5.42	82.24	4.000	No	Yes	2.00
574	37.68	22.47	2.86	3.22	0.97	15.36	5.35	82.23	4.000	No	Yes	2.00
575	37.77	22.71	2.86	3.22	0.96	15.51	5.32	82.51	4.000	No	Yes	2.00
576	37.82	22.94	2.86	3.21	0.96	15.67	5.28	82.75	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
577	37.88	23.12	2.85	3.18	0.96	15.79	5.24	82.68	4.000	No	Yes	2.00
578	37.96	23.17	2.85	3.17	0.96	15.81	5.22	82.50	4.000	No	Yes	2.00
579	38.00	23.39	2.84	3.12	0.96	15.98	5.15	82.25	4.000	No	Yes	2.00
580	38.08	23.81	2.83	3.03	0.95	16.29	5.02	81.76	4.000	No	Yes	2.00
581	38.12	24.25	2.81	2.95	0.95	16.62	4.90	81.46	4.000	No	Yes	2.00
582	38.20	24.73	2.80	2.89	0.94	16.97	4.79	81.32	4.000	No	Yes	2.00
583	38.27	25.09	2.79	2.85	0.94	17.24	4.72	81.32	4.000	No	Yes	2.00
584	38.36	25.41	2.78	2.82	0.94	17.46	4.65	81.20	4.000	No	Yes	2.00
585	38.40	25.70	2.78	2.82	0.93	17.66	4.62	81.62	4.000	No	Yes	2.00
586	38.46	26.47	2.77	2.85	0.93	18.23	4.55	83.02	4.000	No	Yes	2.00
587	38.56	27.70	2.75	2.84	0.92	19.15	4.41	84.43	4.000	No	Yes	2.00
588	38.59	29.37	2.73	2.83	0.92	20.44	4.23	86.38	4.000	No	Yes	2.00
589	38.66	31.20	2.71	2.85	0.91	21.82	4.08	88.94	4.000	No	Yes	2.00
590	38.76	33.40	2.69	2.91	0.90	23.47	3.94	92.37	4.000	No	Yes	2.00
591	38.79	35.50	2.68	3.00	0.90	25.07	3.84	96.19	4.000	No	Yes	2.00
592	38.87	37.72	2.66	3.09	0.89	26.74	3.74	100.07	4.000	No	Yes	2.00
593	38.91	40.14	2.65	3.20	0.89	28.57	3.66	104.53	4.000	No	Yes	2.00
594	39.00	42.72	2.64	3.28	0.88	30.49	3.56	108.61	4.000	No	Yes	2.00
595	39.04	45.10	2.62	3.34	0.88	32.30	3.48	112.39	4.000	No	Yes	2.00
596	39.11	47.29	2.62	3.48	0.87	33.92	3.45	117.11	4.000	No	Yes	2.00
597	39.20	48.94	2.62	3.67	0.88	35.08	3.48	122.18	4.000	No	Yes	2.00
598	39.24	50.53	2.63	3.86	0.88	36.22	3.51	127.28	4.000	No	Yes	2.00
599	39.31	52.73	2.63	4.06	0.88	37.81	3.52	133.19	4.000	No	Yes	2.00
600	39.38	55.69	2.63	4.22	0.88	39.99	3.49	139.41	4.000	No	Yes	2.00
601	39.46	60.04	2.61	4.28	0.87	43.26	3.36	145.48	4.000	No	Yes	2.00
602	39.51	65.29	2.58	4.30	0.86	47.26	3.21	151.76	0.405	No	No	0.98
603	39.60	70.72	2.56	4.32	0.85	51.35	3.07	157.81	4.000	Yes	No	2.00
604	39.66	76.31	2.53	4.30	0.84	55.62	2.93	163.13	4.000	Yes	No	2.00
605	39.71	81.88	2.51	4.24	0.83	59.90	2.80	167.53	4.000	Yes	No	2.00
606	39.79	87.58	2.48	4.18	0.82	64.26	2.67	171.54	4.000	Yes	No	2.00
607	39.85	95.63	2.44	4.03	0.81	70.52	2.49	175.53	4.000	Yes	No	2.00
608	39.91	106.85	2.39	3.78	0.78	79.35	2.26	179.41	4.000	Yes	No	2.00
609	39.99	119.15	2.33	3.54	0.76	89.06	2.06	183.29	4.000	Yes	No	2.00
610	40.05	129.29	2.29	3.39	0.75	97.07	1.93	187.43	4.000	Yes	No	2.00
611	40.11	136.78	2.27	3.31	0.74	102.96	1.86	191.07	4.000	Yes	No	2.00
612	40.20	143.19	2.25	3.26	0.73	107.89	1.80	194.51	0.764	No	No	1.85
613	40.25	148.57	2.24	3.25	0.73	112.05	1.77	198.24	0.805	No	No	1.95
614	40.30	153.54	2.23	3.25	0.73	115.86	1.75	202.36	4.000	No	No	2.00
615	40.40	158.28	2.23	3.28	0.72	119.33	1.73	206.73	4.000	No	No	2.00
616	40.43	160.83	2.23	3.34	0.72	121.18	1.74	210.64	4.000	No	No	2.00
617	40.49	158.66	2.24	3.45	0.73	119.18	1.78	212.23	4.000	No	No	2.00
618	40.55	153.03	2.27	3.63	0.74	114.40	1.86	212.96	4.000	No	No	2.00
619	40.64	146.29	2.30	3.83	0.75	108.69	1.96	213.19	4.000	No	No	2.00
620	40.69	139.08	2.33	3.91	0.76	102.89	2.04	209.39	4.000	No	No	2.00
621	40.80	131.58	2.35	4.01	0.77	96.75	2.12	205.56	4.000	No	No	2.00
622	40.84	124.38	2.37	4.09	0.78	91.04	2.21	201.42	4.000	No	No	2.00
623	40.89	117.63	2.39	4.14	0.79	85.72	2.29	196.43	0.785	No	No	1.90
624	40.96	111.06	2.41	4.14	0.79	80.55	2.37	190.55	0.723	No	No	1.75

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
625	41.04	102.35	2.44	4.22	0.81	73.71	2.50	184.44	0.663	No	No	1.61
626	41.10	99.25	2.44	4.09	0.81	71.35	2.50	178.24	0.607	No	No	1.47
627	41.15	97.87	2.43	3.91	0.80	70.36	2.45	172.25	0.555	No	No	1.35
628	41.24	97.68	2.41	3.69	0.80	70.24	2.37	166.66	0.511	No	No	1.24
629	41.28	99.20	2.40	3.62	0.79	71.40	2.33	166.12	0.506	No	No	1.23
630	41.38	101.83	2.39	3.51	0.78	73.35	2.26	165.46	0.501	No	No	1.22
631	41.41	104.74	2.37	3.41	0.78	75.62	2.19	165.26	0.500	No	No	1.21
632	41.49	107.45	2.35	3.33	0.77	77.66	2.13	165.11	0.499	No	No	1.21
633	41.54	110.57	2.33	3.22	0.76	80.08	2.06	164.61	0.495	No	No	1.20
634	41.61	115.81	2.30	3.05	0.75	84.17	1.95	164.14	0.491	No	No	1.19
635	41.69	117.25	2.29	2.99	0.75	85.22	1.92	163.47	0.486	No	No	1.18
636	41.77	119.86	2.27	2.89	0.74	87.23	1.86	162.49	0.479	No	No	1.16
637	41.84	123.49	2.25	2.75	0.73	90.09	1.79	161.41	0.471	No	No	1.15
638	41.88	127.85	2.22	2.61	0.72	93.59	1.71	160.50	0.465	No	No	1.13
639	41.94	131.93	2.19	2.47	0.71	96.89	1.65	159.54	0.458	No	No	1.11
640	42.04	134.67	2.17	2.36	0.70	99.03	1.60	158.18	0.448	No	No	1.09
641	42.08	136.97	2.15	2.27	0.70	100.92	1.56	157.19	0.441	No	No	1.07
642	42.17	138.21	2.14	2.21	0.69	101.83	1.54	156.42	0.436	No	No	1.06
643	42.19	138.80	2.14	2.19	0.69	102.31	1.52	155.99	0.433	No	No	1.05
644	42.28	138.18	2.14	2.19	0.69	101.67	1.53	155.46	0.429	No	No	1.05
645	42.33	136.34	2.15	2.23	0.69	100.08	1.55	155.19	0.428	No	No	1.04
646	42.39	134.30	2.16	2.28	0.70	98.29	1.58	155.17	0.427	No	No	1.04
647	42.48	131.81	2.18	2.35	0.71	96.09	1.61	155.16	0.427	No	No	1.04
648	42.53	129.20	2.20	2.43	0.71	93.85	1.66	155.50	0.430	No	No	1.05
649	42.59	127.38	2.21	2.52	0.72	92.22	1.70	156.51	0.437	No	No	1.06
650	42.67	125.63	2.23	2.61	0.72	90.61	1.74	157.58	0.444	No	No	1.08
651	42.73	123.71	2.25	2.70	0.73	88.91	1.78	158.66	0.451	No	No	1.10
652	42.81	122.02	2.26	2.79	0.74	87.35	1.83	159.78	0.459	No	No	1.12
653	42.88	120.34	2.28	2.88	0.74	85.85	1.87	160.92	0.468	No	No	1.14
654	42.92	118.62	2.29	2.97	0.75	84.36	1.92	162.09	0.476	No	No	1.16
655	43.00	116.94	2.31	3.06	0.75	82.86	1.97	163.09	0.483	No	No	1.18
656	43.08	115.33	2.32	3.15	0.76	81.42	2.02	164.14	0.491	No	No	1.20
657	43.12	113.76	2.33	3.24	0.76	80.08	2.06	165.17	0.499	No	No	1.22
658	43.21	112.31	2.35	3.32	0.77	78.78	2.11	165.99	0.505	No	No	1.23
659	43.27	110.92	2.36	3.40	0.77	77.57	2.15	166.88	0.512	No	No	1.25
660	43.32	109.66	2.37	3.48	0.78	76.47	2.20	167.89	0.520	No	No	1.27
661	43.39	108.32	2.38	3.56	0.78	75.29	2.24	168.83	0.528	No	No	1.29
662	43.47	106.67	2.40	3.65	0.79	73.88	2.30	169.61	0.534	No	No	1.31
663	43.52	104.14	2.41	3.75	0.79	71.84	2.36	169.87	0.536	No	No	1.31
664	43.59	100.71	2.43	3.86	0.80	69.13	2.45	169.67	0.534	No	No	1.31
665	43.67	95.95	2.46	4.01	0.81	65.41	2.58	168.99	0.529	No	No	1.29
666	43.72	90.92	2.49	4.16	0.82	61.58	2.72	167.69	0.519	No	No	1.27
667	43.80	85.34	2.52	4.25	0.84	57.38	2.87	164.49	0.494	No	No	1.21
668	43.85	79.27	2.55	4.35	0.85	52.89	3.04	160.68	0.466	No	No	1.14
669	43.92	73.36	2.58	4.45	0.86	48.52	3.23	156.49	0.436	No	No	1.07
670	43.97	67.07	2.62	4.56	0.87	43.93	3.46	151.94	4.000	No	Yes	2.00
671	44.04	60.96	2.66	4.66	0.89	39.49	3.72	146.78	4.000	No	Yes	2.00
672	44.13	55.89	2.69	4.70	0.90	35.84	3.94	141.26	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
673	44.17	51.45	2.72	4.67	0.91	32.70	4.14	135.24	4.000	No	Yes	2.00
674	44.24	48.10	2.73	4.55	0.92	30.35	4.25	129.08	4.000	No	Yes	2.00
675	44.31	44.77	2.75	4.43	0.92	28.03	4.39	123.05	4.000	No	Yes	2.00
676	44.37	41.91	2.77	4.39	0.93	26.01	4.56	118.63	4.000	No	Yes	2.00
677	44.45	39.66	2.79	4.30	0.94	24.44	4.68	114.39	4.000	No	Yes	2.00
678	44.50	37.60	2.80	4.17	0.94	23.02	4.77	109.69	4.000	No	Yes	2.00
679	44.56	35.90	2.80	3.97	0.94	21.87	4.79	104.78	4.000	No	Yes	2.00
680	44.65	34.31	2.81	3.80	0.94	20.77	4.83	100.36	4.000	No	Yes	2.00
681	44.71	32.87	2.81	3.67	0.95	19.79	4.89	96.76	4.000	No	Yes	2.00
682	44.76	31.94	2.82	3.60	0.95	19.15	4.94	94.64	4.000	No	Yes	2.00
683	44.85	31.50	2.82	3.55	0.95	18.82	4.96	93.38	4.000	No	Yes	2.00
684	44.88	31.89	2.81	3.54	0.95	19.08	4.91	93.73	4.000	No	Yes	2.00
685	44.96	33.14	2.80	3.58	0.94	19.89	4.81	95.77	4.000	No	Yes	2.00
686	45.05	34.91	2.79	3.64	0.94	21.05	4.70	98.87	4.000	No	Yes	2.00
687	45.10	37.96	2.76	3.65	0.93	23.13	4.44	102.79	4.000	No	Yes	2.00
688	45.17	42.19	2.72	3.63	0.91	26.02	4.13	107.56	4.000	No	Yes	2.00
689	45.25	47.02	2.68	3.59	0.89	29.34	3.82	112.20	4.000	No	Yes	2.00
690	45.30	52.22	2.63	3.54	0.88	32.95	3.55	116.82	4.000	No	Yes	2.00
691	45.37	57.78	2.59	3.49	0.86	36.82	3.30	121.32	0.246	No	No	0.61
692	45.45	63.35	2.56	3.47	0.85	40.70	3.10	126.01	0.266	No	No	0.66
693	45.49	68.76	2.53	3.45	0.84	44.49	2.93	130.44	0.286	No	No	0.71
694	45.54	73.67	2.51	3.45	0.83	47.92	2.81	134.70	0.307	No	No	0.76
695	45.61	77.83	2.49	3.48	0.83	50.78	2.73	138.84	0.329	No	No	0.81
696	45.68	80.57	2.49	3.55	0.82	52.60	2.71	142.61	0.350	No	No	0.86
697	45.75	81.52	2.49	3.65	0.83	53.13	2.74	145.41	0.366	No	No	0.90
698	45.80	81.02	2.50	3.74	0.83	52.66	2.79	147.01	0.375	No	No	0.93
699	45.89	79.02	2.52	3.85	0.84	51.09	2.88	147.36	0.378	No	No	0.93
700	45.93	75.96	2.54	3.96	0.85	48.83	3.01	146.80	0.374	No	No	0.93
701	46.01	71.99	2.57	4.07	0.86	45.92	3.16	145.23	0.365	No	No	0.90
702	46.08	67.58	2.60	4.20	0.87	42.73	3.35	143.16	4.000	No	Yes	2.00
703	46.15	63.04	2.64	4.32	0.88	39.49	3.56	140.53	4.000	No	Yes	2.00
704	46.20	58.87	2.67	4.39	0.89	36.55	3.75	137.15	4.000	No	Yes	2.00
705	46.29	55.12	2.69	4.42	0.90	33.92	3.93	133.38	4.000	No	Yes	2.00
706	46.34	52.58	2.70	4.36	0.91	32.18	4.02	129.41	4.000	No	Yes	2.00
707	46.41	51.11	2.71	4.27	0.91	31.17	4.05	126.27	4.000	No	Yes	2.00
708	46.49	50.54	2.70	4.18	0.91	30.77	4.03	124.04	4.000	No	Yes	2.00
709	46.53	50.02	2.70	4.11	0.91	30.42	4.02	122.34	4.000	No	Yes	2.00
710	46.60	49.69	2.70	4.04	0.90	30.18	4.00	120.82	4.000	No	Yes	2.00
711	46.69	49.41	2.70	3.97	0.90	29.96	3.98	119.37	4.000	No	Yes	2.00
712	46.73	49.11	2.70	3.91	0.90	29.76	3.97	118.07	4.000	No	Yes	2.00
713	46.79	48.28	2.70	3.91	0.91	29.16	4.02	117.13	4.000	No	Yes	2.00
714	46.89	47.27	2.71	3.94	0.91	28.41	4.09	116.30	4.000	No	Yes	2.00
715	46.94	45.73	2.73	4.06	0.92	27.31	4.25	116.20	4.000	No	Yes	2.00
716	46.99	44.21	2.76	4.25	0.93	26.21	4.47	117.04	4.000	No	Yes	2.00
717	47.09	42.89	2.79	4.46	0.94	25.21	4.68	118.10	4.000	No	Yes	2.00
718	47.13	41.81	2.81	4.68	0.95	24.41	4.89	119.40	4.000	No	Yes	2.00
719	47.19	42.93	2.80	4.70	0.94	25.12	4.82	121.09	4.000	No	Yes	2.00
720	47.28	44.62	2.79	4.65	0.94	26.20	4.68	122.72	4.000	Yes	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
721	47.34	47.80	2.75	4.51	0.92	28.32	4.41	124.80	4.000	Yes	Yes	2.00
722	47.38	54.01	2.69	4.18	0.90	32.56	3.90	127.10	4.000	Yes	Yes	2.00
723	47.50	61.85	2.61	3.82	0.87	37.94	3.40	129.13	4.000	Yes	Yes	2.00
724	47.51	72.72	2.52	3.42	0.84	45.60	2.88	131.32	4.000	Yes	No	2.00
725	47.60	84.57	2.44	3.07	0.80	54.02	2.47	133.24	4.000	Yes	No	2.00
726	47.69	97.97	2.35	2.77	0.77	63.68	2.13	135.74	4.000	Yes	No	2.00
727	47.70	112.59	2.28	2.51	0.74	74.42	1.87	139.45	4.000	Yes	No	2.00
728	47.80	125.94	2.22	2.34	0.72	84.20	1.71	143.67	4.000	Yes	No	2.00
729	47.84	139.39	2.16	2.19	0.70	94.21	1.58	148.64	4.000	Yes	No	2.00
730	47.91	151.60	2.12	2.07	0.68	103.34	1.48	153.39	4.000	Yes	No	2.00
731	48.00	161.22	2.08	1.98	0.67	110.51	1.42	157.32	4.000	Yes	No	2.00
732	48.04	168.84	2.06	1.92	0.66	116.26	1.38	160.83	4.000	Yes	No	2.00
733	48.11	173.11	2.05	1.89	0.65	119.39	1.36	162.82	0.481	No	No	1.21
734	48.19	175.86	2.04	1.88	0.65	121.33	1.35	164.25	0.492	No	No	1.23
735	48.23	176.73	2.04	1.89	0.65	121.85	1.35	165.07	0.498	No	No	1.25
736	48.30	176.31	2.04	1.92	0.65	121.32	1.36	165.40	0.501	No	No	1.26
737	48.40	175.47	2.05	1.96	0.66	120.40	1.38	165.61	0.502	No	No	1.26
738	48.45	174.20	2.06	2.00	0.66	119.22	1.39	165.83	0.504	No	No	1.27
739	48.50	172.99	2.07	2.04	0.66	118.09	1.41	166.15	0.507	No	No	1.27
740	48.59	172.02	2.08	2.08	0.67	117.09	1.42	166.44	0.509	No	No	1.28
741	48.66	171.41	2.09	2.11	0.67	116.42	1.43	166.75	0.511	No	No	1.29
742	48.69	171.02	2.09	2.13	0.67	116.01	1.44	167.02	0.513	No	No	1.29
743	48.78	170.78	2.09	2.15	0.67	115.63	1.45	167.11	0.514	No	No	1.29
744	48.85	170.69	2.10	2.15	0.67	115.43	1.45	167.08	0.514	No	No	1.29
745	48.89	170.46	2.10	2.15	0.67	115.19	1.45	166.89	0.512	No	No	1.29
746	48.98	170.14	2.10	2.15	0.67	114.81	1.45	166.50	0.509	No	No	1.28
747	49.03	169.85	2.10	2.15	0.67	114.51	1.45	166.24	0.507	No	No	1.28
748	49.09	170.04	2.10	2.16	0.67	114.53	1.45	166.41	0.509	No	No	1.28
749	49.19	170.33	2.10	2.17	0.68	114.54	1.46	166.69	0.511	No	No	1.29
750	49.23	170.93	2.10	2.18	0.68	114.85	1.46	167.48	0.517	No	No	1.30
751	49.28	172.83	2.10	2.20	0.68	116.08	1.46	169.12	0.530	No	No	1.34
752	49.39	175.13	2.10	2.21	0.68	117.50	1.45	170.85	0.544	No	No	1.37
753	49.42	177.65	2.10	2.23	0.67	119.21	1.45	172.90	0.561	No	No	1.42
754	49.49	180.57	2.09	2.23	0.67	121.19	1.44	174.81	0.577	No	No	1.46
755	49.59	183.31	2.09	2.20	0.67	123.06	1.43	175.79	0.585	No	No	1.48
756	49.62	185.69	2.08	2.17	0.67	124.84	1.41	176.44	0.591	No	No	1.50
757	49.69	187.40	2.07	2.14	0.66	126.08	1.40	176.46	0.591	No	No	1.50
758	49.74	188.52	2.06	2.08	0.66	127.02	1.38	175.46	0.582	No	No	1.48
759	49.83	188.92	2.04	2.00	0.65	127.47	1.36	173.39	0.565	No	No	1.43
760	49.88	187.83	2.03	1.92	0.65	126.90	1.34	170.54	0.541	No	No	1.37
761	49.93	185.76	2.03	1.86	0.65	125.55	1.33	167.52	0.517	No	No	1.31
762	50.03	183.09	2.02	1.81	0.64	123.66	1.33	164.16	4.000	No	No	2.00
763	50.13	179.38	2.02	1.78	0.65	120.92	1.33	160.78	4.000	No	No	2.00
764	50.14	175.33	2.03	1.79	0.65	117.93	1.34	158.34	4.000	No	No	2.00
765	50.23	171.23	2.04	1.82	0.65	114.71	1.36	156.17	4.000	No	No	2.00
766	50.27	166.80	2.06	1.86	0.66	111.30	1.39	154.26	4.000	No	No	2.00
767	50.34	161.56	2.09	1.95	0.67	107.09	1.43	153.13	4.000	No	No	2.00
768	50.43	155.42	2.12	2.08	0.68	102.13	1.49	152.59	4.000	No	No	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
769	50.49	148.95	2.16	2.22	0.70	97.05	1.57	152.09	4.000	No	No	2.00
770	50.53	142.05	2.19	2.33	0.71	91.83	1.64	150.66	4.000	No	No	2.00
771	50.62	134.51	2.22	2.45	0.72	86.16	1.73	148.86	4.000	No	No	2.00
772	50.68	127.42	2.26	2.55	0.73	80.95	1.81	146.80	4.000	No	No	2.00
773	50.73	120.26	2.28	2.62	0.74	75.84	1.89	143.66	4.000	No	No	2.00
774	50.82	113.01	2.31	2.66	0.75	70.70	1.98	139.77	4.000	No	No	2.00
775	50.88	106.07	2.33	2.67	0.76	65.87	2.06	135.47	4.000	No	No	2.00
776	50.93	99.91	2.35	2.65	0.77	61.68	2.12	130.70	4.000	No	No	2.00
777	51.02	94.44	2.36	2.61	0.78	57.95	2.17	125.94	4.000	No	No	2.00
778	51.09	89.17	2.38	2.58	0.78	54.38	2.24	121.63	4.000	Yes	No	2.00
779	51.12	83.92	2.40	2.59	0.79	50.82	2.33	118.24	4.000	Yes	No	2.00
780	51.19	78.60	2.43	2.62	0.80	47.16	2.45	115.41	4.000	Yes	No	2.00
781	51.28	73.22	2.47	2.71	0.82	43.44	2.61	113.38	4.000	Yes	No	2.00
782	51.32	68.33	2.50	2.81	0.83	40.10	2.79	111.88	4.000	Yes	No	2.00
783	51.39	64.21	2.54	2.89	0.84	37.28	2.95	110.12	4.000	Yes	No	2.00
784	51.48	60.31	2.57	2.97	0.85	34.64	3.13	108.49	4.000	Yes	No	2.00
785	51.53	56.31	2.60	3.07	0.87	31.96	3.35	107.03	4.000	Yes	Yes	2.00
786	51.62	52.17	2.64	3.16	0.88	29.22	3.58	104.75	4.000	Yes	Yes	2.00
787	51.68	48.21	2.68	3.20	0.89	26.65	3.82	101.81	4.000	Yes	Yes	2.00
788	51.73	45.05	2.70	3.20	0.90	24.64	4.00	98.61	4.000	Yes	Yes	2.00
789	51.82	42.62	2.71	3.09	0.91	23.13	4.09	94.59	4.000	No	Yes	2.00
790	51.87	40.63	2.71	2.87	0.91	21.96	4.07	89.44	4.000	No	Yes	2.00
791	51.92	38.75	2.71	2.71	0.91	20.83	4.09	85.24	4.000	No	Yes	2.00
792	51.97	36.63	2.73	2.64	0.92	19.52	4.21	82.16	4.000	No	Yes	2.00
793	52.04	34.50	2.75	2.58	0.92	18.20	4.35	79.17	4.000	No	Yes	2.00
794	52.12	32.86	2.76	2.49	0.93	17.19	4.44	76.28	4.000	No	Yes	2.00
795	52.18	31.94	2.76	2.40	0.93	16.63	4.46	74.17	4.000	No	Yes	2.00
796	52.23	31.17	2.76	2.32	0.93	16.17	4.47	72.25	4.000	No	Yes	2.00
797	52.31	30.59	2.76	2.24	0.93	15.81	4.47	70.63	4.000	No	Yes	2.00
798	52.37	30.00	2.77	2.20	0.93	15.45	4.50	69.47	4.000	No	Yes	2.00
799	52.44	29.15	2.78	2.19	0.93	14.92	4.59	68.42	4.000	No	Yes	2.00
800	52.53	28.21	2.79	2.17	0.94	14.32	4.69	67.11	4.000	No	Yes	2.00
801	52.57	27.07	2.81	2.16	0.94	13.61	4.83	65.80	4.000	No	Yes	2.00
802	52.64	25.80	2.83	2.15	0.95	12.83	5.02	64.33	4.000	No	Yes	2.00
803	52.72	24.50	2.85	2.14	0.96	12.02	5.22	62.73	4.000	No	Yes	2.00
804	52.78	23.17	2.87	2.13	0.97	11.20	5.44	61.00	4.000	No	Yes	2.00
805	52.83	21.95	2.89	2.07	0.98	10.48	5.61	58.82	4.000	No	Yes	2.00
806	52.93	20.80	2.91	2.00	0.98	9.79	5.79	56.64	4.000	No	Yes	2.00
807	52.96	19.98	2.92	1.92	0.99	9.31	5.88	54.75	4.000	No	Yes	2.00
808	53.04	19.46	2.92	1.86	0.99	9.00	5.93	53.36	4.000	No	Yes	2.00
809	53.12	19.06	2.93	1.80	0.99	8.76	5.96	52.22	4.000	No	Yes	2.00
810	53.17	18.87	2.92	1.74	0.99	8.66	5.93	51.39	4.000	No	Yes	2.00
811	53.22	18.81	2.92	1.70	0.99	8.63	5.89	50.85	4.000	No	Yes	2.00
812	53.29	18.81	2.91	1.65	0.99	8.63	5.83	50.31	4.000	No	Yes	2.00
813	53.37	18.84	2.91	1.62	0.98	8.64	5.78	49.99	4.000	No	Yes	2.00
814	53.42	18.86	2.91	1.65	0.98	8.64	5.82	50.29	4.000	No	Yes	2.00
815	53.49	18.87	2.91	1.66	0.99	8.63	5.84	50.42	4.000	No	Yes	2.00
816	53.58	18.87	2.91	1.65	0.99	8.62	5.83	50.25	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
817	53.63	18.86	2.91	1.62	0.98	8.62	5.79	49.93	4.000	No	Yes	2.00
818	53.68	18.86	2.91	1.59	0.98	8.62	5.76	49.62	4.000	No	Yes	2.00
819	53.78	18.86	2.90	1.56	0.98	8.61	5.71	49.21	4.000	No	Yes	2.00
820	53.84	18.85	2.90	1.53	0.98	8.61	5.68	48.88	4.000	No	Yes	2.00
821	53.88	18.83	2.90	1.51	0.98	8.59	5.66	48.64	4.000	No	Yes	2.00
822	53.94	18.84	2.89	1.49	0.98	8.60	5.63	48.39	4.000	No	Yes	2.00
823	54.03	18.88	2.89	1.48	0.98	8.61	5.61	48.30	4.000	No	Yes	2.00
824	54.08	18.95	2.89	1.47	0.98	8.65	5.58	48.29	4.000	No	Yes	2.00
825	54.16	19.04	2.89	1.48	0.98	8.69	5.59	48.52	4.000	No	Yes	2.00
826	54.20	19.16	2.89	1.49	0.98	8.75	5.57	48.76	4.000	No	Yes	2.00
827	54.28	19.40	2.88	1.49	0.97	8.88	5.51	48.91	4.000	No	Yes	2.00
828	54.35	19.73	2.87	1.47	0.97	9.07	5.41	49.08	4.000	No	Yes	2.00
829	54.43	20.10	2.86	1.45	0.96	9.29	5.30	49.24	4.000	No	Yes	2.00
830	54.48	20.43	2.85	1.42	0.96	9.48	5.19	49.24	4.000	No	Yes	2.00
831	54.55	20.63	2.84	1.40	0.96	9.61	5.12	49.16	4.000	No	Yes	2.00
832	54.63	20.78	2.83	1.38	0.95	9.69	5.05	48.99	4.000	No	Yes	2.00
833	54.67	20.84	2.83	1.36	0.95	9.73	5.02	48.82	4.000	No	Yes	2.00
834	54.74	20.86	2.82	1.32	0.95	9.74	4.96	48.33	4.000	No	Yes	2.00
835	54.82	20.83	2.82	1.29	0.95	9.72	4.92	47.83	4.000	No	Yes	2.00
836	54.87	20.69	2.82	1.26	0.95	9.64	4.92	47.41	4.000	No	Yes	2.00
837	54.92	20.46	2.82	1.26	0.95	9.49	4.97	47.15	4.000	No	Yes	2.00
838	55.02	20.18	2.83	1.27	0.95	9.31	5.05	46.96	4.000	No	Yes	2.00
839	55.06	19.93	2.84	1.32	0.96	9.14	5.17	47.27	4.000	No	Yes	2.00
840	55.14	19.85	2.86	1.37	0.96	9.06	5.28	47.81	4.000	No	Yes	2.00
841	55.22	19.85	2.87	1.44	0.97	9.03	5.38	48.59	4.000	No	Yes	2.00
842	55.27	20.07	2.87	1.50	0.97	9.13	5.43	49.60	4.000	No	Yes	2.00
843	55.37	20.38	2.88	1.59	0.97	9.28	5.48	50.87	4.000	No	Yes	2.00
844	55.42	20.73	2.88	1.67	0.97	9.45	5.52	52.18	4.000	No	Yes	2.00
845	55.47	21.01	2.89	1.75	0.98	9.58	5.57	53.37	4.000	No	Yes	2.00
846	55.53	21.18	2.89	1.81	0.98	9.65	5.62	54.26	4.000	No	Yes	2.00
847	55.58	21.32	2.90	1.87	0.98	9.71	5.66	54.99	4.000	No	Yes	2.00
848	55.67	21.43	2.90	1.89	0.98	9.75	5.67	55.30	4.000	No	Yes	2.00
849	55.72	21.47	2.90	1.89	0.98	9.77	5.67	55.36	4.000	No	Yes	2.00
850	55.81	21.47	2.90	1.87	0.98	9.76	5.65	55.13	4.000	No	Yes	2.00
851	55.86	21.33	2.89	1.84	0.98	9.68	5.64	54.58	4.000	No	Yes	2.00
852	55.92	21.20	2.90	1.83	0.98	9.60	5.66	54.29	4.000	No	Yes	2.00
853	56.01	21.13	2.90	1.84	0.98	9.54	5.69	54.26	4.000	No	Yes	2.00
854	56.05	21.34	2.90	1.86	0.98	9.65	5.67	54.73	4.000	No	Yes	2.00
855	56.11	21.83	2.90	1.93	0.98	9.91	5.66	56.06	4.000	No	Yes	2.00
856	56.21	22.16	2.91	2.07	0.98	10.04	5.77	57.94	4.000	No	Yes	2.00
857	56.26	22.93	2.91	2.21	0.98	10.44	5.78	60.32	4.000	No	Yes	2.00
858	56.32	24.21	2.90	2.34	0.98	11.14	5.67	63.19	4.000	No	Yes	2.00
859	56.41	25.83	2.88	2.43	0.97	12.03	5.50	66.12	4.000	No	Yes	2.00
860	56.46	27.60	2.86	2.50	0.96	13.03	5.29	68.96	4.000	No	Yes	2.00
861	56.50	29.45	2.83	2.51	0.95	14.10	5.05	71.15	4.000	No	Yes	2.00
862	56.59	31.25	2.81	2.53	0.95	15.12	4.85	73.31	4.000	No	Yes	2.00
863	56.65	32.82	2.79	2.58	0.94	16.01	4.71	75.45	4.000	No	Yes	2.00
864	56.70	34.20	2.78	2.67	0.94	16.78	4.65	78.08	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
865	56.78	36.90	2.75	2.67	0.92	18.34	4.40	80.75	4.000	No	Yes	2.00
866	56.85	39.96	2.72	2.66	0.91	20.15	4.14	83.47	4.000	No	Yes	2.00
867	56.89	43.42	2.68	2.65	0.90	22.21	3.89	86.30	4.000	No	Yes	2.00
868	56.98	46.67	2.66	2.66	0.89	24.13	3.70	89.17	4.000	No	Yes	2.00
869	57.04	49.64	2.64	2.70	0.88	25.88	3.57	92.28	4.000	No	Yes	2.00
870	57.09	52.24	2.63	2.79	0.88	27.37	3.50	95.85	4.000	No	Yes	2.00
871	57.16	54.64	2.62	2.87	0.87	28.73	3.45	99.15	4.000	No	Yes	2.00
872	57.24	57.27	2.61	2.92	0.87	30.26	3.37	101.95	4.000	No	Yes	2.00
873	57.29	60.78	2.58	2.83	0.86	32.45	3.18	103.21	4.000	No	No	2.00
874	57.37	63.44	2.55	2.76	0.85	34.10	3.04	103.78	4.000	No	No	2.00
875	57.42	65.25	2.53	2.70	0.84	35.24	2.95	103.95	4.000	No	No	2.00
876	57.49	65.85	2.53	2.67	0.84	35.59	2.92	103.82	4.000	No	No	2.00
877	57.59	66.05	2.53	2.65	0.84	35.68	2.90	103.46	4.000	No	No	2.00
878	57.64	65.55	2.53	2.63	0.84	35.37	2.90	102.67	4.000	No	No	2.00
879	57.69	64.18	2.53	2.60	0.84	34.52	2.93	101.10	4.000	No	No	2.00
880	57.77	62.46	2.54	2.54	0.84	33.48	2.95	98.82	4.000	No	No	2.00
881	57.82	59.62	2.55	2.52	0.85	31.73	3.03	96.27	4.000	No	No	2.00
882	57.89	55.11	2.59	2.57	0.86	28.91	3.25	93.85	4.000	No	No	2.00
883	57.97	50.06	2.64	2.66	0.88	25.76	3.55	91.40	4.000	No	Yes	2.00
884	58.03	44.69	2.69	2.76	0.90	22.48	3.94	88.53	4.000	No	Yes	2.00
885	58.09	39.45	2.75	2.84	0.92	19.34	4.38	84.77	4.000	No	Yes	2.00
886	58.17	34.44	2.81	2.91	0.95	16.39	4.91	80.43	4.000	No	Yes	2.00
887	58.21	30.20	2.87	2.93	0.97	13.95	5.43	75.82	4.000	No	Yes	2.00
888	58.28	27.04	2.92	2.88	0.99	12.17	5.86	71.37	4.000	No	Yes	2.00
889	58.37	24.54	2.96	2.90	1.00	10.77	6.33	68.16	4.000	No	Yes	2.00
890	58.40	22.95	2.99	2.92	1.00	9.96	6.65	66.27	4.000	No	Yes	2.00
891	58.48	22.15	3.02	3.07	1.00	9.54	6.96	66.39	4.000	No	Yes	2.00
892	58.53	22.64	3.02	3.16	1.00	9.78	6.94	67.91	4.000	No	Yes	2.00
893	58.63	24.67	2.97	3.05	1.00	10.80	6.46	69.73	4.000	No	Yes	2.00
894	58.67	27.06	2.93	2.95	0.99	12.07	5.95	71.85	4.000	No	Yes	2.00
895	58.73	29.10	2.89	2.89	0.98	13.23	5.58	73.85	4.000	No	Yes	2.00
896	58.82	30.69	2.87	2.89	0.97	14.10	5.37	75.70	4.000	No	Yes	2.00
897	58.89	31.56	2.86	2.92	0.96	14.56	5.29	77.01	4.000	No	Yes	2.00
898	58.93	31.85	2.85	2.92	0.96	14.72	5.25	77.30	4.000	No	Yes	2.00
899	59.00	31.94	2.85	2.88	0.96	14.76	5.21	76.96	4.000	No	Yes	2.00
900	59.06	31.98	2.83	2.73	0.96	14.82	5.08	75.29	4.000	No	Yes	2.00
901	59.13	30.97	2.83	2.57	0.95	14.30	5.05	72.23	4.000	No	Yes	2.00
902	59.22	28.79	2.86	2.52	0.96	13.06	5.30	69.22	4.000	No	Yes	2.00
903	59.28	26.42	2.90	2.51	0.98	11.72	5.66	66.38	4.000	No	Yes	2.00
904	59.33	24.42	2.93	2.49	0.99	10.60	6.00	63.61	4.000	No	Yes	2.00
905	59.41	23.06	2.95	2.40	1.00	9.86	6.19	61.04	4.000	No	Yes	2.00
906	59.47	22.47	2.95	2.30	1.00	9.55	6.20	59.23	4.000	No	Yes	2.00
907	59.52	22.50	2.94	2.18	0.99	9.59	6.06	58.08	4.000	No	Yes	2.00
908	59.61	22.85	2.91	2.05	0.99	9.81	5.83	57.18	4.000	No	Yes	2.00
909	59.67	23.26	2.90	1.97	0.98	10.05	5.66	56.84	4.000	No	Yes	2.00
910	59.72	23.81	2.88	1.97	0.97	10.35	5.55	57.41	4.000	No	Yes	2.00
911	59.78	24.44	2.87	1.99	0.97	10.69	5.46	58.31	4.000	No	Yes	2.00
912	59.87	25.08	2.87	2.00	0.97	11.02	5.36	59.13	4.000	Yes	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
913	59.92	25.83	2.82	1.76	0.95	11.52	4.95	57.00	4.000	Yes	Yes	2.00
914	60.00	26.38	2.78	1.54	0.93	11.92	4.59	54.71	4.000	Yes	Yes	2.00
915	60.05	26.95	2.73	1.33	0.92	12.34	4.23	52.22	4.000	Yes	Yes	2.00
916	60.11	27.25	2.69	1.13	0.90	12.61	3.92	49.42	4.000	Yes	Yes	2.00
917	60.21	27.38	2.64	0.93	0.88	12.81	3.61	46.28	4.000	Yes	Yes	2.00
918	60.25	27.51	2.59	0.72	0.86	13.05	3.26	42.60	4.000	Yes	No	2.00
919	60.31	27.68	2.51	0.49	0.83	13.38	2.84	37.95	4.000	Yes	No	2.00
920	60.40	27.58	2.41	0.24	0.79	13.65	2.36	32.18	4.000	Yes	No	2.00
921	60.43	27.43	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
922	60.51	27.37	N/A	0.00	1.00	-1.00	1.00	N/A	4.000	No	No	2.00

Abbreviations

Depth: Depth from free surface, at which CPT was performed (ft)
q_t: Total cone resistance
I_c: Soil behavior type index
Fr: Normalized friction ratio (%)
n: Stress exponent
Q_{tn}: Normalized cone resistance
K_c: Cone resistance correction factor due to fines
$Q_{tn,cs}$: Normalized and adjusted cone resistance
$CRR_{7.5}$: Cyclic resistance ratio for M_w=7.5
FS: Factor of safety against soil liquefaction

:: Liquefaction Potential Index calculation data ::

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
0.10	2.00	0.00	0.00	0.02	0.00	0.15	2.00	0.00	0.00	0.02	0.00
0.23	2.00	0.00	0.00	0.02	0.00	0.30	2.00	0.00	0.00	0.02	0.00
0.34	2.00	0.00	0.00	0.01	0.00	0.39	2.00	0.00	0.00	0.02	0.00
0.50	2.00	0.00	0.00	0.03	0.00	0.53	2.00	0.00	0.00	0.01	0.00
0.60	2.00	0.00	0.00	0.02	0.00	0.69	2.00	0.00	0.00	0.03	0.00
0.72	2.00	0.00	0.00	0.01	0.00	0.80	2.00	0.00	0.00	0.02	0.00
0.87	2.00	0.00	0.00	0.02	0.00	0.92	2.00	0.00	0.00	0.02	0.00
1.00	2.00	0.00	0.00	0.02	0.00	1.08	2.00	0.00	0.00	0.02	0.00
1.12	2.00	0.00	0.00	0.01	0.00	1.20	2.00	0.00	0.00	0.02	0.00
1.30	2.00	0.00	0.00	0.03	0.00	1.34	2.00	0.00	0.00	0.01	0.00
1.40	2.00	0.00	0.00	0.02	0.00	1.49	2.00	0.00	0.00	0.03	0.00
1.54	2.00	0.00	0.00	0.02	0.00	1.59	2.00	0.00	0.00	0.02	0.00
1.68	2.00	0.00	0.00	0.03	0.00	1.74	2.00	0.00	0.00	0.02	0.00
1.79	2.00	0.00	0.00	0.02	0.00	1.87	2.00	0.00	0.00	0.02	0.00
1.94	2.00	0.00	0.00	0.02	0.00	1.98	2.00	0.00	0.00	0.01	0.00
2.04	2.00	0.00	0.00	0.02	0.00	2.13	2.00	0.00	0.00	0.03	0.00
2.17	2.00	0.00	0.00	0.01	0.00	2.24	2.00	0.00	0.00	0.02	0.00
2.33	2.00	0.00	0.00	0.03	0.00	2.36	2.00	0.00	0.00	0.01	0.00
2.43	2.00	0.00	0.00	0.02	0.00	2.52	2.00	0.00	0.00	0.03	0.00
2.56	2.00	0.00	0.00	0.01	0.00	2.64	2.00	0.00	0.00	0.02	0.00
2.74	2.00	0.00	0.00	0.03	0.00	2.78	2.00	0.00	0.00	0.01	0.00
2.83	2.00	0.00	0.00	0.02	0.00	2.90	2.00	0.00	0.00	0.02	0.00
2.98	2.00	0.00	0.00	0.02	0.00	3.03	2.00	0.00	0.00	0.02	0.00
3.10	2.00	0.00	0.00	0.02	0.00	3.18	2.00	0.00	0.00	0.02	0.00
3.23	2.00	0.00	0.00	0.02	0.00	3.29	2.00	0.00	0.00	0.02	0.00
3.38	2.00	0.00	0.00	0.03	0.00	3.42	2.00	0.00	0.00	0.01	0.00
3.51	2.00	0.00	0.00	0.03	0.00	3.58	2.00	0.00	0.00	0.02	0.00
3.62	2.00	0.00	0.00	0.01	0.00	3.69	2.00	0.00	0.00	0.02	0.00
3.77	2.00	0.00	0.00	0.02	0.00	3.82	2.00	0.00	0.00	0.02	0.00
3.89	2.00	0.00	0.00	0.02	0.00	3.97	2.00	0.00	0.00	0.02	0.00
4.03	2.00	0.00	0.00	0.02	0.00	4.10	2.00	0.00	0.00	0.02	0.00
4.15	2.00	0.00	0.00	0.02	0.00	4.24	2.00	0.00	0.00	0.03	0.00
4.29	2.00	0.00	0.00	0.02	0.00	4.35	2.00	0.00	0.00	0.02	0.00
4.44	2.00	0.00	0.00	0.03	0.00	4.48	2.00	0.00	0.00	0.01	0.00
4.54	2.00	0.00	0.00	0.02	0.00	4.61	2.00	0.00	0.00	0.02	0.00
4.69	2.00	0.00	0.00	0.02	0.00	4.74	2.00	0.00	0.00	0.02	0.00
4.82	2.00	0.00	0.00	0.02	0.00	4.86	2.00	0.00	0.00	0.01	0.00
4.94	2.00	0.00	0.00	0.02	0.00	5.02	2.00	0.00	0.00	0.02	0.00
5.09	2.00	0.00	0.00	0.02	0.00	5.13	2.00	0.00	0.00	0.01	0.00
5.23	2.00	0.00	0.00	0.03	0.00	5.28	2.00	0.00	0.00	0.02	0.00
5.33	2.00	0.00	0.00	0.02	0.00	5.39	2.00	0.00	0.00	0.02	0.00
5.48	2.00	0.00	0.00	0.03	0.00	5.52	2.00	0.00	0.00	0.01	0.00
5.58	2.00	0.00	0.00	0.02	0.00	5.67	2.00	0.00	0.00	0.03	0.00
5.73	2.00	0.00	0.00	0.02	0.00	5.78	2.00	0.00	0.00	0.02	0.00
5.88	2.00	0.00	0.00	0.03	0.00	5.92	2.00	0.00	0.00	0.01	0.00
5.97	2.00	0.00	0.00	0.02	0.00	6.08	2.00	0.00	0.00	0.03	0.00
6.11	2.00	0.00	0.00	0.01	0.00	6.18	2.00	0.00	0.00	0.02	0.00
6.27	2.00	0.00	0.00	0.03	0.00	6.33	2.00	0.00	0.00	0.02	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
6.38	2.00	0.00	0.00	0.02	0.00	6.44	2.00	0.00	0.00	0.02	0.00
6.50	2.00	0.00	0.00	0.02	0.00	6.57	2.00	0.00	0.00	0.02	0.00
6.67	2.00	0.00	0.00	0.03	0.00	6.72	2.00	0.00	0.00	0.02	0.00
6.76	2.00	0.00	0.00	0.01	0.00	6.83	2.00	0.00	0.00	0.02	0.00
6.92	2.00	0.00	0.00	0.03	0.00	6.97	2.00	0.00	0.00	0.02	0.00
7.04	2.00	0.00	0.00	0.02	0.00	7.12	2.00	0.00	0.00	0.02	0.00
7.16	2.00	0.00	0.00	0.01	0.00	7.25	2.00	0.00	0.00	0.03	0.00
7.32	2.00	0.00	0.00	0.02	0.00	7.37	2.00	0.00	0.00	0.02	0.00
7.43	2.00	0.00	0.00	0.02	0.00	7.52	2.00	0.00	0.00	0.03	0.00
7.56	2.00	0.00	0.00	0.01	0.00	7.63	2.00	0.00	0.00	0.02	0.00
7.71	2.00	0.00	0.00	0.02	0.00	7.75	2.00	0.00	0.00	0.01	0.00
7.83	2.00	0.00	0.00	0.02	0.00	7.88	2.00	0.00	0.00	0.02	0.00
7.97	2.00	0.00	0.00	0.03	0.00	8.01	2.00	0.00	0.00	0.01	0.00
8.08	2.00	0.00	0.00	0.02	0.00	8.18	2.00	0.00	0.00	0.03	0.00
8.22	2.00	0.00	0.00	0.01	0.00	8.28	2.00	0.00	0.00	0.02	0.00
8.35	2.00	0.00	0.00	0.02	0.00	8.43	2.00	0.00	0.00	0.02	0.00
8.48	2.00	0.00	0.00	0.02	0.00	8.56	2.00	0.00	0.00	0.02	0.00
8.63	2.00	0.00	0.00	0.02	0.00	8.68	2.00	0.00	0.00	0.02	0.00
8.76	2.00	0.00	0.00	0.02	0.00	8.80	2.00	0.00	0.00	0.01	0.00
8.88	2.00	0.00	0.00	0.02	0.00	8.94	2.00	0.00	0.00	0.02	0.00
8.99	2.00	0.00	0.00	0.02	0.00	9.07	2.00	0.00	0.00	0.02	0.00
9.14	2.00	0.00	0.00	0.02	0.00	9.22	2.00	0.00	0.00	0.02	0.00
9.27	2.00	0.00	0.00	0.02	0.00	9.37	2.00	0.00	0.00	0.03	0.00
9.42	2.00	0.00	0.00	0.02	0.00	9.47	2.00	0.00	0.00	0.02	0.00
9.52	2.00	0.00	0.00	0.02	0.00	9.62	2.00	0.00	0.00	0.03	0.00
9.67	2.00	0.00	0.00	0.02	0.00	9.73	2.00	0.00	0.00	0.02	0.00
9.82	2.00	0.00	0.00	0.03	0.00	9.86	2.00	0.00	0.00	0.01	0.00
9.92	2.00	0.00	0.00	0.02	0.00	10.02	2.00	0.00	0.00	0.03	0.00
10.06	2.00	0.00	0.00	0.01	0.00	10.12	2.00	0.00	0.00	0.02	0.00
10.21	2.00	0.00	0.00	0.03	0.00	10.25	2.00	0.00	0.00	0.01	0.00
10.31	2.00	0.00	0.00	0.02	0.00	10.41	2.00	0.00	0.00	0.03	0.00
10.45	2.00	0.00	0.00	0.01	0.00	10.52	2.00	0.00	0.00	0.02	0.00
10.61	2.00	0.00	0.00	0.03	0.00	10.64	2.00	0.00	0.00	0.01	0.00
10.71	2.00	0.00	0.00	0.02	0.00	10.81	2.00	0.00	0.00	0.03	0.00
10.85	2.00	0.00	0.00	0.01	0.00	10.91	2.00	0.00	0.00	0.02	0.00
10.96	2.00	0.00	0.00	0.02	0.00	11.03	2.00	0.00	0.00	0.02	0.00
11.10	2.00	0.00	0.00	0.02	0.00	11.20	2.00	0.00	0.00	0.03	0.00
11.24	2.00	0.00	0.00	0.01	0.00	11.30	2.00	0.00	0.00	0.02	0.00
11.36	2.00	0.00	0.00	0.02	0.00	11.43	2.00	0.00	0.00	0.02	0.00
11.50	2.00	0.00	0.00	0.02	0.00	11.58	2.00	0.00	0.00	0.02	0.00
11.63	2.00	0.00	0.00	0.02	0.00	11.70	2.00	0.00	0.00	0.02	0.00
11.79	2.00	0.00	0.00	0.03	0.00	11.84	2.00	0.00	0.00	0.02	0.00
11.90	2.00	0.00	0.00	0.02	0.00	11.98	2.00	0.00	0.00	0.02	0.00
12.02	2.00	0.00	0.00	0.01	0.00	12.09	2.00	0.00	0.00	0.02	0.00
12.14	2.00	0.00	0.00	0.02	0.00	12.21	2.00	0.00	0.00	0.02	0.00
12.29	2.00	0.00	0.00	0.02	0.00	12.34	2.00	0.00	0.00	0.02	0.00
12.44	2.00	0.00	0.00	0.03	0.00	12.49	2.00	0.00	0.00	0.02	0.00
12.57	2.00	0.00	0.00	0.02	0.00	12.64	2.00	0.00	0.00	0.02	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
12.68	2.00	0.00	0.00	0.01	0.00	12.73	2.00	0.00	0.00	0.02	0.00
12.84	2.00	0.00	0.00	0.03	0.00	12.89	2.00	0.00	0.00	0.02	0.00
12.98	2.00	0.00	0.00	0.03	0.00	13.00	2.00	0.00	0.00	0.01	0.00
13.08	2.00	0.00	0.00	0.02	0.00	13.14	2.00	0.00	0.00	0.02	0.00
13.23	2.00	0.00	0.00	0.03	0.00	13.27	2.00	0.00	0.00	0.01	0.00
13.34	2.00	0.00	0.00	0.02	0.00	13.43	2.00	0.00	0.00	0.03	0.00
13.47	2.00	0.00	0.00	0.01	0.00	13.54	2.00	0.00	0.00	0.02	0.00
13.63	2.00	0.00	0.00	0.03	0.00	13.67	2.00	0.00	0.00	0.01	0.00
13.72	2.00	0.00	0.00	0.02	0.00	13.83	2.00	0.00	0.00	0.03	0.00
13.88	2.00	0.00	0.00	0.02	0.00	13.94	2.00	0.00	0.00	0.02	0.00
13.98	2.00	0.00	0.00	0.01	0.00	14.06	2.00	0.00	0.00	0.02	0.00
14.14	2.00	0.00	0.00	0.02	0.00	14.18	2.00	0.00	0.00	0.01	0.00
14.26	2.00	0.00	0.00	0.02	0.00	14.33	2.00	0.00	0.00	0.02	0.00
14.37	2.00	0.00	0.00	0.01	0.00	14.45	2.00	0.00	0.00	0.02	0.00
14.54	2.00	0.00	0.00	0.03	0.00	14.61	2.00	0.00	0.00	0.02	0.00
14.65	2.00	0.00	0.00	0.01	0.00	14.74	2.00	0.00	0.00	0.03	0.00
14.80	2.00	0.00	0.00	0.02	0.00	14.85	2.00	0.00	0.00	0.02	0.00
14.90	2.00	0.00	0.00	0.02	0.00	15.00	2.00	0.00	0.00	0.03	0.00
15.05	2.00	0.00	0.00	0.02	0.00	15.10	2.00	0.00	0.00	0.02	0.00
15.17	2.00	0.00	0.00	0.02	0.00	15.25	2.00	0.00	0.00	0.02	0.00
15.30	2.00	0.00	0.00	0.02	0.00	15.36	2.00	0.00	0.00	0.02	0.00
15.45	2.00	0.00	0.00	0.03	0.00	15.49	2.00	0.00	0.00	0.01	0.00
15.57	2.00	0.00	0.00	0.02	0.00	15.64	2.00	0.00	0.00	0.02	0.00
15.69	2.00	0.00	0.00	0.02	0.00	15.77	2.00	0.00	0.00	0.02	0.00
15.85	2.00	0.00	0.00	0.02	0.00	15.89	2.00	0.00	0.00	0.01	0.00
15.99	2.00	0.00	0.00	0.03	0.00	16.05	2.00	0.00	0.00	0.02	0.00
16.09	2.00	0.00	0.00	0.01	0.00	16.16	2.00	0.00	0.00	0.02	0.00
16.24	2.00	0.00	0.00	0.02	0.00	16.30	2.00	0.00	0.00	0.02	0.00
16.34	2.00	0.00	0.00	0.01	0.00	16.44	2.00	0.00	0.00	0.03	0.00
16.48	2.00	0.00	0.00	0.01	0.00	16.54	2.00	0.00	0.00	0.02	0.00
16.63	2.00	0.00	0.00	0.03	0.00	16.69	2.00	0.00	0.00	0.02	0.00
16.74	2.00	0.00	0.00	0.02	0.00	16.82	2.00	0.00	0.00	0.02	0.00
16.90	2.00	0.00	0.00	0.02	0.00	16.94	2.00	0.00	0.00	0.01	0.00
17.03	2.00	0.00	0.00	0.03	0.00	17.07	2.00	0.00	0.00	0.01	0.00
17.13	2.00	0.00	0.00	0.02	0.00	17.21	2.00	0.00	0.00	0.02	0.00
17.26	2.00	0.00	0.00	0.02	0.00	17.33	2.00	0.00	0.00	0.02	0.00
17.41	2.00	0.00	0.00	0.02	0.00	17.48	2.00	0.00	0.00	0.02	0.00
17.53	2.00	0.00	0.00	0.02	0.00	17.61	2.00	0.00	0.00	0.02	0.00
17.67	2.00	0.00	0.00	0.02	0.00	17.72	2.00	0.00	0.00	0.02	0.00
17.82	2.00	0.00	0.00	0.03	0.00	17.88	2.00	0.00	0.00	0.02	0.00
17.92	2.00	0.00	0.00	0.01	0.00	18.02	2.00	0.00	0.00	0.03	0.00
18.07	2.00	0.00	0.00	0.02	0.00	18.14	2.00	0.00	0.00	0.02	0.00
18.20	2.00	0.00	0.00	0.02	0.00	18.27	2.00	0.00	0.00	0.02	0.00
18.32	2.00	0.00	0.00	0.02	0.00	18.38	2.00	0.00	0.00	0.02	0.00
18.47	2.00	0.00	0.00	0.03	0.00	18.51	2.00	0.00	0.00	0.01	0.00
18.57	2.00	0.00	0.00	0.02	0.00	18.67	2.00	0.00	0.00	0.03	0.00
18.71	2.00	0.00	0.00	0.01	0.00	18.81	2.00	0.00	0.00	0.03	0.00
18.86	2.00	0.00	0.00	0.02	0.00	18.91	2.00	0.00	0.00	0.02	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
18.97	2.00	0.00	0.00	0.02	0.00	19.06	2.00	0.00	0.00	0.03	0.00
19.11	2.00	0.00	0.00	0.02	0.00	19.21	2.00	0.00	0.00	0.03	0.00
19.27	2.00	0.00	0.00	0.02	0.00	19.31	2.00	0.00	0.00	0.01	0.00
19.41	2.00	0.00	0.00	0.03	0.00	19.46	2.00	0.00	0.00	0.02	0.00
19.51	2.00	0.00	0.00	0.02	0.00	19.56	2.00	0.00	0.00	0.02	0.00
19.63	2.00	0.00	0.00	0.02	0.00	19.71	2.00	0.00	0.00	0.02	0.00
19.80	2.00	0.00	0.00	0.03	0.00	19.82	2.00	0.00	0.00	0.01	0.00
19.91	2.00	0.00	0.00	0.03	0.00	19.95	2.00	0.00	0.00	0.01	0.00
20.02	2.00	0.00	0.00	0.02	0.00	20.11	2.00	0.00	0.00	0.03	0.00
20.15	2.00	0.00	0.00	0.01	0.00	20.24	2.00	0.00	0.00	0.03	0.00
20.29	2.00	0.00	0.00	0.02	0.00	20.36	0.59	0.00	0.00	0.02	0.06
20.41	0.61	0.00	0.00	0.02	0.04	20.48	0.62	0.00	0.00	0.02	0.06
20.56	0.65	0.00	0.00	0.02	0.06	20.66	0.68	0.00	0.00	0.03	0.07
20.71	2.00	0.00	0.00	0.02	0.00	20.74	2.00	0.00	0.00	0.01	0.00
20.82	2.00	0.00	0.00	0.02	0.00	20.91	2.00	0.00	0.00	0.03	0.00
20.95	2.00	0.00	0.00	0.01	0.00	21.03	2.00	0.00	0.00	0.02	0.00
21.11	2.00	0.00	0.00	0.02	0.00	21.15	2.00	0.00	0.00	0.01	0.00
21.22	2.00	0.00	0.00	0.02	0.00	21.26	2.00	0.00	0.00	0.01	0.00
21.34	2.00	0.00	0.00	0.02	0.00	21.41	2.00	0.00	0.00	0.02	0.00
21.48	2.00	0.00	0.00	0.02	0.00	21.52	2.00	0.00	0.00	0.01	0.00
21.61	2.00	0.00	0.00	0.03	0.00	21.66	2.00	0.00	0.00	0.02	0.00
21.76	2.00	0.00	0.00	0.03	0.00	21.81	2.00	0.00	0.00	0.02	0.00
21.85	2.00	0.00	0.00	0.01	0.00	21.92	2.00	0.00	0.00	0.02	0.00
22.01	2.00	0.00	0.00	0.03	0.00	22.09	0.58	0.00	0.00	0.02	0.07
22.12	0.60	0.00	0.00	0.01	0.02	22.20	0.62	0.00	0.00	0.02	0.06
22.29	0.63	0.00	0.00	0.03	0.07	22.31	0.65	0.00	0.00	0.01	0.01
22.40	0.67	0.00	0.00	0.03	0.06	22.45	0.69	0.00	0.00	0.02	0.03
22.51	0.70	0.00	0.00	0.02	0.04	22.60	0.71	0.00	0.00	0.03	0.05
22.64	0.70	0.00	0.00	0.01	0.02	22.75	0.68	0.00	0.00	0.03	0.07
22.80	0.67	0.00	0.00	0.02	0.03	22.85	0.66	0.00	0.00	0.02	0.03
22.91	0.64	0.00	0.00	0.02	0.04	22.99	0.64	0.00	0.00	0.02	0.06
23.08	0.64	0.00	0.00	0.03	0.06	23.10	0.64	0.00	0.00	0.01	0.01
23.18	2.00	0.00	0.00	0.02	0.00	23.26	2.00	0.00	0.00	0.02	0.00
23.30	2.00	0.00	0.00	0.01	0.00	23.37	2.00	0.00	0.00	0.02	0.00
23.46	2.00	0.00	0.00	0.03	0.00	23.51	2.00	0.00	0.00	0.02	0.00
23.56	2.00	0.00	0.00	0.02	0.00	23.63	2.00	0.00	0.00	0.02	0.00
23.72	2.00	0.00	0.00	0.03	0.00	23.79	2.00	0.00	0.00	0.02	0.00
23.87	2.00	0.00	0.00	0.02	0.00	23.91	2.00	0.00	0.00	0.01	0.00
23.96	2.00	0.00	0.00	0.02	0.00	24.02	2.00	0.00	0.00	0.02	0.00
24.11	2.00	0.00	0.00	0.03	0.00	24.20	2.00	0.00	0.00	0.03	0.00
24.22	2.00	0.00	0.00	0.01	0.00	24.31	2.00	0.00	0.00	0.03	0.00
24.39	2.00	0.00	0.00	0.02	0.00	24.42	2.00	0.00	0.00	0.01	0.00
24.51	2.00	0.00	0.00	0.03	0.00	24.55	2.00	0.00	0.00	0.01	0.00
24.63	2.00	0.00	0.00	0.02	0.00	24.71	2.00	0.00	0.00	0.02	0.00
24.75	2.00	0.00	0.00	0.01	0.00	24.81	2.00	0.00	0.00	0.02	0.00
24.90	2.00	0.00	0.00	0.03	0.00	24.94	2.00	0.00	0.00	0.01	0.00
25.01	2.00	0.00	0.00	0.02	0.00	25.07	2.00	0.00	0.00	0.02	0.00
25.15	2.00	0.00	0.00	0.02	0.00	25.20	2.00	0.00	0.00	0.02	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
25.28	2.00	0.00	0.00	0.02	0.00	25.35	2.00	0.00	0.00	0.02	0.00
25.40	2.00	0.00	0.00	0.02	0.00	25.48	2.00	0.00	0.00	0.02	0.00
25.55	2.00	0.00	0.00	0.02	0.00	25.60	2.00	0.00	0.00	0.02	0.00
25.67	2.00	0.00	0.00	0.02	0.00	25.75	2.00	0.00	0.00	0.02	0.00
25.79	2.00	0.00	0.00	0.01	0.00	25.90	2.00	0.00	0.00	0.03	0.00
25.95	2.00	0.00	0.00	0.02	0.00	26.01	2.00	0.00	0.00	0.02	0.00
26.09	2.00	0.00	0.00	0.02	0.00	26.13	2.00	0.00	0.00	0.01	0.00
26.19	2.00	0.00	0.00	0.02	0.00	26.27	2.00	0.00	0.00	0.02	0.00
26.34	2.00	0.00	0.00	0.02	0.00	26.39	2.00	0.00	0.00	0.02	0.00
26.47	2.00	0.00	0.00	0.02	0.00	26.54	2.00	0.00	0.00	0.02	0.00
26.58	2.00	0.00	0.00	0.01	0.00	26.67	2.00	0.00	0.00	0.03	0.00
26.73	2.00	0.00	0.00	0.02	0.00	26.78	2.00	0.00	0.00	0.02	0.00
26.85	2.00	0.00	0.00	0.02	0.00	26.93	2.00	0.00	0.00	0.02	0.00
26.98	2.00	0.00	0.00	0.02	0.00	27.03	2.00	0.00	0.00	0.02	0.00
27.13	2.00	0.00	0.00	0.03	0.00	27.17	2.00	0.00	0.00	0.01	0.00
27.24	2.00	0.00	0.00	0.02	0.00	27.33	2.00	0.00	0.00	0.03	0.00
27.36	2.00	0.00	0.00	0.01	0.00	27.43	2.00	0.00	0.00	0.02	0.00
27.53	2.00	0.00	0.00	0.03	0.00	27.60	2.00	0.00	0.00	0.02	0.00
27.63	2.00	0.00	0.00	0.01	0.00	27.72	2.00	0.00	0.00	0.03	0.00
27.77	2.00	0.00	0.00	0.02	0.00	27.84	2.00	0.00	0.00	0.02	0.00
27.93	2.00	0.00	0.00	0.03	0.00	27.97	2.00	0.00	0.00	0.01	0.00
28.02	2.00	0.00	0.00	0.02	0.00	28.12	2.00	0.00	0.00	0.03	0.00
28.17	2.00	0.00	0.00	0.02	0.00	28.22	2.00	0.00	0.00	0.02	0.00
28.32	2.00	0.00	0.00	0.03	0.00	28.36	2.00	0.00	0.00	0.01	0.00
28.42	2.00	0.00	0.00	0.02	0.00	28.48	2.00	0.00	0.00	0.02	0.00
28.57	2.00	0.00	0.00	0.03	0.00	28.62	2.00	0.00	0.00	0.02	0.00
28.72	2.00	0.00	0.00	0.03	0.00	28.75	2.00	0.00	0.00	0.01	0.00
28.82	2.00	0.00	0.00	0.02	0.00	28.87	2.00	0.00	0.00	0.02	0.00
28.95	2.00	0.00	0.00	0.02	0.00	29.02	2.00	0.00	0.00	0.02	0.00
29.07	2.00	0.00	0.00	0.02	0.00	29.16	2.00	0.00	0.00	0.03	0.00
29.21	2.00	0.00	0.00	0.02	0.00	29.29	2.00	0.00	0.00	0.02	0.00
29.36	2.00	0.00	0.00	0.02	0.00	29.40	2.00	0.00	0.00	0.01	0.00
29.47	2.00	0.00	0.00	0.02	0.00	29.56	2.00	0.00	0.00	0.03	0.00
29.60	2.00	0.00	0.00	0.01	0.00	29.71	2.00	0.00	0.00	0.03	0.00
29.75	2.00	0.00	0.00	0.01	0.00	29.79	2.00	0.00	0.00	0.01	0.00
29.86	2.00	0.00	0.00	0.02	0.00	29.95	2.00	0.00	0.00	0.03	0.00
30.04	2.00	0.00	0.00	0.03	0.00	30.06	2.00	0.00	0.00	0.01	0.00
30.15	2.00	0.00	0.00	0.03	0.00	30.20	2.00	0.00	0.00	0.02	0.00
30.28	2.00	0.00	0.00	0.02	0.00	30.35	2.00	0.00	0.00	0.02	0.00
30.39	2.00	0.00	0.00	0.01	0.00	30.45	2.00	0.00	0.00	0.02	0.00
30.54	2.00	0.00	0.00	0.03	0.00	30.60	2.00	0.00	0.00	0.02	0.00
30.67	2.00	0.00	0.00	0.02	0.00	30.74	2.00	0.00	0.00	0.02	0.00
30.79	2.00	0.00	0.00	0.02	0.00	30.86	2.00	0.00	0.00	0.02	0.00
30.95	2.00	0.00	0.00	0.03	0.00	30.99	2.00	0.00	0.00	0.01	0.00
31.05	2.00	0.00	0.00	0.02	0.00	31.14	2.00	0.00	0.00	0.03	0.00
31.19	2.00	0.00	0.00	0.02	0.00	31.26	2.00	0.00	0.00	0.02	0.00
31.34	2.00	0.00	0.00	0.02	0.00	31.39	2.00	0.00	0.00	0.02	0.00
31.45	2.00	0.00	0.00	0.02	0.00	31.54	2.00	0.00	0.00	0.03	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
31.57	2.00	0.00	0.00	0.01	0.00	31.63	2.00	0.00	0.00	0.02	0.00
31.73	2.00	0.00	0.00	0.03	0.00	31.77	2.00	0.00	0.00	0.01	0.00
31.84	2.00	0.00	0.00	0.02	0.00	31.93	2.00	0.00	0.00	0.03	0.00
31.98	2.00	0.00	0.00	0.02	0.00	32.05	2.00	0.00	0.00	0.02	0.00
32.09	2.00	0.00	0.00	0.01	0.00	32.17	2.00	0.00	0.00	0.02	0.00
32.22	2.00	0.00	0.00	0.02	0.00	32.32	2.00	0.00	0.00	0.03	0.00
32.35	2.00	0.00	0.00	0.01	0.00	32.43	2.00	0.00	0.00	0.02	0.00
32.52	2.00	0.00	0.00	0.03	0.00	32.57	2.00	0.00	0.00	0.02	0.00
32.62	2.00	0.00	0.00	0.02	0.00	32.71	2.00	0.00	0.00	0.03	0.00
32.76	2.00	0.00	0.00	0.02	0.00	32.82	2.00	0.00	0.00	0.02	0.00
32.90	2.00	0.00	0.00	0.02	0.00	32.96	2.00	0.00	0.00	0.02	0.00
33.02	2.00	0.00	0.00	0.02	0.00	33.11	2.00	0.00	0.00	0.03	0.00
33.17	2.00	0.00	0.00	0.02	0.00	33.22	2.00	0.00	0.00	0.02	0.00
33.31	2.00	0.00	0.00	0.03	0.00	33.34	2.00	0.00	0.00	0.01	0.00
33.41	2.00	0.00	0.00	0.02	0.00	33.49	2.00	0.00	0.00	0.02	0.00
33.57	2.00	0.00	0.00	0.02	0.00	33.61	2.00	0.00	0.00	0.01	0.00
33.68	2.00	0.00	0.00	0.02	0.00	33.76	2.00	0.00	0.00	0.02	0.00
33.81	2.00	0.00	0.00	0.02	0.00	33.88	2.00	0.00	0.00	0.02	0.00
33.95	2.00	0.00	0.00	0.02	0.00	34.01	2.00	0.00	0.00	0.02	0.00
34.06	2.00	0.00	0.00	0.02	0.00	34.13	2.00	0.00	0.00	0.02	0.00
34.21	2.00	0.00	0.00	0.02	0.00	34.25	2.00	0.00	0.00	0.01	0.00
34.35	2.00	0.00	0.00	0.03	0.00	34.40	2.00	0.00	0.00	0.02	0.00
34.49	2.00	0.00	0.00	0.03	0.00	34.53	2.00	0.00	0.00	0.01	0.00
34.60	2.00	0.00	0.00	0.02	0.00	34.65	2.00	0.00	0.00	0.02	0.00
34.74	2.00	0.00	0.00	0.03	0.00	34.80	2.00	0.00	0.00	0.02	0.00
34.85	2.00	0.00	0.00	0.02	0.00	34.93	2.00	0.00	0.00	0.02	0.00
34.98	2.00	0.00	0.00	0.02	0.00	35.05	2.00	0.00	0.00	0.02	0.00
35.15	2.00	0.00	0.00	0.03	0.00	35.20	2.00	0.00	0.00	0.02	0.00
35.25	2.00	0.00	0.00	0.02	0.00	35.33	2.00	0.00	0.00	0.02	0.00
35.40	2.00	0.00	0.00	0.02	0.00	35.44	2.00	0.00	0.00	0.01	0.00
35.50	2.00	0.00	0.00	0.02	0.00	35.59	2.00	0.00	0.00	0.03	0.00
35.64	2.00	0.00	0.00	0.02	0.00	35.70	2.00	0.00	0.00	0.02	0.00
35.79	2.00	0.00	0.00	0.03	0.00	35.83	2.00	0.00	0.00	0.01	0.00
35.94	2.00	0.00	0.00	0.03	0.00	35.98	2.00	0.00	0.00	0.01	0.00
36.03	2.00	0.00	0.00	0.02	0.00	36.09	2.00	0.00	0.00	0.02	0.00
36.17	2.00	0.00	0.00	0.02	0.00	36.23	2.00	0.00	0.00	0.02	0.00
36.29	2.00	0.00	0.00	0.02	0.00	36.38	2.00	0.00	0.00	0.03	0.00
36.44	2.00	0.00	0.00	0.02	0.00	36.49	2.00	0.00	0.00	0.02	0.00
36.59	2.00	0.00	0.00	0.03	0.00	36.63	2.00	0.00	0.00	0.01	0.00
36.69	2.00	0.00	0.00	0.02	0.00	36.78	2.00	0.00	0.00	0.03	0.00
36.82	2.00	0.00	0.00	0.01	0.00	36.88	2.00	0.00	0.00	0.02	0.00
36.98	2.00	0.00	0.00	0.03	0.00	37.02	2.00	0.00	0.00	0.01	0.00
37.11	2.00	0.00	0.00	0.03	0.00	37.18	2.00	0.00	0.00	0.02	0.00
37.22	2.00	0.00	0.00	0.01	0.00	37.28	2.00	0.00	0.00	0.02	0.00
37.38	2.00	0.00	0.00	0.03	0.00	37.42	2.00	0.00	0.00	0.01	0.00
37.48	2.00	0.00	0.00	0.02	0.00	37.57	2.00	0.00	0.00	0.03	0.00
37.62	2.00	0.00	0.00	0.02	0.00	37.68	2.00	0.00	0.00	0.02	0.00
37.77	2.00	0.00	0.00	0.03	0.00	37.82	2.00	0.00	0.00	0.02	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
37.88	2.00	0.00	0.00	0.02	0.00	37.96	2.00	0.00	0.00	0.02	0.00
38.00	2.00	0.00	0.00	0.01	0.00	38.08	2.00	0.00	0.00	0.02	0.00
38.12	2.00	0.00	0.00	0.01	0.00	38.20	2.00	0.00	0.00	0.02	0.00
38.27	2.00	0.00	0.00	0.02	0.00	38.36	2.00	0.00	0.00	0.03	0.00
38.40	2.00	0.00	0.00	0.01	0.00	38.46	2.00	0.00	0.00	0.02	0.00
38.56	2.00	0.00	0.00	0.03	0.00	38.59	2.00	0.00	0.00	0.01	0.00
38.66	2.00	0.00	0.00	0.02	0.00	38.76	2.00	0.00	0.00	0.03	0.00
38.79	2.00	0.00	0.00	0.01	0.00	38.87	2.00	0.00	0.00	0.02	0.00
38.91	2.00	0.00	0.00	0.01	0.00	39.00	2.00	0.00	0.00	0.03	0.00
39.04	2.00	0.00	0.00	0.01	0.00	39.11	2.00	0.00	0.00	0.02	0.00
39.20	2.00	0.00	0.00	0.03	0.00	39.24	2.00	0.00	0.00	0.01	0.00
39.31	2.00	0.00	0.00	0.02	0.00	39.38	2.00	0.00	0.00	0.02	0.00
39.46	2.00	0.00	0.00	0.02	0.00	39.51	0.98	0.00	0.00	0.02	0.00
39.60	2.00	0.00	0.00	0.03	0.00	39.66	2.00	0.00	0.00	0.02	0.00
39.71	2.00	0.00	0.00	0.02	0.00	39.79	2.00	0.00	0.00	0.02	0.00
39.85	2.00	0.00	0.00	0.02	0.00	39.91	2.00	0.00	0.00	0.02	0.00
39.99	2.00	0.00	0.00	0.02	0.00	40.05	2.00	0.00	0.00	0.02	0.00
40.11	2.00	0.00	0.00	0.02	0.00	40.20	1.85	0.00	0.00	0.03	0.00
40.25	1.95	0.00	0.00	0.02	0.00	40.30	2.00	0.00	0.00	0.02	0.00
40.40	2.00	0.00	0.00	0.03	0.00	40.43	2.00	0.00	0.00	0.01	0.00
40.49	2.00	0.00	0.00	0.02	0.00	40.55	2.00	0.00	0.00	0.02	0.00
40.64	2.00	0.00	0.00	0.03	0.00	40.69	2.00	0.00	0.00	0.02	0.00
40.80	2.00	0.00	0.00	0.03	0.00	40.84	2.00	0.00	0.00	0.01	0.00
40.89	1.90	0.00	0.00	0.02	0.00	40.96	1.75	0.00	0.00	0.02	0.00
41.04	1.61	0.00	0.00	0.02	0.00	41.10	1.47	0.00	0.00	0.02	0.00
41.15	1.35	0.00	0.00	0.02	0.00	41.24	1.24	0.00	0.00	0.03	0.00
41.28	1.23	0.00	0.00	0.01	0.00	41.38	1.22	0.00	0.00	0.03	0.00
41.41	1.21	0.00	0.00	0.01	0.00	41.49	1.21	0.00	0.00	0.02	0.00
41.54	1.20	0.00	0.00	0.02	0.00	41.61	1.19	0.00	0.00	0.02	0.00
41.69	1.18	0.00	0.00	0.02	0.00	41.77	1.16	0.00	0.00	0.02	0.00
41.84	1.15	0.00	0.00	0.02	0.00	41.88	1.13	0.00	0.00	0.01	0.00
41.94	1.11	0.00	0.00	0.02	0.00	42.04	1.09	0.00	0.00	0.03	0.00
42.08	1.07	0.00	0.00	0.01	0.00	42.17	1.06	0.00	0.00	0.03	0.00
42.19	1.05	0.00	0.00	0.01	0.00	42.28	1.05	0.00	0.00	0.03	0.00
42.33	1.04	0.00	0.00	0.02	0.00	42.39	1.04	0.00	0.00	0.02	0.00
42.48	1.04	0.00	0.00	0.03	0.00	42.53	1.05	0.00	0.00	0.02	0.00
42.59	1.06	0.00	0.00	0.02	0.00	42.67	1.08	0.00	0.00	0.02	0.00
42.73	1.10	0.00	0.00	0.02	0.00	42.81	1.12	0.00	0.00	0.02	0.00
42.88	1.14	0.00	0.00	0.02	0.00	42.92	1.16	0.00	0.00	0.01	0.00
43.00	1.18	0.00	0.00	0.02	0.00	43.08	1.20	0.00	0.00	0.02	0.00
43.12	1.22	0.00	0.00	0.01	0.00	43.21	1.23	0.00	0.00	0.03	0.00
43.27	1.25	0.00	0.00	0.02	0.00	43.32	1.27	0.00	0.00	0.02	0.00
43.39	1.29	0.00	0.00	0.02	0.00	43.47	1.31	0.00	0.00	0.02	0.00
43.52	1.31	0.00	0.00	0.02	0.00	43.59	1.31	0.00	0.00	0.02	0.00
43.67	1.29	0.00	0.00	0.02	0.00	43.72	1.27	0.00	0.00	0.02	0.00
43.80	1.21	0.00	0.00	0.02	0.00	43.85	1.14	0.00	0.00	0.02	0.00
43.92	1.07	0.00	0.00	0.02	0.00	43.97	2.00	0.00	0.00	0.02	0.00
44.04	2.00	0.00	0.00	0.02	0.00	44.13	2.00	0.00	0.00	0.03	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
44.17	2.00	0.00	0.00	0.01	0.00	44.24	2.00	0.00	0.00	0.02	0.00
44.31	2.00	0.00	0.00	0.02	0.00	44.37	2.00	0.00	0.00	0.02	0.00
44.45	2.00	0.00	0.00	0.02	0.00	44.50	2.00	0.00	0.00	0.02	0.00
44.56	2.00	0.00	0.00	0.02	0.00	44.65	2.00	0.00	0.00	0.03	0.00
44.71	2.00	0.00	0.00	0.02	0.00	44.76	2.00	0.00	0.00	0.02	0.00
44.85	2.00	0.00	0.00	0.03	0.00	44.88	2.00	0.00	0.00	0.01	0.00
44.96	2.00	0.00	0.00	0.02	0.00	45.05	2.00	0.00	0.00	0.03	0.00
45.10	2.00	0.00	0.00	0.02	0.00	45.17	2.00	0.00	0.00	0.02	0.00
45.25	2.00	0.00	0.00	0.02	0.00	45.30	2.00	0.00	0.00	0.02	0.00
45.37	0.61	0.00	0.00	0.02	0.03	45.45	0.66	0.00	0.00	0.02	0.03
45.49	0.71	0.00	0.00	0.01	0.01	45.54	0.76	0.00	0.00	0.02	0.01
45.61	0.81	0.00	0.00	0.02	0.01	45.68	0.86	0.00	0.00	0.02	0.01
45.75	0.90	0.00	0.00	0.02	0.01	45.80	0.93	0.00	0.00	0.02	0.00
45.89	0.93	0.00	0.00	0.03	0.01	45.93	0.93	0.00	0.00	0.01	0.00
46.01	0.90	0.00	0.00	0.02	0.01	46.08	2.00	0.00	0.00	0.02	0.00
46.15	2.00	0.00	0.00	0.02	0.00	46.20	2.00	0.00	0.00	0.02	0.00
46.29	2.00	0.00	0.00	0.03	0.00	46.34	2.00	0.00	0.00	0.02	0.00
46.41	2.00	0.00	0.00	0.02	0.00	46.49	2.00	0.00	0.00	0.02	0.00
46.53	2.00	0.00	0.00	0.01	0.00	46.60	2.00	0.00	0.00	0.02	0.00
46.69	2.00	0.00	0.00	0.03	0.00	46.73	2.00	0.00	0.00	0.01	0.00
46.79	2.00	0.00	0.00	0.02	0.00	46.89	2.00	0.00	0.00	0.03	0.00
46.94	2.00	0.00	0.00	0.02	0.00	46.99	2.00	0.00	0.00	0.02	0.00
47.09	2.00	0.00	0.00	0.03	0.00	47.13	2.00	0.00	0.00	0.01	0.00
47.19	2.00	0.00	0.00	0.02	0.00	47.28	2.00	0.00	0.00	0.03	0.00
47.34	2.00	0.00	0.00	0.02	0.00	47.38	2.00	0.00	0.00	0.01	0.00
47.50	2.00	0.00	0.00	0.04	0.00	47.51	2.00	0.00	0.00	0.00	0.00
47.60	2.00	0.00	0.00	0.03	0.00	47.69	2.00	0.00	0.00	0.03	0.00
47.70	2.00	0.00	0.00	0.00	0.00	47.80	2.00	0.00	0.00	0.03	0.00
47.84	2.00	0.00	0.00	0.01	0.00	47.91	2.00	0.00	0.00	0.02	0.00
48.00	2.00	0.00	0.00	0.03	0.00	48.04	2.00	0.00	0.00	0.01	0.00
48.11	1.21	0.00	0.00	0.02	0.00	48.19	1.23	0.00	0.00	0.02	0.00
48.23	1.25	0.00	0.00	0.01	0.00	48.30	1.26	0.00	0.00	0.02	0.00
48.40	1.26	0.00	0.00	0.03	0.00	48.45	1.27	0.00	0.00	0.02	0.00
48.50	1.27	0.00	0.00	0.02	0.00	48.59	1.28	0.00	0.00	0.03	0.00
48.66	1.29	0.00	0.00	0.02	0.00	48.69	1.29	0.00	0.00	0.01	0.00
48.78	1.29	0.00	0.00	0.03	0.00	48.85	1.29	0.00	0.00	0.02	0.00
48.89	1.29	0.00	0.00	0.01	0.00	48.98	1.28	0.00	0.00	0.03	0.00
49.03	1.28	0.00	0.00	0.02	0.00	49.09	1.28	0.00	0.00	0.02	0.00
49.19	1.29	0.00	0.00	0.03	0.00	49.23	1.30	0.00	0.00	0.01	0.00
49.28	1.34	0.00	0.00	0.02	0.00	49.39	1.37	0.00	0.00	0.03	0.00
49.42	1.42	0.00	0.00	0.01	0.00	49.49	1.46	0.00	0.00	0.02	0.00
49.59	1.48	0.00	0.00	0.03	0.00	49.62	1.50	0.00	0.00	0.01	0.00
49.69	1.50	0.00	0.00	0.02	0.00	49.74	1.48	0.00	0.00	0.02	0.00
49.83	1.43	0.00	0.00	0.03	0.00	49.88	1.37	0.00	0.00	0.02	0.00
49.93	1.31	0.00	0.00	0.02	0.00	50.03	2.00	0.00	0.00	0.03	0.00
50.13	2.00	0.00	0.00	0.03	0.00	50.14	2.00	0.00	0.00	0.00	0.00
50.23	2.00	0.00	0.00	0.03	0.00	50.27	2.00	0.00	0.00	0.01	0.00
50.34	2.00	0.00	0.00	0.02	0.00	50.43	2.00	0.00	0.00	0.03	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
50.49	2.00	0.00	0.00	0.02	0.00	50.53	2.00	0.00	0.00	0.01	0.00
50.62	2.00	0.00	0.00	0.03	0.00	50.68	2.00	0.00	0.00	0.02	0.00
50.73	2.00	0.00	0.00	0.02	0.00	50.82	2.00	0.00	0.00	0.03	0.00
50.88	2.00	0.00	0.00	0.02	0.00	50.93	2.00	0.00	0.00	0.02	0.00
51.02	2.00	0.00	0.00	0.03	0.00	51.09	2.00	0.00	0.00	0.02	0.00
51.12	2.00	0.00	0.00	0.01	0.00	51.19	2.00	0.00	0.00	0.02	0.00
51.28	2.00	0.00	0.00	0.03	0.00	51.32	2.00	0.00	0.00	0.01	0.00
51.39	2.00	0.00	0.00	0.02	0.00	51.48	2.00	0.00	0.00	0.03	0.00
51.53	2.00	0.00	0.00	0.02	0.00	51.62	2.00	0.00	0.00	0.03	0.00
51.68	2.00	0.00	0.00	0.02	0.00	51.73	2.00	0.00	0.00	0.02	0.00
51.82	2.00	0.00	0.00	0.03	0.00	51.87	2.00	0.00	0.00	0.02	0.00
51.92	2.00	0.00	0.00	0.02	0.00	51.97	2.00	0.00	0.00	0.02	0.00
52.04	2.00	0.00	0.00	0.02	0.00	52.12	2.00	0.00	0.00	0.02	0.00
52.18	2.00	0.00	0.00	0.02	0.00	52.23	2.00	0.00	0.00	0.02	0.00
52.31	2.00	0.00	0.00	0.02	0.00	52.37	2.00	0.00	0.00	0.02	0.00
52.44	2.00	0.00	0.00	0.02	0.00	52.53	2.00	0.00	0.00	0.03	0.00
52.57	2.00	0.00	0.00	0.01	0.00	52.64	2.00	0.00	0.00	0.02	0.00
52.72	2.00	0.00	0.00	0.02	0.00	52.78	2.00	0.00	0.00	0.02	0.00
52.83	2.00	0.00	0.00	0.02	0.00	52.93	2.00	0.00	0.00	0.03	0.00
52.96	2.00	0.00	0.00	0.01	0.00	53.04	2.00	0.00	0.00	0.02	0.00
53.12	2.00	0.00	0.00	0.02	0.00	53.17	2.00	0.00	0.00	0.02	0.00
53.22	2.00	0.00	0.00	0.02	0.00	53.29	2.00	0.00	0.00	0.02	0.00
53.37	2.00	0.00	0.00	0.02	0.00	53.42	2.00	0.00	0.00	0.02	0.00
53.49	2.00	0.00	0.00	0.02	0.00	53.58	2.00	0.00	0.00	0.03	0.00
53.63	2.00	0.00	0.00	0.02	0.00	53.68	2.00	0.00	0.00	0.02	0.00
53.78	2.00	0.00	0.00	0.03	0.00	53.84	2.00	0.00	0.00	0.02	0.00
53.88	2.00	0.00	0.00	0.01	0.00	53.94	2.00	0.00	0.00	0.02	0.00
54.03	2.00	0.00	0.00	0.03	0.00	54.08	2.00	0.00	0.00	0.02	0.00
54.16	2.00	0.00	0.00	0.02	0.00	54.20	2.00	0.00	0.00	0.01	0.00
54.28	2.00	0.00	0.00	0.02	0.00	54.35	2.00	0.00	0.00	0.02	0.00
54.43	2.00	0.00	0.00	0.02	0.00	54.48	2.00	0.00	0.00	0.02	0.00
54.55	2.00	0.00	0.00	0.02	0.00	54.63	2.00	0.00	0.00	0.02	0.00
54.67	2.00	0.00	0.00	0.01	0.00	54.74	2.00	0.00	0.00	0.02	0.00
54.82	2.00	0.00	0.00	0.02	0.00	54.87	2.00	0.00	0.00	0.02	0.00
54.92	2.00	0.00	0.00	0.02	0.00	55.02	2.00	0.00	0.00	0.03	0.00
55.06	2.00	0.00	0.00	0.01	0.00	55.14	2.00	0.00	0.00	0.02	0.00
55.22	2.00	0.00	0.00	0.02	0.00	55.27	2.00	0.00	0.00	0.02	0.00
55.37	2.00	0.00	0.00	0.03	0.00	55.42	2.00	0.00	0.00	0.02	0.00
55.47	2.00	0.00	0.00	0.02	0.00	55.53	2.00	0.00	0.00	0.02	0.00
55.58	2.00	0.00	0.00	0.02	0.00	55.67	2.00	0.00	0.00	0.03	0.00
55.72	2.00	0.00	0.00	0.02	0.00	55.81	2.00	0.00	0.00	0.03	0.00
55.86	2.00	0.00	0.00	0.02	0.00	55.92	2.00	0.00	0.00	0.02	0.00
56.01	2.00	0.00	0.00	0.03	0.00	56.05	2.00	0.00	0.00	0.01	0.00
56.11	2.00	0.00	0.00	0.02	0.00	56.21	2.00	0.00	0.00	0.03	0.00
56.26	2.00	0.00	0.00	0.02	0.00	56.32	2.00	0.00	0.00	0.02	0.00
56.41	2.00	0.00	0.00	0.03	0.00	56.46	2.00	0.00	0.00	0.02	0.00
56.50	2.00	0.00	0.00	0.01	0.00	56.59	2.00	0.00	0.00	0.03	0.00
56.65	2.00	0.00	0.00	0.02	0.00	56.70	2.00	0.00	0.00	0.02	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
56.78	2.00	0.00	0.00	0.02	0.00	56.85	2.00	0.00	0.00	0.02	0.00
56.89	2.00	0.00	0.00	0.01	0.00	56.98	2.00	0.00	0.00	0.03	0.00
57.04	2.00	0.00	0.00	0.02	0.00	57.09	2.00	0.00	0.00	0.02	0.00
57.16	2.00	0.00	0.00	0.02	0.00	57.24	2.00	0.00	0.00	0.02	0.00
57.29	2.00	0.00	0.00	0.02	0.00	57.37	2.00	0.00	0.00	0.02	0.00
57.42	2.00	0.00	0.00	0.02	0.00	57.49	2.00	0.00	0.00	0.02	0.00
57.59	2.00	0.00	0.00	0.03	0.00	57.64	2.00	0.00	0.00	0.02	0.00
57.69	2.00	0.00	0.00	0.02	0.00	57.77	2.00	0.00	0.00	0.02	0.00
57.82	2.00	0.00	0.00	0.02	0.00	57.89	2.00	0.00	0.00	0.02	0.00
57.97	2.00	0.00	0.00	0.02	0.00	58.03	2.00	0.00	0.00	0.02	0.00
58.09	2.00	0.00	0.00	0.02	0.00	58.17	2.00	0.00	0.00	0.02	0.00
58.21	2.00	0.00	0.00	0.01	0.00	58.28	2.00	0.00	0.00	0.02	0.00
58.37	2.00	0.00	0.00	0.03	0.00	58.40	2.00	0.00	0.00	0.01	0.00
58.48	2.00	0.00	0.00	0.02	0.00	58.53	2.00	0.00	0.00	0.02	0.00
58.63	2.00	0.00	0.00	0.03	0.00	58.67	2.00	0.00	0.00	0.01	0.00
58.73	2.00	0.00	0.00	0.02	0.00	58.82	2.00	0.00	0.00	0.03	0.00
58.89	2.00	0.00	0.00	0.02	0.00	58.93	2.00	0.00	0.00	0.01	0.00
59.00	2.00	0.00	0.00	0.02	0.00	59.06	2.00	0.00	0.00	0.02	0.00
59.13	2.00	0.00	0.00	0.02	0.00	59.22	2.00	0.00	0.00	0.03	0.00
59.28	2.00	0.00	0.00	0.02	0.00	59.33	2.00	0.00	0.00	0.02	0.00
59.41	2.00	0.00	0.00	0.02	0.00	59.47	2.00	0.00	0.00	0.02	0.00
59.52	2.00	0.00	0.00	0.02	0.00	59.61	2.00	0.00	0.00	0.03	0.00
59.67	2.00	0.00	0.00	0.02	0.00	59.72	2.00	0.00	0.00	0.02	0.00
59.78	2.00	0.00	0.00	0.02	0.00	59.87	2.00	0.00	0.00	0.03	0.00
59.92	2.00	0.00	0.00	0.02	0.00	60.00	2.00	0.00	0.00	0.02	0.00
60.05	2.00	0.00	0.00	0.02	0.00	60.11	2.00	0.00	0.00	0.02	0.00
60.21	2.00	0.00	0.00	0.03	0.00	60.25	2.00	0.00	0.00	0.01	0.00
60.31	2.00	0.00	0.00	0.02	0.00	60.40	2.00	0.00	0.00	0.03	0.00
60.43	2.00	0.00	0.00	0.01	0.00	60.51	2.00	0.00	0.00	0.02	0.00

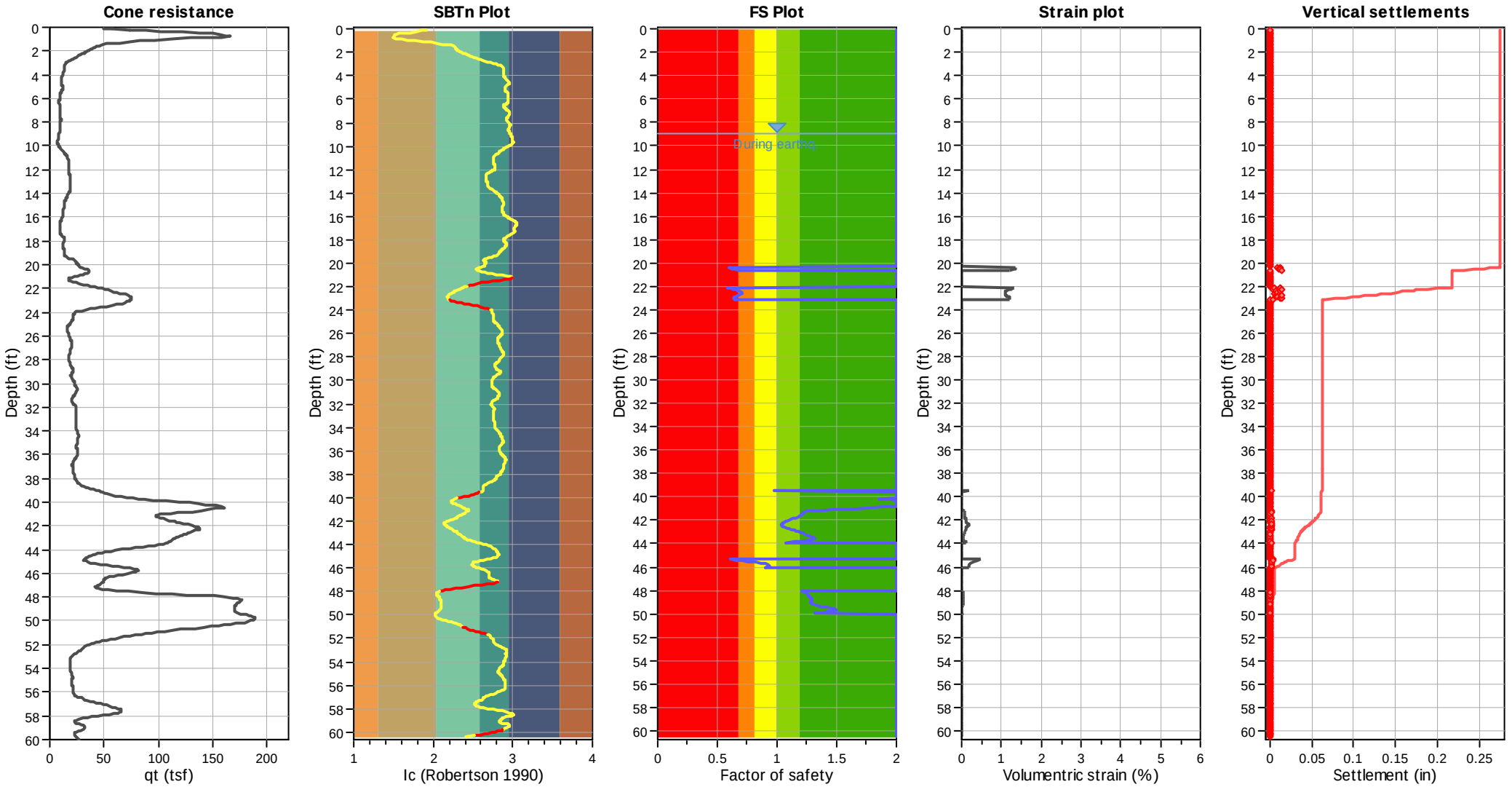
Overall liquefaction potential: 1.15

LPI = 0.00 - Liquefaction risk very low
LPI between 0.00 and 5.00 - Liquefaction risk low
LPI between 5.00 and 15.00 - Liquefaction risk high
LPI > 15.00 - Liquefaction risk very high

Abbreviations

FS: Calculated factor of safety for test point
F_L: 1 - FS
w_z: Function value of the extend of soil liquefaction according to depth
d_z: Layer thickness (ft)
LPI: Liquefaction potential index value for test point

Estimation of post-earthquake settlements



Abbreviations

q_t:	Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c:	Soil Behaviour Type Index
FS:	Calculated Factor of Safety against liquefaction
Volumentric strain:	Post-liquefaction volumentric strain

:: Lateral displacement index calculation ::

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
9.07	8.35	12.59	3.59	81.85	2.00	0.00	0.00	0.00
9.14	8.17	12.30	3.55	80.67	2.00	0.00	0.00	0.00
9.22	8.01	12.03	3.48	79.33	2.00	0.00	0.00	0.00
9.27	7.85	11.77	3.41	77.97	2.00	0.00	0.00	0.00
9.37	7.71	11.54	3.31	76.43	2.00	0.00	0.00	0.00
9.42	7.56	11.30	3.25	75.16	2.00	0.00	0.00	0.00
9.47	7.39	11.03	3.19	73.85	2.00	0.00	0.00	0.00
9.52	7.22	10.74	3.14	72.68	2.00	0.00	0.00	0.00
9.62	7.05	10.46	3.09	71.47	2.00	0.00	0.00	0.00
9.67	6.93	10.26	3.01	70.25	2.00	0.00	0.00	0.00
9.73	7.01	10.39	2.95	69.94	2.00	0.00	0.00	0.00
9.82	7.17	10.63	2.90	70.09	2.00	0.00	0.00	0.00
9.86	7.39	10.98	2.86	70.54	2.00	0.00	0.00	0.00
9.92	7.76	11.57	2.88	72.17	2.00	0.00	0.00	0.00
10.02	8.17	12.23	2.94	74.33	2.00	0.00	0.00	0.00
10.06	8.66	13.01	3.03	77.10	2.00	0.00	0.00	0.00
10.12	9.25	13.95	3.14	80.39	2.00	1.99	0.00	0.00
10.21	9.84	14.90	3.25	83.79	2.00	4.16	0.00	0.00
10.25	10.49	15.94	3.37	87.38	2.00	6.38	0.00	0.00
10.31	11.09	16.89	3.46	90.46	2.00	8.30	0.00	0.00
10.41	11.67	17.81	3.52	93.18	2.00	10.05	0.00	0.00
10.45	12.28	18.80	3.57	95.78	2.00	11.83	0.00	0.00
10.52	12.84	19.69	3.62	98.11	2.00	13.36	0.00	0.00
10.61	13.40	20.57	3.64	100.13	2.00	14.81	0.00	0.00
10.64	13.96	21.47	3.65	101.99	2.00	16.22	0.00	0.00
10.71	14.46	22.27	3.66	103.52	2.00	17.43	0.00	0.00
10.81	14.98	22.93	3.66	104.69	2.00	18.39	0.00	0.00
10.85	15.43	23.52	3.67	105.85	2.00	19.23	0.00	0.00
10.91	15.78	23.92	3.69	106.92	2.00	19.79	0.00	0.00
10.96	16.11	24.32	3.72	108.02	2.00	20.33	0.00	0.00
11.03	16.41	24.63	3.76	109.16	2.00	20.75	0.00	0.00
11.10	16.63	24.81	3.80	110.05	2.00	21.00	0.00	0.00
11.20	16.84	24.94	3.84	110.91	2.00	21.17	0.00	0.00
11.24	17.06	25.18	3.87	111.77	2.00	21.49	0.00	0.00
11.30	17.28	25.38	3.90	112.54	2.00	21.74	0.00	0.00
11.36	17.47	25.53	3.93	113.33	2.00	21.94	0.00	0.00
11.43	17.60	25.59	3.96	113.92	2.00	22.02	0.00	0.00
11.50	17.65	25.53	3.99	114.20	2.00	21.93	0.00	0.00
11.58	17.64	25.35	4.01	114.11	2.00	21.71	0.00	0.00
11.63	17.60	25.19	4.01	113.88	2.00	21.49	0.00	0.00
11.70	17.51	24.92	4.01	113.42	2.00	21.14	0.00	0.00
11.79	17.40	24.59	3.98	112.43	2.00	20.69	0.00	0.00
11.84	17.23	24.24	3.93	111.06	2.00	20.22	0.00	0.00
11.90	17.01	23.80	3.86	109.21	2.00	19.62	0.00	0.00
11.98	16.94	23.51	3.72	106.65	2.00	19.22	0.00	0.00
12.02	16.91	23.37	3.56	103.99	2.00	19.02	0.00	0.00
12.09	17.00	23.38	3.38	101.38	2.00	19.03	0.00	0.00
12.14	17.14	23.48	3.22	99.12	2.00	19.18	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
12.21	17.31	23.60	3.07	96.91	2.00	19.34	0.00	0.00
12.29	17.62	23.89	2.91	94.76	2.00	19.74	0.00	0.00
12.34	17.88	24.16	2.79	93.21	2.00	20.11	0.00	0.00
12.44	18.17	24.43	2.71	92.34	2.00	20.48	0.00	0.00
12.49	18.50	24.79	2.66	91.81	2.00	20.97	0.00	0.00
12.57	18.63	24.90	2.65	91.83	2.00	21.11	0.00	0.00
12.64	18.76	25.02	2.66	92.19	2.00	21.26	0.00	0.00
12.68	18.84	25.09	2.67	92.51	2.00	21.36	0.00	0.00
12.73	18.86	25.08	2.69	92.86	2.00	21.35	0.00	0.00
12.84	18.81	24.93	2.71	92.99	2.00	21.15	0.00	0.00
12.89	18.69	24.74	2.73	93.03	2.00	20.90	0.00	0.00
12.98	18.58	24.53	2.73	92.82	2.00	20.61	0.00	0.00
13.00	18.45	24.34	2.73	92.48	2.00	20.36	0.00	0.00
13.08	18.34	24.13	2.73	92.17	2.00	20.08	0.00	0.00
13.14	18.25	23.98	2.74	92.18	2.00	19.86	0.00	0.00
13.23	18.22	23.86	2.76	92.33	2.00	19.70	0.00	0.00
13.27	18.26	23.89	2.79	92.99	2.00	19.75	0.00	0.00
13.34	18.38	24.01	2.84	93.85	2.00	19.90	0.00	0.00
13.43	18.50	24.12	2.89	94.98	2.00	20.06	0.00	0.00
13.47	18.61	24.25	2.97	96.47	2.00	20.24	0.00	0.00
13.54	18.62	24.25	3.09	98.37	2.00	20.23	0.00	0.00
13.63	18.55	24.12	3.23	100.47	2.00	20.07	0.00	0.00
13.67	18.46	24.02	3.38	102.51	2.00	19.92	0.00	0.00
13.72	18.35	23.87	3.50	104.15	2.00	19.71	0.00	0.00
13.83	18.16	23.56	3.61	105.29	2.00	19.29	0.00	0.00
13.88	17.91	23.21	3.70	106.09	2.00	18.79	0.00	0.00
13.94	17.59	22.77	3.79	106.54	2.00	18.16	0.00	0.00
13.98	17.20	22.26	3.88	106.80	2.00	17.41	0.00	0.00
14.06	16.75	21.64	3.96	106.76	2.00	16.48	0.00	0.00
14.14	16.40	21.13	3.98	106.09	2.00	15.69	0.00	0.00
14.18	16.13	20.75	3.96	105.03	2.00	15.09	0.00	0.00
14.26	15.81	20.27	3.94	103.76	2.00	14.31	0.00	0.00
14.33	15.47	19.77	3.90	102.31	2.00	13.50	0.00	0.00
14.37	15.15	19.33	3.87	101.05	2.00	12.76	0.00	0.00
14.45	14.78	18.80	3.86	99.86	2.00	11.84	0.00	0.00
14.54	14.43	18.29	3.84	98.53	2.00	10.94	0.00	0.00
14.61	14.15	17.89	3.80	97.16	2.00	10.19	0.00	0.00
14.65	13.92	17.55	3.74	95.67	2.00	9.56	0.00	0.00
14.74	13.69	17.19	3.68	94.20	2.00	8.88	0.00	0.00
14.80	13.48	16.88	3.62	92.84	2.00	8.28	0.00	0.00
14.85	13.31	16.63	3.56	91.55	2.00	7.78	0.00	0.00
14.90	13.18	16.42	3.50	90.43	2.00	7.38	0.00	0.00
15.00	13.08	16.23	3.43	89.23	2.00	6.99	0.00	0.00
15.05	13.03	16.13	3.35	88.03	2.00	6.78	0.00	0.00
15.10	12.95	15.99	3.29	86.96	2.00	6.49	0.00	0.00
15.17	12.87	15.84	3.23	85.96	2.00	6.19	0.00	0.00
15.25	12.79	15.69	3.18	85.06	2.00	5.87	0.00	0.00
15.30	12.71	15.56	3.13	84.17	2.00	5.59	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
15.36	12.61	15.39	3.08	83.29	2.00	5.24	0.00	0.00
15.45	12.52	15.23	3.03	82.36	2.00	4.88	0.00	0.00
15.49	12.41	15.06	2.99	81.49	2.00	4.52	0.00	0.00
15.57	12.29	14.87	2.96	80.69	2.00	4.09	0.00	0.00
15.64	12.18	14.70	2.94	80.12	2.00	3.71	0.00	0.00
15.69	12.09	14.56	2.93	79.78	2.00	3.40	0.00	0.00
15.77	11.98	14.39	2.94	79.54	2.00	3.00	0.00	0.00
15.85	11.82	14.15	2.98	79.57	2.00	2.45	0.00	0.00
15.89	11.63	13.90	3.03	79.64	2.00	1.87	0.00	0.00
15.99	11.42	13.60	3.09	79.77	2.00	1.16	0.00	0.00
16.05	11.18	13.29	3.18	80.06	2.00	0.39	0.00	0.00
16.09	10.95	13.00	3.26	80.24	2.00	0.00	0.00	0.00
16.16	10.68	12.63	3.34	80.24	2.00	0.00	0.00	0.00
16.24	10.38	12.21	3.41	79.98	2.00	0.00	0.00	0.00
16.30	10.10	11.82	3.47	79.51	2.00	0.00	0.00	0.00
16.34	9.80	11.42	3.50	78.82	2.00	0.00	0.00	0.00
16.44	9.56	11.07	3.50	77.83	2.00	0.00	0.00	0.00
16.48	9.34	10.78	3.49	76.90	2.00	0.00	0.00	0.00
16.54	9.16	10.52	3.46	75.93	2.00	0.00	0.00	0.00
16.63	9.03	10.33	3.41	74.93	2.00	0.00	0.00	0.00
16.69	8.94	10.19	3.34	73.96	2.00	0.00	0.00	0.00
16.74	8.91	10.14	3.25	72.99	2.00	0.00	0.00	0.00
16.82	8.90	10.10	3.17	72.11	2.00	0.00	0.00	0.00
16.90	8.88	10.04	3.09	71.21	2.00	0.00	0.00	0.00
16.94	8.94	10.09	3.01	70.59	2.00	0.00	0.00	0.00
17.03	8.98	10.11	2.95	70.04	2.00	0.00	0.00	0.00
17.07	8.99	10.11	2.89	69.52	2.00	0.00	0.00	0.00
17.13	8.97	10.07	2.91	69.59	2.00	0.00	0.00	0.00
17.21	8.95	10.01	2.98	70.13	2.00	0.00	0.00	0.00
17.26	9.06	10.15	3.08	71.40	2.00	0.00	0.00	0.00
17.33	9.38	10.52	3.16	73.22	2.00	0.00	0.00	0.00
17.41	9.84	11.06	3.22	75.19	2.00	0.00	0.00	0.00
17.48	10.47	11.81	3.25	77.41	2.00	0.00	0.00	0.00
17.53	11.02	12.49	3.31	79.66	2.00	0.00	0.00	0.00
17.61	11.59	13.15	3.35	81.69	2.00	0.05	0.00	0.00
17.67	12.19	13.84	3.37	83.58	2.00	1.72	0.00	0.00
17.72	12.75	14.48	3.32	84.41	2.00	3.23	0.00	0.00
17.82	13.25	15.02	3.24	84.59	2.00	4.42	0.00	0.00
17.88	13.49	15.26	3.17	84.31	2.00	4.95	0.00	0.00
17.92	13.46	15.20	3.12	83.57	2.00	4.82	0.00	0.00
18.02	13.24	14.89	3.09	82.55	2.00	4.14	0.00	0.00
18.07	12.93	14.50	3.06	81.41	2.00	3.25	0.00	0.00
18.14	12.53	14.00	3.05	80.27	2.00	2.10	0.00	0.00
18.20	12.25	13.64	3.01	79.05	2.00	1.24	0.00	0.00
18.27	12.04	13.36	2.97	78.00	2.00	0.56	0.00	0.00
18.32	11.94	13.22	2.96	77.57	2.00	0.22	0.00	0.00
18.38	11.89	13.14	2.96	77.43	2.00	0.01	0.00	0.00
18.47	11.95	13.17	2.96	77.44	2.00	0.09	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
18.51	12.13	13.36	2.93	77.55	2.00	0.56	0.00	0.00
18.57	12.37	13.61	2.90	77.73	2.00	1.17	0.00	0.00
18.67	12.54	13.76	2.87	77.68	2.00	1.54	0.00	0.00
18.71	12.82	14.06	2.79	77.30	2.00	2.24	0.00	0.00
18.81	13.01	14.23	2.72	76.81	2.00	2.63	0.00	0.00
18.86	13.15	14.35	2.64	76.04	2.00	2.93	0.00	0.00
18.91	13.20	14.38	2.56	74.98	2.00	2.99	0.00	0.00
18.97	13.23	14.38	2.48	73.92	2.00	2.98	0.00	0.00
19.06	13.28	14.39	2.39	72.81	2.00	3.00	0.00	0.00
19.11	13.35	14.44	2.35	72.28	2.00	3.12	0.00	0.00
19.21	13.59	14.66	2.30	71.98	2.00	3.63	0.00	0.00
19.27	14.02	15.12	2.29	72.63	2.00	4.64	0.00	0.00
19.31	14.78	15.97	2.32	74.33	2.00	6.45	0.00	0.00
19.41	16.02	17.32	2.37	77.15	2.00	9.13	0.00	0.00
19.46	17.53	19.00	2.42	80.48	2.00	12.19	0.00	0.00
19.51	19.45	21.12	2.42	83.35	2.00	15.67	0.00	0.00
19.56	21.37	23.23	2.41	85.96	2.00	18.82	0.00	0.00
19.63	22.73	24.70	2.46	88.73	2.00	20.85	0.00	0.00
19.71	23.86	25.91	2.52	91.41	2.00	22.42	0.00	0.00
19.80	24.54	26.62	2.64	94.40	2.00	23.32	0.00	0.00
19.82	25.00	27.14	2.77	97.46	2.00	23.96	0.00	0.00
19.91	24.70	26.78	2.97	100.50	2.00	23.51	0.00	0.00
19.95	25.51	27.65	3.01	102.41	2.00	24.57	0.00	0.00
20.02	26.21	28.37	3.05	103.99	2.00	25.42	0.00	0.00
20.11	26.74	28.89	3.12	105.99	2.00	26.02	0.00	0.00
20.15	27.33	29.52	3.20	108.26	2.00	26.73	0.00	0.00
20.24	28.50	30.73	3.22	110.30	2.00	28.05	0.00	0.00
20.29	30.11	32.44	3.21	112.35	2.00	29.84	0.00	0.00
20.36	32.24	34.68	3.16	114.39	0.59	32.05	51.20	0.51
20.41	34.37	36.93	3.11	116.15	0.61	34.12	51.20	0.37
20.48	36.70	39.36	3.03	117.57	0.62	36.23	51.20	0.51
20.56	36.71	39.31	3.15	120.01	0.65	36.19	51.20	0.59
20.66	35.87	38.33	3.34	122.64	0.68	35.35	51.20	0.74
20.71	34.56	36.92	3.57	125.21	2.00	34.11	0.00	0.00
20.74	32.81	35.04	3.81	127.16	2.00	32.39	0.00	0.00
20.82	30.71	32.73	4.06	128.02	2.00	30.13	0.00	0.00
20.91	28.18	29.93	4.35	128.26	2.00	27.19	0.00	0.00
20.95	25.20	26.71	4.70	127.59	2.00	23.42	0.00	0.00
21.03	22.22	23.43	5.12	126.25	2.00	19.11	0.00	0.00
21.11	19.51	20.46	5.56	124.37	2.00	14.63	0.00	0.00
21.15	17.79	18.53	5.78	121.46	2.00	11.36	0.00	0.00
21.22	17.08	17.69	5.71	118.28	2.00	9.83	0.00	0.00
21.26	16.89	17.46	5.49	115.41	2.00	9.39	0.00	0.00
21.34	17.65	18.26	5.09	113.47	2.00	10.87	0.00	0.00
21.41	19.06	19.71	4.68	112.40	2.00	13.39	0.00	0.00
21.48	21.43	22.18	4.20	111.65	2.00	17.30	0.00	0.00
21.52	24.31	25.19	3.77	111.09	2.00	21.49	0.00	0.00
21.61	27.48	28.46	3.41	110.44	2.00	25.52	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
21.66	30.96	32.05	3.09	109.80	2.00	29.45	0.00	0.00
21.76	34.47	35.62	2.86	109.70	2.00	32.92	0.00	0.00
21.81	38.00	39.23	2.69	110.19	2.00	36.12	0.00	0.00
21.85	41.47	42.78	2.55	110.86	2.00	38.98	0.00	0.00
21.92	44.74	46.08	2.44	111.70	2.00	41.43	0.00	0.00
22.01	47.97	49.30	2.37	113.00	2.00	43.66	0.00	0.00
22.09	50.58	51.88	2.32	114.29	0.58	45.34	34.10	0.39
22.12	53.36	54.70	2.29	116.09	0.60	47.09	34.10	0.15
22.20	56.17	57.47	2.26	117.96	0.62	48.72	34.10	0.39
22.29	59.12	60.36	2.23	119.83	0.63	50.34	34.10	0.44
22.31	62.19	63.46	2.19	121.53	0.65	51.99	34.10	0.10
22.40	64.97	66.14	2.15	122.95	0.67	53.36	34.10	0.44
22.45	67.71	68.85	2.12	124.62	0.69	54.68	34.10	0.24
22.51	70.07	71.14	2.10	126.20	0.70	55.76	16.87	0.15
22.60	72.08	73.01	2.07	126.79	0.71	56.62	16.21	0.21
22.64	73.69	74.54	1.99	125.89	0.70	57.30	17.35	0.10
22.75	74.70	75.33	1.91	124.57	0.68	57.65	19.20	0.30
22.80	75.19	75.71	1.86	123.38	0.67	57.81	21.01	0.15
22.85	75.11	75.52	1.82	122.10	0.66	57.73	22.70	0.16
22.91	74.60	74.89	1.80	120.84	0.64	57.45	22.70	0.20
22.99	74.00	74.15	1.81	120.66	0.64	57.13	22.70	0.26
23.08	73.13	73.14	1.84	120.60	0.64	56.67	22.70	0.29
23.10	71.45	71.45	1.90	120.90	0.64	55.90	22.70	0.07
23.18	69.67	69.57	2.00	121.90	2.00	55.02	0.00	0.00
23.26	67.59	67.40	2.16	124.40	2.00	53.98	0.00	0.00
23.30	65.04	64.84	2.35	127.10	2.00	52.70	0.00	0.00
23.37	61.42	61.15	2.55	128.98	2.00	50.76	0.00	0.00
23.46	57.08	56.69	2.76	130.03	2.00	48.27	0.00	0.00
23.51	52.26	51.82	2.98	130.48	2.00	45.30	0.00	0.00
23.56	47.18	46.67	3.15	128.64	2.00	41.85	0.00	0.00
23.63	42.20	41.60	3.30	125.94	2.00	38.05	0.00	0.00
23.72	37.88	37.16	3.36	121.71	2.00	34.32	0.00	0.00
23.79	33.58	32.77	3.41	116.82	2.00	30.18	0.00	0.00
23.87	29.73	28.83	3.42	111.37	2.00	25.95	0.00	0.00
23.91	26.52	25.57	3.36	105.33	2.00	21.99	0.00	0.00
23.96	24.53	23.53	3.20	99.72	2.00	19.24	0.00	0.00
24.02	23.43	22.37	3.03	95.24	2.00	17.58	0.00	0.00
24.11	22.70	21.59	2.89	91.81	2.00	16.40	0.00	0.00
24.20	22.25	21.07	2.82	90.02	2.00	15.60	0.00	0.00
24.22	21.77	20.58	2.80	88.89	2.00	14.83	0.00	0.00
24.31	21.48	20.25	2.79	88.24	2.00	14.28	0.00	0.00
24.39	21.34	20.06	2.79	88.00	2.00	13.98	0.00	0.00
24.42	21.29	20.00	2.79	87.84	2.00	13.88	0.00	0.00
24.51	21.19	19.85	2.77	87.42	2.00	13.62	0.00	0.00
24.55	21.20	19.83	2.73	86.67	2.00	13.60	0.00	0.00
24.63	20.99	19.58	2.67	85.49	2.00	13.18	0.00	0.00
24.71	20.75	19.30	2.61	84.15	2.00	12.71	0.00	0.00
24.75	20.38	18.92	2.55	82.54	2.00	12.04	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
24.81	19.90	18.40	2.49	80.85	2.00	11.13	0.00	0.00
24.90	19.35	17.82	2.42	79.04	2.00	10.07	0.00	0.00
24.94	18.79	17.25	2.34	76.96	2.00	9.00	0.00	0.00
25.01	18.24	16.67	2.28	75.15	2.00	7.87	0.00	0.00
25.07	17.67	16.09	2.23	73.59	2.00	6.69	0.00	0.00
25.15	17.08	15.48	2.22	72.54	2.00	5.42	0.00	0.00
25.20	16.59	14.97	2.25	72.13	2.00	4.32	0.00	0.00
25.28	16.23	14.59	2.29	72.03	2.00	3.47	0.00	0.00
25.35	16.04	14.38	2.33	72.34	2.00	3.00	0.00	0.00
25.40	16.03	14.36	2.37	72.78	2.00	2.93	0.00	0.00
25.48	16.13	14.42	2.44	73.82	2.00	3.09	0.00	0.00
25.55	16.28	14.54	2.55	75.56	2.00	3.37	0.00	0.00
25.60	16.45	14.69	2.67	77.34	2.00	3.70	0.00	0.00
25.67	16.64	14.85	2.79	79.14	2.00	4.05	0.00	0.00
25.75	16.81	15.00	2.89	80.81	2.00	4.37	0.00	0.00
25.79	16.95	15.12	3.00	82.31	2.00	4.64	0.00	0.00
25.90	17.27	15.38	3.05	83.51	2.00	5.21	0.00	0.00
25.95	17.61	15.69	3.09	84.65	2.00	5.86	0.00	0.00
26.01	17.91	15.95	3.13	85.69	2.00	6.41	0.00	0.00
26.09	18.18	16.17	3.15	86.33	2.00	6.87	0.00	0.00
26.13	18.45	16.42	3.12	86.44	2.00	7.36	0.00	0.00
26.19	18.70	16.64	3.09	86.46	2.00	7.80	0.00	0.00
26.27	19.02	16.91	3.05	86.51	2.00	8.33	0.00	0.00
26.34	19.37	17.21	3.02	86.57	2.00	8.92	0.00	0.00
26.39	19.82	17.61	2.97	86.67	2.00	9.69	0.00	0.00
26.47	20.03	17.78	2.96	86.84	2.00	9.99	0.00	0.00
26.54	20.17	17.88	2.96	87.04	2.00	10.18	0.00	0.00
26.58	20.25	17.94	2.97	87.28	2.00	10.28	0.00	0.00
26.67	20.26	17.90	2.99	87.44	2.00	10.22	0.00	0.00
26.73	20.23	17.85	3.01	87.63	2.00	10.12	0.00	0.00
26.78	20.16	17.76	3.02	87.62	2.00	9.95	0.00	0.00
26.85	20.02	17.59	3.02	87.31	2.00	9.64	0.00	0.00
26.93	19.87	17.41	3.01	86.92	2.00	9.31	0.00	0.00
26.98	19.65	17.18	3.02	86.58	2.00	8.87	0.00	0.00
27.03	19.48	17.00	3.02	86.22	2.00	8.52	0.00	0.00
27.13	19.33	16.82	3.01	85.81	2.00	8.15	0.00	0.00
27.17	19.21	16.68	3.01	85.52	2.00	7.90	0.00	0.00
27.24	19.07	16.52	3.00	85.13	2.00	7.58	0.00	0.00
27.33	18.86	16.29	3.01	84.82	2.00	7.10	0.00	0.00
27.36	18.63	16.05	3.04	84.72	2.00	6.62	0.00	0.00
27.43	18.38	15.79	3.07	84.58	2.00	6.07	0.00	0.00
27.53	18.13	15.51	3.10	84.43	2.00	5.49	0.00	0.00
27.60	17.91	15.28	3.10	84.05	2.00	4.99	0.00	0.00
27.63	17.70	15.07	3.09	83.47	2.00	4.54	0.00	0.00
27.72	17.52	14.87	3.06	82.75	2.00	4.09	0.00	0.00
27.77	17.42	14.76	3.02	81.96	2.00	3.85	0.00	0.00
27.84	17.46	14.77	2.96	81.27	2.00	3.87	0.00	0.00
27.93	17.59	14.85	2.89	80.54	2.00	4.06	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
27.97	17.75	14.99	2.81	79.83	2.00	4.35	0.00	0.00
28.02	17.89	15.10	2.75	79.27	2.00	4.59	0.00	0.00
28.12	18.02	15.18	2.69	78.68	2.00	4.77	0.00	0.00
28.17	18.17	15.30	2.64	78.11	2.00	5.03	0.00	0.00
28.22	18.28	15.38	2.60	77.72	2.00	5.21	0.00	0.00
28.32	18.30	15.36	2.59	77.57	2.00	5.17	0.00	0.00
28.36	18.44	15.47	2.57	77.50	2.00	5.41	0.00	0.00
28.42	18.88	15.86	2.54	77.73	2.00	6.23	0.00	0.00
28.48	19.31	16.24	2.50	77.88	2.00	7.00	0.00	0.00
28.57	19.74	16.59	2.47	78.01	2.00	7.72	0.00	0.00
28.62	20.26	17.05	2.47	78.69	2.00	8.61	0.00	0.00
28.72	20.70	17.42	2.48	79.51	2.00	9.31	0.00	0.00
28.75	20.99	17.67	2.55	80.80	2.00	9.79	0.00	0.00
28.82	21.18	17.81	2.63	82.31	2.00	10.05	0.00	0.00
28.87	21.43	18.01	2.70	83.55	2.00	10.42	0.00	0.00
28.95	21.50	18.04	2.76	84.52	2.00	10.47	0.00	0.00
29.02	21.16	17.70	2.82	84.88	2.00	9.84	0.00	0.00
29.07	20.75	17.30	2.89	85.13	2.00	9.09	0.00	0.00
29.16	20.35	16.89	2.96	85.34	2.00	8.30	0.00	0.00
29.21	19.87	16.43	3.00	85.00	2.00	7.39	0.00	0.00
29.29	19.55	16.11	2.99	84.30	2.00	6.74	0.00	0.00
29.36	19.41	15.96	2.93	83.25	2.00	6.43	0.00	0.00
29.40	19.63	16.15	2.81	81.96	2.00	6.81	0.00	0.00
29.47	19.93	16.39	2.69	80.76	2.00	7.31	0.00	0.00
29.56	20.29	16.68	2.58	79.82	2.00	7.89	0.00	0.00
29.60	20.70	17.04	2.51	79.35	2.00	8.58	0.00	0.00
29.71	21.12	17.37	2.47	79.22	2.00	9.22	0.00	0.00
29.75	21.53	17.73	2.44	79.29	2.00	9.89	0.00	0.00
29.79	21.94	18.08	2.42	79.51	2.00	10.55	0.00	0.00
29.86	22.27	18.35	2.42	80.05	2.00	11.03	0.00	0.00
29.95	22.60	18.60	2.44	80.71	2.00	11.48	0.00	0.00
30.04	22.87	18.80	2.47	81.39	2.00	11.83	0.00	0.00
30.06	23.16	19.06	2.49	82.09	2.00	12.28	0.00	0.00
30.15	23.46	19.28	2.51	82.82	2.00	12.67	0.00	0.00
30.20	23.80	19.56	2.55	83.76	2.00	13.14	0.00	0.00
30.28	24.21	19.88	2.60	85.00	2.00	13.68	0.00	0.00
30.35	24.55	20.15	2.65	86.18	2.00	14.13	0.00	0.00
30.39	24.85	20.40	2.69	87.23	2.00	14.53	0.00	0.00
30.45	25.09	20.58	2.73	88.07	2.00	14.82	0.00	0.00
30.54	25.24	20.67	2.77	88.84	2.00	14.96	0.00	0.00
30.60	25.09	20.50	2.84	89.73	2.00	14.69	0.00	0.00
30.67	24.78	20.19	2.92	90.39	2.00	14.19	0.00	0.00
30.74	24.41	19.81	2.99	90.80	2.00	13.57	0.00	0.00
30.79	23.91	19.35	3.05	90.92	2.00	12.78	0.00	0.00
30.86	23.34	18.82	3.04	89.92	2.00	11.86	0.00	0.00
30.95	22.81	18.30	3.02	88.68	2.00	10.95	0.00	0.00
30.99	22.25	17.80	2.98	87.32	2.00	10.03	0.00	0.00
31.05	21.70	17.29	2.94	85.85	2.00	9.08	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
31.14	21.26	16.87	2.87	84.23	2.00	8.27	0.00	0.00
31.19	20.89	16.53	2.79	82.51	2.00	7.60	0.00	0.00
31.26	20.65	16.30	2.71	80.93	2.00	7.13	0.00	0.00
31.34	20.47	16.11	2.62	79.38	2.00	6.74	0.00	0.00
31.39	20.36	16.00	2.53	77.95	2.00	6.52	0.00	0.00
31.45	20.34	15.96	2.50	77.54	2.00	6.44	0.00	0.00
31.54	20.41	15.99	2.47	77.08	2.00	6.50	0.00	0.00
31.57	20.70	16.25	2.40	76.52	2.00	7.02	0.00	0.00
31.63	21.26	16.71	2.35	76.48	2.00	7.95	0.00	0.00
31.73	21.86	17.20	2.32	76.78	2.00	8.90	0.00	0.00
31.77	22.65	17.87	2.30	77.50	2.00	10.16	0.00	0.00
31.84	23.37	18.47	2.30	78.35	2.00	11.25	0.00	0.00
31.93	23.77	18.77	2.35	79.51	2.00	11.79	0.00	0.00
31.98	24.18	19.10	2.38	80.58	2.00	12.36	0.00	0.00
32.05	24.49	19.34	2.40	81.23	2.00	12.76	0.00	0.00
32.09	24.69	19.49	2.44	82.07	2.00	13.02	0.00	0.00
32.17	24.77	19.51	2.51	83.19	2.00	13.06	0.00	0.00
32.22	24.56	19.30	2.57	83.85	2.00	12.71	0.00	0.00
32.32	24.33	19.06	2.62	84.14	2.00	12.29	0.00	0.00
32.35	24.03	18.79	2.64	84.07	2.00	11.82	0.00	0.00
32.43	23.76	18.52	2.65	83.76	2.00	11.34	0.00	0.00
32.52	23.80	18.52	2.61	83.20	2.00	11.34	0.00	0.00
32.57	23.78	18.49	2.58	82.69	2.00	11.28	0.00	0.00
32.62	23.81	18.49	2.55	82.23	2.00	11.29	0.00	0.00
32.71	23.88	18.52	2.51	81.74	2.00	11.33	0.00	0.00
32.76	23.92	18.53	2.48	81.27	2.00	11.36	0.00	0.00
32.82	24.02	18.59	2.47	81.13	2.00	11.47	0.00	0.00
32.90	24.07	18.60	2.46	81.14	2.00	11.49	0.00	0.00
32.96	24.10	18.60	2.48	81.31	2.00	11.48	0.00	0.00
33.02	24.16	18.62	2.50	81.74	2.00	11.52	0.00	0.00
33.11	24.21	18.62	2.53	82.23	2.00	11.53	0.00	0.00
33.17	24.32	18.69	2.56	82.78	2.00	11.64	0.00	0.00
33.22	24.44	18.77	2.59	83.33	2.00	11.78	0.00	0.00
33.31	24.49	18.77	2.62	83.74	2.00	11.78	0.00	0.00
33.34	24.51	18.77	2.64	84.12	2.00	11.78	0.00	0.00
33.41	24.52	18.75	2.65	84.14	2.00	11.74	0.00	0.00
33.49	24.50	18.69	2.66	84.23	2.00	11.65	0.00	0.00
33.57	24.46	18.63	2.67	84.25	2.00	11.53	0.00	0.00
33.61	24.39	18.55	2.66	84.05	2.00	11.39	0.00	0.00
33.68	24.39	18.52	2.65	83.87	2.00	11.34	0.00	0.00
33.76	24.41	18.50	2.65	83.81	2.00	11.31	0.00	0.00
33.81	24.49	18.55	2.66	84.09	2.00	11.39	0.00	0.00
33.88	24.70	18.69	2.69	84.79	2.00	11.64	0.00	0.00
33.95	24.97	18.88	2.75	85.91	2.00	11.97	0.00	0.00
34.01	25.30	19.12	2.82	87.39	2.00	12.39	0.00	0.00
34.06	25.58	19.32	2.91	88.93	2.00	12.74	0.00	0.00
34.13	25.81	19.47	3.00	90.56	2.00	12.99	0.00	0.00
34.21	25.99	19.58	3.13	92.59	2.00	13.17	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
34.25	26.13	19.66	3.25	94.49	2.00	13.32	0.00	0.00
34.35	26.22	19.68	3.37	96.14	2.00	13.34	0.00	0.00
34.40	26.26	19.68	3.47	97.59	2.00	13.34	0.00	0.00
34.49	26.26	19.62	3.56	98.65	2.00	13.25	0.00	0.00
34.53	26.21	19.56	3.63	99.47	2.00	13.14	0.00	0.00
34.60	26.13	19.45	3.69	100.04	2.00	12.96	0.00	0.00
34.65	26.05	19.36	3.74	100.56	2.00	12.80	0.00	0.00
34.74	26.01	19.28	3.79	101.09	2.00	12.66	0.00	0.00
34.80	25.96	19.21	3.81	101.16	2.00	12.54	0.00	0.00
34.85	25.81	19.06	3.82	100.98	2.00	12.29	0.00	0.00
34.93	25.63	18.87	3.83	100.73	2.00	11.96	0.00	0.00
34.98	25.37	18.64	3.85	100.52	2.00	11.55	0.00	0.00
35.05	25.16	18.43	3.86	100.22	2.00	11.19	0.00	0.00
35.15	24.95	18.22	3.86	99.73	2.00	10.80	0.00	0.00
35.20	24.79	18.07	3.84	99.23	2.00	10.53	0.00	0.00
35.25	24.73	18.00	3.78	98.37	2.00	10.40	0.00	0.00
35.33	24.69	17.94	3.70	97.25	2.00	10.29	0.00	0.00
35.40	24.65	17.88	3.64	96.31	2.00	10.19	0.00	0.00
35.44	24.77	17.97	3.58	95.69	2.00	10.34	0.00	0.00
35.50	24.93	18.08	3.51	95.04	2.00	10.55	0.00	0.00
35.59	25.19	18.26	3.42	94.29	2.00	10.88	0.00	0.00
35.64	25.39	18.41	3.36	93.74	2.00	11.14	0.00	0.00
35.70	25.56	18.52	3.32	93.37	2.00	11.35	0.00	0.00
35.79	25.66	18.57	3.29	93.11	2.00	11.43	0.00	0.00
35.83	25.68	18.57	3.30	93.19	2.00	11.42	0.00	0.00
35.94	25.66	18.50	3.30	93.05	2.00	11.31	0.00	0.00
35.98	25.62	18.45	3.29	92.86	2.00	11.22	0.00	0.00
36.03	25.44	18.29	3.28	92.51	2.00	10.93	0.00	0.00
36.09	25.17	18.05	3.29	92.12	2.00	10.49	0.00	0.00
36.17	24.77	17.69	3.31	91.67	2.00	9.84	0.00	0.00
36.23	24.32	17.31	3.32	91.14	2.00	9.11	0.00	0.00
36.29	23.82	16.88	3.33	90.37	2.00	8.28	0.00	0.00
36.38	23.31	16.44	3.32	89.39	2.00	7.41	0.00	0.00
36.44	22.79	16.01	3.30	88.30	2.00	6.53	0.00	0.00
36.49	22.27	15.58	3.29	87.26	2.00	5.64	0.00	0.00
36.59	21.81	15.17	3.27	86.23	2.00	4.77	0.00	0.00
36.63	21.37	14.82	3.25	85.28	2.00	3.98	0.00	0.00
36.69	21.03	14.53	3.23	84.42	2.00	3.33	0.00	0.00
36.78	20.84	14.35	3.19	83.57	2.00	2.93	0.00	0.00
36.82	20.75	14.28	3.14	82.81	2.00	2.75	0.00	0.00
36.88	20.77	14.28	3.09	82.14	2.00	2.75	0.00	0.00
36.98	20.81	14.28	3.04	81.57	2.00	2.76	0.00	0.00
37.02	20.88	14.33	2.99	81.09	2.00	2.87	0.00	0.00
37.11	20.95	14.36	2.95	80.71	2.00	2.94	0.00	0.00
37.18	21.00	14.38	2.93	80.40	2.00	2.98	0.00	0.00
37.22	21.09	14.44	2.91	80.31	2.00	3.12	0.00	0.00
37.28	21.20	14.50	2.91	80.51	2.00	3.27	0.00	0.00
37.38	21.34	14.58	2.94	80.94	2.00	3.44	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
37.42	21.53	14.71	2.96	81.52	2.00	3.73	0.00	0.00
37.48	21.73	14.84	2.99	82.15	2.00	4.03	0.00	0.00
37.57	21.96	14.99	2.99	82.37	2.00	4.36	0.00	0.00
37.62	22.23	15.19	2.94	82.24	2.00	4.79	0.00	0.00
37.68	22.47	15.36	2.92	82.23	2.00	5.16	0.00	0.00
37.77	22.71	15.51	2.92	82.51	2.00	5.49	0.00	0.00
37.82	22.94	15.67	2.91	82.75	2.00	5.83	0.00	0.00
37.88	23.12	15.79	2.89	82.68	2.00	6.09	0.00	0.00
37.96	23.17	15.81	2.87	82.50	2.00	6.11	0.00	0.00
38.00	23.39	15.98	2.83	82.25	2.00	6.47	0.00	0.00
38.08	23.81	16.29	2.75	81.76	2.00	7.10	0.00	0.00
38.12	24.25	16.62	2.69	81.46	2.00	7.77	0.00	0.00
38.20	24.73	16.97	2.64	81.32	2.00	8.46	0.00	0.00
38.27	25.09	17.24	2.61	81.32	2.00	8.97	0.00	0.00
38.36	25.41	17.46	2.58	81.20	2.00	9.39	0.00	0.00
38.40	25.70	17.66	2.58	81.62	2.00	9.78	0.00	0.00
38.46	26.47	18.23	2.62	83.02	2.00	10.82	0.00	0.00
38.56	27.70	19.15	2.62	84.43	2.00	12.44	0.00	0.00
38.59	29.37	20.44	2.62	86.38	2.00	14.59	0.00	0.00
38.66	31.20	21.82	2.65	88.94	2.00	16.76	0.00	0.00
38.76	33.40	23.47	2.72	92.37	2.00	19.16	0.00	0.00
38.79	35.50	25.07	2.82	96.19	2.00	21.33	0.00	0.00
38.87	37.72	26.74	2.91	100.07	2.00	23.46	0.00	0.00
38.91	40.14	28.57	3.02	104.53	2.00	25.64	0.00	0.00
39.00	42.72	30.49	3.11	108.61	2.00	27.80	0.00	0.00
39.04	45.10	32.30	3.18	112.39	2.00	29.70	0.00	0.00
39.11	47.29	33.92	3.32	117.11	2.00	31.31	0.00	0.00
39.20	48.94	35.08	3.50	122.18	2.00	32.42	0.00	0.00
39.24	50.53	36.22	3.69	127.28	2.00	33.48	0.00	0.00
39.31	52.73	37.81	3.88	133.19	2.00	34.90	0.00	0.00
39.38	55.69	39.99	4.05	139.41	2.00	36.75	0.00	0.00
39.46	60.04	43.26	4.12	145.48	2.00	39.34	0.00	0.00
39.51	65.29	47.26	4.16	151.76	0.98	42.26	8.63	0.00
39.60	70.72	51.35	4.18	157.81	2.00	45.00	0.00	0.00
39.66	76.31	55.62	4.17	163.13	2.00	47.64	0.00	0.00
39.71	81.88	59.90	4.12	167.53	2.00	50.09	0.00	0.00
39.79	87.58	64.26	4.07	171.54	2.00	52.40	0.00	0.00
39.85	95.63	70.52	3.93	175.53	2.00	55.47	0.00	0.00
39.91	106.85	79.35	3.70	179.41	2.00	59.37	0.00	0.00
39.99	119.15	89.06	3.47	183.29	2.00	63.18	0.00	0.00
40.05	129.29	97.07	3.33	187.43	2.00	66.02	0.00	0.00
40.11	136.78	102.96	3.26	191.07	2.00	67.96	0.00	0.00
40.20	143.19	107.89	3.21	194.51	1.85	69.51	0.54	0.00
40.25	148.57	112.05	3.20	198.24	1.95	70.76	0.47	0.00
40.30	153.54	115.86	3.21	202.36	2.00	71.86	0.00	0.00
40.40	158.28	119.33	3.23	206.73	2.00	72.83	0.00	0.00
40.43	160.83	121.18	3.29	210.64	2.00	73.34	0.00	0.00
40.49	158.66	119.18	3.40	212.23	2.00	72.79	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
40.55	153.03	114.40	3.58	212.96	2.00	71.44	0.00	0.00
40.64	146.29	108.69	3.77	213.19	2.00	69.75	0.00	0.00
40.69	139.08	102.89	3.85	209.39	2.00	67.94	0.00	0.00
40.80	131.58	96.75	3.94	205.56	2.00	65.91	0.00	0.00
40.84	124.38	91.04	4.02	201.42	2.00	63.90	0.00	0.00
40.89	117.63	85.72	4.05	196.43	1.90	61.91	0.21	0.00
40.96	111.06	80.55	4.06	190.55	1.75	59.86	0.30	0.00
41.04	102.35	73.71	4.13	184.44	1.61	56.93	0.44	0.00
41.10	99.25	71.35	4.00	178.24	1.47	55.86	0.65	0.00
41.15	97.87	70.36	3.81	172.25	1.35	55.40	0.96	0.00
41.24	97.68	70.24	3.60	166.66	1.24	55.34	1.39	0.00
41.28	99.20	71.40	3.54	166.12	1.23	55.88	1.44	0.00
41.38	101.83	73.35	3.43	165.46	1.22	56.77	1.50	0.00
41.41	104.74	75.62	3.34	165.26	1.21	57.78	1.52	0.00
41.49	107.45	77.66	3.25	165.11	1.21	58.65	1.54	0.00
41.54	110.57	80.08	3.15	164.61	1.20	59.67	1.59	0.00
41.61	115.81	84.17	2.99	164.14	1.19	61.31	1.64	0.00
41.69	117.25	85.22	2.93	163.47	1.18	61.72	1.71	0.00
41.77	119.86	87.23	2.83	162.49	1.16	62.49	1.83	0.00
41.84	123.49	90.09	2.70	161.41	1.15	63.55	1.96	0.00
41.88	127.85	93.59	2.56	160.50	1.13	64.81	2.09	0.00
41.94	131.93	96.89	2.43	159.54	1.11	65.96	2.35	0.00
42.04	134.67	99.03	2.32	158.18	1.09	66.68	2.49	0.00
42.08	136.97	100.92	2.23	157.19	1.07	67.30	2.61	0.00
42.17	138.21	101.83	2.18	156.42	1.06	67.60	2.70	0.00
42.19	138.80	102.31	2.15	155.99	1.05	67.76	2.75	0.00
42.28	138.18	101.67	2.15	155.46	1.05	67.55	2.81	0.00
42.33	136.34	100.08	2.19	155.19	1.04	67.02	2.85	0.00
42.39	134.30	98.29	2.24	155.17	1.04	66.43	2.85	0.00
42.48	131.81	96.09	2.31	155.16	1.04	65.68	2.85	0.00
42.53	129.20	93.85	2.39	155.50	1.05	64.91	2.92	0.00
42.59	127.38	92.22	2.47	156.51	1.06	64.33	2.72	0.00
42.67	125.63	90.61	2.56	157.58	1.08	63.74	2.52	0.00
42.73	123.71	88.91	2.65	158.66	1.10	63.12	2.34	0.00
42.81	122.02	87.35	2.73	159.78	1.12	62.54	2.16	0.00
42.88	120.34	85.85	2.82	160.92	1.14	61.96	2.00	0.00
42.92	118.62	84.36	2.91	162.09	1.16	61.39	1.84	0.00
43.00	116.94	82.86	3.00	163.09	1.18	60.80	1.72	0.00
43.08	115.33	81.42	3.08	164.14	1.20	60.22	1.60	0.00
43.12	113.76	80.08	3.17	165.17	1.22	59.67	1.49	0.00
43.21	112.31	78.78	3.24	165.99	1.23	59.13	1.41	0.00
43.27	110.92	77.57	3.32	166.88	1.25	58.61	1.33	0.00
43.32	109.66	76.47	3.40	167.89	1.27	58.15	1.24	0.00
43.39	108.32	75.29	3.48	168.83	1.29	57.63	1.16	0.00
43.47	106.67	73.88	3.56	169.61	1.31	57.01	1.10	0.00
43.52	104.14	71.84	3.66	169.87	1.31	56.09	1.08	0.00
43.59	100.71	69.13	3.76	169.67	1.31	54.81	0.76	0.00
43.67	95.95	65.41	3.91	168.99	1.29	52.99	0.81	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
43.72	90.92	61.58	4.04	167.69	1.27	51.00	0.92	0.00
43.80	85.34	57.38	4.13	164.49	1.21	48.67	1.25	0.00
43.85	79.27	52.89	4.21	160.68	1.14	45.98	1.81	0.00
43.92	73.36	48.52	4.29	156.49	1.07	43.13	0.00	0.00
43.97	67.07	43.93	4.39	151.94	2.00	39.85	0.00	0.00
44.04	60.96	39.49	4.47	146.78	2.00	36.34	0.00	0.00
44.13	55.89	35.84	4.49	141.26	2.00	33.13	0.00	0.00
44.17	51.45	32.70	4.44	135.24	2.00	30.11	0.00	0.00
44.24	48.10	30.35	4.30	129.08	2.00	27.64	0.00	0.00
44.31	44.77	28.03	4.18	123.05	2.00	25.01	0.00	0.00
44.37	41.91	26.01	4.12	118.63	2.00	22.55	0.00	0.00
44.45	39.66	24.44	4.03	114.39	2.00	20.49	0.00	0.00
44.50	37.60	23.02	3.88	109.69	2.00	18.52	0.00	0.00
44.56	35.90	21.87	3.68	104.78	2.00	16.82	0.00	0.00
44.65	34.31	20.77	3.51	100.36	2.00	15.13	0.00	0.00
44.71	32.87	19.79	3.38	96.76	2.00	13.52	0.00	0.00
44.76	31.94	19.15	3.31	94.64	2.00	12.44	0.00	0.00
44.85	31.50	18.82	3.26	93.38	2.00	11.87	0.00	0.00
44.88	31.89	19.08	3.25	93.73	2.00	12.32	0.00	0.00
44.96	33.14	19.89	3.30	95.77	2.00	13.70	0.00	0.00
45.05	34.91	21.05	3.37	98.87	2.00	15.57	0.00	0.00
45.10	37.96	23.13	3.40	102.79	2.00	18.68	0.00	0.00
45.17	42.19	26.02	3.41	107.56	2.00	22.57	0.00	0.00
45.25	47.02	29.34	3.39	112.20	2.00	26.52	0.00	0.00
45.30	52.22	32.95	3.36	116.82	2.00	30.36	0.00	0.00
45.37	57.78	36.82	3.33	121.32	0.61	34.02	51.20	0.00
45.45	63.35	40.70	3.32	126.01	0.66	37.33	51.20	0.00
45.49	68.76	44.49	3.32	130.44	0.71	40.27	51.20	0.00
45.54	73.67	47.92	3.33	134.70	0.76	42.72	51.20	0.00
45.61	77.83	50.78	3.36	138.84	0.81	44.63	50.44	0.00
45.68	80.57	52.60	3.43	142.61	0.86	45.79	10.74	0.00
45.75	81.52	53.13	3.53	145.41	0.90	46.13	8.02	0.00
45.80	81.02	52.66	3.62	147.01	0.93	45.83	6.79	0.00
45.89	79.02	51.09	3.72	147.36	0.93	44.83	20.04	0.00
45.93	75.96	48.83	3.82	146.80	0.93	43.34	22.08	0.00
46.01	71.99	45.92	3.92	145.23	0.90	41.31	27.76	0.00
46.08	67.58	42.73	4.03	143.16	2.00	38.94	0.00	0.00
46.15	63.04	39.49	4.13	140.53	2.00	36.33	0.00	0.00
46.20	58.87	36.55	4.19	137.15	2.00	33.78	0.00	0.00
46.29	55.12	33.92	4.21	133.38	2.00	31.31	0.00	0.00
46.34	52.58	32.18	4.14	129.41	2.00	29.58	0.00	0.00
46.41	51.11	31.17	4.05	126.27	2.00	28.53	0.00	0.00
46.49	50.54	30.77	3.95	124.04	2.00	28.10	0.00	0.00
46.53	50.02	30.42	3.89	122.34	2.00	27.72	0.00	0.00
46.60	49.69	30.18	3.82	120.82	2.00	27.46	0.00	0.00
46.69	49.41	29.96	3.75	119.37	2.00	27.22	0.00	0.00
46.73	49.11	29.76	3.69	118.07	2.00	26.99	0.00	0.00
46.79	48.28	29.16	3.69	117.13	2.00	26.33	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
46.89	47.27	28.41	3.71	116.30	2.00	25.47	0.00	0.00
46.94	45.73	27.31	3.81	116.20	2.00	24.16	0.00	0.00
46.99	44.21	26.21	3.99	117.04	2.00	22.80	0.00	0.00
47.09	42.89	25.21	4.18	118.10	2.00	21.52	0.00	0.00
47.13	41.81	24.41	4.37	119.40	2.00	20.46	0.00	0.00
47.19	42.93	25.12	4.40	121.09	2.00	21.40	0.00	0.00
47.28	44.62	26.20	4.37	122.72	2.00	22.79	0.00	0.00
47.34	47.80	28.32	4.25	124.80	2.00	25.36	0.00	0.00
47.38	54.01	32.56	3.97	127.10	2.00	29.97	0.00	0.00
47.50	61.85	37.94	3.65	129.13	2.00	35.01	0.00	0.00
47.51	72.72	45.60	3.29	131.32	2.00	41.08	0.00	0.00
47.60	84.57	54.02	2.97	133.24	2.00	46.67	0.00	0.00
47.69	97.97	63.68	2.69	135.74	2.00	52.10	0.00	0.00
47.70	112.59	74.42	2.45	139.45	2.00	57.25	0.00	0.00
47.80	125.94	84.20	2.29	143.67	2.00	61.32	0.00	0.00
47.84	139.39	94.21	2.15	148.64	2.00	65.03	0.00	0.00
47.91	151.60	103.34	2.03	153.39	2.00	68.08	0.00	0.00
48.00	161.22	110.51	1.95	157.32	2.00	70.30	0.00	0.00
48.04	168.84	116.26	1.89	160.83	2.00	71.97	0.00	0.00
48.11	173.11	119.39	1.86	162.82	1.21	72.85	1.86	0.00
48.19	175.86	121.33	1.85	164.25	1.23	73.38	1.74	0.00
48.23	176.73	121.85	1.86	165.07	1.25	73.52	1.68	0.00
48.30	176.31	121.32	1.89	165.40	1.26	73.38	1.65	0.00
48.40	175.47	120.40	1.92	165.61	1.26	73.13	1.64	0.00
48.45	174.20	119.22	1.97	165.83	1.27	72.80	1.62	0.00
48.50	172.99	118.09	2.01	166.15	1.27	72.49	1.59	0.00
48.59	172.02	117.09	2.05	166.44	1.28	72.21	1.57	0.00
48.66	171.41	116.42	2.08	166.75	1.29	72.02	1.55	0.00
48.69	171.02	116.01	2.10	167.02	1.29	71.90	1.53	0.00
48.78	170.78	115.63	2.11	167.11	1.29	71.79	1.52	0.00
48.85	170.69	115.43	2.12	167.08	1.29	71.74	1.52	0.00
48.89	170.46	115.19	2.12	166.89	1.29	71.67	1.53	0.00
48.98	170.14	114.81	2.12	166.50	1.28	71.56	1.56	0.00
49.03	169.85	114.51	2.12	166.24	1.28	71.47	1.57	0.00
49.09	170.04	114.53	2.12	166.41	1.28	71.48	1.56	0.00
49.19	170.33	114.54	2.13	166.69	1.29	71.48	1.54	0.00
49.23	170.93	114.85	2.15	167.48	1.30	71.57	1.48	0.00
49.28	172.83	116.08	2.16	169.12	1.34	71.92	1.38	0.00
49.39	175.13	117.50	2.18	170.85	1.37	72.32	1.28	0.00
49.42	177.65	119.21	2.19	172.90	1.42	72.80	1.17	0.00
49.49	180.57	121.19	2.19	174.81	1.46	73.34	1.07	0.00
49.59	183.31	123.06	2.17	175.79	1.48	73.85	1.03	0.00
49.62	185.69	124.84	2.14	176.44	1.50	74.32	1.00	0.00
49.69	187.40	126.08	2.10	176.46	1.50	74.65	1.00	0.00
49.74	188.52	127.02	2.04	175.46	1.48	74.89	1.04	0.00
49.83	188.92	127.47	1.97	173.39	1.43	75.01	1.53	0.00
49.88	187.83	126.90	1.89	170.54	1.37	74.86	1.28	0.00
49.93	185.76	125.55	1.83	167.52	1.31	74.51	1.46	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
50.03	183.09	123.66	1.78	164.16	2.00	74.01	0.00	0.00
50.13	179.38	120.92	1.75	160.78	2.00	73.27	0.00	0.00
50.14	175.33	117.93	1.76	158.34	2.00	72.44	0.00	0.00
50.23	171.23	114.71	1.78	156.17	2.00	71.53	0.00	0.00
50.27	166.80	111.30	1.82	154.26	2.00	70.53	0.00	0.00
50.34	161.56	107.09	1.91	153.13	2.00	69.26	0.00	0.00
50.43	155.42	102.13	2.04	152.59	2.00	67.70	0.00	0.00
50.49	148.95	97.05	2.17	152.09	2.00	66.01	0.00	0.00
50.53	142.05	91.83	2.28	150.66	2.00	64.19	0.00	0.00
50.62	134.51	86.16	2.40	148.86	2.00	62.08	0.00	0.00
50.68	127.42	80.95	2.49	146.80	2.00	60.02	0.00	0.00
50.73	120.26	75.84	2.55	143.66	2.00	57.87	0.00	0.00
50.82	113.01	70.70	2.59	139.77	2.00	55.55	0.00	0.00
50.88	106.07	65.87	2.60	135.47	2.00	53.22	0.00	0.00
50.93	99.91	61.68	2.57	130.70	2.00	51.05	0.00	0.00
51.02	94.44	57.95	2.52	125.94	2.00	48.99	0.00	0.00
51.09	89.17	54.38	2.49	121.63	2.00	46.89	0.00	0.00
51.12	83.92	50.82	2.49	118.24	2.00	44.66	0.00	0.00
51.19	78.60	47.16	2.52	115.41	2.00	42.20	0.00	0.00
51.28	73.22	43.44	2.60	113.38	2.00	39.48	0.00	0.00
51.32	68.33	40.10	2.69	111.88	2.00	36.84	0.00	0.00
51.39	64.21	37.28	2.75	110.12	2.00	34.43	0.00	0.00
51.48	60.31	34.64	2.82	108.49	2.00	32.01	0.00	0.00
51.53	56.31	31.96	2.91	107.03	2.00	29.35	0.00	0.00
51.62	52.17	29.22	2.97	104.75	2.00	26.40	0.00	0.00
51.68	48.21	26.65	3.00	101.81	2.00	23.36	0.00	0.00
51.73	45.05	24.64	2.98	98.61	2.00	20.77	0.00	0.00
51.82	42.62	23.13	2.87	94.59	2.00	18.68	0.00	0.00
51.87	40.63	21.96	2.66	89.44	2.00	16.96	0.00	0.00
51.92	38.75	20.83	2.50	85.24	2.00	15.23	0.00	0.00
51.97	36.63	19.52	2.42	82.16	2.00	13.08	0.00	0.00
52.04	34.50	18.20	2.35	79.17	2.00	10.76	0.00	0.00
52.12	32.86	17.19	2.26	76.28	2.00	8.87	0.00	0.00
52.18	31.94	16.63	2.17	74.17	2.00	7.78	0.00	0.00
52.23	31.17	16.17	2.09	72.25	2.00	6.86	0.00	0.00
52.31	30.59	15.81	2.02	70.63	2.00	6.13	0.00	0.00
52.37	30.00	15.45	1.98	69.47	2.00	5.36	0.00	0.00
52.44	29.15	14.92	1.96	68.42	2.00	4.20	0.00	0.00
52.53	28.21	14.32	1.93	67.11	2.00	2.85	0.00	0.00
52.57	27.07	13.61	1.91	65.80	2.00	1.18	0.00	0.00
52.64	25.80	12.83	1.89	64.33	2.00	0.00	0.00	0.00
52.72	24.50	12.02	1.87	62.73	2.00	0.00	0.00	0.00
52.78	23.17	11.20	1.85	61.00	2.00	0.00	0.00	0.00
52.83	21.95	10.48	1.78	58.82	2.00	0.00	0.00	0.00
52.93	20.80	9.79	1.70	56.64	2.00	0.00	0.00	0.00
52.96	19.98	9.31	1.62	54.75	2.00	0.00	0.00	0.00
53.04	19.46	9.00	1.56	53.36	2.00	0.00	0.00	0.00
53.12	19.06	8.76	1.50	52.22	2.00	0.00	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
53.17	18.87	8.66	1.45	51.39	2.00	0.00	0.00	0.00
53.22	18.81	8.63	1.42	50.85	2.00	0.00	0.00	0.00
53.29	18.81	8.63	1.38	50.31	2.00	0.00	0.00	0.00
53.37	18.84	8.64	1.35	49.99	2.00	0.00	0.00	0.00
53.42	18.86	8.64	1.37	50.29	2.00	0.00	0.00	0.00
53.49	18.87	8.63	1.38	50.42	2.00	0.00	0.00	0.00
53.58	18.87	8.62	1.37	50.25	2.00	0.00	0.00	0.00
53.63	18.86	8.62	1.35	49.93	2.00	0.00	0.00	0.00
53.68	18.86	8.62	1.33	49.62	2.00	0.00	0.00	0.00
53.78	18.86	8.61	1.30	49.21	2.00	0.00	0.00	0.00
53.84	18.85	8.61	1.27	48.88	2.00	0.00	0.00	0.00
53.88	18.83	8.59	1.26	48.64	2.00	0.00	0.00	0.00
53.94	18.84	8.60	1.24	48.39	2.00	0.00	0.00	0.00
54.03	18.88	8.61	1.23	48.30	2.00	0.00	0.00	0.00
54.08	18.95	8.65	1.23	48.29	2.00	0.00	0.00	0.00
54.16	19.04	8.69	1.24	48.52	2.00	0.00	0.00	0.00
54.20	19.16	8.75	1.25	48.76	2.00	0.00	0.00	0.00
54.28	19.40	8.88	1.24	48.91	2.00	0.00	0.00	0.00
54.35	19.73	9.07	1.23	49.08	2.00	0.00	0.00	0.00
54.43	20.10	9.29	1.22	49.24	2.00	0.00	0.00	0.00
54.48	20.43	9.48	1.20	49.24	2.00	0.00	0.00	0.00
54.55	20.63	9.61	1.18	49.16	2.00	0.00	0.00	0.00
54.63	20.78	9.69	1.17	48.99	2.00	0.00	0.00	0.00
54.67	20.84	9.73	1.15	48.82	2.00	0.00	0.00	0.00
54.74	20.86	9.74	1.12	48.33	2.00	0.00	0.00	0.00
54.82	20.83	9.72	1.09	47.83	2.00	0.00	0.00	0.00
54.87	20.69	9.64	1.07	47.41	2.00	0.00	0.00	0.00
54.92	20.46	9.49	1.06	47.15	2.00	0.00	0.00	0.00
55.02	20.18	9.31	1.07	46.96	2.00	0.00	0.00	0.00
55.06	19.93	9.14	1.10	47.27	2.00	0.00	0.00	0.00
55.14	19.85	9.06	1.15	47.81	2.00	0.00	0.00	0.00
55.22	19.85	9.03	1.20	48.59	2.00	0.00	0.00	0.00
55.27	20.07	9.13	1.26	49.60	2.00	0.00	0.00	0.00
55.37	20.38	9.28	1.34	50.87	2.00	0.00	0.00	0.00
55.42	20.73	9.45	1.41	52.18	2.00	0.00	0.00	0.00
55.47	21.01	9.58	1.48	53.37	2.00	0.00	0.00	0.00
55.53	21.18	9.65	1.54	54.26	2.00	0.00	0.00	0.00
55.58	21.32	9.71	1.58	54.99	2.00	0.00	0.00	0.00
55.67	21.43	9.75	1.60	55.30	2.00	0.00	0.00	0.00
55.72	21.47	9.77	1.60	55.36	2.00	0.00	0.00	0.00
55.81	21.47	9.76	1.59	55.13	2.00	0.00	0.00	0.00
55.86	21.33	9.68	1.56	54.58	2.00	0.00	0.00	0.00
55.92	21.20	9.60	1.55	54.29	2.00	0.00	0.00	0.00
56.01	21.13	9.54	1.55	54.26	2.00	0.00	0.00	0.00
56.05	21.34	9.65	1.57	54.73	2.00	0.00	0.00	0.00
56.11	21.83	9.91	1.64	56.06	2.00	0.00	0.00	0.00
56.21	22.16	10.04	1.76	57.94	2.00	0.00	0.00	0.00
56.26	22.93	10.44	1.89	60.32	2.00	0.00	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
56.32	24.21	11.14	2.02	63.19	2.00	0.00	0.00	0.00
56.41	25.83	12.03	2.12	66.12	2.00	0.00	0.00	0.00
56.46	27.60	13.03	2.20	68.96	2.00	0.00	0.00	0.00
56.50	29.45	14.10	2.23	71.15	2.00	2.34	0.00	0.00
56.59	31.25	15.12	2.26	73.31	2.00	4.66	0.00	0.00
56.65	32.82	16.01	2.32	75.45	2.00	6.54	0.00	0.00
56.70	34.20	16.78	2.41	78.08	2.00	8.07	0.00	0.00
56.78	36.90	18.34	2.43	80.75	2.00	11.03	0.00	0.00
56.85	39.96	20.15	2.44	83.47	2.00	14.12	0.00	0.00
56.89	43.42	22.21	2.44	86.30	2.00	17.34	0.00	0.00
56.98	46.67	24.13	2.47	89.17	2.00	20.08	0.00	0.00
57.04	49.64	25.88	2.52	92.28	2.00	22.38	0.00	0.00
57.09	52.24	27.37	2.61	95.85	2.00	24.23	0.00	0.00
57.16	54.64	28.73	2.70	99.15	2.00	25.83	0.00	0.00
57.24	57.27	30.26	2.75	101.95	2.00	27.55	0.00	0.00
57.29	60.78	32.45	2.68	103.21	2.00	29.85	0.00	0.00
57.37	63.44	34.10	2.61	103.78	2.00	31.48	0.00	0.00
57.42	65.25	35.24	2.56	103.95	2.00	32.57	0.00	0.00
57.49	65.85	35.59	2.54	103.82	2.00	32.90	0.00	0.00
57.59	66.05	35.68	2.51	103.46	2.00	32.99	0.00	0.00
57.64	65.55	35.37	2.49	102.67	2.00	32.69	0.00	0.00
57.69	64.18	34.52	2.46	101.10	2.00	31.90	0.00	0.00
57.77	62.46	33.48	2.41	98.82	2.00	30.88	0.00	0.00
57.82	59.62	31.73	2.37	96.27	2.00	29.11	0.00	0.00
57.89	55.11	28.91	2.41	93.85	2.00	26.04	0.00	0.00
57.97	50.06	25.76	2.48	91.40	2.00	22.23	0.00	0.00
58.03	44.69	22.48	2.55	88.53	2.00	17.73	0.00	0.00
58.09	39.45	19.34	2.60	84.77	2.00	12.77	0.00	0.00
58.17	34.44	16.39	2.62	80.43	2.00	7.31	0.00	0.00
58.21	30.20	13.95	2.60	75.82	2.00	1.99	0.00	0.00
58.28	27.04	12.17	2.52	71.37	2.00	0.00	0.00	0.00
58.37	24.54	10.77	2.49	68.16	2.00	0.00	0.00	0.00
58.40	22.95	9.96	2.49	66.27	2.00	0.00	0.00	0.00
58.48	22.15	9.54	2.59	66.39	2.00	0.00	0.00	0.00
58.53	22.64	9.78	2.68	67.91	2.00	0.00	0.00	0.00
58.63	24.67	10.80	2.63	69.73	2.00	0.00	0.00	0.00
58.67	27.06	12.07	2.57	71.85	2.00	0.00	0.00	0.00
58.73	29.10	13.23	2.55	73.85	2.00	0.23	0.00	0.00
58.82	30.69	14.10	2.57	75.70	2.00	2.33	0.00	0.00
58.89	31.56	14.56	2.60	77.01	2.00	3.41	0.00	0.00
58.93	31.85	14.72	2.60	77.30	2.00	3.76	0.00	0.00
59.00	31.94	14.76	2.57	76.96	2.00	3.86	0.00	0.00
59.06	31.98	14.82	2.44	75.29	2.00	3.99	0.00	0.00
59.13	30.97	14.30	2.28	72.23	2.00	2.80	0.00	0.00
59.22	28.79	13.06	2.22	69.22	2.00	0.00	0.00	0.00
59.28	26.42	11.72	2.18	66.38	2.00	0.00	0.00	0.00
59.33	24.42	10.60	2.13	63.61	2.00	0.00	0.00	0.00
59.41	23.06	9.86	2.04	61.04	2.00	0.00	0.00	0.00

:: Estimation of post-earthquake lateral Displacements :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	R_f (%)	$Q_{tn,cs}$	FS	D_r	$Gamma_{max}$ (%)	Lat. disp. (in)
59.47	22.47	9.55	1.94	59.23	2.00	0.00	0.00	0.00
59.52	22.50	9.59	1.84	58.08	2.00	0.00	0.00	0.00
59.61	22.85	9.81	1.74	57.18	2.00	0.00	0.00	0.00
59.67	23.26	10.05	1.68	56.84	2.00	0.00	0.00	0.00
59.72	23.81	10.35	1.68	57.41	2.00	0.00	0.00	0.00
59.78	24.44	10.69	1.70	58.31	2.00	0.00	0.00	0.00
59.87	25.08	11.02	1.72	59.13	2.00	0.00	0.00	0.00
59.92	25.83	11.52	1.52	57.00	2.00	0.00	0.00	0.00
60.00	26.38	11.92	1.34	54.71	2.00	0.00	0.00	0.00
60.05	26.95	12.34	1.15	52.22	2.00	0.00	0.00	0.00
60.11	27.25	12.61	0.98	49.42	2.00	0.00	0.00	0.00
60.21	27.38	12.81	0.81	46.28	2.00	0.00	0.00	0.00
60.25	27.51	13.05	0.63	42.60	2.00	0.00	0.00	0.00
60.31	27.68	13.38	0.43	37.95	2.00	0.61	0.00	0.00
60.40	27.58	13.65	0.21	32.18	2.00	1.27	0.00	0.00
60.43	27.43	N/A	0.00	-1.00	2.00	0.00	0.00	0.00
60.51	27.37	N/A	0.00	-1.00	2.00	0.00	0.00	0.00

Total estimated displacement: 6.76

Abbreviations

q_t: Total cone resistance
Q_{tn}: Adjusted cone resistance to an effective overburden stress of 1 atm
R_f: Friction ration
$Q_{tn,cs}$: Adjusted and corrected cone resistance due to fines
FS: Calculated factor of safety against liquefaction
D_r: Calculated relative density
$Gamma_{max}$: Calculated maximum cyclic shear strain
Lat. disp.: Lateral displacement

:: Strength loss calculation (Robertson (2009) ::

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
0.10	49.56	79.61	1.20	95.18	1.91	N/A	N/A
0.15	58.10	93.33	1.16	108.18	1.87	N/A	N/A
0.23	73.22	117.62	1.10	129.38	1.79	N/A	N/A
0.30	87.93	141.25	1.05	148.50	1.72	N/A	N/A
0.34	102.61	164.82	1.00	164.76	1.64	N/A	N/A
0.39	122.42	196.64	1.00	196.64	1.57	N/A	N/A
0.50	138.33	222.19	1.00	222.19	1.53	N/A	N/A
0.53	149.90	240.79	1.00	240.79	1.51	N/A	N/A
0.60	156.28	251.04	1.00	251.04	1.50	N/A	N/A
0.69	161.75	259.81	1.00	259.81	1.50	N/A	N/A
0.72	165.78	266.28	1.00	266.28	1.50	N/A	N/A
0.80	157.82	253.48	1.00	253.48	1.54	N/A	N/A
0.87	146.07	234.60	1.00	234.60	1.60	N/A	N/A
0.92	130.10	208.94	1.02	213.65	1.68	N/A	N/A
1.00	112.06	179.95	1.09	196.18	1.78	N/A	N/A
1.08	96.24	154.52	1.17	180.26	1.88	N/A	N/A
1.12	83.03	133.29	1.26	167.79	1.97	N/A	N/A
1.20	73.32	117.68	1.36	159.61	2.04	N/A	N/A
1.30	64.42	103.38	1.48	153.19	2.11	N/A	N/A
1.34	56.90	91.29	1.62	148.32	2.18	N/A	N/A
1.40	51.93	83.30	1.73	144.16	2.23	N/A	N/A
1.49	47.87	76.77	1.82	140.01	2.26	N/A	N/A
1.54	45.15	72.38	1.87	135.47	2.28	N/A	N/A
1.59	43.56	69.84	1.88	131.38	2.28	N/A	N/A
1.68	42.04	67.38	1.90	127.84	2.28	N/A	N/A
1.74	40.63	65.11	1.92	125.10	2.29	N/A	N/A
1.79	39.35	63.05	1.96	123.29	2.30	N/A	N/A
1.87	38.01	60.89	2.01	122.18	2.32	N/A	N/A
1.94	36.70	58.77	2.07	121.55	2.34	N/A	N/A
1.98	35.46	56.78	2.14	121.52	2.36	N/A	N/A
2.04	34.18	54.71	2.22	121.49	2.38	N/A	N/A
2.13	32.82	52.53	2.32	121.63	2.40	N/A	N/A
2.17	31.54	50.47	2.40	121.32	2.42	N/A	N/A
2.24	30.07	48.09	2.50	120.38	2.44	N/A	N/A
2.33	28.70	45.88	2.60	119.10	2.46	N/A	N/A
2.36	27.08	43.27	2.72	117.61	2.49	N/A	N/A
2.43	25.49	40.73	2.84	115.57	2.51	N/A	N/A
2.52	23.95	38.24	2.97	113.59	2.54	N/A	N/A
2.56	22.45	35.82	3.12	111.86	2.57	N/A	N/A
2.64	20.99	33.47	3.30	110.58	2.60	N/A	N/A
2.74	19.57	31.18	3.53	110.08	2.63	N/A	N/A
2.78	18.20	28.97	3.81	110.38	2.67	N/A	N/A
2.83	17.12	27.24	4.09	111.38	2.71	N/A	N/A
2.90	16.00	25.43	4.43	112.72	2.76	N/A	N/A
2.98	15.24	24.21	4.71	114.07	2.79	N/A	N/A
3.03	14.73	23.37	4.94	115.52	2.82	N/A	N/A
3.10	14.29	22.66	5.14	116.59	2.84	N/A	N/A
3.18	13.94	22.10	5.32	117.49	2.86	N/A	N/A

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
3.23	13.72	21.74	5.44	118.30	2.87	N/A	N/A
3.29	13.57	21.50	5.51	118.48	2.88	N/A	N/A
3.38	13.45	21.30	5.55	118.25	2.89	N/A	N/A
3.42	13.36	21.13	5.56	117.44	2.89	N/A	N/A
3.51	13.27	20.98	5.55	116.42	2.88	N/A	N/A
3.58	13.16	20.80	5.54	115.30	2.88	N/A	N/A
3.62	13.00	20.54	5.55	114.00	2.88	N/A	N/A
3.69	12.78	20.18	5.57	112.51	2.89	N/A	N/A
3.77	12.51	19.74	5.61	110.72	2.89	N/A	N/A
3.82	12.27	19.35	5.62	108.69	2.89	N/A	N/A
3.89	12.10	19.07	5.59	106.68	2.89	N/A	N/A
3.97	11.87	18.70	5.60	104.67	2.89	N/A	N/A
4.03	11.66	18.35	5.61	103.05	2.89	N/A	N/A
4.10	11.44	17.99	5.65	101.73	2.90	N/A	N/A
4.15	11.24	17.67	5.70	100.72	2.90	N/A	N/A
4.24	11.07	17.39	5.75	100.03	2.91	N/A	N/A
4.29	10.91	17.13	5.83	99.87	2.91	N/A	N/A
4.35	10.77	16.89	5.92	100.05	2.92	N/A	N/A
4.44	10.61	16.63	6.04	100.44	2.93	N/A	N/A
4.48	10.42	16.32	6.17	100.73	2.95	N/A	N/A
4.54	10.34	16.19	6.25	101.19	2.95	N/A	N/A
4.61	10.34	16.19	6.28	101.63	2.96	N/A	N/A
4.69	10.46	16.37	6.22	101.92	2.95	N/A	N/A
4.74	10.72	16.78	6.09	102.16	2.94	N/A	N/A
4.82	11.01	17.24	5.94	102.49	2.92	N/A	N/A
4.86	11.27	17.65	5.82	102.81	2.91	N/A	N/A
4.94	11.44	17.92	5.75	103.07	2.91	N/A	N/A
5.02	11.53	18.06	5.72	103.35	2.90	N/A	N/A
5.09	11.59	18.15	5.71	103.54	2.90	N/A	N/A
5.13	11.58	18.13	5.71	103.44	2.90	N/A	N/A
5.23	11.50	17.99	5.73	103.05	2.90	N/A	N/A
5.28	11.33	17.72	5.78	102.47	2.91	N/A	N/A
5.33	11.01	17.20	5.90	101.40	2.92	N/A	N/A
5.39	10.68	16.65	6.01	100.10	2.93	N/A	N/A
5.48	10.37	16.15	6.11	98.65	2.94	N/A	N/A
5.52	10.16	15.81	6.14	97.14	2.94	N/A	N/A
5.58	10.05	15.63	6.11	95.46	2.94	N/A	N/A
5.67	9.93	15.43	6.08	93.87	2.94	N/A	N/A
5.73	9.80	15.21	6.07	92.37	2.94	N/A	N/A
5.78	9.62	14.92	6.08	90.75	2.94	N/A	N/A
5.88	9.43	14.60	6.11	89.22	2.94	N/A	N/A
5.92	9.27	14.35	6.12	87.78	2.94	N/A	N/A
5.97	9.11	14.09	6.12	86.19	2.94	N/A	N/A
6.08	8.96	13.84	6.10	84.43	2.94	N/A	N/A
6.11	8.81	13.59	6.07	82.50	2.94	N/A	N/A
6.18	8.66	13.35	6.05	80.80	2.94	N/A	N/A
6.27	8.55	13.16	6.02	79.18	2.93	N/A	N/A
6.33	8.51	13.09	5.94	77.79	2.92	N/A	N/A

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
6.38	8.57	13.18	5.85	77.06	2.91	N/A	N/A
6.44	8.68	13.35	5.71	76.30	2.90	N/A	N/A
6.50	8.77	13.50	5.63	75.97	2.89	N/A	N/A
6.57	8.86	13.64	5.60	76.38	2.89	N/A	N/A
6.67	8.93	13.74	5.62	77.22	2.89	N/A	N/A
6.72	9.00	13.85	5.67	78.47	2.90	N/A	N/A
6.76	9.05	13.91	5.75	79.99	2.91	N/A	N/A
6.83	9.07	13.94	5.85	81.62	2.92	N/A	N/A
6.92	9.05	13.90	5.98	83.10	2.93	N/A	N/A
6.97	9.00	13.82	6.10	84.30	2.94	N/A	N/A
7.04	8.95	13.74	6.22	85.48	2.95	N/A	N/A
7.12	8.92	13.67	6.32	86.38	2.96	N/A	N/A
7.16	8.93	13.69	6.35	86.88	2.96	N/A	N/A
7.25	8.98	13.77	6.33	87.12	2.96	N/A	N/A
7.32	9.04	13.86	6.29	87.24	2.96	N/A	N/A
7.37	9.15	14.04	6.23	87.46	2.95	N/A	N/A
7.43	9.31	14.29	6.14	87.79	2.94	N/A	N/A
7.52	9.51	14.59	6.04	88.11	2.93	N/A	N/A
7.56	9.71	14.92	5.96	88.91	2.93	N/A	N/A
7.63	9.90	15.21	5.91	89.83	2.92	N/A	N/A
7.71	10.03	15.41	5.89	90.76	2.92	N/A	N/A
7.75	10.10	15.52	5.90	91.59	2.92	N/A	N/A
7.83	10.07	15.47	5.97	92.32	2.93	N/A	N/A
7.88	10.00	15.34	6.06	92.94	2.94	N/A	N/A
7.97	9.86	15.11	6.16	93.11	2.95	N/A	N/A
8.01	9.69	14.84	6.25	92.80	2.95	N/A	N/A
8.08	9.54	14.59	6.33	92.37	2.96	N/A	N/A
8.18	9.42	14.39	6.36	91.57	2.97	N/A	N/A
8.22	9.30	14.19	6.39	90.63	2.97	N/A	N/A
8.28	9.26	14.13	6.36	89.79	2.96	N/A	N/A
8.35	9.23	14.08	6.33	89.07	2.96	N/A	N/A
8.43	9.24	14.09	6.28	88.45	2.96	N/A	N/A
8.48	9.27	14.12	6.22	87.82	2.95	N/A	N/A
8.56	9.28	14.13	6.18	87.32	2.95	N/A	N/A
8.63	9.26	14.10	6.18	87.07	2.95	N/A	N/A
8.68	9.20	14.00	6.20	86.84	2.95	N/A	N/A
8.76	9.10	13.83	6.25	86.49	2.95	N/A	N/A
8.80	9.00	13.66	6.28	85.75	2.96	N/A	N/A
8.88	8.84	13.40	6.34	84.89	2.96	N/A	N/A
8.94	8.67	13.13	6.39	83.89	2.97	N/A	N/A
8.99	8.51	12.85	6.45	82.88	2.97	N/A	N/A
9.07	8.35	12.59	6.50	81.85	2.98	1.10	1.10
9.14	8.17	12.30	6.56	80.67	2.98	1.06	1.06
9.22	8.01	12.03	6.59	79.33	2.99	1.03	1.03
9.27	7.85	11.77	6.62	77.97	2.99	1.00	1.00
9.37	7.71	11.54	6.62	76.43	2.99	0.98	0.98
9.42	7.56	11.30	6.65	75.16	2.99	0.95	0.95
9.47	7.39	11.03	6.70	73.85	3.00	0.92	0.92

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
9.52	7.22	10.74	6.77	72.68	3.00	0.89	0.89
9.62	7.05	10.46	6.83	71.47	3.01	0.86	0.86
9.67	6.93	10.26	6.85	70.25	3.01	0.84	0.84
9.73	7.01	10.39	6.73	69.94	3.00	0.35	0.85
9.82	7.17	10.63	6.59	70.09	2.99	0.86	0.86
9.86	7.39	10.98	6.42	70.54	2.97	0.88	0.88
9.92	7.76	11.57	6.24	72.17	2.95	0.93	0.93
10.02	8.17	12.23	6.08	74.33	2.94	0.97	0.97
10.06	8.66	13.01	5.92	77.10	2.92	1.03	1.03
10.12	9.25	13.95	5.76	80.39	2.91	1.10	1.10
10.21	9.84	14.90	5.62	83.79	2.89	1.16	1.16
10.25	10.49	15.94	5.48	87.38	2.88	1.24	1.24
10.31	11.09	16.89	5.36	90.46	2.86	1.30	1.30
10.41	11.67	17.81	5.23	93.18	2.85	1.36	1.36
10.45	12.28	18.80	5.10	95.78	2.84	1.43	1.43
10.52	12.84	19.69	4.98	98.11	2.82	1.49	1.49
10.61	13.40	20.57	4.87	100.13	2.81	1.54	1.54
10.64	13.96	21.47	4.75	101.99	2.80	1.61	1.61
10.71	14.46	22.27	4.65	103.52	2.78	1.66	1.66
10.81	14.98	22.93	4.57	104.69	2.77	1.70	1.70
10.85	15.43	23.52	4.50	105.85	2.77	1.75	1.75
10.91	15.78	23.92	4.47	106.92	2.76	1.78	1.78
10.96	16.11	24.32	4.44	108.02	2.76	1.81	1.81
11.03	16.41	24.63	4.43	109.16	2.76	1.83	1.83
11.10	16.63	24.81	4.43	110.05	2.76	1.84	1.84
11.20	16.84	24.94	4.45	110.91	2.76	1.85	1.85
11.24	17.06	25.18	4.44	111.77	2.76	1.87	1.87
11.30	17.28	25.38	4.43	112.54	2.76	1.88	1.88
11.36	17.47	25.53	4.44	113.33	2.76	1.89	1.89
11.43	17.60	25.59	4.45	113.92	2.76	1.90	1.90
11.50	17.65	25.53	4.47	114.20	2.76	1.89	1.89
11.58	17.64	25.35	4.50	114.11	2.77	1.87	1.87
11.63	17.60	25.19	4.52	113.88	2.77	1.86	1.86
11.70	17.51	24.92	4.55	113.42	2.77	1.84	1.84
11.79	17.40	24.59	4.57	112.43	2.77	1.81	1.81
11.84	17.23	24.24	4.58	111.06	2.78	1.79	1.79
11.90	17.01	23.80	4.59	109.21	2.78	1.75	1.75
11.98	16.94	23.51	4.54	106.65	2.77	1.73	1.73
12.02	16.91	23.37	4.45	103.99	2.76	1.73	1.73
12.09	17.00	23.38	4.34	101.38	2.75	1.73	1.73
12.14	17.14	23.48	4.22	99.12	2.73	1.74	1.74
12.21	17.31	23.60	4.11	96.91	2.71	1.76	1.76
12.29	17.62	23.89	3.97	94.76	2.70	1.78	1.78
12.34	17.88	24.16	3.86	93.21	2.68	1.81	1.81
12.44	18.17	24.43	3.78	92.34	2.67	1.83	1.83
12.49	18.50	24.79	3.70	91.81	2.66	1.86	1.86
12.57	18.63	24.90	3.69	91.83	2.66	1.87	1.87
12.64	18.76	25.02	3.69	92.19	2.66	1.88	1.88

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
12.68	18.84	25.09	3.69	92.51	2.66	1.88	1.88
12.73	18.86	25.08	3.70	92.86	2.66	1.88	1.88
12.84	18.81	24.93	3.73	92.99	2.66	1.87	1.87
12.89	18.69	24.74	3.76	93.03	2.67	1.85	1.85
12.98	18.58	24.53	3.78	92.82	2.67	1.83	1.83
13.00	18.45	24.34	3.80	92.48	2.67	1.82	1.82
13.08	18.34	24.13	3.82	92.17	2.68	1.80	1.80
13.14	18.25	23.98	3.84	92.18	2.68	1.79	1.79
13.23	18.22	23.86	3.87	92.33	2.68	1.78	1.78
13.27	18.26	23.89	3.89	92.99	2.69	1.78	1.78
13.34	18.38	24.01	3.91	93.85	2.69	1.79	1.79
13.43	18.50	24.12	3.94	94.98	2.69	1.79	1.79
13.47	18.61	24.25	3.98	96.47	2.70	1.80	1.80
13.54	18.62	24.25	4.06	98.37	2.71	1.80	1.80
13.63	18.55	24.12	4.16	100.47	2.72	1.78	1.78
13.67	18.46	24.02	4.27	102.51	2.74	1.77	1.77
13.72	18.35	23.87	4.36	104.15	2.75	1.76	1.76
13.83	18.16	23.56	4.47	105.29	2.76	1.73	1.73
13.88	17.91	23.21	4.57	106.09	2.77	1.70	1.70
13.94	17.59	22.77	4.68	106.54	2.79	1.67	1.67
13.98	17.20	22.26	4.80	106.80	2.80	1.63	1.63
14.06	16.75	21.64	4.93	106.76	2.82	1.58	1.58
14.14	16.40	21.13	5.02	106.09	2.83	1.54	1.54
14.18	16.13	20.75	5.06	105.03	2.83	1.51	1.51
14.26	15.81	20.27	5.12	103.76	2.84	1.47	1.47
14.33	15.47	19.77	5.17	102.31	2.84	1.43	1.43
14.37	15.15	19.33	5.23	101.05	2.85	1.40	1.40
14.45	14.78	18.80	5.31	99.86	2.86	1.36	1.36
14.54	14.43	18.29	5.39	98.53	2.87	1.32	1.32
14.61	14.15	17.89	5.43	97.16	2.87	1.29	1.29
14.65	13.92	17.55	5.45	95.67	2.87	1.27	1.27
14.74	13.69	17.19	5.48	94.20	2.88	1.24	1.24
14.80	13.48	16.88	5.50	92.84	2.88	1.22	1.22
14.85	13.31	16.63	5.51	91.55	2.88	1.20	1.20
14.90	13.18	16.42	5.51	90.43	2.88	1.18	1.18
15.00	13.08	16.23	5.50	89.23	2.88	1.17	1.17
15.05	13.03	16.13	5.46	88.03	2.88	1.16	1.16
15.10	12.95	15.99	5.44	86.96	2.87	1.15	1.15
15.17	12.87	15.84	5.43	85.96	2.87	1.14	1.14
15.25	12.79	15.69	5.42	85.06	2.87	1.13	1.13
15.30	12.71	15.56	5.41	84.17	2.87	1.12	1.12
15.36	12.61	15.39	5.41	83.29	2.87	1.11	1.11
15.45	12.52	15.23	5.41	82.36	2.87	1.10	1.10
15.49	12.41	15.06	5.41	81.49	2.87	1.09	1.09
15.57	12.29	14.87	5.43	80.69	2.87	1.07	1.07
15.64	12.18	14.70	5.45	80.12	2.87	1.06	1.06
15.69	12.09	14.56	5.48	79.78	2.88	1.05	1.05
15.77	11.98	14.39	5.53	79.54	2.88	1.04	1.04

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
15.85	11.82	14.15	5.62	79.57	2.89	1.02	1.02
15.89	11.63	13.90	5.73	79.64	2.90	1.00	1.00
15.99	11.42	13.60	5.86	79.77	2.92	0.98	0.98
16.05	11.18	13.29	6.02	80.06	2.93	0.95	0.95
16.09	10.95	13.00	6.17	80.24	2.95	0.93	0.93
16.16	10.68	12.63	6.35	80.24	2.96	0.90	0.90
16.24	10.38	12.21	6.55	79.98	2.98	0.87	0.87
16.30	10.10	11.82	6.73	79.51	3.00	0.84	0.84
16.34	9.80	11.42	6.90	78.82	3.01	0.82	0.82
16.44	9.56	11.07	7.03	77.83	3.03	0.79	0.79
16.48	9.34	10.78	7.14	76.90	3.03	0.77	0.77
16.54	9.16	10.52	7.21	75.93	3.04	0.75	0.75
16.63	9.03	10.33	7.26	74.93	3.04	0.74	0.74
16.69	8.94	10.19	7.26	73.96	3.04	0.73	0.73
16.74	8.91	10.14	7.20	72.99	3.04	0.72	0.72
16.82	8.90	10.10	7.14	72.11	3.03	0.72	0.72
16.90	8.88	10.04	7.09	71.21	3.03	0.72	0.72
16.94	8.94	10.09	6.99	70.59	3.02	0.72	0.72
17.03	8.98	10.11	6.93	70.04	3.02	0.72	0.72
17.07	8.99	10.11	6.88	69.52	3.01	0.33	0.72
17.13	8.97	10.07	6.91	69.59	3.02	0.31	0.72
17.21	8.95	10.01	7.00	70.13	3.02	0.72	0.72
17.26	9.06	10.15	7.04	71.40	3.03	0.72	0.72
17.33	9.38	10.52	6.96	73.22	3.02	0.75	0.75
17.41	9.84	11.06	6.80	75.19	3.00	0.79	0.79
17.48	10.47	11.81	6.55	77.41	2.98	0.84	0.84
17.53	11.02	12.49	6.38	79.66	2.97	0.89	0.89
17.61	11.59	13.15	6.21	81.69	2.95	0.94	0.94
17.67	12.19	13.84	6.04	83.58	2.93	0.99	0.99
17.72	12.75	14.48	5.83	84.41	2.91	1.04	1.04
17.82	13.25	15.02	5.63	84.59	2.89	1.08	1.08
17.88	13.49	15.26	5.52	84.31	2.88	1.10	1.10
17.92	13.46	15.20	5.50	83.57	2.88	1.09	1.09
18.02	13.24	14.89	5.54	82.55	2.88	1.07	1.07
18.07	12.93	14.50	5.62	81.41	2.89	1.04	1.04
18.14	12.53	14.00	5.73	80.27	2.90	1.00	1.00
18.20	12.25	13.64	5.80	79.05	2.91	0.98	0.98
18.27	12.04	13.36	5.84	78.00	2.91	0.96	0.96
18.32	11.94	13.22	5.87	77.57	2.92	0.95	0.95
18.38	11.89	13.14	5.89	77.43	2.92	0.94	0.94
18.47	11.95	13.17	5.88	77.44	2.92	0.94	0.94
18.51	12.13	13.36	5.80	77.55	2.91	0.96	0.96
18.57	12.37	13.61	5.71	77.73	2.90	0.98	0.98
18.67	12.54	13.76	5.64	77.68	2.89	0.99	0.99
18.71	12.82	14.06	5.50	77.30	2.88	1.01	1.01
18.81	13.01	14.23	5.40	76.81	2.87	1.02	1.02
18.86	13.15	14.35	5.30	76.04	2.86	1.03	1.03
18.91	13.20	14.38	5.22	74.98	2.85	1.04	1.04

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
18.97	13.23	14.38	5.14	73.92	2.84	1.04	1.04
19.06	13.28	14.39	5.06	72.81	2.83	1.04	1.04
19.11	13.35	14.44	5.01	72.28	2.83	1.04	1.04
19.21	13.59	14.66	4.91	71.98	2.81	1.06	1.06
19.27	14.02	15.12	4.80	72.63	2.80	1.09	1.09
19.31	14.78	15.97	4.65	74.33	2.78	1.16	1.16
19.41	16.02	17.32	4.45	77.15	2.76	1.26	1.26
19.46	17.53	19.00	4.24	80.48	2.73	1.38	1.38
19.51	19.45	21.12	3.95	83.35	2.69	1.54	1.54
19.56	21.37	23.23	3.70	85.96	2.66	1.70	1.70
19.63	22.73	24.70	3.59	88.73	2.64	1.81	1.81
19.71	23.86	25.91	3.53	91.41	2.63	1.90	1.90
19.80	24.54	26.62	3.55	94.40	2.63	1.95	1.95
19.82	25.00	27.14	3.59	97.46	2.64	1.99	1.99
19.91	24.70	26.78	3.75	100.50	2.67	1.96	1.96
19.95	25.51	27.65	3.70	102.41	2.66	2.02	2.02
20.02	26.21	28.37	3.67	103.99	2.65	2.07	2.07
20.11	26.74	28.89	3.67	105.99	2.65	2.11	2.11
20.15	27.33	29.52	3.67	108.26	2.65	2.16	2.16
20.24	28.50	30.73	3.59	110.30	2.64	2.25	2.25
20.29	30.11	32.44	3.46	112.35	2.62	2.37	2.37
20.36	32.24	34.68	3.30	114.39	2.60	0.69	0.69
20.41	34.37	36.93	3.15	116.15	2.57	0.70	0.70
20.48	36.70	39.36	2.99	117.57	2.54	0.70	0.70
20.56	36.71	39.31	3.05	120.01	2.55	0.70	0.70
20.66	35.87	38.33	3.20	122.64	2.58	0.70	0.70
20.71	34.56	36.92	3.39	125.21	2.61	2.70	2.70
20.74	32.81	35.04	3.63	127.16	2.65	2.56	2.56
20.82	30.71	32.73	3.91	128.02	2.69	2.38	2.38
20.91	28.18	29.93	4.29	128.26	2.74	2.17	2.17
20.95	25.20	26.71	4.78	127.59	2.80	1.93	1.93
21.03	22.22	23.43	5.39	126.25	2.87	1.68	1.68
21.11	19.51	20.46	6.08	124.37	2.94	1.46	1.46
21.15	17.79	18.53	6.55	121.46	2.98	1.32	1.32
21.22	17.08	17.69	6.69	118.28	2.99	1.26	1.26
21.26	16.89	17.46	6.61	115.41	2.99	1.25	1.25
21.34	17.65	18.26	6.21	113.47	2.95	1.30	1.30
21.41	19.06	19.71	5.70	112.40	2.90	1.41	1.41
21.48	21.43	22.18	5.03	111.65	2.83	1.60	1.60
21.52	24.31	25.19	4.41	111.09	2.75	1.82	1.82
21.61	27.48	28.46	3.88	110.44	2.68	2.06	2.06
21.66	30.96	32.05	3.43	109.80	2.62	2.33	2.33
21.76	34.47	35.62	3.08	109.70	2.56	0.69	0.69
21.81	38.00	39.23	2.81	110.19	2.51	0.70	0.70
21.85	41.47	42.78	2.59	110.86	2.46	0.71	0.71
21.92	44.74	46.08	2.42	111.70	2.43	0.72	0.72
22.01	47.97	49.30	2.29	113.00	2.39	0.73	0.73
22.09	50.58	51.88	2.20	114.29	2.37	0.74	0.74

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
22.12	53.36	54.70	2.12	116.09	2.35	0.75	0.75
22.20	56.17	57.47	2.05	117.96	2.33	0.75	0.75
22.29	59.12	60.36	1.99	119.83	2.31	0.76	0.76
22.31	62.19	63.46	1.91	121.53	2.29	0.77	0.77
22.40	64.97	66.14	1.86	122.95	2.27	0.77	0.77
22.45	67.71	68.85	1.81	124.62	2.25	0.78	0.78
22.51	70.07	71.14	1.77	126.20	2.24	0.78	0.78
22.60	72.08	73.01	1.74	126.79	2.23	0.78	0.78
22.64	73.69	74.54	1.69	125.89	2.21	0.79	0.79
22.75	74.70	75.33	1.65	124.57	2.19	0.79	0.79
22.80	75.19	75.71	1.63	123.38	2.18	0.79	0.79
22.85	75.11	75.52	1.62	122.10	2.18	0.79	0.79
22.91	74.60	74.89	1.61	120.84	2.18	0.79	0.79
22.99	74.00	74.15	1.63	120.66	2.18	0.79	0.79
23.08	73.13	73.14	1.65	120.60	2.19	0.78	0.78
23.10	71.45	71.45	1.69	120.90	2.21	0.78	0.78
23.18	69.67	69.57	1.75	121.90	2.23	0.78	0.78
23.26	67.59	67.40	1.85	124.40	2.27	0.77	0.77
23.30	65.04	64.84	1.96	127.10	2.30	0.77	0.77
23.37	61.42	61.15	2.11	128.98	2.35	0.76	0.76
23.46	57.08	56.69	2.29	130.03	2.40	0.75	0.75
23.51	52.26	51.82	2.52	130.48	2.45	0.74	0.74
23.56	47.18	46.67	2.76	128.64	2.50	0.73	0.73
23.63	42.20	41.60	3.03	125.94	2.55	0.71	0.71
23.72	37.88	37.16	3.28	121.71	2.59	0.70	0.70
23.79	33.58	32.77	3.56	116.82	2.64	2.36	2.36
23.87	29.73	28.83	3.86	111.37	2.68	2.08	2.08
23.91	26.52	25.57	4.12	105.33	2.72	1.84	1.84
23.96	24.53	23.53	4.24	99.72	2.73	1.69	1.69
24.02	23.43	22.37	4.26	95.24	2.73	1.61	1.61
24.11	22.70	21.59	4.25	91.81	2.73	1.55	1.55
24.20	22.25	21.07	4.27	90.02	2.74	1.51	1.51
24.22	21.77	20.58	4.32	88.89	2.74	1.48	1.48
24.31	21.48	20.25	4.36	88.24	2.75	1.45	1.45
24.39	21.34	20.06	4.39	88.00	2.75	1.44	1.44
24.42	21.29	20.00	4.39	87.84	2.75	1.44	1.44
24.51	21.19	19.85	4.40	87.42	2.75	1.42	1.42
24.55	21.20	19.83	4.37	86.67	2.75	1.42	1.42
24.63	20.99	19.58	4.37	85.49	2.75	1.41	1.41
24.71	20.75	19.30	4.36	84.15	2.75	1.39	1.39
24.75	20.38	18.92	4.36	82.54	2.75	1.36	1.36
24.81	19.90	18.40	4.39	80.85	2.75	1.32	1.32
24.90	19.35	17.82	4.44	79.04	2.76	1.28	1.28
24.94	18.79	17.25	4.46	76.96	2.76	1.24	1.24
25.01	18.24	16.67	4.51	75.15	2.77	1.20	1.20
25.07	17.67	16.09	4.57	73.59	2.77	1.15	1.15
25.15	17.08	15.48	4.69	72.54	2.79	1.11	1.11
25.20	16.59	14.97	4.82	72.13	2.80	1.07	1.07

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
25.28	16.23	14.59	4.94	72.03	2.82	1.04	1.04
25.35	16.04	14.38	5.03	72.34	2.83	1.03	1.03
25.40	16.03	14.36	5.07	72.78	2.83	1.03	1.03
25.48	16.13	14.42	5.12	73.82	2.84	1.03	1.03
25.55	16.28	14.54	5.19	75.56	2.85	1.04	1.04
25.60	16.45	14.69	5.26	77.34	2.85	1.05	1.05
25.67	16.64	14.85	5.33	79.14	2.86	1.06	1.06
25.75	16.81	15.00	5.39	80.81	2.87	1.07	1.07
25.79	16.95	15.12	5.45	82.31	2.87	1.08	1.08
25.90	17.27	15.38	5.43	83.51	2.87	1.10	1.10
25.95	17.61	15.69	5.40	84.65	2.87	1.12	1.12
26.01	17.91	15.95	5.37	85.69	2.87	1.14	1.14
26.09	18.18	16.17	5.34	86.33	2.86	1.16	1.16
26.13	18.45	16.42	5.27	86.44	2.85	1.17	1.17
26.19	18.70	16.64	5.20	86.46	2.85	1.19	1.19
26.27	19.02	16.91	5.12	86.51	2.84	1.21	1.21
26.34	19.37	17.21	5.03	86.57	2.83	1.23	1.23
26.39	19.82	17.61	4.92	86.67	2.82	1.26	1.26
26.47	20.03	17.78	4.88	86.84	2.81	1.27	1.27
26.54	20.17	17.88	4.87	87.04	2.81	1.28	1.28
26.58	20.25	17.94	4.87	87.28	2.81	1.28	1.28
26.67	20.26	17.90	4.88	87.44	2.81	1.28	1.28
26.73	20.23	17.85	4.91	87.63	2.81	1.28	1.28
26.78	20.16	17.76	4.93	87.62	2.82	1.27	1.27
26.85	20.02	17.59	4.96	87.31	2.82	1.26	1.26
26.93	19.87	17.41	4.99	86.92	2.82	1.24	1.24
26.98	19.65	17.18	5.04	86.58	2.83	1.23	1.23
27.03	19.48	17.00	5.07	86.22	2.83	1.21	1.21
27.13	19.33	16.82	5.10	85.81	2.84	1.20	1.20
27.17	19.21	16.68	5.13	85.52	2.84	1.19	1.19
27.24	19.07	16.52	5.15	85.13	2.84	1.18	1.18
27.33	18.86	16.29	5.21	84.82	2.85	1.16	1.16
27.36	18.63	16.05	5.28	84.72	2.86	1.15	1.15
27.43	18.38	15.79	5.36	84.58	2.86	1.13	1.13
27.53	18.13	15.51	5.44	84.43	2.87	1.11	1.11
27.60	17.91	15.28	5.50	84.05	2.88	1.09	1.09
27.63	17.70	15.07	5.54	83.47	2.88	1.08	1.08
27.72	17.52	14.87	5.57	82.75	2.89	1.06	1.06
27.77	17.42	14.76	5.55	81.96	2.89	1.05	1.05
27.84	17.46	14.77	5.50	81.27	2.88	1.05	1.05
27.93	17.59	14.85	5.42	80.54	2.87	1.06	1.06
27.97	17.75	14.99	5.33	79.83	2.86	1.07	1.07
28.02	17.89	15.10	5.25	79.27	2.85	1.08	1.08
28.12	18.02	15.18	5.18	78.68	2.85	1.08	1.08
28.17	18.17	15.30	5.11	78.11	2.84	1.09	1.09
28.22	18.28	15.38	5.05	77.72	2.83	1.10	1.10
28.32	18.30	15.36	5.05	77.57	2.83	1.10	1.10
28.36	18.44	15.47	5.01	77.50	2.83	1.10	1.10

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
28.42	18.88	15.86	4.90	77.73	2.81	1.13	1.13
28.48	19.31	16.24	4.80	77.88	2.80	1.16	1.16
28.57	19.74	16.59	4.70	78.01	2.79	1.18	1.18
28.62	20.26	17.05	4.62	78.69	2.78	1.21	1.21
28.72	20.70	17.42	4.56	79.51	2.77	1.24	1.24
28.75	20.99	17.67	4.57	80.80	2.77	1.26	1.26
28.82	21.18	17.81	4.62	82.31	2.78	1.27	1.27
28.87	21.43	18.01	4.64	83.55	2.78	1.28	1.28
28.95	21.50	18.04	4.69	84.52	2.79	1.28	1.28
29.02	21.16	17.70	4.80	84.88	2.80	1.26	1.26
29.07	20.75	17.30	4.92	85.13	2.82	1.23	1.23
29.16	20.35	16.89	5.05	85.34	2.83	1.20	1.20
29.21	19.87	16.43	5.17	85.00	2.84	1.17	1.17
29.29	19.55	16.11	5.23	84.30	2.85	1.15	1.15
29.36	19.41	15.96	5.22	83.25	2.85	1.14	1.14
29.40	19.63	16.15	5.08	81.96	2.83	1.15	1.15
29.47	19.93	16.39	4.93	80.76	2.82	1.17	1.17
29.56	20.29	16.68	4.78	79.82	2.80	1.19	1.19
29.60	20.70	17.04	4.66	79.35	2.78	1.21	1.21
29.71	21.12	17.37	4.56	79.22	2.77	1.24	1.24
29.75	21.53	17.73	4.47	79.29	2.76	1.26	1.26
29.79	21.94	18.08	4.40	79.51	2.75	1.29	1.29
29.86	22.27	18.35	4.36	80.05	2.75	1.30	1.30
29.95	22.60	18.60	4.34	80.71	2.75	1.32	1.32
30.04	22.87	18.80	4.33	81.39	2.74	1.34	1.34
30.06	23.16	19.06	4.31	82.09	2.74	1.35	1.35
30.15	23.46	19.28	4.30	82.82	2.74	1.37	1.37
30.20	23.80	19.56	4.28	83.76	2.74	1.39	1.39
30.28	24.21	19.88	4.28	85.00	2.74	1.41	1.41
30.35	24.55	20.15	4.28	86.18	2.74	1.43	1.43
30.39	24.85	20.40	4.28	87.23	2.74	1.45	1.45
30.45	25.09	20.58	4.28	88.07	2.74	1.46	1.46
30.54	25.24	20.67	4.30	88.84	2.74	1.47	1.47
30.60	25.09	20.50	4.38	89.73	2.75	1.46	1.46
30.67	24.78	20.19	4.48	90.39	2.76	1.43	1.43
30.74	24.41	19.81	4.58	90.80	2.78	1.41	1.41
30.79	23.91	19.35	4.70	90.92	2.79	1.37	1.37
30.86	23.34	18.82	4.78	89.92	2.80	1.34	1.34
30.95	22.81	18.30	4.84	88.68	2.81	1.30	1.30
30.99	22.25	17.80	4.91	87.32	2.81	1.27	1.27
31.05	21.70	17.29	4.96	85.85	2.82	1.23	1.23
31.14	21.26	16.87	4.99	84.23	2.82	1.20	1.20
31.19	20.89	16.53	4.99	82.51	2.82	1.18	1.18
31.26	20.65	16.30	4.96	80.93	2.82	1.16	1.16
31.34	20.47	16.11	4.93	79.38	2.82	1.15	1.15
31.39	20.36	16.00	4.87	77.95	2.81	1.14	1.14
31.45	20.34	15.96	4.86	77.54	2.81	1.13	1.13
31.54	20.41	15.99	4.82	77.08	2.80	1.14	1.14

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
31.57	20.70	16.25	4.71	76.52	2.79	1.15	1.15
31.63	21.26	16.71	4.58	76.48	2.78	1.19	1.19
31.73	21.86	17.20	4.46	76.78	2.76	1.22	1.22
31.77	22.65	17.87	4.34	77.50	2.75	1.27	1.27
31.84	23.37	18.47	4.24	78.35	2.73	1.31	1.31
31.93	23.77	18.77	4.24	79.51	2.73	1.33	1.33
31.98	24.18	19.10	4.22	80.58	2.73	1.35	1.35
32.05	24.49	19.34	4.20	81.23	2.73	1.37	1.37
32.09	24.69	19.49	4.21	82.07	2.73	1.38	1.38
32.17	24.77	19.51	4.26	83.19	2.74	1.38	1.38
32.22	24.56	19.30	4.34	83.85	2.75	1.37	1.37
32.32	24.33	19.06	4.41	84.14	2.75	1.35	1.35
32.35	24.03	18.79	4.47	84.07	2.76	1.33	1.33
32.43	23.76	18.52	4.52	83.76	2.77	1.31	1.31
32.52	23.80	18.52	4.49	83.20	2.76	1.31	1.31
32.57	23.78	18.49	4.47	82.69	2.76	1.31	1.31
32.62	23.81	18.49	4.45	82.23	2.76	1.31	1.31
32.71	23.88	18.52	4.41	81.74	2.75	1.31	1.31
32.76	23.92	18.53	4.39	81.27	2.75	1.31	1.31
32.82	24.02	18.59	4.36	81.13	2.75	1.31	1.31
32.90	24.07	18.60	4.36	81.14	2.75	1.32	1.32
32.96	24.10	18.60	4.37	81.31	2.75	1.32	1.32
33.02	24.16	18.62	4.39	81.74	2.75	1.32	1.32
33.11	24.21	18.62	4.42	82.23	2.76	1.32	1.32
33.17	24.32	18.69	4.43	82.78	2.76	1.32	1.32
33.22	24.44	18.77	4.44	83.33	2.76	1.33	1.33
33.31	24.49	18.77	4.46	83.74	2.76	1.33	1.33
33.34	24.51	18.77	4.48	84.12	2.76	1.33	1.33
33.41	24.52	18.75	4.49	84.14	2.76	1.33	1.33
33.49	24.50	18.69	4.51	84.23	2.77	1.32	1.32
33.57	24.46	18.63	4.52	84.25	2.77	1.32	1.32
33.61	24.39	18.55	4.53	84.05	2.77	1.31	1.31
33.68	24.39	18.52	4.53	83.87	2.77	1.31	1.31
33.76	24.41	18.50	4.53	83.81	2.77	1.31	1.31
33.81	24.49	18.55	4.53	84.09	2.77	1.31	1.31
33.88	24.70	18.69	4.54	84.79	2.77	1.32	1.32
33.95	24.97	18.88	4.55	85.91	2.77	1.33	1.33
34.01	25.30	19.12	4.57	87.39	2.77	1.35	1.35
34.06	25.58	19.32	4.60	88.93	2.78	1.37	1.37
34.13	25.81	19.47	4.65	90.56	2.78	1.38	1.38
34.21	25.99	19.58	4.73	92.59	2.79	1.38	1.38
34.25	26.13	19.66	4.81	94.49	2.80	1.39	1.39
34.35	26.22	19.68	4.89	96.14	2.81	1.39	1.39
34.40	26.26	19.68	4.96	97.59	2.82	1.39	1.39
34.49	26.26	19.62	5.03	98.65	2.83	1.39	1.39
34.53	26.21	19.56	5.09	99.47	2.83	1.39	1.39
34.60	26.13	19.45	5.14	100.04	2.84	1.38	1.38
34.65	26.05	19.36	5.19	100.56	2.85	1.37	1.37

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
34.74	26.01	19.28	5.24	101.09	2.85	1.37	1.37
34.80	25.96	19.21	5.27	101.16	2.85	1.36	1.36
34.85	25.81	19.06	5.30	100.98	2.86	1.35	1.35
34.93	25.63	18.87	5.34	100.73	2.86	1.34	1.34
34.98	25.37	18.64	5.39	100.52	2.87	1.32	1.32
35.05	25.16	18.43	5.44	100.22	2.87	1.31	1.31
35.15	24.95	18.22	5.47	99.73	2.88	1.29	1.29
35.20	24.79	18.07	5.49	99.23	2.88	1.28	1.28
35.25	24.73	18.00	5.47	98.37	2.88	1.28	1.28
35.33	24.69	17.94	5.42	97.25	2.87	1.27	1.27
35.40	24.65	17.88	5.39	96.31	2.87	1.27	1.27
35.44	24.77	17.97	5.33	95.69	2.86	1.28	1.28
35.50	24.93	18.08	5.26	95.04	2.85	1.28	1.28
35.59	25.19	18.26	5.16	94.29	2.84	1.29	1.29
35.64	25.39	18.41	5.09	93.74	2.84	1.30	1.30
35.70	25.56	18.52	5.04	93.37	2.83	1.31	1.31
35.79	25.66	18.57	5.01	93.11	2.83	1.31	1.31
35.83	25.68	18.57	5.02	93.19	2.83	1.31	1.31
35.94	25.66	18.50	5.03	93.05	2.83	1.31	1.31
35.98	25.62	18.45	5.03	92.86	2.83	1.31	1.31
36.03	25.44	18.29	5.06	92.51	2.83	1.29	1.29
36.09	25.17	18.05	5.10	92.12	2.84	1.28	1.28
36.17	24.77	17.69	5.18	91.67	2.85	1.25	1.25
36.23	24.32	17.31	5.27	91.14	2.85	1.23	1.23
36.29	23.82	16.88	5.35	90.37	2.86	1.20	1.20
36.38	23.31	16.44	5.44	89.39	2.87	1.17	1.17
36.44	22.79	16.01	5.52	88.30	2.88	1.14	1.14
36.49	22.27	15.58	5.60	87.26	2.89	1.11	1.11
36.59	21.81	15.17	5.68	86.23	2.90	1.08	1.08
36.63	21.37	14.82	5.76	85.28	2.91	1.05	1.05
36.69	21.03	14.53	5.81	84.42	2.91	1.03	1.03
36.78	20.84	14.35	5.82	83.57	2.91	1.02	1.02
36.82	20.75	14.28	5.80	82.81	2.91	1.02	1.02
36.88	20.77	14.28	5.75	82.14	2.91	1.02	1.02
36.98	20.81	14.28	5.71	81.57	2.90	1.02	1.02
37.02	20.88	14.33	5.66	81.09	2.90	1.02	1.02
37.11	20.95	14.36	5.62	80.71	2.89	1.02	1.02
37.18	21.00	14.38	5.59	80.40	2.89	1.02	1.02
37.22	21.09	14.44	5.56	80.31	2.89	1.03	1.03
37.28	21.20	14.50	5.55	80.51	2.88	1.03	1.03
37.38	21.34	14.58	5.55	80.94	2.89	1.04	1.04
37.42	21.53	14.71	5.54	81.52	2.88	1.04	1.04
37.48	21.73	14.84	5.54	82.15	2.88	1.05	1.05
37.57	21.96	14.99	5.50	82.37	2.88	1.06	1.06
37.62	22.23	15.19	5.42	82.24	2.87	1.08	1.08
37.68	22.47	15.36	5.35	82.23	2.86	1.09	1.09
37.77	22.71	15.51	5.32	82.51	2.86	1.10	1.10
37.82	22.94	15.67	5.28	82.75	2.86	1.11	1.11

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
37.88	23.12	15.79	5.24	82.68	2.85	1.12	1.12
37.96	23.17	15.81	5.22	82.50	2.85	1.12	1.12
38.00	23.39	15.98	5.15	82.25	2.84	1.13	1.13
38.08	23.81	16.29	5.02	81.76	2.83	1.15	1.15
38.12	24.25	16.62	4.90	81.46	2.81	1.17	1.17
38.20	24.73	16.97	4.79	81.32	2.80	1.20	1.20
38.27	25.09	17.24	4.72	81.32	2.79	1.21	1.21
38.36	25.41	17.46	4.65	81.20	2.78	1.23	1.23
38.40	25.70	17.66	4.62	81.62	2.78	1.24	1.24
38.46	26.47	18.23	4.55	83.02	2.77	1.28	1.28
38.56	27.70	19.15	4.41	84.43	2.75	1.34	1.34
38.59	29.37	20.44	4.23	86.38	2.73	1.43	1.43
38.66	31.20	21.82	4.08	88.94	2.71	1.52	1.52
38.76	33.40	23.47	3.94	92.37	2.69	1.63	1.63
38.79	35.50	25.07	3.84	96.19	2.68	1.74	1.74
38.87	37.72	26.74	3.74	100.07	2.66	1.86	1.86
38.91	40.14	28.57	3.66	104.53	2.65	1.98	1.98
39.00	42.72	30.49	3.56	108.61	2.64	2.11	2.11
39.04	45.10	32.30	3.48	112.39	2.62	2.23	2.23
39.11	47.29	33.92	3.45	117.11	2.62	2.34	2.34
39.20	48.94	35.08	3.48	122.18	2.62	2.42	2.42
39.24	50.53	36.22	3.51	127.28	2.63	2.50	2.50
39.31	52.73	37.81	3.52	133.19	2.63	2.61	2.61
39.38	55.69	39.99	3.49	139.41	2.63	2.76	2.76
39.46	60.04	43.26	3.36	145.48	2.61	2.98	2.98
39.51	65.29	47.26	3.21	151.76	2.58	0.73	0.73
39.60	70.72	51.35	3.07	157.81	2.56	0.74	0.74
39.66	76.31	55.62	2.93	163.13	2.53	0.75	0.75
39.71	81.88	59.90	2.80	167.53	2.51	0.76	0.76
39.79	87.58	64.26	2.67	171.54	2.48	0.77	0.77
39.85	95.63	70.52	2.49	175.53	2.44	0.78	0.78
39.91	106.85	79.35	2.26	179.41	2.39	0.80	0.80
39.99	119.15	89.06	2.06	183.29	2.33	0.81	0.81
40.05	129.29	97.07	1.93	187.43	2.29	0.82	0.82
40.11	136.78	102.96	1.86	191.07	2.27	0.83	0.83
40.20	143.19	107.89	1.80	194.51	2.25	0.84	0.84
40.25	148.57	112.05	1.77	198.24	2.24	0.84	0.84
40.30	153.54	115.86	1.75	202.36	2.23	0.85	0.85
40.40	158.28	119.33	1.73	206.73	2.23	0.85	0.85
40.43	160.83	121.18	1.74	210.64	2.23	0.85	0.85
40.49	158.66	119.18	1.78	212.23	2.24	0.85	0.85
40.55	153.03	114.40	1.86	212.96	2.27	0.85	0.85
40.64	146.29	108.69	1.96	213.19	2.30	0.84	0.84
40.69	139.08	102.89	2.04	209.39	2.33	0.83	0.83
40.80	131.58	96.75	2.12	205.56	2.35	0.82	0.82
40.84	124.38	91.04	2.21	201.42	2.37	0.81	0.81
40.89	117.63	85.72	2.29	196.43	2.39	0.81	0.81
40.96	111.06	80.55	2.37	190.55	2.41	0.80	0.80

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
41.04	102.35	73.71	2.50	184.44	2.44	0.79	0.79
41.10	99.25	71.35	2.50	178.24	2.44	0.78	0.78
41.15	97.87	70.36	2.45	172.25	2.43	0.78	0.78
41.24	97.68	70.24	2.37	166.66	2.41	0.78	0.78
41.28	99.20	71.40	2.33	166.12	2.40	0.78	0.78
41.38	101.83	73.35	2.26	165.46	2.39	0.78	0.78
41.41	104.74	75.62	2.19	165.26	2.37	0.79	0.79
41.49	107.45	77.66	2.13	165.11	2.35	0.79	0.79
41.54	110.57	80.08	2.06	164.61	2.33	0.80	0.80
41.61	115.81	84.17	1.95	164.14	2.30	0.80	0.80
41.69	117.25	85.22	1.92	163.47	2.29	0.81	0.81
41.77	119.86	87.23	1.86	162.49	2.27	0.81	0.81
41.84	123.49	90.09	1.79	161.41	2.25	0.81	0.81
41.88	127.85	93.59	1.71	160.50	2.22	0.82	0.82
41.94	131.93	96.89	1.65	159.54	2.19	0.82	0.82
42.04	134.67	99.03	1.60	158.18	2.17	0.83	0.83
42.08	136.97	100.92	1.56	157.19	2.15	0.83	0.83
42.17	138.21	101.83	1.54	156.42	2.14	0.83	0.83
42.19	138.80	102.31	1.52	155.99	2.14	0.83	0.83
42.28	138.18	101.67	1.53	155.46	2.14	0.83	0.83
42.33	136.34	100.08	1.55	155.19	2.15	0.83	0.83
42.39	134.30	98.29	1.58	155.17	2.16	0.82	0.82
42.48	131.81	96.09	1.61	155.16	2.18	0.82	0.82
42.53	129.20	93.85	1.66	155.50	2.20	0.82	0.82
42.59	127.38	92.22	1.70	156.51	2.21	0.82	0.82
42.67	125.63	90.61	1.74	157.58	2.23	0.81	0.81
42.73	123.71	88.91	1.78	158.66	2.25	0.81	0.81
42.81	122.02	87.35	1.83	159.78	2.26	0.81	0.81
42.88	120.34	85.85	1.87	160.92	2.28	0.81	0.81
42.92	118.62	84.36	1.92	162.09	2.29	0.80	0.80
43.00	116.94	82.86	1.97	163.09	2.31	0.80	0.80
43.08	115.33	81.42	2.02	164.14	2.32	0.80	0.80
43.12	113.76	80.08	2.06	165.17	2.33	0.80	0.80
43.21	112.31	78.78	2.11	165.99	2.35	0.79	0.79
43.27	110.92	77.57	2.15	166.88	2.36	0.79	0.79
43.32	109.66	76.47	2.20	167.89	2.37	0.79	0.79
43.39	108.32	75.29	2.24	168.83	2.38	0.79	0.79
43.47	106.67	73.88	2.30	169.61	2.40	0.79	0.79
43.52	104.14	71.84	2.36	169.87	2.41	0.78	0.78
43.59	100.71	69.13	2.45	169.67	2.43	0.78	0.78
43.67	95.95	65.41	2.58	168.99	2.46	0.77	0.77
43.72	90.92	61.58	2.72	167.69	2.49	0.76	0.76
43.80	85.34	57.38	2.87	164.49	2.52	0.75	0.75
43.85	79.27	52.89	3.04	160.68	2.55	0.74	0.74
43.92	73.36	48.52	3.23	156.49	2.58	0.73	0.73
43.97	67.07	43.93	3.46	151.94	2.62	2.99	2.99
44.04	60.96	39.49	3.72	146.78	2.66	2.71	2.71
44.13	55.89	35.84	3.94	141.26	2.69	2.47	2.47

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
44.17	51.45	32.70	4.14	135.24	2.72	2.26	2.26
44.24	48.10	30.35	4.25	129.08	2.73	2.10	2.10
44.31	44.77	28.03	4.39	123.05	2.75	1.94	1.94
44.37	41.91	26.01	4.56	118.63	2.77	1.81	1.81
44.45	39.66	24.44	4.68	114.39	2.79	1.70	1.70
44.50	37.60	23.02	4.77	109.69	2.80	1.61	1.61
44.56	35.90	21.87	4.79	104.78	2.80	1.53	1.53
44.65	34.31	20.77	4.83	100.36	2.81	1.45	1.45
44.71	32.87	19.79	4.89	96.76	2.81	1.38	1.38
44.76	31.94	19.15	4.94	94.64	2.82	1.34	1.34
44.85	31.50	18.82	4.96	93.38	2.82	1.32	1.32
44.88	31.89	19.08	4.91	93.73	2.81	1.34	1.34
44.96	33.14	19.89	4.81	95.77	2.80	1.39	1.39
45.05	34.91	21.05	4.70	98.87	2.79	1.47	1.47
45.10	37.96	23.13	4.44	102.79	2.76	1.60	1.60
45.17	42.19	26.02	4.13	107.56	2.72	1.79	1.79
45.25	47.02	29.34	3.82	112.20	2.68	2.01	2.01
45.30	52.22	32.95	3.55	116.82	2.63	2.24	2.24
45.37	57.78	36.82	3.30	121.32	2.59	0.70	0.70
45.45	63.35	40.70	3.10	126.01	2.56	0.71	0.71
45.49	68.76	44.49	2.93	130.44	2.53	0.72	0.72
45.54	73.67	47.92	2.81	134.70	2.51	0.73	0.73
45.61	77.83	50.78	2.73	138.84	2.49	0.74	0.74
45.68	80.57	52.60	2.71	142.61	2.49	0.74	0.74
45.75	81.52	53.13	2.74	145.41	2.49	0.74	0.74
45.80	81.02	52.66	2.79	147.01	2.50	0.74	0.74
45.89	79.02	51.09	2.88	147.36	2.52	0.74	0.74
45.93	75.96	48.83	3.01	146.80	2.54	0.73	0.73
46.01	71.99	45.92	3.16	145.23	2.57	0.72	0.72
46.08	67.58	42.73	3.35	143.16	2.60	2.89	2.89
46.15	63.04	39.49	3.56	140.53	2.64	2.68	2.68
46.20	58.87	36.55	3.75	137.15	2.67	2.49	2.49
46.29	55.12	33.92	3.93	133.38	2.69	2.32	2.32
46.34	52.58	32.18	4.02	129.41	2.70	2.21	2.21
46.41	51.11	31.17	4.05	126.27	2.71	2.14	2.14
46.49	50.54	30.77	4.03	124.04	2.70	2.11	2.11
46.53	50.02	30.42	4.02	122.34	2.70	2.09	2.09
46.60	49.69	30.18	4.00	120.82	2.70	2.07	2.07
46.69	49.41	29.96	3.98	119.37	2.70	2.05	2.05
46.73	49.11	29.76	3.97	118.07	2.70	2.04	2.04
46.79	48.28	29.16	4.02	117.13	2.70	2.00	2.00
46.89	47.27	28.41	4.09	116.30	2.71	1.95	1.95
46.94	45.73	27.31	4.25	116.20	2.73	1.88	1.88
46.99	44.21	26.21	4.47	117.04	2.76	1.81	1.81
47.09	42.89	25.21	4.68	118.10	2.79	1.75	1.75
47.13	41.81	24.41	4.89	119.40	2.81	1.70	1.70
47.19	42.93	25.12	4.82	121.09	2.80	1.75	1.75
47.28	44.62	26.20	4.68	122.72	2.79	1.82	1.82

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
47.34	47.80	28.32	4.41	124.80	2.75	1.96	1.96
47.38	54.01	32.56	3.90	127.10	2.69	2.22	2.22
47.50	61.85	37.94	3.40	129.13	2.61	2.56	2.56
47.51	72.72	45.60	2.88	131.32	2.52	0.72	0.72
47.60	84.57	54.02	2.47	133.24	2.44	0.74	0.74
47.69	97.97	63.68	2.13	135.74	2.35	0.77	0.77
47.70	112.59	74.42	1.87	139.45	2.28	0.79	0.79
47.80	125.94	84.20	1.71	143.67	2.22	0.80	0.80
47.84	139.39	94.21	1.58	148.64	2.16	0.82	0.82
47.91	151.60	103.34	1.48	153.39	2.12	0.83	0.83
48.00	161.22	110.51	1.42	157.32	2.08	0.84	0.84
48.04	168.84	116.26	1.38	160.83	2.06	0.85	0.85
48.11	173.11	119.39	1.36	162.82	2.05	0.85	0.85
48.19	175.86	121.33	1.35	164.25	2.04	0.85	0.85
48.23	176.73	121.85	1.35	165.07	2.04	0.86	0.86
48.30	176.31	121.32	1.36	165.40	2.04	0.85	0.85
48.40	175.47	120.40	1.38	165.61	2.05	0.85	0.85
48.45	174.20	119.22	1.39	165.83	2.06	0.85	0.85
48.50	172.99	118.09	1.41	166.15	2.07	0.85	0.85
48.59	172.02	117.09	1.42	166.44	2.08	0.85	0.85
48.66	171.41	116.42	1.43	166.75	2.09	0.85	0.85
48.69	171.02	116.01	1.44	167.02	2.09	0.85	0.85
48.78	170.78	115.63	1.45	167.11	2.09	0.85	0.85
48.85	170.69	115.43	1.45	167.08	2.10	0.85	0.85
48.89	170.46	115.19	1.45	166.89	2.10	0.85	0.85
48.98	170.14	114.81	1.45	166.50	2.10	0.85	0.85
49.03	169.85	114.51	1.45	166.24	2.10	0.85	0.85
49.09	170.04	114.53	1.45	166.41	2.10	0.85	0.85
49.19	170.33	114.54	1.46	166.69	2.10	0.85	0.85
49.23	170.93	114.85	1.46	167.48	2.10	0.85	0.85
49.28	172.83	116.08	1.46	169.12	2.10	0.85	0.85
49.39	175.13	117.50	1.45	170.85	2.10	0.85	0.85
49.42	177.65	119.21	1.45	172.90	2.10	0.85	0.85
49.49	180.57	121.19	1.44	174.81	2.09	0.85	0.85
49.59	183.31	123.06	1.43	175.79	2.09	0.86	0.86
49.62	185.69	124.84	1.41	176.44	2.08	0.86	0.86
49.69	187.40	126.08	1.40	176.46	2.07	0.86	0.86
49.74	188.52	127.02	1.38	175.46	2.06	0.86	0.86
49.83	188.92	127.47	1.36	173.39	2.04	0.86	0.86
49.88	187.83	126.90	1.34	170.54	2.03	0.86	0.86
49.93	185.76	125.55	1.33	167.52	2.03	0.86	0.86
50.03	183.09	123.66	1.33	164.16	2.02	0.86	0.86
50.13	179.38	120.92	1.33	160.78	2.02	0.85	0.85
50.14	175.33	117.93	1.34	158.34	2.03	0.85	0.85
50.23	171.23	114.71	1.36	156.17	2.04	0.85	0.85
50.27	166.80	111.30	1.39	154.26	2.06	0.84	0.84
50.34	161.56	107.09	1.43	153.13	2.09	0.84	0.84
50.43	155.42	102.13	1.49	152.59	2.12	0.83	0.83

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
50.49	148.95	97.05	1.57	152.09	2.16	0.82	0.82
50.53	142.05	91.83	1.64	150.66	2.19	0.82	0.82
50.62	134.51	86.16	1.73	148.86	2.22	0.81	0.81
50.68	127.42	80.95	1.81	146.80	2.26	0.80	0.80
50.73	120.26	75.84	1.89	143.66	2.28	0.79	0.79
50.82	113.01	70.70	1.98	139.77	2.31	0.78	0.78
50.88	106.07	65.87	2.06	135.47	2.33	0.77	0.77
50.93	99.91	61.68	2.12	130.70	2.35	0.76	0.76
51.02	94.44	57.95	2.17	125.94	2.36	0.75	0.75
51.09	89.17	54.38	2.24	121.63	2.38	0.75	0.75
51.12	83.92	50.82	2.33	118.24	2.40	0.74	0.74
51.19	78.60	47.16	2.45	115.41	2.43	0.73	0.73
51.28	73.22	43.44	2.61	113.38	2.47	0.72	0.72
51.32	68.33	40.10	2.79	111.88	2.50	0.71	0.71
51.39	64.21	37.28	2.95	110.12	2.54	0.70	0.70
51.48	60.31	34.64	3.13	108.49	2.57	0.69	0.69
51.53	56.31	31.96	3.35	107.03	2.60	2.13	2.13
51.62	52.17	29.22	3.58	104.75	2.64	1.96	1.96
51.68	48.21	26.65	3.82	101.81	2.68	1.80	1.80
51.73	45.05	24.64	4.00	98.61	2.70	1.67	1.67
51.82	42.62	23.13	4.09	94.59	2.71	1.57	1.57
51.87	40.63	21.96	4.07	89.44	2.71	1.49	1.49
51.92	38.75	20.83	4.09	85.24	2.71	1.42	1.42
51.97	36.63	19.52	4.21	82.16	2.73	1.33	1.33
52.04	34.50	18.20	4.35	79.17	2.75	1.25	1.25
52.12	32.86	17.19	4.44	76.28	2.76	1.18	1.18
52.18	31.94	16.63	4.46	74.17	2.76	1.14	1.14
52.23	31.17	16.17	4.47	72.25	2.76	1.11	1.11
52.31	30.59	15.81	4.47	70.63	2.76	1.09	1.09
52.37	30.00	15.45	4.50	69.47	2.77	0.33	1.06
52.44	29.15	14.92	4.59	68.42	2.78	0.32	1.03
52.53	28.21	14.32	4.69	67.11	2.79	0.30	0.99
52.57	27.07	13.61	4.83	65.80	2.81	0.30	0.94
52.64	25.80	12.83	5.02	64.33	2.83	0.29	0.89
52.72	24.50	12.02	5.22	62.73	2.85	0.25	0.84
52.78	23.17	11.20	5.44	61.00	2.87	0.23	0.79
52.83	21.95	10.48	5.61	58.82	2.89	0.21	0.74
52.93	20.80	9.79	5.79	56.64	2.91	0.19	0.69
52.96	19.98	9.31	5.88	54.75	2.92	0.18	0.66
53.04	19.46	9.00	5.93	53.36	2.92	0.16	0.64
53.12	19.06	8.76	5.96	52.22	2.93	0.11	0.62
53.17	18.87	8.66	5.93	51.39	2.92	0.12	0.61
53.22	18.81	8.63	5.89	50.85	2.92	0.14	0.61
53.29	18.81	8.63	5.83	50.31	2.91	0.15	0.61
53.37	18.84	8.64	5.78	49.99	2.91	0.15	0.61
53.42	18.86	8.64	5.82	50.29	2.91	0.15	0.61
53.49	18.87	8.63	5.84	50.42	2.91	0.15	0.61
53.58	18.87	8.62	5.83	50.25	2.91	0.14	0.61

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
53.63	18.86	8.62	5.79	49.93	2.91	0.14	0.61
53.68	18.86	8.62	5.76	49.62	2.91	0.14	0.61
53.78	18.86	8.61	5.71	49.21	2.90	0.13	0.61
53.84	18.85	8.61	5.68	48.88	2.90	0.12	0.61
53.88	18.83	8.59	5.66	48.64	2.90	0.12	0.61
53.94	18.84	8.60	5.63	48.39	2.89	0.12	0.61
54.03	18.88	8.61	5.61	48.30	2.89	0.12	0.61
54.08	18.95	8.65	5.58	48.29	2.89	0.12	0.61
54.16	19.04	8.69	5.59	48.52	2.89	0.12	0.61
54.20	19.16	8.75	5.57	48.76	2.89	0.12	0.62
54.28	19.40	8.88	5.51	48.91	2.88	0.13	0.62
54.35	19.73	9.07	5.41	49.08	2.87	0.13	0.64
54.43	20.10	9.29	5.30	49.24	2.86	0.14	0.65
54.48	20.43	9.48	5.19	49.24	2.85	0.14	0.66
54.55	20.63	9.61	5.12	49.16	2.84	0.13	0.67
54.63	20.78	9.69	5.05	48.99	2.83	0.13	0.67
54.67	20.84	9.73	5.02	48.82	2.83	0.13	0.68
54.74	20.86	9.74	4.96	48.33	2.82	0.12	0.68
54.82	20.83	9.72	4.92	47.83	2.82	0.12	0.67
54.87	20.69	9.64	4.92	47.41	2.82	0.12	0.67
54.92	20.46	9.49	4.97	47.15	2.82	0.12	0.66
55.02	20.18	9.31	5.05	46.96	2.83	0.11	0.65
55.06	19.93	9.14	5.17	47.27	2.84	0.11	0.64
55.14	19.85	9.06	5.28	47.81	2.86	0.11	0.63
55.22	19.85	9.03	5.38	48.59	2.87	0.12	0.63
55.27	20.07	9.13	5.43	49.60	2.87	0.12	0.64
55.37	20.38	9.28	5.48	50.87	2.88	0.14	0.65
55.42	20.73	9.45	5.52	52.18	2.88	0.15	0.66
55.47	21.01	9.58	5.57	53.37	2.89	0.17	0.67
55.53	21.18	9.65	5.62	54.26	2.89	0.19	0.68
55.58	21.32	9.71	5.66	54.99	2.90	0.20	0.69
55.67	21.43	9.75	5.67	55.30	2.90	0.20	0.69
55.72	21.47	9.77	5.67	55.36	2.90	0.20	0.69
55.81	21.47	9.76	5.65	55.13	2.90	0.19	0.69
55.86	21.33	9.68	5.64	54.58	2.89	0.18	0.68
55.92	21.20	9.60	5.66	54.29	2.90	0.17	0.68
56.01	21.13	9.54	5.69	54.26	2.90	0.16	0.67
56.05	21.34	9.65	5.67	54.73	2.90	0.15	0.68
56.11	21.83	9.91	5.66	56.06	2.90	0.14	0.70
56.21	22.16	10.04	5.77	57.94	2.91	0.17	0.71
56.26	22.93	10.44	5.78	60.32	2.91	0.20	0.74
56.32	24.21	11.14	5.67	63.19	2.90	0.23	0.79
56.41	25.83	12.03	5.50	66.12	2.88	0.29	0.85
56.46	27.60	13.03	5.29	68.96	2.86	0.34	0.91
56.50	29.45	14.10	5.05	71.15	2.83	0.98	0.98
56.59	31.25	15.12	4.85	73.31	2.81	1.05	1.05
56.65	32.82	16.01	4.71	75.45	2.79	1.10	1.10
56.70	34.20	16.78	4.65	78.08	2.78	1.15	1.15

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
56.78	36.90	18.34	4.40	80.75	2.75	1.25	1.25
56.85	39.96	20.15	4.14	83.47	2.72	1.37	1.37
56.89	43.42	22.21	3.89	86.30	2.68	1.49	1.49
56.98	46.67	24.13	3.70	89.17	2.66	1.61	1.61
57.04	49.64	25.88	3.57	92.28	2.64	1.72	1.72
57.09	52.24	27.37	3.50	95.85	2.63	1.82	1.82
57.16	54.64	28.73	3.45	99.15	2.62	1.90	1.90
57.24	57.27	30.26	3.37	101.95	2.61	2.00	2.00
57.29	60.78	32.45	3.18	103.21	2.58	0.68	0.68
57.37	63.44	34.10	3.04	103.78	2.55	0.69	0.69
57.42	65.25	35.24	2.95	103.95	2.53	0.69	0.69
57.49	65.85	35.59	2.92	103.82	2.53	0.69	0.69
57.59	66.05	35.68	2.90	103.46	2.53	0.69	0.69
57.64	65.55	35.37	2.90	102.67	2.53	0.69	0.69
57.69	64.18	34.52	2.93	101.10	2.53	0.69	0.69
57.77	62.46	33.48	2.95	98.82	2.54	0.68	0.68
57.82	59.62	31.73	3.03	96.27	2.55	0.68	0.68
57.89	55.11	28.91	3.25	93.85	2.59	0.67	0.67
57.97	50.06	25.76	3.55	91.40	2.64	1.71	1.71
58.03	44.69	22.48	3.94	88.53	2.69	1.51	1.51
58.09	39.45	19.34	4.38	84.77	2.75	1.32	1.32
58.17	34.44	16.39	4.91	80.43	2.81	1.13	1.13
58.21	30.20	13.95	5.43	75.82	2.87	0.98	0.98
58.28	27.04	12.17	5.86	71.37	2.92	0.86	0.86
58.37	24.54	10.77	6.33	68.16	2.96	0.25	0.77
58.40	22.95	9.96	6.65	66.27	2.99	0.23	0.71
58.48	22.15	9.54	6.96	66.39	3.02	0.20	0.68
58.53	22.64	9.78	6.94	67.91	3.02	0.19	0.70
58.63	24.67	10.80	6.46	69.73	2.97	0.26	0.77
58.67	27.06	12.07	5.95	71.85	2.93	0.86	0.86
58.73	29.10	13.23	5.58	73.85	2.89	0.93	0.93
58.82	30.69	14.10	5.37	75.70	2.87	0.99	0.99
58.89	31.56	14.56	5.29	77.01	2.86	1.02	1.02
58.93	31.85	14.72	5.25	77.30	2.85	1.03	1.03
59.00	31.94	14.76	5.21	76.96	2.85	1.03	1.03
59.06	31.98	14.82	5.08	75.29	2.83	1.03	1.03
59.13	30.97	14.30	5.05	72.23	2.83	0.99	0.99
59.22	28.79	13.06	5.30	69.22	2.86	0.30	0.91
59.28	26.42	11.72	5.66	66.38	2.90	0.29	0.83
59.33	24.42	10.60	6.00	63.61	2.93	0.25	0.75
59.41	23.06	9.86	6.19	61.04	2.95	0.21	0.70
59.47	22.47	9.55	6.20	59.23	2.95	0.20	0.68
59.52	22.50	9.59	6.06	58.08	2.94	0.19	0.68
59.61	22.85	9.81	5.83	57.18	2.91	0.18	0.69
59.67	23.26	10.05	5.66	56.84	2.90	0.18	0.71
59.72	23.81	10.35	5.55	57.41	2.88	0.19	0.73
59.78	24.44	10.69	5.46	58.31	2.87	0.20	0.75
59.87	25.08	11.02	5.36	59.13	2.87	0.20	0.77

:: Strength loss calculation (Robertson (2009) :: (continued)

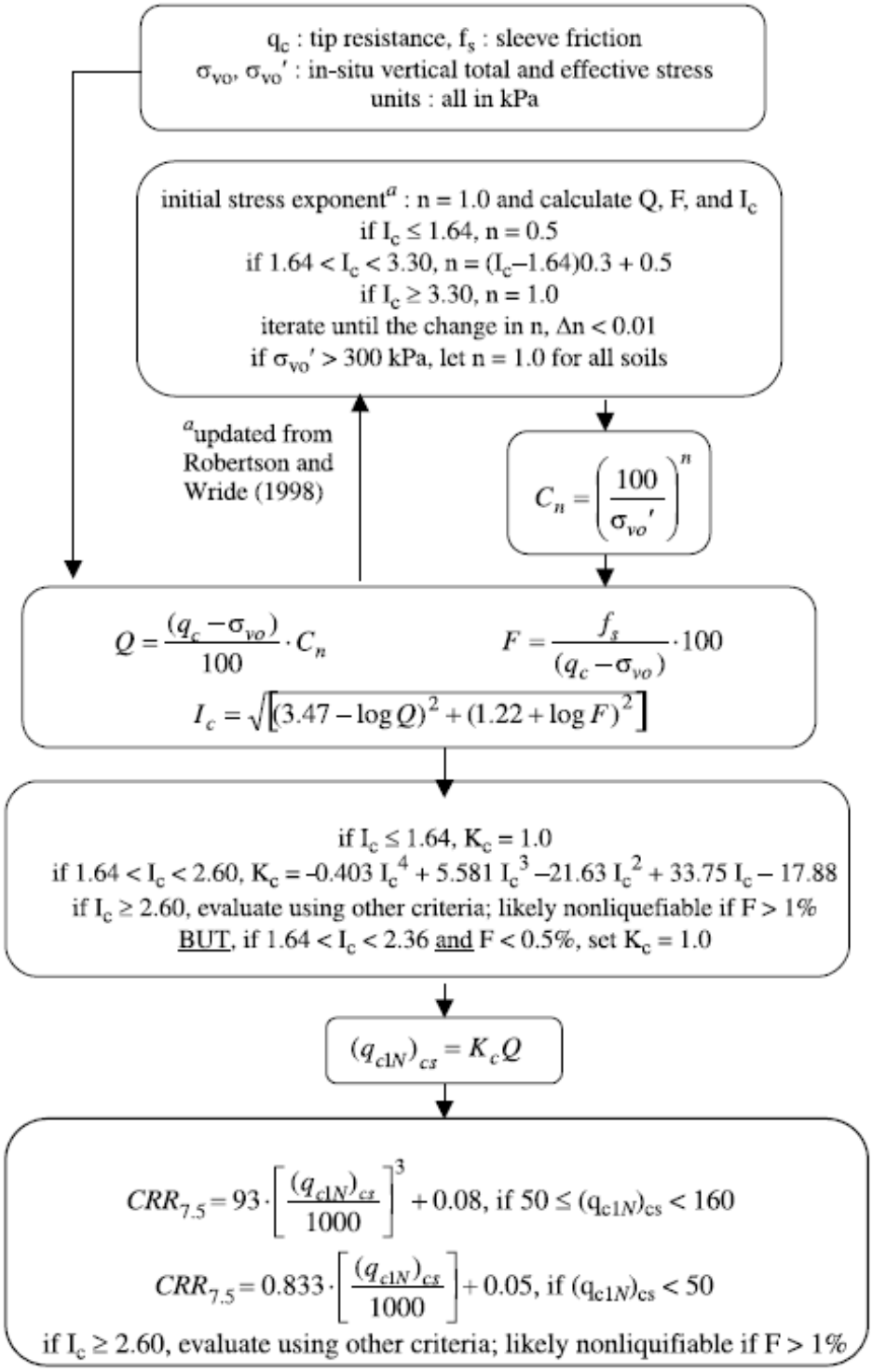
Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
59.92	25.83	11.52	4.95	57.00	2.82	0.22	0.80
60.00	26.38	11.92	4.59	54.71	2.78	0.25	0.82
60.05	26.95	12.34	4.23	52.22	2.73	0.27	0.84
60.11	27.25	12.61	3.92	49.42	2.69	0.26	0.85
60.21	27.38	12.81	3.61	46.28	2.64	0.00	0.85
60.25	27.51	13.05	3.26	42.60	2.59	0.05	0.57
60.31	27.68	13.38	2.84	37.95	2.51	0.04	0.58
60.40	27.58	13.65	2.36	32.18	2.41	0.04	0.58
60.43	27.43	-1.00	1.00	-1.00	-1.00	N/A	N/A
60.51	27.37	-1.00	1.00	-1.00	-1.00	N/A	N/A

Abbreviations

q_t: Total cone resistance
K_c: Cone resistance correction factor due to fines
$Q_{tn,cs}$: Adjusted and corrected cone resistance due to fines
I_c: Soil behavior type index
$S_{u(liq)}/\sigma'_v$: Calculated liquefied undrained strength ratio
$S_{u(peak)}/\sigma'_v$: Calculated peak undrained strength ratio

Procedure for the evaluation of soil liquefaction resistance, NCEER (1998)

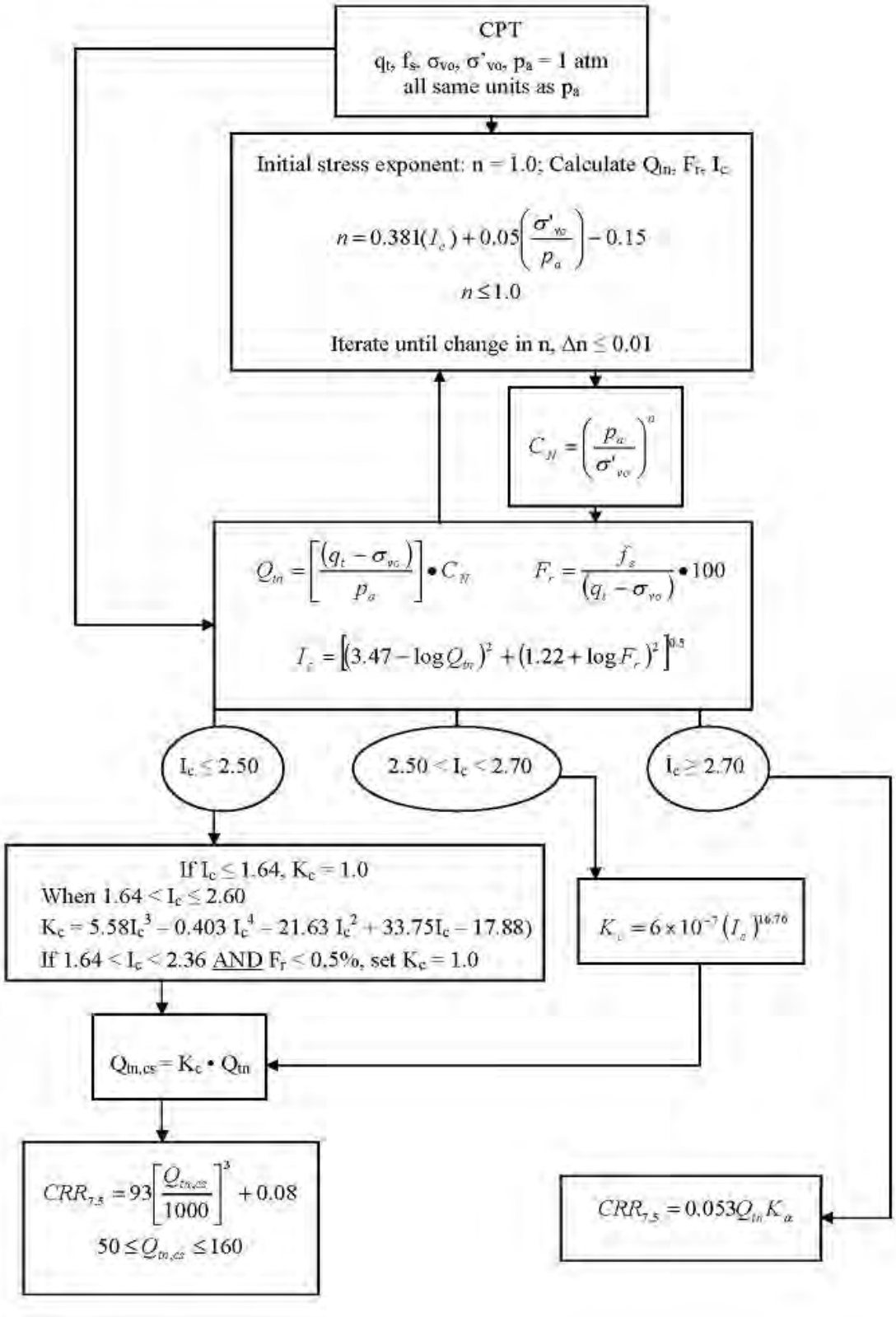
Calculation of soil resistance against liquefaction is performed according to the Robertson & Wride (1998) procedure. The procedure used in the software, slightly differs from the one originally published in NCEER-97-0022 (Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils). The revised procedure is presented below in the form of a flowchart[1]:



[1] "Estimating liquefaction-induced ground settlements from CPT for level ground", G. Zhang, P.K. Robertson, and R.W.I. Brachman

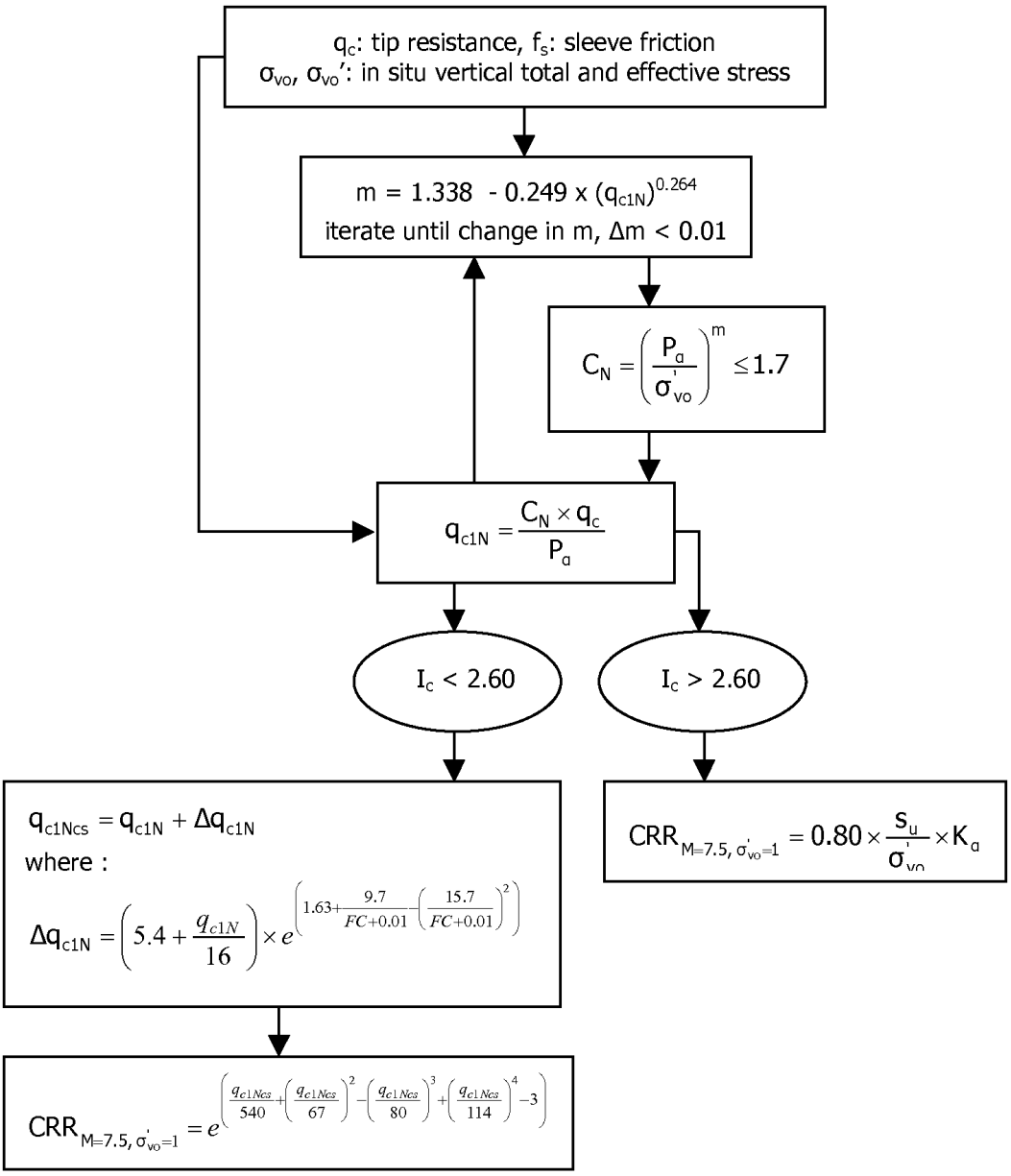
Procedure for the evaluation of soil liquefaction resistance (all soils), Robertson (2010)

Calculation of soil resistance against liquefaction is performed according to the Robertson & Wride (1998) procedure. This procedure used in the software, slightly differs from the one originally published in NCEER-97-0022 (Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils). The revised procedure is presented below in the form of a flowchart[1]:

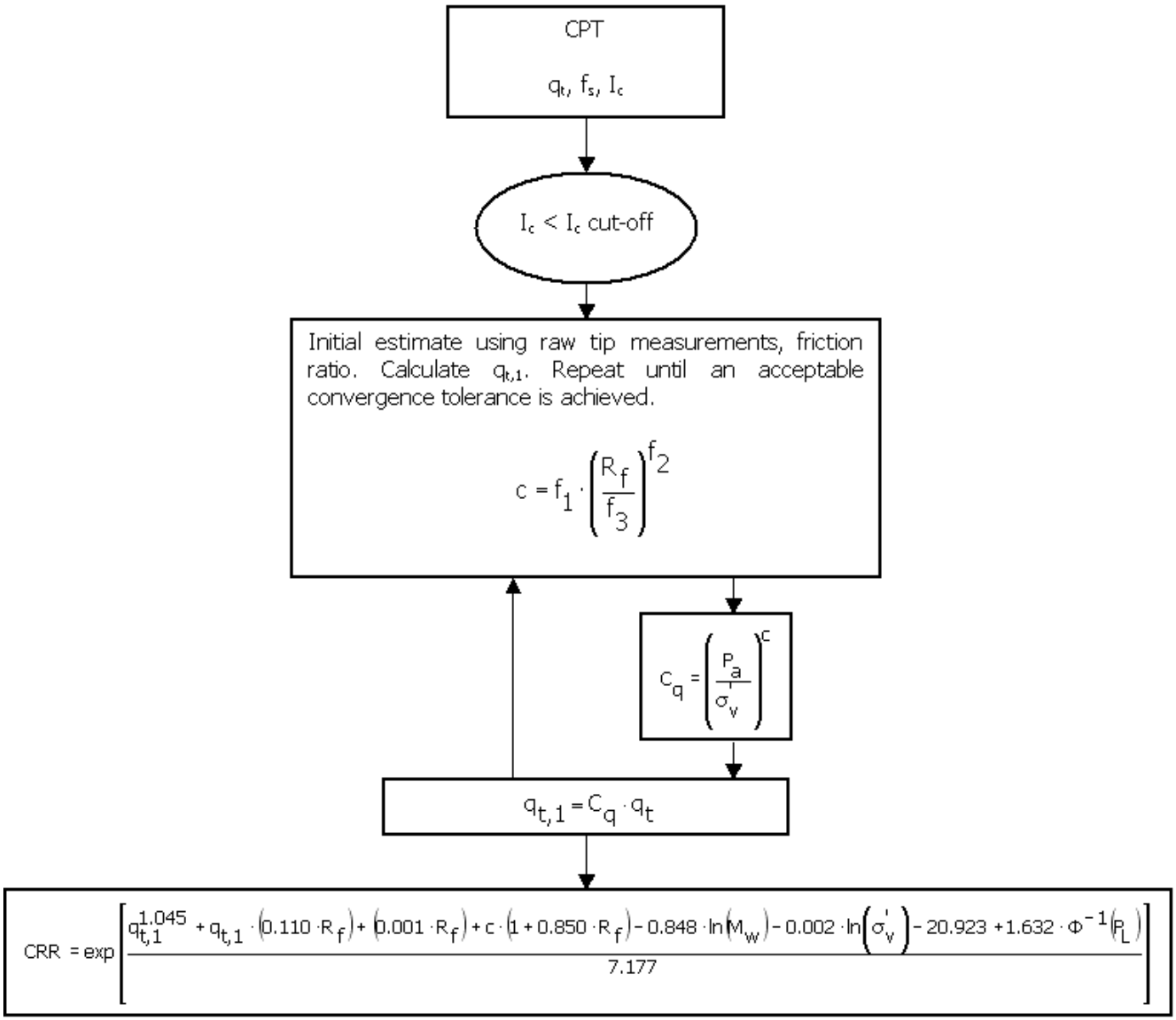


[1] P.K. Robertson, 2009. "Performance based earthquake design using the CPT", Keynote Lecture, International Conference on Performance-based Design in Earthquake Geotechnical Engineering – from case history to practice, IS-Tokyo, June 2009

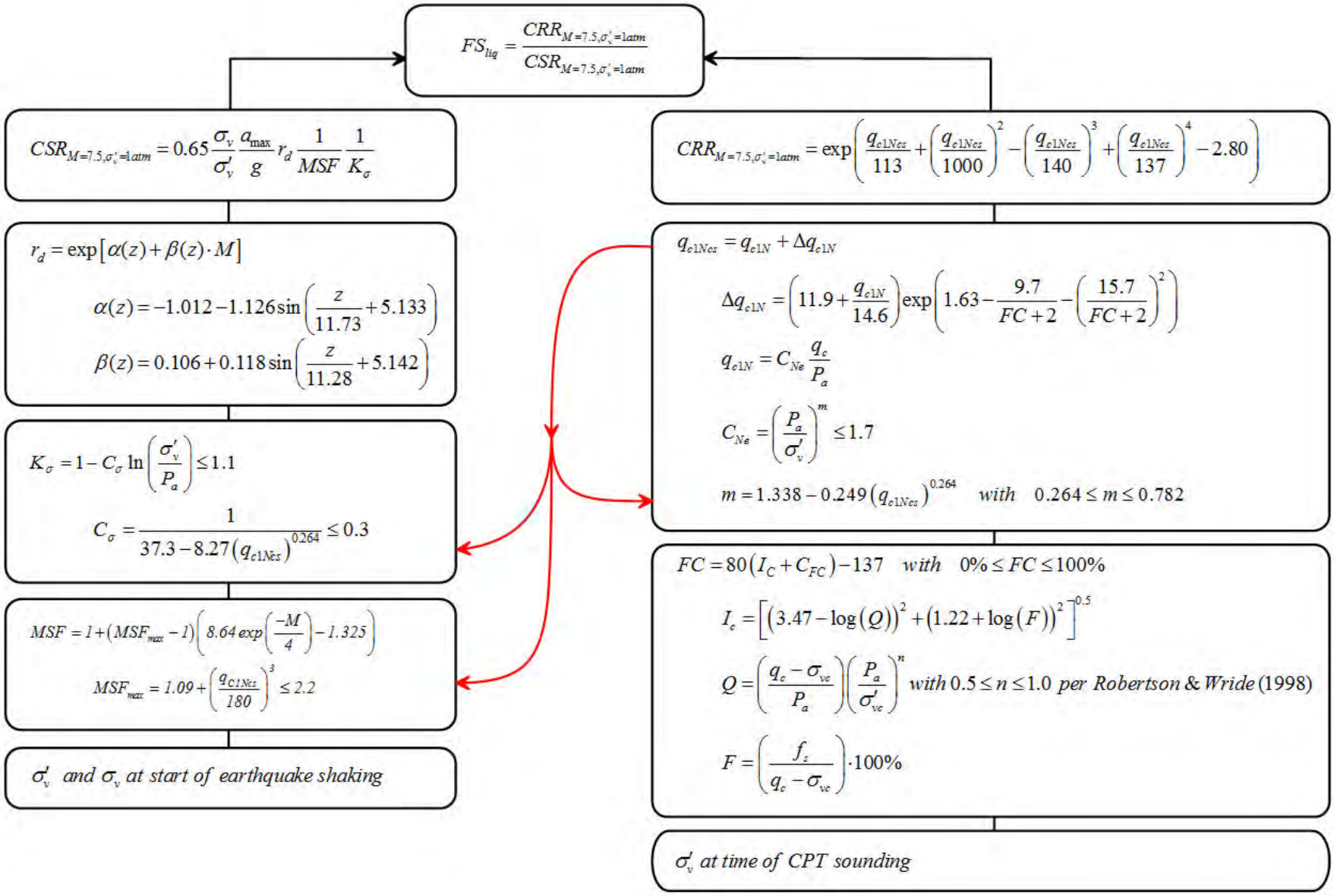
Procedure for the evaluation of soil liquefaction resistance, Idriss & Boulanger (2008)



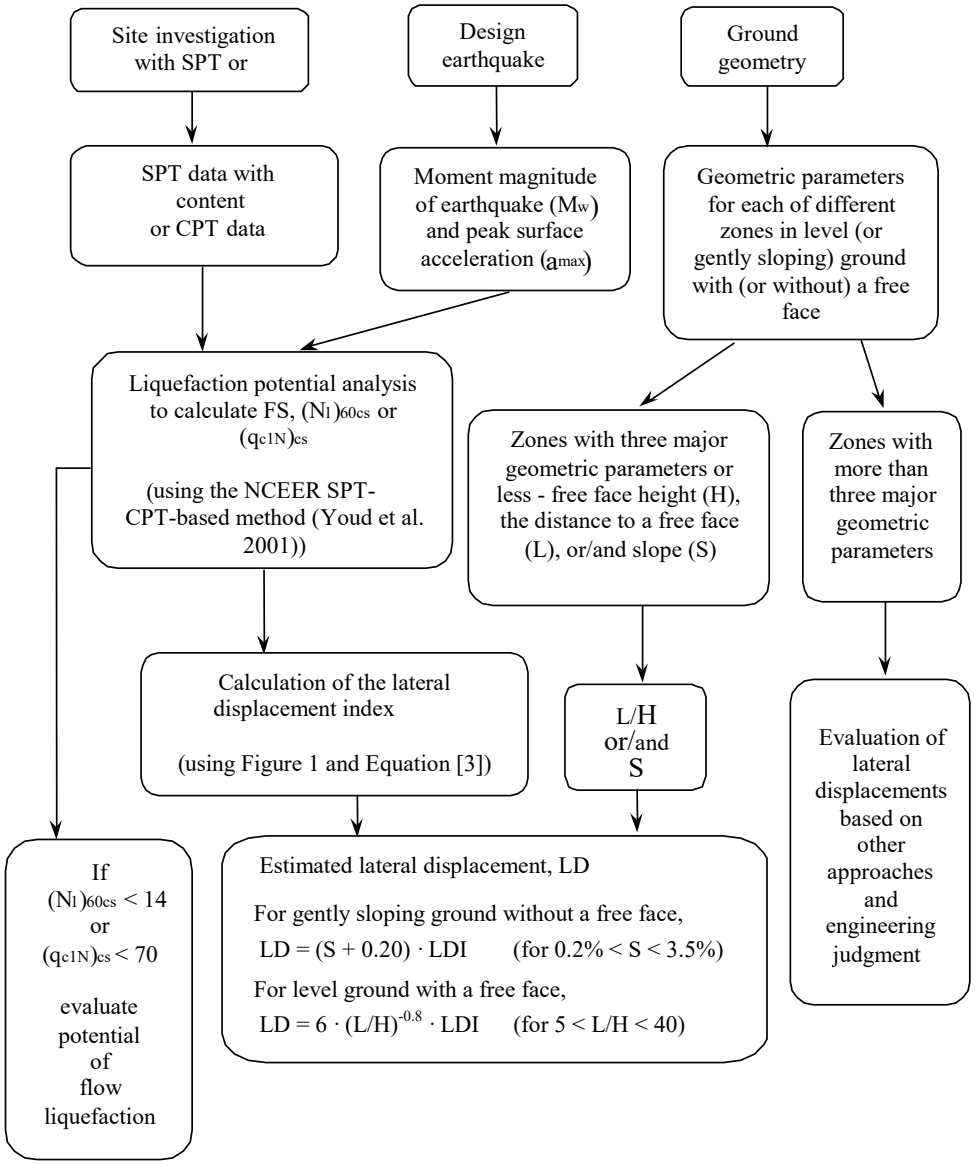
Procedure for the evaluation of soil liquefaction resistance (sandy soils), Moss et al. (2006)



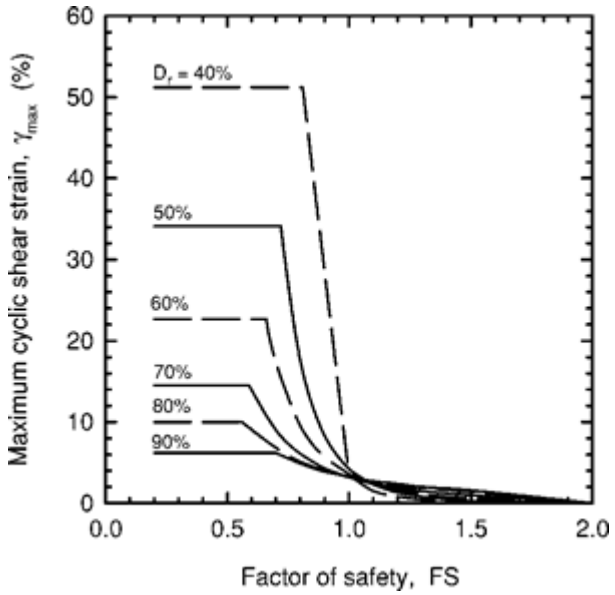
Procedure for the evaluation of soil liquefaction resistance, Boulanger & Idriss(2014)



Procedure for the evaluation of liquefaction-induced lateral spreading displacements



[1] Flow chart illustrating major steps in estimating liquefaction-induced lateral spreading displacements using the proposed approach



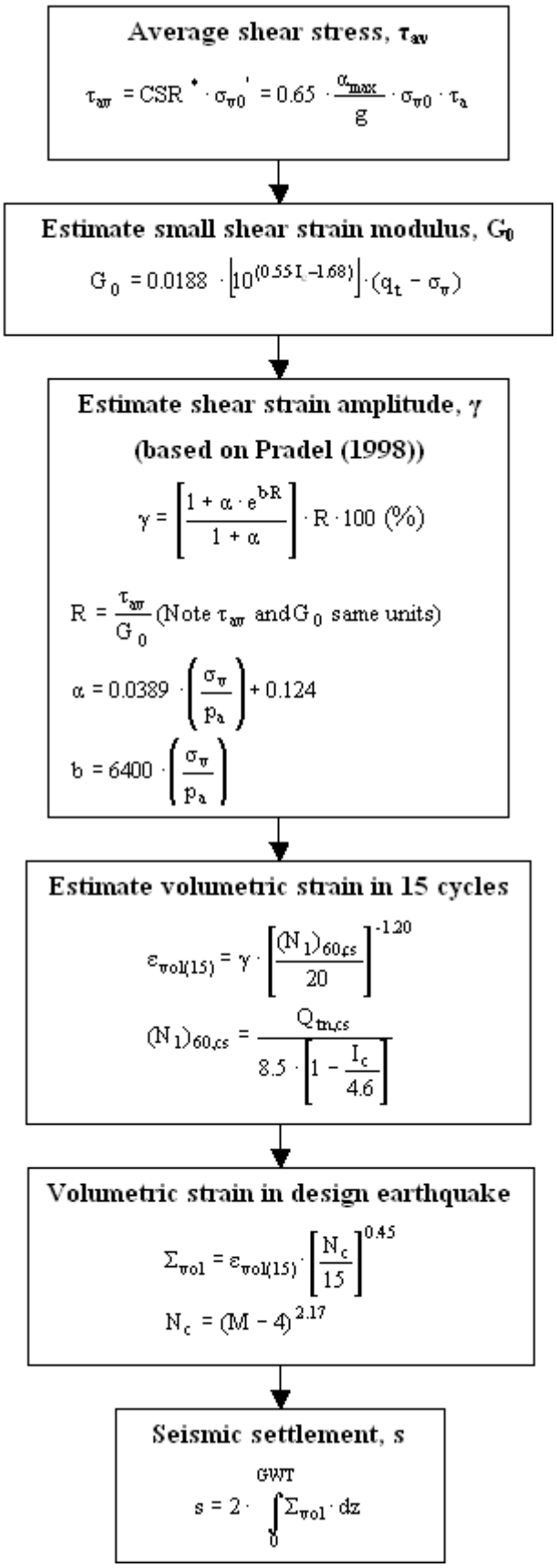
[1] **Figure 1**

$$LDI = \int_0^{z_{max}} \gamma_{max} dz$$

[1] **Equation [3]**

[1] "Estimating liquefaction-induced ground settlements from CPT for level ground", G. Zhang, P.K. Robertson, and R.W.I. Brachman

Procedure for the estimation of seismic induced settlements in dry sands



Robertson, P.K. and Lisheng, S., 2010, “Estimation of seismic compression in dry soils using the CPT” FIFTH INTERNATIONAL CONFERENCE ON RECENT ADVANCES IN GEOTECHNICAL EARTHQUAKE ENGINEERING AND SOIL DYNAMICS, Symposium in honor of professor I. M. Idriss, San Diego, CA

Liquefaction Potential Index (LPI) calculation procedure

Calculation of the Liquefaction Potential Index (LPI) is used to interpret the liquefaction assessment calculations in terms of severity over depth. The calculation procedure is based on the methology developed by Iwasaki (1982) and is adopted by AFPS.

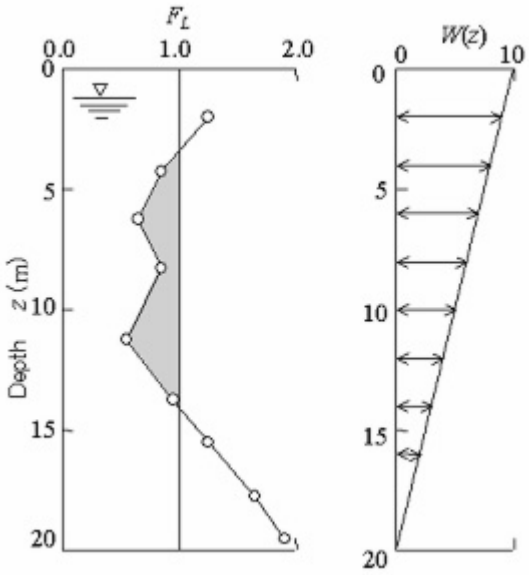
To estimate the severity of liquefaction extent at a given site, LPI is calculated based on the following equation:

$$\mathbf{LPI} = \int_0^{20} (10 - 0{,}5z) \times F_L \times dz$$

where:
F_L = 1 - F.S. when F.S. less than 1
F_L = 0 when F.S. greater than 1
z depth of measurment in meters

Values of LPI range between zero (0) when no test point is characterized as liquefiable and 100 when all points are characterized as susceptible to liquefaction. Iwasaki proposed four (4) discrete categories based on the numeric value of LPI:

- LPI = 0 : Liquefaction risk is very low
- 0 < LPI <= 5 : Liquefaction risk is low
- 5 < LPI <= 15 : Liquefaction risk is high
- LPI > 15 : Liquefaction risk is very high



Graphical presentation of the LPI calculation procedure

Shear-Induced Building Settlement (Ds) calculation procedure

The shear-induced building settlement (Ds) due to liquefaction below the building can be estimated using the relationship developed by Bray and Macedo (2017):

$$Ln(Ds) = c1 + c2 * LBS + 0.58 * Ln\left(Tanh\left(\frac{HL}{6}\right)\right) + 4.59 * Ln(Q) - 0.42 * Ln(Q)^2 - 0.02 * B + 0.84 * Ln(CAVdp) + 0.41 * Ln(Sa1) + \varepsilon$$

where Ds is in the units of mm, c1= -8.35 and c2= 0.072 for LBS ≤ 16, and c1= -7.48 and c2= 0.014 otherwise. Q is the building contact pressure in units of kPa, HL is the cumulative thickness of the liquefiable layers in the units of m, B is the building width in the units of m, CAVdp is a standardized version of the cumulative absolute velocity in the units of g-s, Sa1 is 5%-damped pseudo-acceleration response spectral value at a period of 1 s in the units of g, and ε is a normal random variable with zero mean and 0.50 standard deviation in Ln units. The liquefaction-induced building settlement index (LBS) is:

$$LBS = \sum W * \frac{\varepsilon_{shear}}{z} dz$$

where z (m) is the depth measured from the ground surface > 0, W is a foundation-weighting factor wherein W = 0.0 for z less than Df, which is the embedment depth of the foundation, and W = 1.0 otherwise. The shear strain parameter (ε_shear) is the liquefaction-induced free-field shear strain (in %) estimated using Zhang et al. (2004). It is calculated based on the estimated Dr of the liquefied soil layer and the calculated safety factor against liquefaction triggering (FSL).

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CONFIDENTIAL REPORT
Available at the City of Carson upon request.

Appendix F

Paleontological Resources Assessment Report

ESA

Appendix G
Greenhouse Gas Modeling Files

ESA

21611 South Perry Street

Construction Assumptions

Project Site Acreage 2.8

Project Summary

Land Use	CalEEMod Landuse Type	Unit Amount	Size Metrics	Lot Acreage	Square Feet	
Commercial	General Office Building	2.425	1000sqft	0.2	700	Postal Annex
Recreational	High Turnover (Sit Down Restaurant)	1.55	1000sqft	0.2	1,550	Café
Retail	Strip Mall	0.7	1000sqft	0.2	2,425	elf-Storage Office
Industrial	Unrefrigerated Warehouse-No Rail	109.039	1000sqft	0.5	109,039	Storage Area
Parking	Parking Lot	41	Space	0.2	16,400	Parking
Recreational	City Park	0.528	Acre	1.5	23,000	Landscape Area
				2.8	153114	

Notes

1 Land use acreage is an estimate of the total site acreage of 5 acres

Project Description

Location	CEC Forecasting Climate Zone	Start of Construction	Operational Year	Utility Company
Los Angeles County	11	1-Jan-23	2024	Southern California Edison Company

Construction Schedule

Phase Name	CalEEMod Phase Type	Start Date	End Date	Total Days	# of Workers per day	Total One-way Worker Trips per day	Trip Length	Vendor Trips per day	Total One-Way Vendor Trips per day	Trip Length	Total Haul Trucks	Total One-way Haul Trips	Trucks per day	Trip Length
Demo & Site Preparation		1/1/2023	2/1/2023	23	8	16	14.7		0	6.9	115	230	5	42
Grading/Excavation		2/1/2023	3/1/2023	21	10	20	14.7		0	6.9	315	630	15	20
Drainage/Utilities/Trenching		3/1/2023	5/1/2023	44	20	40	14.7		0	6.9	132	264	3	20
Foundations/Concrete Pour		5/1/2023	6/1/2023	24	30	60	14.7	9	18	6.9	48	96	2	20
Building Construction		6/1/2023	2/1/2024	176	75	150	14.7		0	6.9	0	0	0	20
Paving		1/1/2024	1/31/2024	23	10	20	14.7	4	8	6.9	115	230	5	20
Architectural Coatings		11/1/2023	2/1/2024	67	8	16	14.7		0	6.9	0	0	0	20
Other 1: Landscaping		11/1/2023	2/1/2024	67	8	16	14.7		0	6.9	67	134	1	20

Note: Foundation/Concrete Pour Vendor Truck assumes 10 cy/truck for concrete spread throughout the 24 days of the phase.

Building Construction Vendor Trucks taken from CalEEMod Defaults 0

21611 South Perry Street

Construction Annual GHG

	Metric Tons/Year			
Phase/Year	**On-Road Mobile Sources**	**Construction Equipment**	**Water + Construction Office**	**Total**
3.2 Demo & Site Preparation - 2023	20	33.9	0.0	53
3.3 Grading/Excavation - 2023	51	87.4	0.8	139
3.4 Drainage/Utilities/Trenching - 2023	29	81.8	0.0	111
3.5 Foundations/Concrete Pour - 2023	21	34.8	0.0	55
3.6 Building Construction - 2023	107	402.7	0.0	510
3.6 Building Construction - 2024	17	63.6	0.0	80
3.7 Architectural Coating - 2023	3	13.0	0.0	16
3.7 Architectural Coating - 2024	2	7.3	0.0	9
3.8 Landscaping - 2023	10	4.8	0.0	15
3.8 Landscaping - 2024	5	2.7	0.0	8
3.9 Paving - 2024	22	39.9	0.0	62
Total	**286**	**772**	**1**	**1,059**
Amortized - 30 years	**10**	**26**	**0**	**35**

21611 South Perry Street
Construction GHG Analysis

Temporary Construction Trailer - Electricity							
Land Use	**Square Feet**	**Energy Use per year (kWh)**	**Estimated Project Construction Duration (years)**	**Total Energy Use (kWh)**	**Construction Office GHG Emissions Total**	**Electricity Emission Factor**	**Electricity Emission Factor**
General Office	1,000	12,500		-	0.00	**(MT CO2e/MWh)**	**(lbs CO2e/MWh)**
Note: CalEEMod 2020.4.0 used to estimate energy use for temporary construction office						0.23	508.97

21611 South Perry Street
Construction Energy

Construction Water Energy Estimates

Source	Acreage/Day	Number of Days	Total Construction Water Use (Mgal)	Electricity Demand from Water Conveyance (MWh)	Annual Electricity Demand from Water Conveyance (MWh)
Grading/Excavation	4.0	21	0.252	3.3	3.5
Total			**0.252**	**3.3**	**3.5**

CalEEMod Water Electricity Factors	Electricity Intensity Factor To Supply (kWh/Mgal)	Electricity Intensity Factor To Treat (kWh/Mgal)	Electricity Intensity Factor To Distribute (kWh/Mgal)	Electricity Intensity Factor For Wastewater Treatment (kWh/Mgal)
	9727	111	1272	1911

Construction Water GHG	Electricity Emission (MT CO2e/MWh)	Electricity Emission (lbs CO2e/MWh)
0.76	0.23	508.97

Sources and Assumptions:

CalEEMod Appendix A, Pg. 8, based on given piece of equipment can pass over in an 8-hour workday

-Electricity Intensity Factors - California Emissions Estimator Model (CalEEMod).

-Estimated construction water use assumed to be generally equivalent to landscape irrigation, based on a factor of 20.94 gallons per year per square foot of landscaped area within the Los Angeles area (Mediterranean climate), which assumes high water demand landscaping materials and an irrigation system efficiency of 85%. Factor is therefore (20.94 GAL/SF/year) x (43,560 SF/acre) / (365 days/year) / (0.85) = 2,940 gallons/acre/day, rounded up to 3,000 gallons/acre/day. (U.S. Department of Energy, Energy Efficiency & Renewable Energy, Federal Energy Management Program. “Guidelines for Estimating Unmetered Landscaping Water Use." July 2010. Page 12, Table 4 - Annual Irrigation Factor – Landscaped Areas with High Water Requirements).

Equipment Type	Acres/8hr-day
Crawler Tractors	0.5
Graders	0.5
Rubber Tired Dozers	0.5
Scrapers	1

21611 Perry Street

Total On-Road Emissions

260 Max construction days per year

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Idling per Day (minutes)
Demo & Site Preparation	2023				
Total Haul Trips	230				
Hauling	10	23	8	42	15
Vendor	0	23	8	6.9	15
Worker	16	23	8	14.7	0
					Total:
Grading/Excavation	2023				
Total Haul Trips	630				
Hauling	30	21	8	42	15
Vendor	0	21	8	6.9	15
Worker	20	21	8	14.7	0
					Total:
Drainage/Utilities/Trenching	2023				
Total Haul Trips	264				
Hauling	6	44	8	42	15
Vendor	0	44	8	6.9	15
Worker	40	44	8	14.7	0
					Total:
Foundations/Concrete Pour	2023				
Total Haul Trips	96				
Hauling	4	24	8	42	15
Vendor	18	24	8	6.9	15
Worker	60	24	8	14.7	0
					Total:
Building Construction	2023				
Total Haul Trips	0				
Hauling	0	152	8	42	15
Vendor	0	152	8	6.9	15
Worker	150	152	8	14.7	0
					Total:
Building Construction	2024				
Total Haul Trips	0				
Hauling	0	24	8	42	15
Vendor	0	24	8	6.9	15
Worker	150	24	8	14.7	0
					Total:
Architectural Coatings	2023				
Total Haul Trips	0				
Hauling	0	43	8	42	15
Vendor	0	43	8	6.9	15
Worker	16	43	8	14.7	0
					Total:
Architectural Coatings	2024				
Total Haul Trips	0				
Hauling	0	24	8	42	15
Vendor	0	24	8	6.9	15
Worker	16	24	8	14.7	0
					Total:
Landscaping	2023				
Total Haul Trips	86				
Hauling	2	43	8	42	15
Vendor	0	43	8	6.9	15
Worker	16	43	8	14.7	0
					Total:

21611 Perry Street

Total On-Road Emissions

260 Max construction days per year

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Idling per Day (minutes)
Landscaping	2024				
Total Haul Trips	48				
Hauling	2	24	8	42	15
Vendor	0	24	8	6.9	15
Worker	16	24	8	14.7	0
					Total:
Paving	2024				
Total Haul Trips	230				
Hauling	10	23	8	42	15
Vendor	8	23	8	6.9	15
Worker	20	23	8	14.7	0
					Total:

21611 Perry Street

Total On-Road Emissions

Construction Phase	Regional Emissions (pounds/day)										(MT/yr)
	ROG	NOX	CO	SO2	PM10 Dust	PM10 Exh	Total PM10	PM2.5 Dust	PM2.5 Exh	Total PM2.5	Total CO2e
Demo & Site Preparation											
Total Haul Trips											
Hauling	0.02	2.53	1.51	0.01	0.17	0.02	0.20	0.04	0.02	0.07	17.83
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.05	0.62	0.00	0.04	0.00	0.04	0.01	0.00	0.01	1.73
	0.03	2.58	2.14	0.02	0.22	0.02	0.24	0.05	0.02	0.08	19.56
Grading/Excavation											
Total Haul Trips											
Hauling	0.05	7.58	4.54	0.04	0.52	0.07	0.59	0.13	0.06	0.20	48.83
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.06	0.78	0.00	0.05	0.00	0.06	0.01	0.00	0.01	1.97
	0.06	7.65	5.33	0.05	0.58	0.07	0.64	0.14	0.06	0.21	50.80
Drainage/Utilities/Trenching											
Total Haul Trips											
Hauling	0.01	1.52	0.91	0.01	0.10	0.01	0.12	0.03	0.01	0.04	20.46
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.03	0.12	1.56	0.00	0.11	0.00	0.11	0.02	0.00	0.02	8.27
	0.04	1.64	2.47	0.01	0.21	0.02	0.23	0.05	0.01	0.06	28.73
Foundations/Concrete Pour											
Total Haul Trips											
Hauling	0.01	1.01	0.61	0.01	0.07	0.01	0.08	0.02	0.01	0.03	7.44
Vendor	0.01	1.25	1.17	0.01	0.04	0.01	0.05	0.01	0.01	0.02	6.33
Worker	0.04	0.18	2.34	0.01	0.16	0.00	0.17	0.03	0.00	0.03	6.77
	0.06	2.45	4.12	0.02	0.28	0.02	0.29	0.06	0.02	0.08	20.53
Building Construction											
Total Haul Trips											
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.11	0.46	5.86	0.02	0.41	0.01	0.42	0.07	0.01	0.08	107.13
	0.11	0.46	5.86	0.02	0.41	0.01	0.42	0.07	0.01	0.08	107.13
Building Construction											
Total Haul Trips											
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.10	0.41	5.40	0.01	0.41	0.01	0.42	0.07	0.01	0.08	16.50
	0.10	0.41	5.40	0.01	0.41	0.01	0.42	0.07	0.01	0.08	16.50
Architectural Coatings											
Total Haul Trips											
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.05	0.62	0.00	0.04	0.00	0.04	0.01	0.00	0.01	3.23
	0.01	0.05	0.62	0.00	0.04	0.00	0.04	0.01	0.00	0.01	3.23
Architectural Coatings											
Total Haul Trips											
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.04	0.58	0.00	0.04	0.00	0.04	0.01	0.00	0.01	1.76
	0.01	0.04	0.58	0.00	0.04	0.00	0.04	0.01	0.00	0.01	1.76
Landscaping											
Total Haul Trips											
Hauling	0.00	0.51	0.30	0.00	0.03	0.00	0.04	0.01	0.00	0.01	6.67
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.05	0.62	0.00	0.04	0.00	0.04	0.01	0.00	0.01	3.23
	0.01	0.55	0.93	0.00	0.08	0.01	0.08	0.02	0.01	0.02	9.90

21611 Perry Street

Total On-Road Emissions

Construction Phase	Regional Emissions (pounds/day)										(MT/yr)
	ROG	NOX	CO	SO2	PM10 Dust	PM10 Exh	Total PM10	PM2.5 Dust	PM2.5 Exh	Total PM2.5	Total CO2e
Landscaping											
Total Haul Trips											
Hauling	0.00	0.49	0.30	0.00	0.03	0.00	0.04	0.01	0.00	0.01	3.66
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.04	0.58	0.00	0.04	0.00	0.04	0.01	0.00	0.01	1.76
	0.01	0.53	0.87	0.00	0.08	0.01	0.08	0.02	0.01	0.02	5.42
Paving											
Total Haul Trips											
Hauling	0.01	2.44	1.49	0.01	0.17	0.02	0.20	0.04	0.02	0.07	17.53
Vendor	0.01	0.54	0.51	0.00	0.02	0.00	0.02	0.00	0.00	0.01	2.65
Worker	0.01	0.05	0.72	0.00	0.05	0.00	0.06	0.01	0.00	0.01	2.11
	0.03	3.03	2.72	0.02	0.25	0.03	0.27	0.06	0.02	0.08	22.30

21611 Perry Street

Total On-Road Emissions

260 Max construction days per year

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Idling per Day (minutes)
Demo & Site Preparation	2023				
Total Haul Trips	230				
Hauling	10	23	8	42	15
Vendor	0	23	8	6.9	15
Worker	16	23	8	14.7	0
Grading/Excavation	2023				
Total Haul Trips	630				
Hauling	30	21	8	42	15
Vendor	0	21	8	6.9	15
Worker	20	21	8	14.7	0
Drainage/Utilities/Trenching	2023				
Total Haul Trips	264				
Hauling	6	44	8	42	15
Vendor	0	44	8	6.9	15
Worker	40	44	8	14.7	0
Foundations/Concrete Pour	2023				
Total Haul Trips	96				
Hauling	4	24	8	42	15
Vendor	18	24	8	6.9	15
Worker	60	24	8	14.7	0
Building Construction	2023				
Total Haul Trips	0				
Hauling	0	152	8	42	15
Vendor	0	152	8	6.9	15
Worker	150	152	8	14.7	0
Building Construction	2024				
Total Haul Trips	0				
Hauling	0	24	8	42	15
Vendor	0	24	8	6.9	15
Worker	150	24	8	14.7	0
Architectural Coatings	2023				
Total Haul Trips	0				
Hauling	0	43	8	42	15
Vendor	0	43	8	6.9	15
Worker	16	43	8	14.7	0
Architectural Coatings	2024				
Total Haul Trips	0				
Hauling	0	24	8	42	15
Vendor	0	24	8	6.9	15
Worker	16	24	8	14.7	0

21611 Perry Street

Total On-Road Emissions

260 Max construction days per year

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Idling per Day (minutes)
Landscaping	2023				
Total Haul Trips	86				
Hauling	2	43	8	42	15
Vendor	0	43	8	6.9	15
Worker	16	43	8	14.7	0
Landscaping	2024				
Total Haul Trips	48				
Hauling	2	24	8	42	15
Vendor	0	24	8	6.9	15
Worker	16	24	8	14.7	0
Paving	2024				
Total Haul Trips	230				
Hauling	10	23	8	42	15
Vendor	8	23	8	6.9	15
Worker	20	23	8	14.7	0

21611 Perry Street

Total On-Road Emissions

Construction Phase	Regional Emissions (Tons/year)										(MT/yr)
	ROG	NOX	CO	SO2	PM10 Dust	PM10 Exh	Total PM10	PM2.5 Dust	PM2.5 Exh	Total PM2.5	Total CO2e
Demo & Site Preparation											
Total Haul Trips											
Hauling	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.83
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.73
Grading/Excavation											
Total Haul Trips											
Hauling	0.00	0.08	0.05	0.00	0.01	0.00	0.01	0.00	0.00	0.00	48.83
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.97
Drainage/Utilities/Trenching											
Total Haul Trips											
Hauling	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.46
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.27
Foundations/Concrete Pour											
Total Haul Trips											
Hauling	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.44
Vendor	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.33
Worker	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.77
Building Construction											
Total Haul Trips											
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.03	0.45	0.00	0.03	0.00	0.03	0.01	0.00	0.01	107.13
Building Construction											
Total Haul Trips											
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.06	0.00	0.00	0.00	0.01	0.00	0.00	0.00	16.50
Architectural Coatings											
Total Haul Trips											
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.23
Architectural Coatings											
Total Haul Trips											
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.76

21611 Perry Street

Total On-Road Emissions

Construction Phase	Regional Emissions (Tons/year)										(MT/yr)
	ROG	NOX	CO	SO2	PM10 Dust	PM10 Exh	Total PM10	PM2.5 Dust	PM2.5 Exh	Total PM2.5	Total CO2e
Landscaping											
Total Haul Trips											
Hauling	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.67
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.23
Landscaping											
Total Haul Trips											
Hauling	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.66
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.76
Paving											
Total Haul Trips											
Hauling	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.53
Vendor	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.65
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.11

21611 Perry Street
Idling Emissions

		Idling Emissions Factor (grams/minute)						Idling Emissions Factor (grams/minute)		
	ROG	NOX	CO	SO2	PM10	PM2.5	CO2	CH4	N2O
2023Hauling Hauling	0.00153219	2.475440914	3.09007671	0.00445539	0.00146199	0.00139636	501.459269	0.09222066	0.08043855
2023Vendor Vendor	0.00873855	1.452222429	1.72640023	0.00258336	0.00124295	0.00118783	289.393152	0.05139395	0.0460508
2023Worker Worker	0	0	0	0	0	0	0	0	0
2024Hauling Hauling	0.0020895	2.445312655	3.07903027	0.00435308	0.00137735	0.00131528	490.827049	0.0905213	0.07877141
2024Vendor Vendor	0.00870264	1.431440263	1.72000292	0.00253055	0.00112049	0.0010706	283.971879	0.05066755	0.04521769
2024Worker Worker	0	0	0	0	0	0	0	0	0
2025Hauling Hauling	0.00332165	2.416878954	3.06623505	0.00425044	0.00130967	0.00125041	480.185746	0.0891488	0.07710399
2025Vendor Vendor	0.00900196	1.411456643	1.71231511	0.00247621	0.00101449	0.00096912	278.397376	0.05008131	0.04436118
2025Worker Worker	0	0	0	0	0	0	0	0	0
2026Hauling Hauling	0.00482353	2.390354593	3.05359376	0.00415118	0.00124574	0.00118913	469.943227	0.08803578	0.07550138
2026Vendor Vendor	0.00946874	1.392752914	1.70465807	0.00242296	0.00092072	0.00087934	272.952852	0.0496051	0.04352444
2026Worker Worker	0	0	0	0	0	0	0	0	0
GWP	N/A	N/A	N/A	N/A	N/A	N/A	1	25	290

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	Idling minutes per Day (miles)	Regional Emissions (pounds/day) ROG	NOX	CO	SO2	PM10	PM2.5	Regional Emissions (MT/year) CO2	CH4	N2O	CO2e
Demo & Site Preparation	2023													
Total Haul Trips	230													
Hauling	10	23	8	15	0.00	0.82	1.02	0.00	0.00	0.00	1.73	0.01	0.08	1.82
Vendor	0	23	8	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	16	23	8	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	2023													
Total Haul Trips	630													
Hauling	30	21	8	15	0.00	2.46	3.07	0.00	0.00	0.00	4.74	0.02	0.22	4.98
Vendor	0	21	8	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	20	21	8	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Trenchir	2023													
Total Haul Trips	264													
Hauling	6	44	8	15	0.00	0.49	0.61	0.00	0.00	0.00	1.99	0.01	0.09	2.09
Vendor	0	44	8	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	40	44	8	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Foundations/Concrete Pou	2023													
Total Haul Trips	96													
Hauling	4	24	8	15	0.00	0.33	0.41	0.00	0.00	0.00	0.72	0.00	0.03	0.76
Vendor	18	24	8	15	0.01	0.86	1.03	0.00	0.00	0.00	1.88	0.01	0.09	1.97
Worker	60	24	8	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	2023													
Total Haul Trips	0													
Hauling	0	152	8	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0	152	8	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	150	152	8	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	2024													
Total Haul Trips	0													
Hauling	0	24	8	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0	24	8	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	150	24	8	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coatings	2023													
Total Haul Trips	0													
Hauling	0	43	8	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0	43	8	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	16	43	8	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coatings	2024													
Total Haul Trips	0													
Hauling	0	24	8	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0	24	8	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	16	24	8	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	2023													
Total Haul Trips	86													
Hauling	2	43	8	15	0.00	0.16	0.20	0.00	0.00	0.00	0.65	0.00	0.03	0.68
Vendor	0	43	8	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	16	43	8	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	2024													
Total Haul Trips	48													
Hauling	2	24	8	15	0.00	0.16	0.20	0.00	0.00	0.00	0.35	0.00	0.02	0.37
Vendor	0	24	8	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	16	24	8	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	2024													
Total Haul Trips	230													
Hauling	10	23	8	15	0.00	0.81	1.02	0.00	0.00	0.00	1.69	0.01	0.08	1.78
Vendor	8	23	8	15	0.00	0.38	0.46	0.00	0.00	0.00	0.78	0.00	0.04	0.82
Worker	20	23	8	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

21611 Perry Street
Running Emissions

	Running Emissions Factor (grams/mile)						Running Emissions Factor (grams/mile)		
	ROG	NOX	CO	SO2	PM10	PM2.5	CO2	CH4	N2O
2023Hauling Hauling	0.01583726	1.846349092	0.53216798	0.01440181	0.02335548	0.02234022	1582.16594	0.07485845	0.25204854
2023Vendor Vendor	0.02517402	1.413009631	0.53163708	0.01304101	0.01704589	0.01630115	1404.04014	0.0416683	0.1941139
2023Worker Worker	0.02253027	0.09409696	1.20532597	0.00313687	0.00190111	0.00175	317.32672	0.00530072	0.00752789
2024Hauling Hauling	0.01500166	1.757966945	0.5097505	0.01416696	0.02319781	0.02218961	1557.21286	0.07114403	0.24811684
2024Vendor Vendor	0.02221033	1.324663487	0.47751009	0.01284951	0.01640294	0.01568629	1384.23319	0.03949423	0.19181212
2024Worker Worker	0.01996092	0.084125691	1.11121797	0.00306134	0.00178709	0.00164482	309.685005	0.0047538	0.0069466
2025Hauling Hauling	0.01431182	1.682904108	0.49345533	0.01390961	0.02282737	0.02183543	1529.97223	0.06799383	0.24382581
2025Vendor Vendor	0.01962764	1.243630697	0.43346534	0.01262634	0.01566747	0.01498289	1361.14553	0.03768321	0.189104
2025Worker Worker	0.01787186	0.075802473	1.03210504	0.00299115	0.00169862	0.00156324	302.584557	0.00430196	0.00645241
2026Hauling Hauling	0.01368221	1.614053992	0.47684787	0.01364538	0.0226378	0.02165426	1501.9816	0.06476403	0.23941148
2026Vendor Vendor	0.01750743	1.169214075	0.39765668	0.0123973	0.01509905	0.01443925	1337.37545	0.03590634	0.1862605
2026Worker Worker	0.01606854	0.068748951	0.96388598	0.00292729	0.0016094	0.00148096	296.123967	0.00390838	0.00603404
GWP	N/A	N/A	N/A	N/A	N/A	N/A	1	25	290

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Regional Emissions (pounds/day)						Regional Emissions (MT/year)			
					ROG	NOX	CO	SO2	PM10	PM2.5	CO2	CH4	N2O	CO2e
Demo & Site Preparation	2023													
Total Haul Trips	230													
Hauling	10	23	8	42	0.01	1.71	0.49	0.01	0.02	0.02	15.28	0.02	0.71	16.01
Vendor	0	23	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	16	23	8	14.7	0.01	0.05	0.62	0.00	0.00	0.00	1.72	0.00	0.01	1.73
Grading/Excavation	2023													
Total Haul Trips	630													
Hauling	30	21	8	42	0.04	5.13	1.48	0.04	0.06	0.06	41.86	0.05	1.93	43.85
Vendor	0	21	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	20	21	8	14.7	0.01	0.06	0.78	0.00	0.00	0.00	1.96	0.00	0.01	1.97
Drainage/Utilities/Trenchi	2023													
Total Haul Trips	264													
Hauling	6	44	8	42	0.01	1.03	0.30	0.01	0.01	0.01	17.54	0.02	0.81	18.37
Vendor	0	44	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	40	44	8	14.7	0.03	0.12	1.56	0.00	0.00	0.00	8.21	0.00	0.06	8.27
Foundations/Concrete Pou	2023													
Total Haul Trips	96													
Hauling	4	24	8	42	0.01	0.68	0.20	0.01	0.01	0.01	6.38	0.01	0.29	6.68
Vendor	18	24	8	6.9	0.01	0.39	0.15	0.00	0.00	0.00	4.19	0.00	0.17	4.36
Worker	60	24	8	14.7	0.04	0.18	2.34	0.01	0.00	0.00	6.72	0.00	0.05	6.77
Building Construction	2023													
Total Haul Trips	0													
Hauling	0	152	8	42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0	152	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	150	152	8	14.7	0.11	0.46	5.86	0.02	0.01	0.01	106.36	0.04	0.73	107.13
Building Construction	2024													
Total Haul Trips	0													
Hauling	0	24	8	42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0	24	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	150	24	8	14.7	0.10	0.41	5.40	0.01	0.01	0.01	16.39	0.01	0.11	16.50

21611 Perry Street
Running Emissions

		Running Emissions Factor (grams/mile)						Running Emissions Factor (grams/mile)		
	ROG	NOX	CO	SO2	PM10	PM2.5	CO2	CH4	N2O
2023Hauling Hauling	0.01583726	1.846349092	0.53216798	0.01440181	0.02335548	0.02234022	1582.16594	0.07485845	0.25204854
2023Vendor Vendor	0.02517402	1.413009631	0.53163708	0.01304101	0.01704589	0.01630115	1404.04014	0.0416683	0.1941139
2023Worker Worker	0.02253027	0.09409696	1.20532597	0.00313687	0.00190111	0.00175	317.32672	0.00530072	0.00752789
2024Hauling Hauling	0.01500166	1.757966945	0.5097505	0.01416696	0.02319781	0.02218961	1557.21286	0.07114403	0.24811684
2024Vendor Vendor	0.02221033	1.324663487	0.47751009	0.01284951	0.01640294	0.01568629	1384.23319	0.03949423	0.19181212
2024Worker Worker	0.01996092	0.084125691	1.11121797	0.00306134	0.00178709	0.00164482	309.685005	0.0047538	0.0069466
2025Hauling Hauling	0.01431182	1.682904108	0.49345533	0.01390961	0.02282737	0.02183543	1529.97223	0.06799383	0.24382581
2025Vendor Vendor	0.01962764	1.243630697	0.43346534	0.01262634	0.01566747	0.01498289	1361.14553	0.03768321	0.189104
2025Worker Worker	0.01787186	0.075802473	1.03210504	0.00299115	0.00169862	0.00156324	302.584557	0.00430196	0.00645241
2026Hauling Hauling	0.01368221	1.614053992	0.47684787	0.01364538	0.0226378	0.02165426	1501.9816	0.06476403	0.23941148
2026Vendor Vendor	0.01750743	1.169214075	0.39765668	0.0123973	0.01509905	0.01443925	1337.37545	0.03590634	0.1862605
2026Worker Worker	0.01606854	0.068748951	0.96388598	0.00292729	0.0016094	0.00148096	296.123967	0.00390838	0.00603404
GWP	N/A	N/A	N/A	N/A	N/A	N/A	1	25	290

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Regional Emissions (pounds/day)						Regional Emissions (MT/year)			
					ROG	NOX	CO	SO2	PM10	PM2.5	CO2	CH4	N2O	CO2e
Architectural Coatings	2023													
Total Haul Trips	0													
Hauling	0	43	8	42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0	43	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	16	43	8	14.7	0.01	0.05	0.62	0.00	0.00	0.00	3.21	0.00	0.02	3.23
Architectural Coatings	2024													
Total Haul Trips	0													
Hauling	0	24	8	42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0	24	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	16	24	8	14.7	0.01	0.04	0.58	0.00	0.00	0.00	1.75	0.00	0.01	1.76
Landscaping	2023													
Total Haul Trips	86													
Hauling	2	43	8	42	0.00	0.34	0.10	0.00	0.00	0.00	5.71	0.01	0.26	5.99
Vendor	0	43	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	16	43	8	14.7	0.01	0.05	0.62	0.00	0.00	0.00	3.21	0.00	0.02	3.23
Landscaping	2024													
Total Haul Trips	48													
Hauling	2	24	8	42	0.00	0.33	0.09	0.00	0.00	0.00	3.14	0.00	0.15	3.29
Vendor	0	24	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	16	24	8	14.7	0.01	0.04	0.58	0.00	0.00	0.00	1.75	0.00	0.01	1.76
Paving	2024													
Total Haul Trips	230													
Hauling	10	23	8	42	0.01	1.63	0.47	0.01	0.02	0.02	15.04	0.02	0.70	15.75
Vendor	8	23	8	6.9	0.00	0.16	0.06	0.00	0.00	0.00	1.76	0.00	0.07	1.83
Worker	20	23	8	14.7	0.01	0.05	0.72	0.00	0.00	0.00	2.09	0.00	0.01	2.11

21611 Perry Street

Road Dust, Break Wear, and Tire wear Emissions

	Emission Factors (grams/mile)					
	PM10			PM2.5		
	RD	BW	TW	RD	BW	TW
2023Hauling Hauling	6.72E-02	0.084714206	0.03543552	1.01E-02	0.02964997	0.00885888
2023Vendor Vendor	6.72E-02	0.064163683	0.02371776	1.01E-02	0.02245729	0.00592944
2023Worker Worker	6.72E-02	0.009477692	0.008	1.01E-02	0.00331719	0.002
2024Hauling Hauling	6.72E-02	0.08427948	0.03543928	1.01E-02	0.02949782	0.00885982
2024Vendor Vendor	6.72E-02	0.063890978	0.02371964	1.01E-02	0.02236184	0.00592991
2024Worker Worker	6.72E-02	0.009419633	0.008	1.01E-02	0.00329687	0.002
2025Hauling Hauling	6.72E-02	0.084162962	0.03544313	1.01E-02	0.02945704	0.00886078
2025Vendor Vendor	6.72E-02	0.063767774	0.02372157	1.01E-02	0.02231872	0.00593039
2025Worker Worker	6.72E-02	0.009385513	0.008	1.01E-02	0.00328493	0.002
2026Hauling Hauling	6.72E-02	0.084352575	0.03544711	1.01E-02	0.0295234	0.00886178
2026Vendor Vendor	6.72E-02	0.063787152	0.02372356	1.01E-02	0.0223255	0.00593089
2026Worker Worker	6.72E-02	0.009353635	0.008	1.01E-02	0.00327377	0.002

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Regional Emissions (pounds/day) PM10 RD	PM10 BW	PM10 TW	PM2.5 RD	PM2.5 BW	PM2.5 TW
Demo & Site Preparation	2023									
Total Haul Trips	230									
Hauling	10	23	8	42	0.06	0.08	0.03	0.01	0.03	0.01
Vendor	0	23	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00
Worker	16	23	8	14.7	0.03	0.00	0.00	0.01	0.00	0.00
Grading/Excavation	2023									
Total Haul Trips	630									
Hauling	30	21	8	42	0.19	0.24	0.10	0.03	0.08	0.02
Vendor	0	21	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00
Worker	20	21	8	14.7	0.04	0.01	0.01	0.01	0.00	0.00
Drainage/Utilities/Trenchin	2023									
Total Haul Trips	264									
Hauling	6	44	8	42	0.04	0.05	0.02	0.01	0.02	0.00
Vendor	0	44	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00
Worker	40	44	8	14.7	0.09	0.01	0.01	0.01	0.00	0.00
Foundations/Concrete Pour	2023									
Total Haul Trips	96									
Hauling	4	24	8	42	0.02	0.03	0.01	0.00	0.01	0.00
Vendor	18	24	8	6.9	0.02	0.02	0.01	0.00	0.01	0.00
Worker	60	24	8	14.7	0.13	0.02	0.02	0.02	0.01	0.00
Building Construction	2023									
Total Haul Trips	0									
Hauling	0	152	8	42	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0	152	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00
Worker	150	152	8	14.7	0.33	0.05	0.04	0.05	0.02	0.01

21611 Perry Street

Road Dust, Break Wear, and Tire wear Emissions

	Emission Factors (grams/mile)					
	PM10			PM2.5		
	RD	BW	TW	RD	BW	TW
2023Hauling Hauling	6.72E-02	0.084714206	0.03543552	1.01E-02	0.02964997	0.00885888
2023Vendor Vendor	6.72E-02	0.064163683	0.02371776	1.01E-02	0.02245729	0.00592944
2023Worker Worker	6.72E-02	0.009477692	0.008	1.01E-02	0.00331719	0.002
2024Hauling Hauling	6.72E-02	0.08427948	0.03543928	1.01E-02	0.02949782	0.00885982
2024Vendor Vendor	6.72E-02	0.063890978	0.02371964	1.01E-02	0.02236184	0.00592991
2024Worker Worker	6.72E-02	0.009419633	0.008	1.01E-02	0.00329687	0.002
2025Hauling Hauling	6.72E-02	0.084162962	0.03544313	1.01E-02	0.02945704	0.00886078
2025Vendor Vendor	6.72E-02	0.063767774	0.02372157	1.01E-02	0.02231872	0.00593039
2025Worker Worker	6.72E-02	0.009385513	0.008	1.01E-02	0.00328493	0.002
2026Hauling Hauling	6.72E-02	0.084352575	0.03544711	1.01E-02	0.0295234	0.00886178
2026Vendor Vendor	6.72E-02	0.063787152	0.02372356	1.01E-02	0.0223255	0.00593089
2026Worker Worker	6.72E-02	0.009353635	0.008	1.01E-02	0.00327377	0.002

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Regional Emissions (pounds/day) PM10 RD	PM10 BW	PM10 TW	PM2.5 RD	PM2.5 BW	PM2.5 TW
Building Construction	2024									
Total Haul Trips	0									
Hauling	0	24	8	42	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0	24	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00
Worker	150	24	8	14.7	0.33	0.05	0.04	0.05	0.02	0.01
Architectural Coatings	2023									
Total Haul Trips	0									
Hauling	0	43	8	42	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0	43	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00
Worker	16	43	8	14.7	0.03	0.00	0.00	0.01	0.00	0.00
Architectural Coatings	2024									
Total Haul Trips	0									
Hauling	0	24	8	42	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0	24	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00
Worker	16	24	8	14.7	0.03	0.00	0.00	0.01	0.00	0.00
Landscaping	2023									
Total Haul Trips	86									
Hauling	2	43	8	42	0.01	0.02	0.01	0.00	0.01	0.00
Vendor	0	43	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00
Worker	16	43	8	14.7	0.03	0.00	0.00	0.01	0.00	0.00
Landscaping	2024									
Total Haul Trips	48									
Hauling	2	24	8	42	0.01	0.02	0.01	0.00	0.01	0.00
Vendor	0	24	8	6.9	0.00	0.00	0.00	0.00	0.00	0.00
Worker	16	24	8	14.7	0.03	0.00	0.00	0.01	0.00	0.00
Paving	2024									
Total Haul Trips	230									
Hauling	10	23	8	42	0.06	0.08	0.03	0.01	0.03	0.01
Vendor	8	23	8	6.9	0.01	0.01	0.00	0.00	0.00	0.00
Worker	20	23	8	14.7	0.04	0.01	0.01	0.01	0.00	0.00

21611 Perry Street

Total On-Road Fuel Consumption

		gal/mile	gal/min
2023Hauling	Hauling	0.16744049	2.63411E-07
2023Vendor	Vendor	0.140008299	7.56451E-07
2023Worker	Worker	0.039164184	9.57885E-07
2024Hauling	Hauling	0.165344566	1.98496E-07
2024Vendor	Vendor	0.138767125	6.53915E-07
2024Worker	Worker	0.038437414	8.66366E-07
2025Hauling	Hauling	0.163051712	1.95685E-07
2025Vendor	Vendor	0.137362721	6.50149E-07
2025Worker	Worker	0.037780897	8.51473E-07
2026Hauling	Hauling	0.160756677	2.00057E-07
2026Vendor	Vendor	0.135957296	6.52676E-07
2026Worker	Worker	0.037118687	8.35632E-07

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Idling per Day (minutes)
Demo & Site Preparation	2023				
Total Haul Trips	230				
Hauling	10	23	8	42	15
Vendor	0	23	8	6.9	15
Worker	16	23	8	14.7	0
Grading/Excavation	2023				
Total Haul Trips	630				
Hauling	30	21	8	42	15
Vendor	0	21	8	6.9	15
Worker	20	21	8	14.7	0
Drainage/Utilities/Trenching	2023				
Total Haul Trips	264				
Hauling	6	44	8	42	15
Vendor	0	44	8	6.9	15
Worker	40	44	8	14.7	0
Foundations/Concrete Pour	2023				
Total Haul Trips	96				
Hauling	4	24	8	42	15
Vendor	18	24	8	6.9	15
Worker	60	24	8	14.7	0
Building Construction	2023				
Total Haul Trips	0				
Hauling	0	152	8	42	15
Vendor	0	152	8	6.9	15
Worker	150	152	8	14.7	0
Building Construction	2024				
Total Haul Trips	0				
Hauling	0	24	8	42	15
Vendor	0	24	8	6.9	15
Worker	150	24	8	14.7	0

21611 Perry Street

Total On-Road Fuel Consumption

		gal/mile	gal/min
2023Hauling	Hauling	0.16744049	2.63411E-07
2023Vendor	Vendor	0.140008299	7.56451E-07
2023Worker	Worker	0.039164184	9.57885E-07
2024Hauling	Hauling	0.165344566	1.98496E-07
2024Vendor	Vendor	0.138767125	6.53915E-07
2024Worker	Worker	0.038437414	8.66366E-07
2025Hauling	Hauling	0.163051712	1.95685E-07
2025Vendor	Vendor	0.137362721	6.50149E-07
2025Worker	Worker	0.037780897	8.51473E-07
2026Hauling	Hauling	0.160756677	2.00057E-07
2026Vendor	Vendor	0.135957296	6.52676E-07
2026Worker	Worker	0.037118687	8.35632E-07

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Idling per Day (minutes)
Architectural Coatings	2023				
Total Haul Trips	0				
Hauling	0	43	8	42	15
Vendor	0	43	8	6.9	15
Worker	16	43	8	14.7	0
Architectural Coatings	2024				
Total Haul Trips	0				
Hauling	0	24	8	42	15
Vendor	0	24	8	6.9	15
Worker	16	24	8	14.7	0
Landscaping	2023				
Total Haul Trips	86				
Hauling	2	43	8	42	15
Vendor	0	43	8	6.9	15
Worker	16	43	8	14.7	0
Landscaping	2024				
Total Haul Trips	48				
Hauling	2	24	8	42	15
Vendor	0	24	8	6.9	15
Worker	16	24	8	14.7	0
Paving	2024				
Total Haul Trips	230				
Hauling	10	23	8	42	15
Vendor	8	23	8	6.9	15
Worker	20	23	8	14.7	0

21611 Perry Street

Total On-Road Fuel Consumption

Source	Fuel Type	Total Fuel Use (gal)
Hauling	Diesel	11,115
Vendor	Diesel	594
Worker	Gasoline	18,942

Fuel Type	Total Fuel Use	Annual Fuel Use
Diesel	11,709	10,792
Gasoline	18,942	17,459

Duration of Construction	
1.1	years

Construction Phase	Regional Emissions (gallons)			
	gal/mile	gal/min	gal/day	Total Gallons/yr
Demo & Site Preparation				
Total Haul Trips				
Hauling	0.17	2.63E-07	70	1,617
Vendor	0.14	7.56E-07	0	0
Worker	0.04	9.58E-07	9	212
Grading/Excavation				
Total Haul Trips				
Hauling	0.17	2.63E-07	211	4,430
Vendor	0.14	7.56E-07	0	0
Worker	0.04	9.58E-07	12	242
Drainage/Utilities/Trenching				
Total Haul Trips				
Hauling	0.17	2.63E-07	42	1,857
Vendor	0.14	7.56E-07	0	0
Worker	0.04	9.58E-07	23	1,013
Foundations/Concrete Pour				
Total Haul Trips				
Hauling	0.17	2.63E-07	28	675
Vendor	0.14	7.56E-07	17	417
Worker	0.04	9.58E-07	35	829
Building Construction				
Total Haul Trips				
Hauling	0.17	2.63E-07	0	0
Vendor	0.14	7.56E-07	0	0
Worker	0.04	9.58E-07	86	13,126
Building Construction				
Total Haul Trips				
Hauling	0.17	1.98E-07	0	0
Vendor	0.14	6.54E-07	0	0
Worker	0.04	8.66E-07	85	2,034

21611 Perry Street

Total On-Road Fuel Consumption

Source	Fuel Type	Total Fuel Use (gal)
Hauling	Diesel	11,115
Vendor	Diesel	594
Worker	Gasoline	18,942

Fuel Type	Total Fuel Use	Annual Fuel Use
Diesel	11,709	10,792
Gasoline	18,942	17,459

Duration of Construction	
1.1	years

Construction Phase	Regional Emissions (gallons)			
	gal/mile	gal/min	gal/day	Total Gallons/yr
Architectural Coatings				
Total Haul Trips				
Hauling	0.17	2.63E-07	0	0
Vendor	0.14	7.56E-07	0	0
Worker	0.04	9.58E-07	9	396
Architectural Coatings				
Total Haul Trips				
Hauling	0.17	1.98E-07	0	0
Vendor	0.14	6.54E-07	0	0
Worker	0.04	8.66E-07	9	217
Landscaping				
Total Haul Trips				
Hauling	0.17	2.63E-07	14	605
Vendor	0.14	7.56E-07	0	0
Worker	0.04	9.58E-07	9	396
Landscaping				
Total Haul Trips				
Hauling	0.17	1.98E-07	14	333
Vendor	0.14	6.54E-07	0	0
Worker	0.04	8.66E-07	9	217
Paving				
Total Haul Trips				
Hauling	0.17	1.98E-07	69	1,597
Vendor	0.14	6.54E-07	8	176
Worker	0.04	8.66E-07	11	260

21611 Perry Street
Road Dust

Paved Road Dust Emission Factors (Assumes No Precipitation)

Formula: $EF_{Dust,P} = (k\ (sL)^{0.91} \times (W)^{1.02})$

Where:

$EF_{Dust,P}$ =	Paved Road Dust Emission Factor (having the same units as k)
k =	particle size multiplier
sL =	road surface silt loading (g/m^2)
W =	average fleet vehicle weight (tons) (CARB uses 2.4 tons as a fleet average vehicle weight factor)

Emission Factor (grams per VMT)			
	PM10	PM2.5	
k	1.0000	0.1500	
sL	0.0200	0.0200	weighted average silt loading factor used
W	2.4	2.4	
P	46	46	Table 5 of CARB Miscellaneous Process Methodology 7.9 for Los Angeles County
N	365	365	
$EF_{Dust,P}$	0.0672	0.0101	← use in off-model calculation as EF

Silt Loading Factor

Source: CARB, 2021.

Table 3: California Default Statewide and Local Silt Loading Values (Los Angeles County)

Silt Loadings (g/m2)			
Freeway	**Major**	**Collector**	**Local**
0.015	0.013	0.013	0.135

Table 2: Roadway Travel Fractions (Los Angeles County)

2008 HPMS Travel Fractions			
0.44	0.44	0.07	0.05

Unpaved Road Dust Emission Factors (Assumes No Precipitation)

Formula: $EF_{Dust,U} = (k\ (\ s / 12)^{1} \times (Sp / 30)^{0.5} / (M / 0.5)^{0.2}) - C)$

Where:

$EF_{Dust,U}$ =	Unpaved Road Dust Emission Factor (having the same units as k)
k =	particle size multiplier
s =	surface material silt content (%)
Sp =	mean vehicle speed (mph)
M =	surface material moisture content (%)
C =	Emission Factor for 1980s vehicle fleet exhaust, brake wear, and tire wear

Emission Factor (grams per VMT)		
	PM10	PM2.5
k	816.47	81.65
s	4.3%	4.3%
Sp	15	15
M	0.5%	0.5%
C	0.00047	0.00036
$EF_{Dust,U}$	5.20E+00	5.19E-01

Sources:
SCAQMD, CalEEMod, Version 2011.1.
CARB, *Entrained Dust from Paved Road Travel: Emission Estimation Methodology Background Document* , (1997).
USEPA, *AP-42* , Fifth Edition, Volume I, Chapter 13.2.1 - Paved Roads, (2011).
PCR Services Corporation, 2013.

21611 Perry Street
Operational Air Quality Assessment

Regional Operational Emissions

Maximum Unmitigated Regional Operational Emissions (pounds per day)

Source	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Area (Consumer Products, Landscaping)	3	<1	<1	<1	<1	<1
Energy (Natural Gas)	<1	<1	<1	<1	<1	<1
Motor Vehicles	1	2	14	<1	<1	<1
Total Project On-Site and Off-Site Emissions	**4**	**2**	**14**	**0**	**1**	**0**
SCAQMD Numeric Indicators	**55**	**55**	**550**	**150**	**150**	**55**
Over/(Under)	(51)	(53)	(536)	(150)	(149)	(55)
Exceeds Thresholds?	**No**	**No**	**No**	**No**	**No**	**No**

Net Regional Operations

Maximum Unmitigated Regional Operational Emissions (pounds per day)

Source	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Area (Consumer Products, Landscaping)	3	<1	<1	<1	<1	<1
Energy (Natural Gas)	<1	<1	<1	<1	<1	<1
Motor Vehicles	1	2	14	<1	<1	<1
Total Project On-Site and Off-Site Emissions	**4**	**2**	**14**	**<1**	**1**	**0**
Existing On-Site and Off-Site Emissions	<1	<1	<1	<1	<1	<1
Net On-Site and Off-Site Emissions	**4**	**2**	**14**	**<1**	**<1**	**<1**
SCAQMD Numeric Indicators	**55**	**55**	**550**	**150**	**150**	**55**
Over/(Under)	(51)	(53)	(536)	(150)	(149)	(55)
Exceeds Thresholds?	**No**	**No**	**No**	**No**	**No**	**No**

21611 Perry Street
Operational Air Quality Assessment

Localized Operational Emissions

Maximum Unmitigated Localized Operational Emissions (pounds per day)

Source	NO_X	CO	PM_{10}	$PM_{2.5}$
Area (Consumer Products, Landscaping)	0.0	0.0	0.0	0.0
Energy (Natural Gas)	0.1	0.1	0.0	0.0
Total Project On-Site Emissions	**0**	**0**	**0.0**	**0.0**
SCAQMD Numeric Indicators	**82**	**842**	**2.0**	**1.0**
Exceeds Thresholds?	**No**	**No**	**No**	**No**

Localized significance thresholds from SCAQMD Look-Up tables, 5 acre site; SRA 4 (Carson) area; sensitive receptors 25 m away

21611 Perry Street

Greenhouse Gas Emissions Summary

Project Operations Summary (Full Buildout Year 2024)	
Category	**$MTCO_2e/yr$**
Mobile	640
From CalEEMod:	
Area	0
Energy	77
Waste	62
Water	69
External spreadsheet calcs:	
EV Charging	1
Construction Emissions	
2023	685
2024	120
Construction Total	805
Construction Amortized (30 years)	27
Project Subtotal	**876**
Existing	-
Project Net Total GHG Emissions	**876**

$MTCO_2e$=Metric Tons Carbon Dioxide equivalents

21611 Perry Street
Air Quality and GHG Assessment
Operational Mobile Emissions

			Criteria Pollutant Emission Factors (lb/mile)									GHG Emissions (metric tons/mile)				Criteria Pollutant Emissions (pounds/day)									GHG Emissions (metric tons/year)			
	Year	Weekday Daily VMT	ROG	NOx	CO	SOx	PM10 Road Dust	PM10	PM10 Total	PM2_5 Road Dust	PM2_5	PM2.5 Tota	CO2	CH4	N2O	CO2e	ROG	NOx	CO	SOx	PM10 Road Dust	PM10	PM10 Total	PM2_5 Road Dust	PM2_5	PM2.5 Total	CO2	CH4	N2O	CO2e
																											1	*25*	*298*	
Project	2024	4,466	3.26E-04	4.55E-04	3.09E-03	8.24E-06	1.48E-04	5.67E-05	2.05E-04	2.22E-05	2.15E-05	4.37E-05	3.86E-04	2.00E-08	2.04E-08	3.93E-04	1.46	2.03	13.80	0.04	0.66	0.25	0.92	0.10	0.10	0.20	629.60	0.03	0.03	640.34

Source: Fehr and Peers MOU

Appendix H

Phase I Environmental Site Assessment

ESA

Phase I Environmental Site Assessment

21611 S Perry Street
Carson, CA 90745-1613

January 25, 2021

Faring Capital LLC
659 N. Robertson Blvd
West Hollywood, CA 90069

Project Number 20-09-014

Prepared by:

1938 Kellogg Avenue, Suite 116
Carlsbad, CA 92008
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January 25, 2021

Darren Embry
Faring Capital LLC
659 N. Robertson Blvd
West Hollywood, CA 90069

Subject: Phase I Environmental Site Assessment
21611 S Perry Street
Carson, CA 90745-1613
Project Number 20-09-014

Dear Mr. Embry:

Weis Environmental, LLC has completed the contracted environmental consulting services for the above-referenced project. The services were performed in accordance with our proposal and agreement fully executed by all parties. The Phase I Environmental Site Assessment has been performed in accordance with ASTM International (ASTM) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, ASTM Designation E1527-13 and Title 40 of the Code of Federal Regulations (40 CFR) Part 312. We appreciate the opportunity to be of service to you on this project. Please contact us if you have any questions or comments regarding this report or if we can be of further assistance.

Sincerely,

Weis Environmental, LLC

Daniel Weis, R.E.H.S.
Environmental Manager

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APPENDICES

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1.0 INTRODUCTION

This report presents the methods and findings of a Phase I ESA of the property located at 21611 S Perry Street in the City of Carson, County of Los Angeles, California (Site) performed in conformance with the contract/agreement for this assignment and the scope and limitations of ASTM Standard Practice E1527-13 and United States Environmental Protection Agency (EPA) Standards and Practices for All Appropriate Inquiries (AAI) as published in 40 Code of Federal Regulations (CFR) Part 312. EPA promulgated the AAI rule that became effective in November 2006 and has indicated that the ASTM E1527 practice is consistent with the requirements of AAI and may be used to comply with the provisions of the AAI rule.

1.1 Purpose

The purpose of the ASTM E1527 practice (framework for this Phase I ESA) is to define good commercial and customary practice in the United States of America for conducting an ESA of a parcel of real estate with respect to the range of contaminants within the scope of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (Title 42 United States Code (U.S.C.) Section 9601)) and petroleum products. As such, this practice is intended to permit a user to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner, or bona fide prospective purchaser limitations on CERCLA liability (hereinafter, the "landowner liability protections," or "LLPs"): that is, the practice that constitutes all appropriate inquiries into the previous ownership and uses of the property consistent with good commercial and customary practice as defined at 42 U.S.C. Section 9601(35)(B).

In defining a standard of good commercial and customary practice for conducting this Phase I ESA of the Site, the goal of the processes established by the ASTM E1527 practice is to identify, to the extent feasible, recognized environmental conditions. The term recognized environmental conditions is defined as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. In addition, controlled recognized environmental conditions, historical recognized environmental conditions and/or de minimis conditions, if identified during the completion of the assessment, are discussed herein. Definitions of these terms and other key terminology relevant to the practice are included in Section 14.0 of this report.

1.2 Scope of the Assessment

In general terms, this Phase I ESA included the acquisition of readily available/accessible and practically reviewable regulatory records and historical information, a site reconnaissance, interviews, and preparation of this written report of findings. A more detailed description of the four primary components of the Phase I ESA is presented below.

Records Review - A review of Federal, State, Tribal, and local standard ASTM and non-ASTM regulatory databases for a myriad of environmental identifiers including but not limited to properties with underground storage tanks (USTs), properties with leaking USTs, properties that have reported spills/releases that did not occur from a leaking UST, businesses that utilize hazardous materials and/or generate hazardous waste and hazardous waste disposal locations. The regulatory review may also include public records requests with one or more Federal, State, Tribal and/or local agencies. A review

of historical sources is also completed to help ascertain previous land uses of the property in question and in the surrounding area.

Site Reconnaissance - A property inspection and viewing of adjacent and surrounding properties for conditions that could be recognized environmental conditions.

Interviews - Interviews with present and past owners, operators and/or occupants of a property and local government officials.

Reporting - Evaluation of the information gathered during the completion of the Phase I ESA and the subsequent preparation of a written report.

1.3 Limitations and Exceptions

Concerns regarding liability under the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. 9601 et seq. (CERCLA) and analogous State laws, have been a primary driver for Phase I ESA assignments in commercial real estate transactions. While the ASTM E1527 practice can be used in many contexts, a familiarity with CERCLA and its potential LLPs is critical in understanding and applying the ASTM E1527 practice. We advise consultation with legal counsel if further inquiry or information is desired.

AAI represents the minimum level of inquiry necessary to support the LLPs. However, it is important to understand that additional inquiry ultimately may be necessary or desirable for legal as well as business reasons depending upon the outcome of this inquiry and the particular risk tolerances of a given user. For example, additional inquiry may assist a user of a Phase I ESA in determining whether he or she would have continuing obligations in the event he or she acquires a given property and may also assist the user in defining the scope of future steps to be taken to satisfy such obligations. In addition, a user may be concerned about business environmental risks or non-scope ASTM considerations that do not fall within the definition of a recognized environmental condition. In addition, this assessment did not include subsurface or other invasive exploration. Users are also cautioned that Federal, State, Tribal and local laws may impose environmental assessment obligations that are beyond the scope of the ASTM E1527 practice.

The evaluation, opinion and conclusions presented herein are based solely on visual observations and regulatory, historical, and personal knowledge related information that existed at the time our assessment was completed. The use of the gathered information is exclusively for the purposes outlined in this report and only for the Site. Our firm can make no warranty, either express or implied, except that the services conducted were performed in accordance with generally accepted environmental assessment practices applicable at the time and location of the assessment and that the conclusions of the assessment have been based in part on professional judgment/experience, an interpretation of readily available data and the standard of care normally followed by similar professionals practicing in a similar locale and under similar circumstances. Any opinions presented cannot apply to Site changes of which our firm is unaware and has not had the opportunity to evaluate. In addition, this report cannot feasibly include any evaluation of undocumented activities at the Site or on adjacent or nearby properties. Lastly, a Phase I ESA meeting or exceeding this practice and completed less than 180 days prior to the date of acquisition of a given property or (for transactions not involving an acquisition) the date of the intended transaction is presumed to be valid.

1.4 Special Terms and Conditions

This Phase I ESA was prepared in accordance with the terms and conditions of the contract/agreement for the work as executed between our firm and the client. There are no other special terms and conditions established between our firm and the client pertinent to the findings of this ESA or methodology used to complete this assessment. In addition, our firm has no final or other vested interest in the Site or adjacent/surrounding properties, or in any entity that owns or occupies the Site or adjacent/surrounding properties.

1.5 Limiting Conditions and Deviations

There were no significant limiting conditions that would inhibit our ability to identify recognized environmental conditions noted during the completion of this assessment. In addition, there were no deviations from the ASTM E1527 standard noted during the completion of this assessment. Any limiting conditions that are not considered to be ones that would inhibit our ability to identify recognized environmental conditions at the Site are referenced in applicable sections of this report.

1.6 Data Failure and Data Gaps

No instances of data failure were encountered during the completion of this assessment. In addition, no data gaps of significance (i.e. those that would inhibit our ability to identify recognized environmental conditions) were identified during the completion of this assessment. Any data gaps that are not considered to be ones that would inhibit our ability to identify recognized environmental conditions at the Site are referenced in applicable sections of this report.

1.7 Reliance

This report has been prepared for the exclusive use of the client. This report may not be relied upon by any other person or entity without the written consent of both our firm and our client. The scope of services performed for this assessment may not be appropriate to satisfy the specific needs of other users, and any use or reuse of this document would be at the sole risk of said users. Any other party seeking liability protection under CERCLA must take independent action to accomplish its objective.

2.0 SITE DESCRIPTION

2.1 Location and Legal Description

The Site is identified by the legal address of 21611 S Perry Street and Los Angeles County Assessor's Parcel Numbers 7327-010-014 and -015. The Site is a reported 2.82 acres and is situated generally north of E Carson Street, south of E 215th Place, east of the Dominguez Channel and west of S Perry Street. A Vicinity Map is included as Figure 1. A Site Plan is included as Figure 2.

2.2 Site and Vicinity Characteristics

The Site and the surrounding vicinity are situated in an area of the City of Carson consisting primarily of commercial properties, residential development and petroleum storage activities. The Site vicinity and its adjoining properties are generally level.

2.3 Current Use of the Site

The Site is currently a vacant and undeveloped lot.

2.4 Description of Site Improvements

There are no habitable structures present at the Site. Various remnant improvements present at the Site include a concrete approach at the gated entrance to the Site (southeast corner), a metal gate and concrete pathway at the northeast corner of the Site, portions of former concrete slabs, concrete curbs and other features and landscaping. The Site is surrounded by chain-linked fencing and block walls. Indicators of various utility systems are also present at the Site. The nature of each of the subsurface features is unknown. A higher level of confidence regarding the nature of extent of surface indicators of subsurface features can be obtained from a utility or geophysical consultant.

2.5 Utilities

Utilities that are reported to be present at the Site or provide service in the surrounding area are noted below along with their municipal provider where applicable. If certain utility systems are not provided by public agencies or entities, they are noted as privately maintained.

Utility	Provider (Where Applicable)
Potable Water	California Water Service Company or Golden State Water Company.
Sewage Maintenance	County of Los Angeles Sanitation District.
Electrical	Southern California Edison.
Natural Gas	Southern California Gas Company.
Solid Waste Disposal	Waste Resources.

2.6 Description of Adjoining Properties

Adjoining properties are defined as any real property or properties, the border of which is contiguous or partially contiguous with that of the subject property of a Phase I ESA, or that would be contiguous or partially contiguous with that of a subject property but for a street, road, or other public thoroughfare separating them. To the extent feasible, our firm performed a visual inspection of adjoining properties

from the Site boundaries and along public right of ways. We did not encroach on to adjoining private property during the completion of this assessment. The following table identifies the adjoining property uses:

Direction	Adjoining Property Use
North	Residential development and E 215th Place.
South	E Carson Street and commercial properties.
East	S Perry Street and commercial and residential development.
West	Dominguez Channel.

3.0 PHYSICAL SETTING

3.1 Topography

The Site is depicted on the United States Geological Survey (USGS) topographic map for the Torrance, California 7.5-minute quadrangle. The Site is shown on the map as being situated at an elevation of approximately 20 feet above mean sea level. Site and surrounding area topography trends generally downward toward the south. There are no improvements, structures, or surface waters depicted on-Site on the map. Adjoining and surrounding roadways are depicted on the map. A Topographic Map is included as Figure 3.

3.2 Hydrology

The Site is situated within the Coastal Plain Of Los Angeles. There are no known substantial hydrologic features at the Site including major storm drain inlets, drainages, channels, or surface waters. The Dominquez Channel is adjacent to the west. Significant infiltration of precipitation is expected over the majority of the Site due to its unimproved nature. Any excess water would appear to flow as surface runoff to surrounding areas of lower elevation. Surface runoff at the Site and along adjacent roadways occurs as sheet flow. The Site does not appear to receive significant drainage from off-Site properties.

3.3 Geology

General geologic information pertaining to the Site is presented in the table below.

Geologic Consideration	Details
California Geomorphic Province	Peninsular Ranges.
Mapped Soils or Formation	Quaternary alluvium.
Description of Soils or Formation	Generally medium to coarse-grained sands, silts, clays and gravels.
Distance/Direction to Mapped Faults	No known faults are mapped on the Site. Please refer to the project geotechnical report for additional information.

3.4 Hydrogeology

General hydrogeologic information pertaining to the Site is presented in the table below.

Hydrogeologic Consideration	Details
Groundwater Basin or Unit	Coastal Plain Of Los Angeles.
Beneficial Uses	Municipal, industrial, process, and agricultural uses.
Estimated Depth to Groundwater	Measured at depths of approximately 12 to 18 feet below existing grades.
Estimated Flow of Groundwater	South to Southwest.

Hydrogeologic Consideration	Details
Known Site or Regional Groundwater Contamination Issues	There are known petroleum hydrocarbon impacts in groundwater beneath the Site. See the narrative below.

As stated above, there are known groundwater impacts at the Site. The most recent technical document pertaining to such impacts made available to our firm is titled 2020 First Semi-Annual Groundwater Monitoring Report, January through June 2020, Dominguez Channel Release, Carson, California, Cleanup and Abatement Order No. R4-2013-0007. The report was prepared by Aecom on behalf of Resource Environmental LLC (RELLC). Based on information included in the report, light non-aqueous phase liquid (LNAPL) began appearing within the Dominguez Channel (west of the Site) in January 2011. The LNAPL was reportedly observed entering into channel waters from sediments within the bottom of the channel and within horizontal, perforated sub-drain pipe systems installed within both the west and east channel levees.

In April 2011, the Los Angeles Regional Water Quality Control Board (LARWQCB) reportedly issued orders pursuant to Section 13267 of the California Water Code requiring potential responsible parties to assess contaminants of concern impacting soil, soil vapor, and groundwater at the Dominguez Channel and determine the extent that their facilities may have contributed to the release. URS Corporation (URS), on behalf of RELLC, implemented investigations for Shell Oil Products US (Shell) and Chevron Environmental Management Company (Chevron) within the channel and levees, the former Carson Air Harbor (CAH) property located at 21611 South Perry Street (i.e. subject Site of our current Phase I ESA), a former Texaco Station located at 1209 East Carson Street, a 76 Station located at 1025 East Carson Street, and the former Active RV property located at 1202 East Carson Street, and within several nearby streets/roadways. Investigations for BP Pipelines (North American), Inc. (BP) and Tesoro Corporation have also been prepared by Aecom and Orion Environmental Inc., respectively. Upon completion of the various assessment activities, the LARWQCB determined that the CAH property and the Texaco and 76 stations were not likely contributors to the LANPL releases and were granted no further action status relative to the Dominguez Channel issues. However, a separate case for the former CAH property was opened by the LARWQCB (Site Cleanup Program Case No. 0490C) due to other possible sources of contamination. That case was subsequently combined with nearby Case Nos. 0490A (Shell Pipeline Leak – Colony Holdings at 1211 East Carson Street) and 0490B (Shell Pipeline at 21500 South Perry Street) into a single Case No. 0490B entitled Shell Pipeline. A Cleanup and Abatement Order for the Dominguez Channel impacts was issued by the LARWQCB to BP, Chevron, Phillips 66, and Shell. One of the ongoing obligations under Case No. 0490B and the Order is to conduct groundwater monitoring and sampling of a myriad of wells, several of which are located on the subject Site (former CAH property).

There are upwards of 16 groundwater monitoring wells present at the Site that are used as part of the groundwater monitoring program. The wells are identified as MW-1, MW-2, MW-3, MW-4, MW-5, MW-6A, MW-6B, MW-7A, MW-7B, MW-7C, MW-8A, MW-8B, MW-8C, MW-9A, MW-9B and MW-9C. Primary groundwater contaminants of concern identified in these wells included total petroleum hydrocarbons in the gasoline range, benzene and diisopropyl ether. It was noted that concentrations in existing monitoring wells generally appeared to be stable or decreasing, with a few instances of fluctuation. In addition, groundwater elevations had generally been increasing over time. It was also noted that groundwater monitoring would continue on a semi-annual basis and would be next performed during the fourth quarter of 2020. An updated site conceptual model report would then be prepared. Excerpts of the groundwater monitoring report are included in Appendix A.

3.5 Oil and Gas Exploration

According to online resources provided by the California Department of Conservation, Geologic Energy Management Division (CalGEM), there are no oil, gas or geothermal wells located on the Site or its adjacent properties. Placards indicative of underground oil pipelines are present along the Dominguez Channel near the southwest corner of the Site.

4.0 USER PROVIDED INFORMATION

A representative of the user of this report (Faring Capital LLC) was interviewed during the completion of this assessment. The questions posed during the interview are defined by the ASTM E1527 practice. The client also provided our firm with any land title records and judicial records that may be available for the Site as part of the required evaluation for environmental liens and activity and use limitations (AULs) in connection with the subject property of a Phase I ESA. As stated in the ASTM E1527 practice, it is the responsibility of the user of the report to provide any available records pertaining to environmental liens and AULs that may exist in connection with a given property. Any land title and judicial recorded provided to our firm are discussed below. If such information is not discussed in the sections below, it was not provided by the user of the report. In addition to the contact information obtained, the user of the report was also asked if they are aware of other useful documents that may exist and if so whether copies can be provided to the environmental professional within reasonable time and cost constraints. A list of typical useful documents is included in Section 10.8.1 of the ASTM E1527 practice and include but are not limited to environmental assessment reports, compliance audits and permits, registrations for tank and other aboveground or underground systems, safety plans, spill prevention and other facility related plans and geological/geotechnical studies and environmental governmental agency notices and/or correspondence.

4.1 Title Records

A Preliminary Title Report issued by Commonwealth Land Title Insurance Company and dated August 4, 2020 was provided for our review. A Covenant and Environmental Restriction recorded against the Site by the LARWQCB is referenced in the title report. This document is dated July 8, 2015 and was recorded due to residual petroleum hydrocarbon contamination in the subsurface at the Site. Residual soil impacts are referenced as being the result of releases from off-Site pipelines and a former UST at the Site previously used for the storage of waste oil. It is further stated in the document that by way of excavation, the known contamination in soil had been reduced to levels protective of a commercial/industrial land use. In addition, reference is made to groundwater impacts beneath the Site. However, it is stated that such impacts are being addressed separately and do not affect the development and use restrictions in the Covenant. Article III of the Covenant outlines the restrictions on development and use of the Site. The key restrictions as noted in the document are as follows:

- Development and use of the Site shall be restricted to industrial, commercial and/or office spaces uses.
- Any future excavation work shall be conducted per the LARWQCB approved Soil Management Plan (SMP) and an appropriate Health and Safety Plan.
- A vapor barrier shall be incorporated in the design of any future structures that are constructed at the Site.

Another document referenced in the title report that pertains to residual petroleum impacts at the Site is an Access Agreement dated November 19, 2015 between a former owner of the Site and Triton Diagnostics Inc. (a subsidiary of Shell Oil Company). The document outlines provisions regarding access being granted to Shell as part of the ongoing groundwater monitoring being conducted at the Site in addition to roles and responsibilities of the parties as it pertains to future Site development activities. Key terms of the agreement include the following:

- Shell would be responsible for any future assessment and remedial work in the event the LARWQCB re-opened the soil related release case for the Site.
- Shell would be responsible for the cost of removal of contaminated soils encountered during future Site development that exceed commercial/industrial human health risk based screening levels.
- If groundwater monitoring wells require relocation due to Site development activities, Shell would be responsible for the cost of such work.

Copies of the title report, Covenant with attached SMP and the Access Agreement are included in Appendices B through D.

4.2 Environmental Liens

The client is unaware of environmental liens in connection with the Site.

4.3 Activity and Use Limitations

With the exception of the July 8, 2015 Covenant and Environmental Restriction recorded against the Site, the client is unaware of AULs in connection with the Site.

4.4 Specialized or Actual Knowledge or Experience

With the exception of residual petroleum impacts in the subsurface at the Site, the client is unaware of specialized knowledge, actual knowledge or experience that is material to recognized environmental conditions in connection with the Site.

4.5 Commonly Known or Reasonably Ascertainable Information

With the exception of residual petroleum impacts in the subsurface at the Site, the client is unaware of commonly known or reasonably ascertainable information within the local community that is material to recognized environmental conditions in connection with the Site.

4.6 Valuation Reduction for Environmental Issues

The client is unaware of information pertaining to an undervalued purchase price of the Site relative to the estimated fair market value of the Site due to the presence of contamination.

4.7 Owner, Property Manager, and Occupant Information

The Site is currently owned and managed by Recreation Road LLC. The Site is vacant with no known occupants.

4.8 Reason for Performing Phase I ESA

The client has commissioned this Phase I ESA as part of a proposed real estate transaction and future Site development for commercial purposes. The Phase I ESA is also being completed to assist the client in complying with 40 CFR Part 312.

4.9 Proceedings Involving the Site

The client is unaware of pending, threatened, or past litigation and administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the Site. The client is also unaware of notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products in connection with the Site.

4.10 Other Provided Documents

A prior Phase I ESA for the Site was provided to us for review. The report is dated February 28, 2019, and was prepared by Advanced Geoenvironmental. At the time of the assessment, the Site was a vacant and undeveloped lot, similar to the present. The Phase I ESA was completed in accordance with applicable standards and included a review of historical resources and regulatory records, a physical inspection of the Site and interviews. Summaries of select prior environmental documents were also included in the report. Relative to on-Site soil impacts resulting from historical Site activities, a Soil Excavation Report for the Site dated December 15, 2014 was summarized and included as an appendix to the Phase I ESA report. The report was prepared by URS on behalf of Shell Oil Products US.

As stated in the report, petroleum hydrocarbon-impacted soil and groundwater were identified at the Site during various investigations beginning in 1990. Several of the prior assessments are summarized in the URS report. Historical metal fabrication operations and migration of off-property impacts onto the Site were notes as the sources of the petroleum hydrocarbons. To address Site impacts to soil in order to redevelop the Site for commercial/industrial use, a Soil Excavation Workplan was developed by URS in 2014 following a September 30, 2013 meeting and subsequent follow-up phone conversations and e-mail with the LARWQCB regarding the cleanup goals and excavation limits. The Soil Excavation Workplan was approved on April 21, 2014.

Between September 9 and October 8, 2014, 7,255.69 tons (approximately 4,837 in-place cubic yards assuming 1.5 tons per cubic yard) of impacted soil were excavated from the Site and disposed off-Site. The impacted soil was removed from four distinct areas to depths ranging from approximately five to eight feet. Confirmation soil samples were obtained from the sidewalls and bottoms of the excavations. San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels (ESLs) for the protection of commercial/industrial workers were utilized as action levels to guide the extent of the remedial excavations. Once all confirmation soil samples exhibited concentrations of petroleum hydrocarbons and volatile organic compounds (VOCs) below the ESLs, the excavations were deemed complete. The excavated areas were then backfilled with imported clean fill or with an approximate 50:50 mix of crushed concrete and imported fill and a small amount of clean overburden soil. The crushed concrete was generated during the demolition of former Site improvements. Prior to its reuse, the material was sampled and analyzed for various contaminants of potential concern. Any detections of metals and/or organic compounds were below applicable screening levels. Upon review of the data, the LARWQCB approved the reuse of the crushed concrete. Excerpts of the excavation report are included as Appendix E. A letter documenting the LARWQCB approval of the crushed concrete is included as Appendix F.

URS concluded that based on confirmation soil sampling for each of the excavations, the cleanup criteria set out in the workplan had been met. URS also stated that a SMP for the Site was prepared to mitigate potential future exposure to residual petroleum hydrocarbons and odor generation during future Site development. URS also stated that a deed restriction limiting future Site use to commercial/industrial uses and requiring . It was also noted in the report that a vapor barrier would be incorporated in the design of any future structures that are constructed at the Site. URS requested that

the LARWQCB issue a no further action letter for vadose zone soils at the Site. The LARWQCB reviewed the report and concurred with its findings. A no further action letter for soil was issued by the LARWQCB on December 14, 2015. A copy of the letter is included in Appendix G.

The following recognized environmental conditions were noted in the 2019 Advanced Geoenvironmental Phase I ESA:

- Controlled Recognized Environmental Condition - A previous petroleum hydrocarbon release occurring on the property from past UST use. Petroleum hydrocarbon and VOC impact to soil remains in place at the Site over residential screening levels. An environmental deed restriction has been placed on the Site which limits the Site use to commercial/industrial, and also requires the construction of engineering controls beneath any building constructed on the Site.
- Recognized Environmental Condition - Groundwater beneath the Site is impacted with petroleum hydrocarbons and VOCs. The groundwater impact originated from an oil pipeline release at the adjacent, upgradient properties. Groundwater assessment activities are currently on going. Regulatory agencies overseeing the groundwater in the area have combined the Site and two additional properties into one case, however, past and present ownership of the Site has not been deemed a responsible party.

Based on the information obtained during the completion of the Phase I ESA, it was Advanced Geoenvironmental's opinion that additional environmental assessment was not warranted at the Site.

5.0 REGULATORY RECORDS REVIEW

Our firm commissioned the preparation of a regulatory database report from Environmental Risk Information Services (ERIS) as part of the regulatory records review. ERIS searches a myriad of Federal, State, and local government environmental databases during the preparation of their deliverables. Certain databases are specifically required by the ASTM E1527 practice and are referenced as "standard ASTM regulatory databases." Such databases are searched to at least the minimum search distance around a given property as defined in the practice. Other regulatory databases are also searched that are not specifically referenced in ASTM E1527. Such databases are referenced as "non-ASTM regulatory databases" and are searched as varying radii around a given property as selected by ERIS.

Descriptions of each database searched and the dates that the regulatory databases were last updated by the applicable agencies are included in the ERIS report. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of an updates. ERIS updates databases in accordance with ASTM E1527 which states that government information from nongovernmental sources may be considered current if the source updates the information at least every 90 days, or, for information that is updated less frequently than quarterly by the government agency, within 90 days of the date the government agency makes the information available to the public.

Our firm also reviewed unplottable sites listed in the database report by cross-referencing reasonably ascertainable information pertaining to such properties that may include facility names, street names, zip codes or other information. Unplottable sites are ones that cannot be formally mapped or geocoded due to various reasons, including limited geographic information. Any unplottable sites that we identify within the specified search radii have been evaluated as part of the preparation of this report. A copy of the regulatory database report is included in Appendix H.

5.1 Standard ASTM Regulatory Database Search

The tables below present the standard Federal, State, Tribal and local ASTM databases that were searched by ERIS including the search distances from the Site. Below the tables are descriptions of any listings for the Site that may appear in the databases. In addition, a discussion of adjoining properties or properties in the Site vicinity that are listed in one or more regulatory databases that in our professional judgment and opinion have the potential to adversely impact the Site due to current or former releases of hazardous substances and/or petroleum products that occurred at said properties is presented. This practice of discussing only properties of potential environmental concern to the Site is noted in ASTM E1527 which states that the environmental professional may make statements applicable to multiple properties listed in regulatory databases that are not likely to have current or former releases of hazardous substances and/or petroleum products with the potential to migrate to the a given subject property. Our professional judgment and opinions discussed herein are based on several factors including the nature of the regulatory database listings, distance of the off-Site listed properties from the Site, orientation of the listed properties relative to the Site, interpreted the direction of groundwater flow and/or regulatory case status information for the various properties as described in the databases.

The following Federal standard ASTM databases were searched:

Standard Environmental Record Source Name	ERIS Regulatory Database Identification	Search Distance From Site (Miles)
National Priorities List (NPL) Site List	NPL – Proposed NPL – Superfund Record of Decision (ROD)	1.0
Delisted NPL Site List	Deleted NPL	0.5
Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) List	CERCLIS - SEMS – SEMS Archive – ODI – IODI – CERCLIS LIENS – SEMS LIENS	0.5
CERCLIS List	CERCLIS LIENS – SEMS LIENS	Site
CERCLIS No Further Remedial Action Planned (NFRAP) Site List	CERCLIS NFRAP	0.5
Resource Conservation and Recovery Act (RCRA) Corrective Action Sites (CORRACTS) Facilities List	RCRA CORRACTS	1.0
RCRA Non-CORRACTS Treatment, Storage and Disposal (TSD) Facilities List	RCRA TSD	0.5
RCRA Generators List	RCRA LQG – RCRA SQG – RCRA CESQG – RCRA NON-GEN – BULK TERMINAL – REFN – FEMA Underground Storage Tank (UST) - FRP	0.25
Institutional Control/Engineering Control Registries	FED ENG – FED INST – FED Brownfields	0.5
Emergency Response Notification System (ERNS) List	ERNS – ERNS 1982 to 1986 – ERNS 1987 to 1989	Site

Site – The Site is listed on the RCRA SQG database as Air Harbor Machine Co Inc. and Shell Oil Co. There are no violations reported for these listings.

Other Properties – There are numerous properties mapped within a one mile radius of the Site that are listed on various Federal ASTM regulatory databases including NPL (one listing), SEMS (one listing), RCRA CORRACTS (three listings), RCRA TSD (four listings), RCRA LQG (two listings), RCRA SQG (three listings), RCRA NON GEN (21 listings), FED BROWNFIELDS (one listing) and SUPERFUND ROD (one listing). Several of the listings pertain to impacts reported in the western adjacent Dominguez Channel and also as a result of adjoining or nearby pipelines as discussed in Sections 4.1 and 4.10 of this report. As stated previously, off-Site migration of petroleum hydrocarbons to the Site has occurred from properties in the area.

The following State, Tribal and local standard ASTM databases were searched:

Standard Environmental Record Sources Name	EDR Regulatory Database Identification	Search Distance From Site (Miles)
Equivalent NPL	RESPONSE - HWP	1.0
Equivalent CERCLIS	ENVIROSTOR – DELISTED ENVS	0.5

Standard Environmental Record Sources Name	EDR Regulatory Database Identification	Search Distance From Site (Miles)
Landfill and/or Solid Waste Disposal Site Lists	SWF/LF – SWAT – LDS – SWRCB SWF – LA SWF	0.5
Leaking Storage Tank Lists	LUST – DELISTED LST – CLEANUP SITES - INDIAN LUST – DELISTED ILST – LA SML	0.5
Registered Storage Tank Lists	UST – AST – UST CLOSURE – HHSS – TANK OIL GAS – DELISTED TNK - CERS TANK – DELISTED COUNTY – DELISTED CTNK – HIST TANK - INDIAN UST - DELISTED IUST – LA COUNTY CUPA – LA HMS – UST LA CITY – AST LA CITY	Site and Adjoining Properties
Institutional Control/Engineering Control Registries	DEED - LUR – HLUR	Site
Voluntary Cleanup Sites	VCP	0.5
Brownfield Sites	Not Applicable – No Database Exists	0.5

Site – The Site is listed on the CLEANUP SITES and DEED State regulatory databases as Carson Air Property. The Site is referenced with a closed regulatory status as of October 23, 2015 and with a Covenant and Environmental Restriction recorded on the Site. Information in the database listings is consistent with that described in Sections 4.1 and 4.10 of this report. The Site is also listed on the local LA County CUPA and LA HMS regulatory databases as Air Harbor Machine Co Inc. and 21611 S Perry Street, respectively. No details are provided in the LA County CUPA database listing. The LA HMS database listing pertains to closed permits pertaining to waste generation and stormwater.

Other Properties – There are numerous properties mapped within a one mile radius of the Site that are listed on various State and Local ASTM regulatory databases including ENVIROSTOR (20 listings), SWF/LF (two listings), HWP (three listings), LDS (one listing), LUST (two listings), UST (one listing), HHSS (two listings), DELISTED TNK (one listing), CERS TANK (one listing), LUR (one listing), VCP (two listings), CLEANUP Sites (23 listings), HIST TANK (two listings), LA SML (one listing), LA SWF (two listings), LA COUNTY CUPA (10 listings) and LA HMS (17 listings). . None of these properties are considered to have the potential to adversely impact the Site. Several of the listings pertain to the impacts reported in the western adjacent Dominguez Channel and also as a result of adjoining or nearby pipelines. As stated previously, off-Site migration of petroleum hydrocarbons to the Site has occurred from properties in the area.

5.2 Non-ASTM Regulatory Database Search

A myriad of non-ASTM regulatory databases was searched by ERIS as noted in the regulatory database report.

Site – The Site is listed on the non-ASTM FINDS/FRS, HAZNET and HIST MANIFEST regulatory database as Air Harbor Machine Co Inc., Carson Air Harbor, Shell Oil Co., Beach Boats Inc., Carson Trailers, Triton Diagnostics Inc. and 21611 Perry Street. 20th Century Fox, Inc. The listings pertain to

the manifesting and removal of various wastes (primarily petroleum hydrocarbon derived). Such wastes include used/mixed soil and contaminated soils from cleanup activities.

Other Properties – There are several properties mapped within a one mile radius of the Site that are listed on various non-ASTM regulatory databases including DRYCLEANERS (three listings), DRYC GRANT (one listing), HAZNET (one listing), CERS HAZ (one listing) and EMISSIONS (two listings). Several of the listings pertain to impacts reported in the western adjacent Dominguez Channel and also as a result of adjoining or nearby pipelines. As stated previously, off-Site migration of petroleum hydrocarbons to the Site has occurred from properties in the area.

5.3 Regulatory Agency File Reviews

If a property being assessed under a Phase I ESA or any of the adjoining properties are identified on one or more of the above referenced standard environmental record sources, pertinent regulatory files and/or records associated with such listings should be reviewed to assist the environmental professional in evaluating if recognized environmental conditions existing at a given subject property in connection with any listings. However, if in the environmental professional's opinion, such a review is not warranted, file reviews need not be conducted if the environmental professional provides justification for not doing so.

Agency file reviews for the Site completed during this assessment are noted below. No file reviews for adjoining properties or properties in the surrounding area were deemed warranted with the exception of research completed on the State of California Water Resources Control Board Geotracker database for properties in the surrounding area. The agency inquiries were performed by way of on-line searches/queries of published databases and/or direct inquiries with public records clerks at one or more agencies. Daniel Weis of Weis Environmental conducted the agency file reviews during the completion of this assessment.

Regulatory Agency	Jurisdiction	Date of Inquiry or Request	Contact	Response or Information From Agency
United States EPA	Federal	12/31/2020	Online https://enviro.epa.gov/	Records Identified
California Department of Toxic Substances Control	State	12/31/2020	Online https://www.envirostor.dtsc.ca.gov/public/ https://hwts.dtsc.ca.gov/report_list.cfm	No Records Identified
State Water Resources Control Board/Regional Water Quality Control Board	State	12/7/2020	Online https://geotracker.waterboards.ca.gov/ https://geotracker.waterboards.ca.gov/historical_ust_facilities	Records Identified
Los Angeles County	Local	12/31/2020	Public Records Clerk	Records Identified

As shown in the table above, records were identified in files with the United States EPA, LARWQCB and Los Angeles County. Information included in the records is consistent with information previously described in Sections 4.1 and 4.10 of this report with documents included in the previously referenced appendices. Records obtained from Los Angeles County are included in Appendix I.

6.0 HISTORICAL RESOURCE REVIEW

The objective of consulting historical sources is to develop a history of the previous uses of a property and surrounding area, in order to help identify the likelihood of past uses having led to recognized environmental conditions in connection with a given property. The goal of the historical research is to identify all obvious uses of a subject property from the present, back to the property's first developed use, or back to 1940, whichever is earlier. The environmental professional exercises professional judgment in reviewing only as many of the standard historical sources referenced in ASTM E1527 that are deemed necessary, are reasonably ascertainable and are likely to be useful. Historical resources reviewed during the completion of this assessment are referenced below. Copies of the historical resources are included in Appendix J. The copies of the historical resources were obtained from the prior Phase I ESA completed for the Site in 2019. As stated in ASTM E1527, standard historical sources reviewed as part of a prior environmental site assessment do not need to be searched for again, but uses of the property since the prior environmental site assessment should be identified either through standard historical sources or by alternatives to standard historical sources. Because the use of the Site has not changed since the prior assessment completed in 2019, additional historical research other than that which is summarized below is not warranted.

6.1 Aerial Photographs

We reviewed historical aerial photographs from the years 1928, 1947, 1952, 1963, 1972, 1977, 1983, 1989, 1994, 2002, 2005, 2009, 2012 and 2016 provided by Environmental Data Resources, Inc. (EDR). The table below presents the results of the photograph review.

Photograph Year	Site Observations	Adjoining Property Observations
1928, 1947, 1952	The Site appears to be vacant and possibly used for agricultural purposes.	Adjoining properties are generally vacant or used for agricultural purposes. Scattered residential structures are visible. The Dominguez Channel is visible to the west. Petroleum bulk storage activity is visible nearby to the north.
1962	The Site appears to be under construction.	Adjoining properties are generally similar to the prior photographs. Interstate 405 is visible nearby to the west.
1977, 1983, 1989, 1994, 2002, 2005, 2009	The Site appears to be developed with the former commercial/industrial building and other improvements.	Adjoining properties are generally used for residential and commercial purposes.
2012, 2016	The Site is a vacant lot.	Adjoining properties are generally used for residential and commercial purposes.

As stated above, the Site was potentially historically used for agricultural activities. During historical agricultural activities throughout the State of California, organochlorine pesticides (OCPs) were commonly and legally applied during the normal course of agricultural operations. Such compounds have since been banned from production and use in the United States. Section 105215 of the California Health and Safety Code discusses the regulatory reporting of incidents that pertain to pesticide spills and accidental releases of pesticide products. No information has been revealed that would lead us to believe that an accidental spill or release of pesticide products has occurred at the Site. In addition, neither stressed vegetation nor evidence of the storage of OCP based chemical products based on

regulatory and historical research reviews. In addition, the Site was redeveloped for commercial/industrial purposes following its possible prior agricultural uses. As such, the historical agricultural use of the Site is not considered to be a recognized environmental condition in connection with the Site.

6.2 City Directories

Our firm reviewed city directories dated ranging in date from 1920 to 2014 provided by EDR. The following listings for the Site were noted in the directories:

- 1962 – Air Comfort Co Inc., Plan Hold Corp
- 1975, 1976, 1980, 1981, 1985, 1986 – Air Harbor Machine Co Inc.
- 1990 – Aaire RV & Marine, Inc, Air-Harbor Machine Co Inc. Carson, American Seacraft Marine Inc., Pacific Yacht Sales
- 2001 – Carson Trailer
- 2006 – Carson Trailer Sales

Adjoining and nearby properties in the surrounding area are primarily referenced as being used for residential (personal names) and general retail, commercial and industrial purposes.

6.3 Fire Insurance Maps

Fire insurance maps are not published for the Site.

6.4 Other Historical Sources

Other historical sources are referenced in the ASTM E1527 practice as any source or sources other than the standard historical sources referenced in the practice that are credible to a reasonable person and that identify past uses of a subject property. This category includes, but is not limited to miscellaneous maps, newspaper archives, internet sites, community organizations, local libraries, historical societies, current owners or occupants of neighboring properties, or records in the files and/or personal knowledge of the property owner and/or occupants. No historical sources other than the standard sources described above were deemed necessary and useful to assist in identifying recognized environmental conditions.

7.0 SITE RECONAISSANCE

The objective of the Site reconnaissance is to obtain information indicating the likelihood of identifying recognized environmental conditions in connection with a subject property. The Site visit for our assessment was completed by Daniel Weis, on December 31, 2020. Mr. Weis was unaccompanied during the reconnaissance.

7.1 Methodology and Limiting Conditions

The Site reconnaissance consisted of walking multiple transects across the Site as well as walking publicly accessible areas surrounding the Site. No significant limiting conditions of the Site inspection were noted. Select photographs of the Site obtained during the Site reconnaissance are included in Appendix K.

7.2 Current General Site and Vicinity Characteristics

The Site and the surrounding vicinity are situated in an area of the City of Carson consisting primarily of commercial properties, residential development and petroleum storage activities. The Site vicinity and its adjoining properties are generally level. The Site is currently a vacant and undeveloped lot.

7.3 Indications of Past Site and Vicinity Uses

There are no material differences between the current and past uses of the Site, adjoining properties and the surrounding area Site that were visually and/or physically observed during the Site reconnaissance that pertain to recognized environmental conditions.

7.4 Site-Specific Observations

We examined visible and accessible areas of the Site for the features and conditions noted in the table below.

Feature or Condition	Details
General Description of Structures	There are no habitable structures present at the Site. Various remnant improvements present at the Site include a concrete approach at the gated entrance to the Site (southeast corner), a metal gate and concrete pathway at the northeast corner of the Site, portions of former concrete slabs, concrete curbs and other features and landscaping. The Site is surrounded by chain-linked fencing and block walls. Indicators of various utility systems are also present at the Site. The nature of each of the subsurface features is unknown. A higher level of confidence regarding the nature of extent of surface indicators of subsurface features can be obtained from a utility or geophysical consultant.
Drains and Sumps	None observed.
Heating/Cooling Systems	None observed.
Potable Water Supply	California Water Service Company or Golden State Water Company
Roads	None observed. Ingress and egress is from a paved approach in the southeastern portion of the Site.

Feature or Condition	Details
Septic Systems / Sewage Disposal System	County of Los Angeles Sanitation District
Wastewater and Stormwater Discharges	None observed.
Wells	There are several groundwater monitoring wells present at the Site as previously discussed in this report.
Drums	None observed.
Electrical or Hydraulic Equipment Known to Contain PCBs or Likely to Contain PCBs	None observed.
Hazardous Substances and Petroleum Products in Connection with Identified Uses	None observed.
Hazardous Substance and Petroleum Products Not Necessarily in Connection With Identified Uses	None observed.
Odors	None noted.
Pits, Ponds or Lagoons	None observed.
Pools of Liquid	None observed.
Solid Waste (Including Fill Material)	Miscellaneous debris including concrete, brick, rebar and plastic and paper products are present in scattered areas at the Site.
Stained Soil or Pavement	None observed.
Stains or Corrosion	None observed.
Chemical Storage Tanks	None observed.
Stressed Vegetation	None observed.
Unidentified Substance Containers	None observed.

8.0 INTERVIEWS

Persons interviewed during the completion of this assessment are noted in the table below. Descriptions of the information obtained from interviews completed during this assessment are included in the Sections below. Daniel Weis conducted the interviews during the completion of this assessment.

8.1 Site Owner

We were informed that the Site owner's knowledge regarding environmental conditions at the Site is consistent with that which is described in the myriad of environmental documents pertaining to the Site.

8.2 Key Site Manager

The Site owner representative is also considered to be the Key Site Manager. Please refer to Section 8.1 above.

8.3 Current Occupants

The Site is vacant with no known occupants.

8.4 Local Government Official

We interviewed Ms. Jeanette Liu of the LARWQCB regarding the Site. Mr. Liu confirmed the closure of the agency closure of the Site relative to soil and the ongoing assessment work being completed at the Site relative to evaluations of groundwater impacts that have resulted from off-Site locations. We were also informed that a new case will not need to be opened for the future planned Site development as long as the requirements under the Covenant and Environmental Restriction are complied with. These include adhering to the SMP for the Site, conducting construction activities under a Health and Safety Plan and ensuring that a proper vapor barrier is installed beneath future buildings. In addition, the LARWCB will not require a review of future vapor barrier design plans/specifications. Such a review would fall under the purview of the City of Carson as part of general construction plan design submittal and approval.

8.5 Other Parties

Interviews with other persons were not conducted during the preparation of this assessment. As stated in the ASTM E1527 practice, interviews with past owners, operators, and occupants of a subject property who are likely to have material information regarding the potential for contamination at a given property shall be conducted to the extent that they have been identified and that the information likely to be obtained is not duplicative of information already obtained from other sources. Interviews with persons with past association with the Site were not deemed warranted during the completion of this assessment.

9.0 ADDITIONAL SERVICES – NON-SCOPE ASTM CONSIDERATIONS

Several non-scope ASTM considerations are referenced in the ASTM E1527 practice that a user of a report may wish to evaluate. Listed considerations in the practice include asbestos-containing building materials, biological agents, cultural and historic resources, ecological resources, endangered species, health and safety, indoor air quality (unrelated to releases of hazardous substances or petroleum products into the environment), industrial hygiene, lead-based paint, lead in drinking water, mold, radon, regulatory compliance, and wetlands. No implication is intended by the practice as to the relative importance of inquiry into such non-scope considerations, and the list of considerations is not intended to be all-inclusive. An evaluation of one or more of the non-scope considerations was not requested of our firm as part of the scope of services for the assessment. Therefore, no findings, opinions and conclusions of this assessment are based on said non-scope ASTM considerations.

10.0 FINDINGS AND OPINIONS

With the exception of the known residual petroleum hydrocarbon impacts in soil beneath the Site (below commercial/industrial screening levels) and the known groundwater impacts that have resulted from off-Site sources, no features and/or conditions indicating the presence or likely presence of hazardous substances and/or petroleum products at the Site were identified during the completion of this assessment. Residual soil impacts are considered to be a controlled recognized environmental condition that does not require additional assessment at the time. Any residual petroleum impacted soil that is encountered at the Site during development (if any) will be handled in accordance with the SMP under conventional means and methods. Known groundwater impacts beneath the Site are considered to be recognized environmental condition that also does not require additional assessment at the time. The responsible parties for said impacts are required by the LARWQCB to assess and remediate (if required) groundwater impacts in the area resulting from their unauthorized releases.

11.0 CONCLUSIONS AND RECOMMENDATIONS

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM International Practice E1527 of the Site identified 21611 S Perry Street in the City of Carson, County of Los Angeles, California (Los Angeles County Assessor's Parcel Number 7327-010-014 and -015). Any exceptions to, or deletions from, this practice are described in Section 1.5 of this report. This assessment has revealed the following in connection with the Site:

- Controlled Recognized Environmental Condition - Residual petroleum hydrocarbon soil impacts present at the Site.
- Recognized Environmental Condition - Known petroleum hydrocarbon groundwater impacts beneath the Site.

As stated previously, we do not recommend that the client complete additional environmental assessment at the Site at this time. Any residual petroleum impacted soil that is encountered at the Site during development (if any) will be handled in accordance with the SMP under conventional means and methods, and any future assessment and remediation of groundwater would be required to be completed by the responsible parties of the unauthorized releases. With adherence to the SMP and Environmental Covenant recorded against the Site, the Site can be redeveloped for its intended commercial use.

12.0 ENVIRONMENTAL PROFESSIONAL STATEMENT

I declare that, to the best of my professional knowledge and belief, I meet the definition of environmental professional as defined in Section 312.10 of 40 CFR. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Site. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312. Qualifications of personnel involved with the completion of this report are included in Appendix L.

_____

Daniel Weis, R.E.H.S.
Environmental Manager

13.0 ASSUMPTIONS

No Phase I ESA effort can eliminate uncertainty regarding the potential for recognized environmental conditions to exist in connection with a given property. Performance of the ASTM E1527 practice may reduce such uncertainty but in no way should the findings and report be misconstrued as insurance or a guarantee regarding the potential for recognized environmental conditions in connection with a given property. The ASTM E1527 practice recognizes reasonable limits of time and cost relative to the completion of a Phase I ESA.

During the completion of this ESA, our firm relied on certain information obtained from secondary sources, including but not limited to the user of the report, government agencies, historical research business entities, environmental databases, and interviews with one or more persons. The sources obtained and/or consulted are assumed to be reliable. However, our firm cannot warranty or guarantee that the information provided by these other sources is wholly accurate or complete. Our firm is not responsible for any misrepresentations or false statements that may be provided by others or the lack of pertinent/relevant information that should have been provided/disclosed by others and we assume no responsibility for any consequence as a result of such omissions or withheld information.

Accuracy and completeness of records varies among information sources, including from governmental agencies. As a result, there is a possibility that even with the proper application of the methodologies presented in ASTM E1527, conditions may exist that could not be identified within the scope of this assessment or which were not reasonably identifiable from the available information. In addition, any responses received from Federal, State, Tribal, and local regulatory agency secondary sources of information after the issuance of this report may change certain findings and conclusions of this report.

Estimations and opinions regarding the potential for off-Site properties to adversely impact a given subject property is one of the key components of a Phase I ESA. In most cases, recent property-specific or adjacent-property specific measured groundwater data or other hydrogeological information is not reasonably ascertainable. In the absence of such data, reasonable assumptions regarding the depth and flow of groundwater are made based on various sources including comparisons to surface elevations, land topography and available hydrogeological on the State of California Geotracker database. In addition, estimations and opinions regarding potential impacts from off-Site locations may be based on certain assumptions that a hazardous substance or petroleum product may not migrate laterally within unsaturated soil for a substantial distance and that contaminants that have reached saturated soil and groundwater may attenuate over time and/or may decrease in concentration relative to distance from its source. While any interpretations presented herein may be effective in reducing uncertainty regarding potential impacts to a subject property from off-Site locations, in no way should the findings and report be misconstrued as insurance or a guarantee regarding the potential for such impacts to occur. Greater certainty regarding subsurface conditions at a given property can only be achieved by way of a subsurface sampling effort of one or more media.

14.0 DEFINITIONS

Definitions of key terminology relevant to the ASTM E1527 practice are presented below.

Recognized Environmental Condition - The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment.

Controlled Recognized Environmental Condition - A recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).

Data Failure - A failure to achieve the historical research objectives as outlined in the ASTM E1527 practice even after reviewing the standard historical sources that are reasonably ascertainable and likely to be useful. Data failure is one type of data gap.

Data Gap - A lack of or inability to obtain information required by this practice despite good faith efforts by the environmental professional to gather such information. Data gaps may result from incompleteness in any of the activities required by the ASTM E1527 practice, including, but not limited to site reconnaissance (for example, an inability to conduct the site visit), and interviews (for example, an inability to interview the key site manager, regulatory officials, etc.). Data gaps are only considered to be significant if they affect the ability of the environmental professional to identify recognized environmental conditions.

De Minimis Condition - A condition that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be de minimis conditions are not recognized environmental conditions nor controlled recognized environmental conditions.

Environment - (A) the navigable waters, the waters of the contiguous zone, and the ocean waters of which the natural resources are under the exclusive management authority of the United States under the Magnuson-Stevens Fishery Conservation and Management Act [16 U.S.C. §§ 1801 et seq.], and (B) any other surface water, groundwater, drinking water supply, land surface or subsurface strata, or ambient air within the United States or under the jurisdiction of the United States.

Good Faith - The absence of any intention to seek an unfair advantage or to defraud another party; an honest and sincere intention to fulfill one's obligations in the conduct or transaction concerned.

Hazardous Substance - Includes hazardous substances designated under section 311 of the Clean Water Act (CWA) or Section 102 of CERCLA, any toxic pollutant listed under Section 307(a) of the CWA, any waste that has been listed as a RCRA hazardous waste or possesses a RCRA hazardous waste characteristic, any substance that is identified as a hazardous pollutant under Section 112 of the Clean Air Act (CAA), and any imminently hazardous chemical that EPA has taken action pursuant to Section 7 of the Toxic Substances Control Act (TSCA).

Historical Recognized Environmental Condition - A past release of any hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority or

meeting unrestricted use criteria established by a regulatory authority, without subjecting the property in question to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).

Petroleum Exclusion – While the definition of a CERCLA hazardous substance specifically excludes petroleum products and crude oil, the EPA has determined that the petroleum exclusion applies to petroleum products such as gasoline and other fuels containing lead, benzene or other hazardous substances that are normally added during the refining process. Notwithstanding the existence of the petroleum exclusion, petroleum products are included within the scope of the ASTM E1527 practice for multiple reasons. Petroleum products have historically been widely used at commercial properties. In addition, other federal and state laws may impose liability for releases or spills of petroleum products.

Reasonably Ascertainable Information - Information that is (1) publicly available, (2) obtainable from its source within reasonable time and cost constraints and (3) practically reviewable.

Release or Threatened Release - Spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping or disposing into the environment (including the abandonment or discarding of barrels, containers and other closed receptacles containing any hazardous substance, or pollutant or contaminant).

15.0 REFERENCES

Sources of information consulted during the completion of our Phase I ESA are noted in the sections below.

15.1 Documents, Plans and Reports

- All Appropriate Inquiry" as necessary to satisfy the defenses available under 42 U.S.C. §§ 9607(b)(3), 9607(r)(1), and 9607(q), relying on definitions provided at 42 U.S.C. §§ 9601(35)(B); and as further explained in 40 CFR §§ 312.1 – 312.31.
- ASTM International, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process," ASTM Designation E 1527-13, Published November 2013.
- California Geological Survey, 2002, California Geomorphic Provinces Note 36, Electronic Copy, Revised December.
- California State Water Resources Control Board, Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties, Region (4), California, Published 2014.
- EDR Aerial Photographs Report.
- EDR City Directories Report.
- EDR Fire Insurance Maps Report.
- ERIS Regulatory Database Report.
- Prior Phase I ESA (2019)
- USGS Topographic Map, Torrance, California

15.2 Personal Communications

- Designated Site Owner Representative – Recreation Road LLC
- Key Site Manager – Recreation Road LLC
- LARWQCB – Ms. Jeanette Liu

15.3 Agencies Consulted

- California Department of Conservation, Geologic Energy Management Division (CalGEM)
- California Department of Toxic Substances Control
- California State Water Resources Control Board
- County of Los Angeles
- LARWQCB
- United States EPA

FIGURES

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FIGURE 2
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FIGURE 3
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FIGURE 1
VICINITY MAP

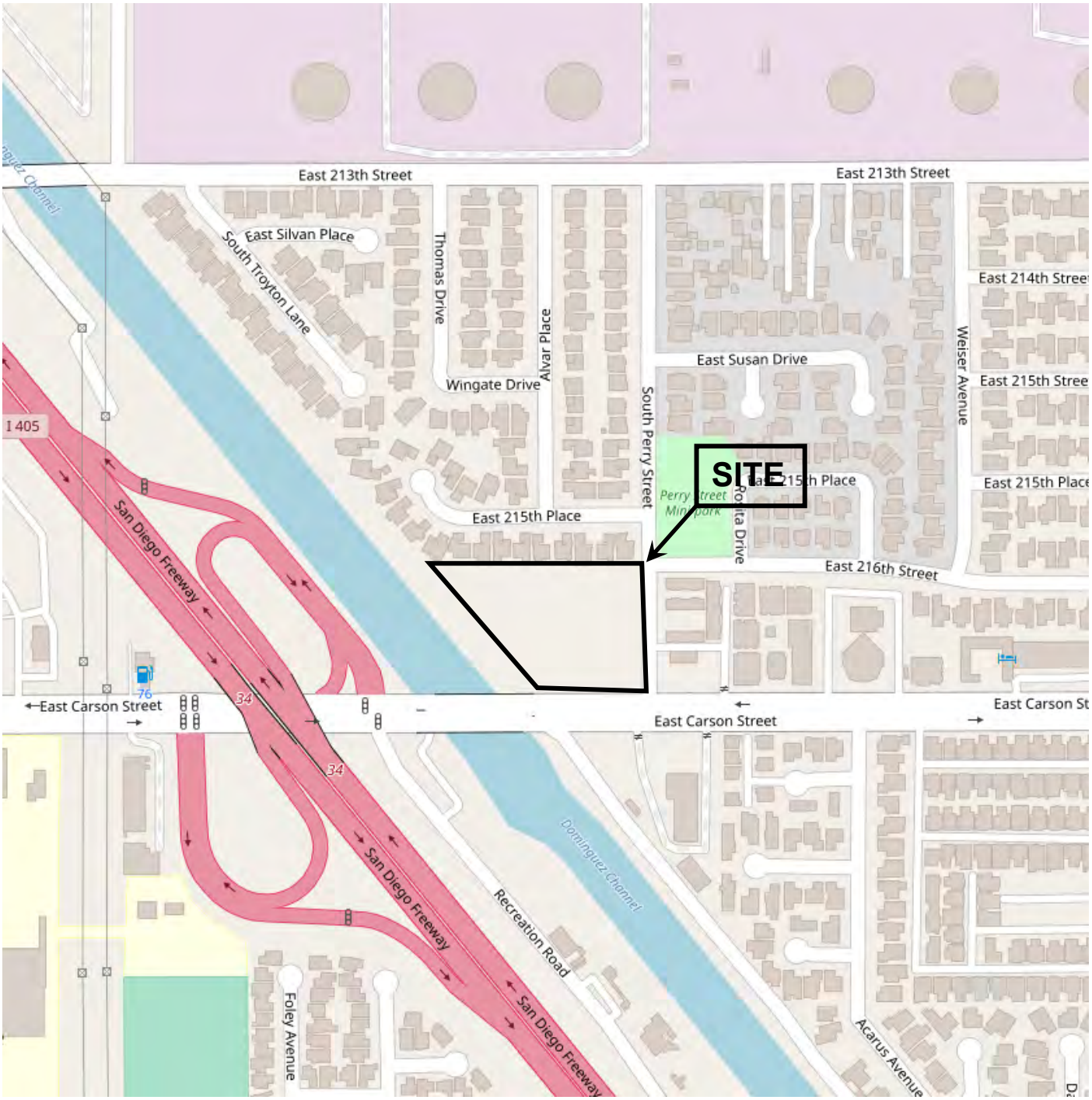

Figure 1 - Vicinity Map

21611 S Perry Street
Carson, California

Prepared by:

Weis Environmental
1938 Kellogg Avenue, Suite 116
Carlsbad, CA 92008

FIGURE 2
SITE PLAN

Figure 2 - Site Plan

21611 S Perry Street
Carson, California

N

Prepared by:

Weis Environmental
1938 Kellogg Avenue, Suite 116
Carlsbad, CA 92008

Weis ENVIRONMENTAL

FIGURE 3
TOPOGRAPHIC MAP

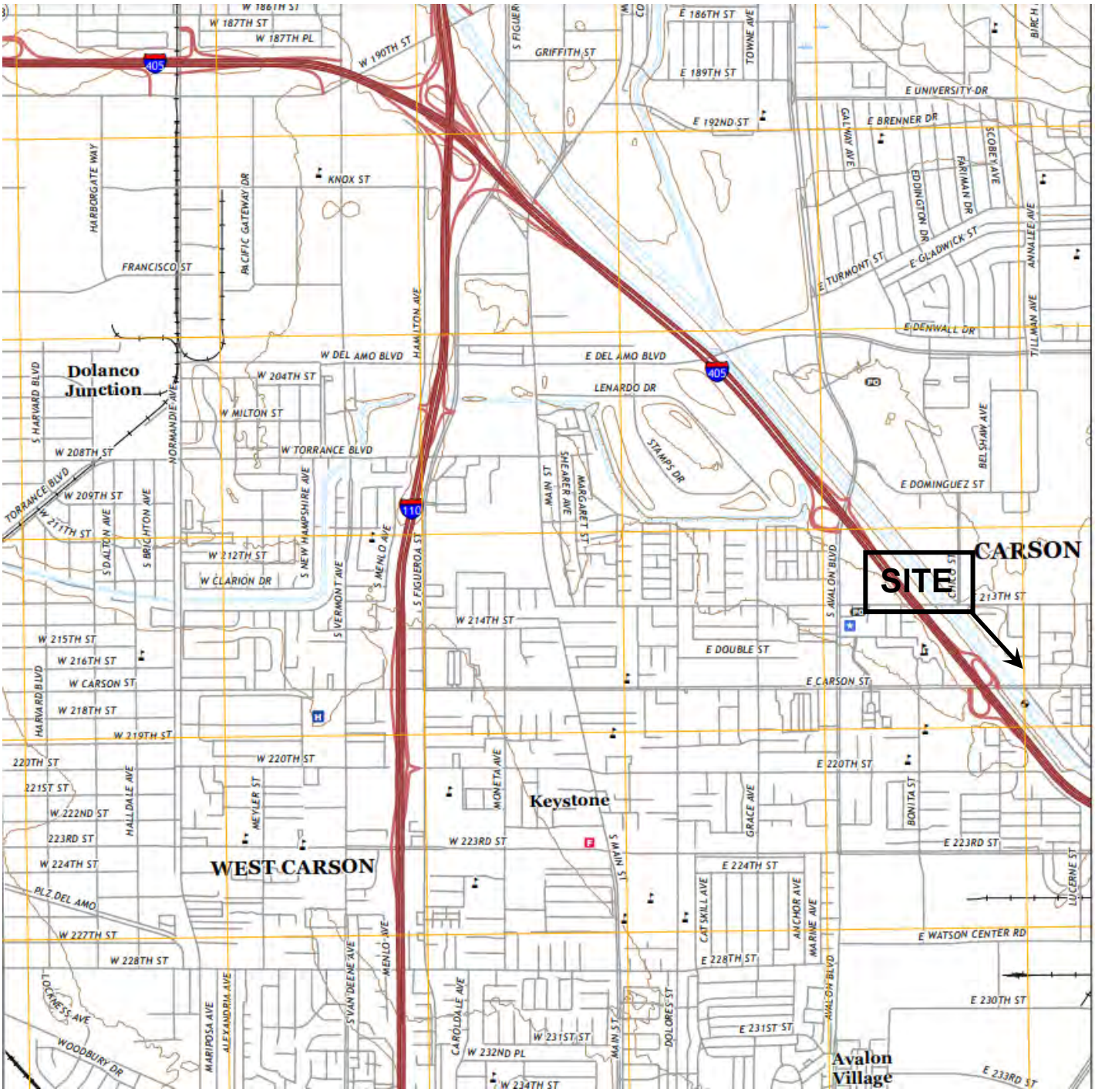

Figure 3 - Topographic Map

21611 S Perry Street
Carson, California

N

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APPENDICES

APPENDIX A
GROUNDWATER MONITORING REPORT EXCERPTS

AECOM

July 14, 2020

California Regional Water Quality Control Board
Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, CA 90013

ATTN: Mr. Majd Nima

SITE: Dominguez Channel, South of East Carson Street
Carson, California (SCP No. 1264; File No. 11-184)

RE: 2020 FIRST SEMI-ANNUAL GROUNDWATER MONITORING REPORT
JANUARY THROUGH JUNE 2020
DOMINGUEZ CHANNEL RELEASE
CARSON, CALIFORNIA
CLEANUP AND ABATEMENT ORDER NO. R4-2013-0007

Dear Mr. Nima:

On behalf of Resource Environmental L.L.C. (RELLC, an environmental management company), AECOM has prepared this *2020 First Semi-Annual Groundwater Monitoring Report* for Dominguez Channel south of East Carson Street in Carson, California (Site; see Figure 1).

The groundwater monitoring program for this semi-annual event includes gauging and/or sampling of the existing groundwater monitoring wells within the A, B, and C Zones adjacent to the Dominguez Channel south of East Carson Street (including nearby Recreation Road to the southwest and Ashmill and Cloverbrook Streets to the northeast), at the former Active RV property located at 1202 East Carson Street (former Active RV site), and at/adjacent to the former Texaco Service Station located at 1209 East Carson Street (former Texaco site). Collectively, these areas are herein referred to as the "Project Area."

This report has been prepared for submittal to the California Regional Water Quality Control Board, Los Angeles Region (LARWQCB), and presents the results for the 2020 first semi-annual groundwater monitoring event. The groundwater monitoring was conducted in accordance with the May 6, 2013 *Groundwater Monitoring Work Plan* (URS, 2013), that was approved by the LARWQCB on May 9, 2013.

BACKGROUND

Light non-aqueous phase liquid (LNAPL) started appearing within the Dominguez Channel south of the Carson Street Bridge in January 2011. The LNAPL was reportedly observed entering into channel waters from sediments within the bottom of the channel and within horizontal, perforated sub-drain pipe systems installed within both the west and east channel levees. The LARWQCB has been working in collaboration with other agencies, to facilitate the assessment and remedy of the release.

In April 2011, the LARWQCB issued orders pursuant to Section 13267 of the California Water Code requiring potential responsible parties to assess contaminants of concern impacting soil, soil vapor, and groundwater at the Dominguez Channel and determine the extent that their facilities may

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have contributed to the release. URS Corporation (URS), on behalf of RELLC, implemented investigations for Shell Oil Products US (Shell) and Chevron Environmental Management Company (Chevron) within the channel and levees, the former Carson Air Harbor (CAH) property located at 21611 South Perry Street, the former Texaco Station located at 1209 East Carson Street, the 76 Station located at 1025 East Carson Street, and the former Active RV property located at 1202 East Carson Street, and within several nearby streets. Investigations for BP Pipelines (North American), Inc. (BP) and Tesoro Corporation have been prepared by AECOM and Orion Environmental Inc., respectively.

Based on the results presented in the *Light Non-Aqueous Phase Liquid Release Assessment Report, Dominguez Channel South of Carson Street, Carson, California* dated October 20, 2011 (URS, 2011), the LARWQCB issued letters to RELLC indicating that the former CAH property, former Texaco Station, and 76 Station were not likely contributors to LNAPL releases in the Dominguez Channel and granted No Further Action (NFA) determinations in association with the Dominguez Channel LNAPL investigation. The LARWQCB recommended that the former Texaco Station and 76 Station sites be transferred back to the Underground Storage Tank (UST) Program because petroleum hydrocarbon impacts related to UST operations remain at the sites. The former Texaco Station was granted closure on March 9, 2015. Several wells both onsite and offsite were destroyed in February 2015; however, the responsibility of the remaining former Texaco Station wells was transferred to RELLC as part of the Dominguez Channel assessment project. The LARWQCB Site Cleanup Program Case No. 0490C for the former CAH property remains active due to onsite and offsite groundwater contamination; however, it has been combined with nearby Case Nos. 0490A (Shell Pipeline Leak – Colony Holdings at 1211 East Carson Street) and 0490B (Shell Pipeline at 21500 South Perry Street) into a single Case No. 0490B entitled Shell Pipeline.

On February 8, 2013, the LARWQCB issued Cleanup and Abatement Order (CAO) No. R4-2013-0007 to BP, Chevron, Phillips 66, and Shell. The CAO requires these responsible parties to cleanup waste and abate the effects of the discharges of waste, specifically petroleum hydrocarbons, to the Dominguez Channel and within the sub-drain pipe system located in the Dominguez Channel levees, and of petroleum hydrocarbons within soil, soil gas, and groundwater near the Dominguez Channel. Letters have been provided to the LARWQCB from Chevron (which also represents Phillips 66), Shell, and BP (effective May 3, 2013) acknowledging RELLC's role to act on their behalf in all future matters before regulatory agencies with regard to this effort.

In response to CAO No. R4-2013-0007, a *Groundwater Monitoring Work Plan* dated May 6, 2013 was prepared by URS on behalf of RELLC (URS, 2013). Per the work plan, groundwater monitoring is to be performed on a semi-annual basis using the A and B Zone groundwater monitoring wells and on a biennial basis using the C Zone groundwater monitoring wells (in addition to the A and B Zone wells). The work plan was approved by the LARWQCB on May 9, 2013, with two requirements:

1. Submit Groundwater Monitoring Reports in accordance with the Time Schedule (Directive 8) within the CAO, and
2. Groundwater Monitoring Reports need to include figures depicting groundwater elevations with the groundwater flow direction for the A Zone and B Zone on a semiannual basis and for the C Zone on a biennial basis, and separate contour maps showing detections of petroleum constituents in groundwater.

These requirements constitute an amendment to the requirements of the CAO.

Groundwater monitoring activities at the Site began in August 2011 and are conducted semi-

annually (except for the second half of 2012). Per the *Groundwater Monitoring Work Plan* approval letter, the first biennial monitoring was performed during the first semi-annual event of 2014.

GROUNDWATER MONITORING ACTIVITIES

Field activities that were completed for the 2020 first semi-annual groundwater monitoring event, which was conducted between April 20 and 23, 2020, included the following:

Dominguez Channel

- Gauging and sampling 16 A, B, or A/B Zone wells (R-MW-1, R-MW-1B, R-MW-2, R-MW-3, R-MW-5, R-MW-6B, R-MW-7A, R-MW-7B, R-MW-8A, R-MW-8B, R-MW-9B, R-MW-10A, R-MW-13B, R-MW-14B, R-MW-16A, and R-MW-16B)
- Gauging and sampling three C Zone wells (R-MW-1C, R-MW-6C, and R-MW-10C)
- Gauging five wells with LNAPL (R-MW-6, R-MW-10B, R-MW-11, R-MW-12, and R-MW-15)
- Gauging only two A Zone wells (R-MW-13A and R-MW-14A) and one A/B Zone well (R-MW-4), and
- Gauging four A/B Zone wells installed by others (DC-1, DC-3, DC-4, and DC-5) and sampling one of those wells (DC-3).

Former Active RV

- Gauging and sampling 10 A or B Zone wells (MW-1A-RV, MW-1B-RV, MW-2A-RV, MW-2B-RV, MW-3A-RV, MW-3B-RV, MW-4A-RV, MW-4B-RV, MW-5A-RV, and MW-5B-RV).

Former Texaco Site

- Gauging and sampling 11 A or B Zone wells (MW-1, MW-4, MW-7, MW-8, MW-8B, MW-9, MW-9B, MW-10, MW-13, MW-13B, and MW-15), and
- Gauging and sampling three C wells (MW-8C, MW-9C, and MW-13C).

The groundwater monitoring well locations are shown on Figure 2. Wells R-MW-6, R-MW-10B, R-MW-11, R-MW-12, and R-MW-15 located along the western levee of Dominguez Channel or within Recreation Road were not sampled during this semi-annual event due to the presence of LNAPL in the wells (see discussion below). With the closure of Case No. R-05994 for the former Texaco site, onsite Texaco Wells MW-11, MW-12, MW-14, and MW-16 and offsite Texaco Wells MW-3, MW-5, and MW-6 were destroyed on February 25 and 26, 2015 with the LARWQCB's concurrence (AECOM, 2015). In addition, with the LARWQCB's concurrence via email on April 15, 2016, some A, A/B, and C Zone wells were eliminated from the monitoring program due to low or non-detect stable concentrations that were not needed to provide plume delineation (Dominguez Channel Wells R-MW-4, R-MW-13A, R-MW-14A, DC-1, DC-4, and DC-5, and former Texaco Wells MW-2, MW-8C, and MW-9C).

Wells R-MW-7A, R-MW-8A, and MW-16A located along the western levee of Dominguez Channel, Well R-MW-10A located on Recreation Road, Wells R-MW-13A and R-MW-14A located northeast of Dominguez Channel within Ashmill and Cloverbrook Streets, respectively, Wells MW-1A-RV through MW-5A-RV located at the former Active RV site, and Wells MW-1, MW-2, MW-4, MW-7, MW-8, MW-9, MW-10, MW-13, and MW-15 at the former Texaco site are screened within the upper water-bearing A Zone, which primarily consists of clays and silts with trace amounts of fine-

grained sand from the surface to approximately 35 feet below ground surface (bgs). Wells R-MW-1B, R-MW-6B, R-MW-7B, R-MW-8B, R-MW-9B, and MW-16B near the channel, Well R-MW-10B on Recreation Road, Wells R-MW-13B and R-MW-14B within Ashmill and Cloverbrook Streets, respectively, Wells MW-1B-RV through MW-5B-RV located at the former Active RV site, and Wells MW-8B, MW-9B, and MW-13B at the former Texaco site are screened in the deeper water-bearing B Zone, which primarily consists of silty fine sands and silts with some interbedded clay lenses from roughly 35 to 50 feet bgs. Wells R-MW-1 through R-MW-6, R-MW-11, R-MW-12, R-MW-15, DC-1, DC-3, DC-4, and DC-5 at Dominguez Channel are cross-screened between the A and B Zones. Wells R-MW-1C, R-MW-6C, and R-MW-10C at or near Dominguez Channel, and Wells MW-8C, MW-9C, and MW-13C at the former Texaco site are screened within the deeper C Zone, which consists of silty sands from approximately 70 to 80 feet bgs. The screened intervals for the wells are included in Table 1.

The groundwater purging and sampling were conducted by Blaine Tech Services, Inc. (Blaine Tech) of Carson, California, under the oversight of AECOM field personnel. A description of the monitoring methods is presented below.

Groundwater Gauging

On April 20, 2020, prior to purging and sampling, the depth to groundwater in each well relative to the top of casing (TOC) was measured to the nearest 0.01 foot using an electronic water level indicator. An oil-water interface probe was used to measure depth to groundwater in monitoring wells that have historically had LNAPL. Wells R-MW-11 and R-MW-12 contain active skimmers, Well R-MW-6 contains a passive skimmer, and Wells R-MW-10B and R-MW-15 contain a product sock. Product was measured in these wells during this monitoring event. The depth from the monitoring well TOC to the bottom of most of the wells was also measured and recorded to calculate the volume of the water column in the well. Groundwater elevations were calculated by subtracting the water table depth from the top of casing elevation. The depths to water and groundwater elevations are summarized in Table 1.

LNAPL Removal

In August 2011, LNAPL collection was initiated in groundwater monitoring Well R-MW-6 located along the western levee road. Initially, the product was removed weekly by hand bailing. On October 21, 2011, a passive skimmer was installed in Well R-MW-6 and daily LNAPL recovery from the well commenced on October 24, 2011. Due to continued LNAPL detections in Well R-MW-6, URS installed an active LNAPL recovery skimmer system on August 31, 2012. Due to declining product recoveries, the active skimmer was removed from R-MW-6 and replaced with a passive skimmer between March 9 and 17, 2015. Product sheen was detected in Well R-MW-6 during this monitoring event. Since September 15, 2011, approximately 688 gallons (as of June 24, 2020) of LNAPL have been removed from Well R-MW-6.

In July 2014, LNAPL recovery Well R-MW-11 was installed along the western levee road (URS, 2014). Initially, product was removed by bailing, then with a passive skimmer. On October 17, 2014, an active skimmer was installed in Well R-MW-11. A product thickness of 0.02 feet was observed in Well R-MW-11 during this monitoring event. Since July 23, 2014, approximately 374 gallons (as of June 24, 2020) of LNAPL have been removed from Well R-MW-11. In December 2014, LNAPL recovery Well R-MW-12 was installed roughly mid-way between Wells R-MW-6 and R-MW-11 (URS, 2015). Initially, a passive skimmer was used to remove product from the well, then the active skimmer from Well R-MW-6 was installed in Well R-MW-12 in March 2015. A product thickness of 0.07 feet was observed in Well R-MW-12 during this monitoring event. Through June

24, 2020, approximately 1,097 gallons of LNAPL have been removed from Well R-MW-12.

In February 2016, LNAPL recovery Well R-MW-15 was installed approximately 20 feet south of Well R-MW-6C. A passive skimmer was initially installed in this well on March 2, 2016, then an active skimmer was installed between August 2 and 12, 2016. On April 25, 2018, a passive skimmer was reinstalled in the well. In May 2019, the passive skimmer was removed, and a product sock was installed. Product sheen was detected in Well R-MW-15 during this monitoring event. Through June 24, 2020, approximately 199 gallons of product have been recovered from Well R-MW-15.

Measurable LNAPL was detected for the first time in Well R-MW-10B during the 2015 second semi-annual groundwater monitoring event. An absorbent sock was first installed in the well on February 3, 2016. The socks that are placed in the well are checked periodically and replaced as necessary. Product sheen was detected in Well R-MW-10B during this monitoring event.

In addition, product socks were installed in Wells R-MW-1B and MW-2A-RV in May 2013 to absorb the LNAPL sheen present in the two wells. The socks were checked periodically and replaced as necessary, until they were removed in January 2014. Product socks were installed in Wells MW-1A-RV and MW-2A-RV in June 2014 to absorb the LNAPL sheen present in the two wells. The socks are checked periodically and replaced as necessary. Sheen was not observed in these wells during this monitoring event.

Purging and Sampling Methods

After gauging, post-purge groundwater samples were collected from the wells for laboratory analysis. The wells were purged and sampled with a Grundfos® submersible well pump using low-flow/low-stress procedures (U.S. Environmental Protection Agency [USEPA]/540/S-95/504, April 1996) to minimize the impact of the purging process on groundwater chemistry during sample collection, and to minimize the volume of water purged and disposed. Purge rates of approximately 100 to 200 milliliters per minute (ml/min) were utilized.

Water quality indicator parameters were used to determine purging needs prior to sample collection in each well. The goal was to minimize drawdown where possible (less than 0.33 feet), with frequent monitoring of water quality parameters. Particular care was taken to insert the pump at the desired interval in the well screen with minimal disturbance to the water in the well casing. Water purged from each well was monitored for various field parameters including temperature, pH, turbidity, electrical conductivity, dissolved oxygen (DO), and oxidation reduction potential (ORP) using a YSI™ multi-parameter meter equipped with a flow-through cell. Purging continued until temperature, pH, and conductivity had stabilized. Measured field parameters are listed in Table 1. Copies of the groundwater purge logs are provided in Attachment A.

Groundwater samples were collected from 44 monitoring wells between April 20 through 23, 2020 for laboratory analysis. Due to the presence of LNAPL, active or passive skimmers are located in Wells R-MW-6, R-MW-11, and R-MW-12, and absorbent socks are located in Wells R-MW-10B and R-MW-15; therefore, samples were not collected from these five wells. Groundwater samples were collected from the discharge tubing of the well pump following well purging. The submersible well pump was cleaned prior to use and between wells by washing in a solution of Liquinox, rinsing with tap water, final rinsing with deionized water, and air drying. New, disposable, polyethylene discharge tubing was attached to the pump following each decontamination procedure and was changed between each well. Duplicate samples were collected from Wells R-MW-1, R-MW-6B, R-MW-8B, R-MW-10C, MW-1B-RV, MW-1, and MW-8, and labeled DUP-1-DC, DUP-2-DC, DUP-3-DC, DUP-4-DC, DUP-1-RV, Dup-1-TEX, and Dup-2-TEX, respectively. Six equipment blanks were collected by pumping deionized water through the utilized pumps and clean, disposable,

polyethylene tubing into sample containers following decontamination procedures. Eleven trip blank samples were included in ice chests during sample collection and transport. The equipment and trip blanks were placed on hold pending the results of the field samples.

Sample containers and handling procedures conformed to the established protocols for each specific parameter as described in USEPA SW-846. The sample bottles, once filled and preserved as required, were labeled with the following: well identification number, sample number, date and time sampled, job number, site/client name and location, and sampling personnel's initials. The labeled samples were logged on a chain-of-custody (COC) document, placed in an ice chest containing ice, and transported to Eurofins Calscience Irvine, Inc. (Eurofins) of Irvine, California, for analysis. Eurofins is accredited by California's Environmental Laboratory Accreditation Program (ELAP). The temperatures of the ice chests were recorded by the laboratory upon sample receipt and were within acceptable range. COC documents were maintained throughout the sampling program. Copies of the COC documents are included in Attachment B with the laboratory reports.

Laboratory Analysis Program

Forty-four primary groundwater samples and seven field duplicate groundwater samples were analyzed for the following:

- Total petroleum hydrocarbons (TPH) in the gasoline range (TPHg), TPH as diesel (TPHd), and TPH as oil (TPHo) by USEPA Method 8015B, and
- Volatile organic compounds (VOCs), including fuel oxygenates methyl tert-butyl ether (MTBE), diisopropyl ether (DIPE), ethanol (EtOH), ethyl tert-butyl ether (ETBE), tert-amyl methyl ether (TAME), and tert-butyl alcohol (TBA) by USEPA Method 8260B.

GROUNDWATER MONITORING RESULTS

Groundwater Elevation and Contours

Groundwater depth and elevation data for this reporting period are presented in Table 1. Historical groundwater elevation data are included in Attachment C. As shown in Table 1:

- Measured depths to water in the A Zone wells (screened between approximately 4 and 35 feet bgs) ranged from 4.61 (MW-2) to 16.93 (R-MW-16A) feet below top of casing (btoc). Groundwater elevations for the A Zone wells ranged from 3.06 (R-MW-16A) to 14.33 (MW-4) feet above mean sea level (msl). Between the 2019 second semi-annual groundwater monitoring event and the current reporting period, A Zone groundwater elevations decreased an average of 2.65 feet for the Dominguez Channel wells, increased an average of 0.15 feet for the former Active RV wells, and decreased an average of 1.31 feet for the former Texaco wells.
- Measured depths to water in the B Zone wells (screened between approximately 30 and 60 feet bgs) ranged from 12.25 (MW-8B) to 17.70 (MW-5B-RV) feet btoc. Groundwater elevations for the B Zone wells ranged from 3.24 (R-MW-10B) to 5.56 (MW-8B) feet msl. Between the 2019 second semi-annual groundwater monitoring event and the current reporting period, B Zone groundwater elevations decreased an average of 1.99, 0.78, and 1.74 feet for the Dominguez Channel, former Active RV, and former Texaco site wells, respectively.
- Measured depths to water in the C Zone wells (screened between approximately 70 and 80 feet bgs) ranged from 15.32 (R-MW-10C) to 19.53 (MW-8C) feet btoc. Groundwater

elevations for the C Zone wells ranged from -1.64 (MW-8C) to 1.75 (R-MW-10C) feet msl. Between the 2019 second semi-annual groundwater monitoring event and the current reporting period, C Zone groundwater elevations decreased an average of 1.94 and 1.25 feet for the Dominguez Channel and former Texaco site wells, respectively.

Wells that were screened across both A and B Zones (e.g., R-MW-1 and DC-1) were not included in the above summaries.

Interpretive groundwater elevation contour maps for all three groundwater zones (A, B, and C) were prepared using both kriging and polynomial regression with SURFER™, a graphical contouring software program. Both the kriging and polynomial regression methods provide a statistical interpolation of data points to generate elevation contours. Kriging provides a more precise extrapolation of the data points and is useful for interpreting local groundwater flow patterns. By contrast, polynomial regression processes the data so that underlying large-scale trends and patterns are shown; which is used for trend surface analysis.

In addition to the Dominguez Channel, former Active RV site, and former Texaco site wells, groundwater elevation data for the nearby Shell Pipeline site north of East Carson Street have been used to assist in preparation of the groundwater elevation contour maps.

The groundwater elevation contour maps are presented as Figures 3A and 3B for the A Zone, Figures 3C and 3D for the B Zone, and Figures 3E and 3F for the C Zone. The resultant groundwater contours based on polynomial regression indicate a southwest groundwater flow direction with a gradient of about 0.02 foot/foot (ft/ft) for the A Zone (Figures 3A and 3B), a south-southwest groundwater flow direction with a gradient of about 0.005 ft/ft for the B Zone (Figures 3C and 3D), and a northwest groundwater flow direction with a gradient of about 0.002 ft/ft for the C Zone (Figures 3E and 3F).

Groundwater Analytical Results

Chemical analytical results for this reporting period are presented in Table 2. Historical analytical results are included in Attachment C. For duplicate samples, the maximum concentration detected in either the primary or duplicate sample has been used to represent the presence of the analyte in the sample.

In summary, TPHg and/or VOCs were detected above laboratory reporting limits in 37 of the 38 wells sampled. Well R-MW-5 had no detections above the laboratory reporting limits. A summary of detections for TPHg, benzene, MTBE, TBA, and DIPE in wells at Dominguez Channel, the former Active RV site, and the former Texaco site is provided in the table below.

Detected Compound	Number of Detections	Minimum Detection (µg/L)	Maximum Detection (µg/L)	Well with Maximum Concentration
Dominguez Channel				
TPHg	17	36 J	34,000	R-MW-1B
Benzene	17	0.26 J	7,800	R-MW-1B
MTBE	3	0.45 J	1.1	DC-3
TBA	9	8.9 J	1,800	R-MW-6B
DIPE	17	0.25 J	640	R-MW-1C

Detected Compound	Number of Detections	Minimum Detection (µg/L)	Maximum Detection (µg/L)	Well with Maximum Concentration
Former Active RV Site				
TPHg	10	1,600	54,000	MW-2A-RV
Benzene	9	120	14,000	MW-1A-RV
MTBE	0	< 2.5	<25	--
TBA	5	91	700	MW-2B-RV
DIPE	10	3.5	1,400	MW-1B-RV
Former Texaco Site				
TPHg	14	43 J	21,000	MW-1
Benzene	11	0.36J	5,100	MW-1
MTBE	2	0.68	2.7	MW-13
TBA	5	5.9 J	340	MW-13B
DIPE	12	0.35 J	1,600	MW-9B

µg/L – micrograms per liter
<1.0 – Not detected above the laboratory reporting limit.
J – Reported value is below the laboratory reporting limit, but above the method detection limit; result is estimated.

Copies of the laboratory reports are included in Attachment B. Based on results of the analyses, isoconcentration contour maps for dissolved-phase TPHg, benzene, and DIPE in groundwater are provided as Figures 4A/4B, 5A/5B, and 6A/6B for the A and B Zones, respectively. In addition to the Dominguez Channel, former Active RV, and former Texaco site wells, groundwater concentration data for the nearby Shell Pipeline site have been included to assist in preparation of the isoconcentration contour maps. Historical analytical results for the CAH wells associated with the Shell Pipeline site are presented in Attachment C. TPHg, benzene, and DIPE hydrographs are provided in Attachment D.

AECOM conducted a check of data completeness for the analytical laboratory results for the groundwater samples collected. All samples were analyzed as requested and all holding times were met. Due to matrix interference, the result for benzene for one sample was qualified as estimated ("J"). No other data were qualified. Overall, based on this limited validation, the data as qualified are useable for their intended purpose. A copy of AECOM's data validation memorandum is included as Attachment E.

WASTE MANAGEMENT

Liquid wastes (decontamination water and well purge water) were collected and stored in three 55-gallon Department of Transportation (DOT)-approved drums, which were labeled to identify the source of the waste. The drums were stored onsite in a designated area pending lawful disposal.

FUTURE PLANNED ACTIVITIES

Groundwater monitoring will continue on a semi-annual basis and will be next performed during the fourth quarter of 2020. An updated site conceptual model report will be prepared.

CONCLUSIONS

- A southwest groundwater flow direction with a gradient of 0.02 ft/ft in the A zone; a south-southwest groundwater flow direction with a gradient of 0.005 ft/ft in the B zone; and a northwest groundwater flow direction with a gradient of about 0.002 ft/ft for the C zone are consistent with recent monitoring events.
- LNAPL was observed in Wells R-MW-6, R-MW-10B, R-MW-11, R-MW-12, and R-MW-15 in April 2020. This is consistent with previous groundwater monitoring events. LNAPL removal activities are conducted regularly using active skimmers (R-MW-11 and R-MW-12), a passive skimmer (R-MW-6), and absorbent socks (R-MW-10B and R-MW-15).
- The highest Project Area TPHg concentration (54,000 µg/L) was detected in former Active RV Well MW-2A-RV.
- The highest Project Area benzene concentration (14,000 µg/L) was detected in former Active RV Well MW-1A-RV.
- The highest Project Area DIPE concentration (1,600 µg/L) was detected in former Texaco Well MW-9B.
- As shown in the time series graphs included in Attachment D, TPHg, benzene, and DIPE concentrations in existing monitoring wells generally appear to be stable or decreasing, with a few instances of fluctuation. Groundwater elevations have generally been increasing over time.

STATEMENT OF LIMITATIONS

The conclusions, if any, presented in this report are professional opinions based solely upon the data described in this report. They are intended exclusively for the purpose outlined herein and the site location and project indicated. This report is for the sole use and benefit of the Client. The scope of services performed in execution of this effort may not be appropriate to satisfy the needs of other users, and any use or reuse of this document or the findings, conclusions, or recommendations presented herein is at the sole risk of said user. No express or implied representation or warranty is included or intended in this report except that the work was performed within the limits prescribed by the Client with the customary thoroughness and competence of professionals working in the same area on similar projects.

REFERENCES

AECOM, 2015. *Groundwater Monitoring Well Destruction, Former Texaco Service Station, 1209 East Carson Street, Carson, California, CRWQCB Case No. R-05994*. March 4.

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URS, 2014. *LNAPL Recovery Well R-MW-11 Installation Report, Dominguez Channel, South of Carson Street, Carson, California, Cleanup and Abatement Order No. R4-2013-0007*. August 22.

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CLOSING

If you have any questions regarding this summary report or need additional information concerning the Project, please call Robert Michna at (510) 219-3082, or Greg Vogelpohl with RELLC at (805) 286-4076.

Sincerely,

AECOM

Robert Michna
Project Manager

Laurie S. Fernandez, PG
Principal Geologist

List of Attachments:

Tables

1 Groundwater Levels and Field Parameters
2 Summary of Detected Analytes in Groundwater

Figures

1 Site Vicinity Map
2 Site Plan
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3B Groundwater Elevation Contour Map – A Zone, April 20, 2020 (Polynomial Regression)
3C Groundwater Elevation Contour Map – B Zone, April 20, 2020 (Kriging)
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4A TPHg Isoconcentration Contour Map – A Zone, April 2020
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5A Benzene Isoconcentration Contour Map – A Zone, April 2020
5B Benzene Isoconcentration Contour Map – B Zone, April 2020
6A DIPE Isoconcentration Contour Map – A Zone, April 2020
6B DIPE Isoconcentration Contour Map – B Zone, April 2020

Attachments

A Well Purging and Sampling Logs
B Chain-of-Custody Documentation and Analytical Laboratory Reports
C Historical Groundwater Data
D Groundwater Monitoring Well Hydrographs and Time Series Graphs
E Data Validation Memorandum

cc: John Englehardt, RELLC
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Cindy Kezos, BP
Robert Speer, CEMC
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Joseph Lentini, Equilon
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TABLES

TABLE 1
GROUNDWATER LEVELS AND FIELD PARAMETERS
2020 FIRST SEMI-ANNUAL GROUNDWATER MONITORING
RELLC-Dominguez Channel
Carson, California

Monitoring Well ID	Aquifer Zone	Notes	Gauging Date	Gauging Time	GROUNDWATER LEVELS					Approximate Screened Interval (feet bgs)	FIELD PARAMETERS							
					Depth to Groundwater (feet btoc)	Standing Product Thickness (feet)	Total Well Depth (feet btoc)	Casing Elevation (feet MSL)	Groundwater Elevation (feet MSL)		Sample Date	TEMP (°F)	TEMP (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	DO (mg/L)	ORP (mV)
DOMINGUEZ CHANNEL																		
R-MW-1	A/B	1	4/20/2020	12:29	12.92	0.00	49.27	16.95	4.03	10-50	4/21/2020	73.76	23.20	6.94	4,899	34	1.37	-230.9
R-MW-1B	B	1	4/20/2020	12:32	12.88	0.00	53.77	16.76	3.88	32-52	4/22/2020	71.24	21.80	6.90	4,492	2	0.22	-145.7
R-MW-1C	C	1	4/20/2020	12:38	16.86	0.00	76.81	16.93	0.07	67-77	4/22/2020	71.24	21.80	6.45	21060	2	0.17	-41.6
R-MW-2	A/B	1	4/20/2020	12:20	16.67	0.00	49.74	20.45	3.78	10-50	4/21/2020	70.70	21.50	7.17	23,845	5	0.42	40.3
R-MW-3	A/B	1	4/20/2020	12:13	17.10	0.00	49.72	20.84	3.74	10-50	4/21/2020	71.24	21.80	7.11	29,853	1	0.31	27.1
R-MW-4	A/B	--	4/20/2020	9:37	17.09	0.00	49.62	20.14	3.05	10-50	--	--	--	--	--	--	--	--
R-MW-5	A/B	1	4/20/2020	9:42	17.30	0.00	49.64	20.38	3.08	10-50	4/21/2020	71.06	21.70	7.02	25,370	2	0.42	30.8
R-MW-6	A/B	3	4/20/2020	14:12	15.90	Sheen	--	20.07	4.17	10-50	--	--	--	--	--	--	--	--
R-MW-6B	B	1	4/20/2020	9:52	16.75	0.00	56.10	20.12	3.37	36-56	4/21/2020	70.16	21.20	6.96	36,977	6	0.21	-252.8
R-MW-6C	C	1	4/20/2020	9:57	18.87	0.00	80.05	19.99	1.12	70-80	4/22/2020	71.78	22.10	6.51	36237	3	0.30	-120
R-MW-7A	A	1	4/20/2020	10:06	15.71	0.00	29.88	19.97	4.26	10-30	4/22/2020	72.32	22.40	6.95	18,376	1	0.72	-131.7
R-MW-7B	B	1	4/20/2020	10:10	16.87	0.00	52.03	20.15	3.28	32-52	4/22/2020	71.42	21.90	7.04	39,682	1	0.29	-307.9
R-MW-8A	A	1	4/20/2020	10:21	16.30	0.00	29.80	19.74	3.44	10-30	4/22/2020	70.70	21.50	6.64	28,015	1	0.26	-0.8
R-MW-8B	B	1	4/20/2020	10:27	16.46	0.00	51.40	19.93	3.47	31-51	4/22/2020	70.52	21.40	6.80	37,952	4	0.32	-167.9
R-MW-9B	B	1	4/20/2020	12:44	15.36	0.00	55.07	19.22	3.86	35-55	4/22/2020	69.08	20.60	7.08	11,562	1	0.39	104.3
R-MW-10A	A	1	4/20/2020	8:39	12.02	0.00	28.32	17.05	5.03	18-28	4/21/2020	74.30	23.50	7.35	3,767	5	0.48	1.8
R-MW-10B	B	3	4/20/2020	8:34	13.87	Sheen	--	17.11	3.24	30-40	--	--	--	--	--	--	--	--
R-MW-10C	C	1	4/20/2020	8:28	15.32	0.00	80.08	17.07	1.75	70-80	4/21/2020	72.32	22.40	6.77	34740	10	0.29	-34.1
R-MW-11	A/B	3	4/20/2020	14:28	16.75	0.02	--	20.98	4.25	10-50	--	--	--	--	--	--	--	--
R-MW-12	A/B	3	4/20/2020	14:20	17.00	0.07	--	19.30	2.36	10-50	--	--	--	--	--	--	--	--
R-MW-13A	A	--	4/20/2020	9:07	6.81	0.00	34.96	19.38	12.57	10-30	--	--	--	--	--	--	--	--
R-MW-13B	B	1	4/20/2020	9:12	14.28	0.00	49.91	19.54	5.26	31-51	4/21/2020	70.88	21.60	6.78	6045	2	0.66	75.8
R-MW-14A	A	--	4/20/2020	9:24	5.75	0.00	34.91	19.98	14.23	10-30	--	--	--	--	--	--	--	--
R-MW-14B	B	1	4/20/2020	9:33	14.94	0.00	49.26	19.82	4.88	31-51	4/21/2020	73.40	23.00	7.37	5,353	3	0.30	50.5
R-MW-15	A/B	3	4/20/2020	14:08	16.44	Sheen	--	19.67	3.23	10-50	--	--	--	--	--	--	--	--
R-MW-16A	A	1	4/20/2020	11:50	16.93	0.00	30.27	19.99	3.06	10-30	4/22/2020	70.52	21.40	6.60	30,001	2	0.26	-14.7
R-MW-16B	B	1	4/20/2020	11:56	16.47	0.00	51.64	19.83	3.36	32-52	4/22/2020	69.44	20.80	7.77	34,122	4	0.18	-159.4
DC-1	A/B	--	4/20/2020	7:47	16.40	0.00	53.37	20.30	3.90	13-53	--	--	--	--	--	--	--	--
DC-3	A/B	1	4/20/2020	9:22	14.97	0.00	49.32	17.75	2.78	5-50	4/21/2020	73.76	23.20	6.93	31,330	4	0.51	-12.5
DC-4	A/B	--	4/20/2020	9:13	13.95	0.00	49.97	16.63	2.68	5-50	--	--	--	--	--	--	--	--
DC-5	A/B	--	4/20/2020	8:48	13.82	0.00	49.80	16.20	2.38	5-50	--	--	--	--	--	--	--	--
FORMER ACTIVE RV																		
MW-1A-RV	A	1	4/20/2020	8:53	11.33	0.00	33.03	19.03	7.70	13-33	4/23/2020	74.12	23.40	6.91	10,748	2	0.55	-230.0
MW-1B-RV	B	1	4/20/2020	8:47	14.99	0.00	48.24	19.16	4.17	38-48	4/23/2020	74.30	23.50	6.91	16,321	3	0.40	-102.6
MW-2A-RV	A	1	4/20/2020	7:35	11.21	0.00	33.42	19.74	8.53	15-35	4/23/2020	75.74	24.30	7.38	7,068	3	0.50	-161.7
MW-2B-RV	B	1	4/20/2020	7:45	15.89	0.00	50.08	19.98	4.09	40-50	4/23/2020	73.76	23.20	7.07	16,201	2	0.53	-122.9
MW-3A-RV	A	1	4/20/2020	8:31	15.85	0.00	32.82	20.34	4.49	13-33	4/23/2020	79.70	26.50	7.24	5,724	5	0.61	-99.8
MW-3B-RV	B	1	4/20/2020	8:37	16.58	0.00	48.92	20.25	3.67	39-49	4/23/2020	76.46	24.70	7.26	5,220	3	0.57	-141.2
MW-4A-RV	A	1	4/20/2020	8:15	10.94	0.00	34.51	20.91	9.97	15-35	4/23/2020	70.88	21.60	6.98	2,081	5	2.56	-157.0
MW-4B-RV	B	1	4/20/2020	8:22	17.23	0.00	48.93	21.12	3.89	39-49	4/23/2020	74.12	23.40	7.18	5,039	10	1.80	-95.3
MW-5A-RV	A	1	4/20/2020	7:57	13.91	0.00	34.40	21.69	7.78	15-35	4/23/2020	73.94	23.30	7.11	4,915	6	0.81	-234.3
MW-5B-RV	B	1	4/20/2020	8:00	17.70	0.00	48.46	21.79	4.09	38.5-48.5	4/23/2020	77.72	25.40	6.94	4,415	24	0.73	-115.8

TABLE 1
GROUNDWATER LEVELS AND FIELD PARAMETERS
2020 FIRST SEMI-ANNUAL GROUNDWATER MONITORING
RELLC-Dominguez Channel
Carson, California

Monitoring Well ID	Aquifer Zone	Notes	Gauging Date	Gauging Time	GROUNDWATER LEVELS					Approximate Screened Interval (feet bgs)	FIELD PARAMETERS							
					Depth to Groundwater (feet btoc)	Standing Product Thickness (feet)	Total Well Depth (feet btoc)	Casing Elevation (feet MSL)	Groundwater Elevation (feet MSL)		Sample Date	TEMP (°F)	TEMP (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	DO (mg/L)	ORP (mV)
FORMER TEXACO SERVICE STATION																		
MW-1	A	1	4/20/2020	7:51	5.11	0.00	24.95	18.04	12.93	5-25	4/20/2020	74.84	23.80	7.06	2,118	20	1.80	-266.1
MW-2	A	--	4/20/2020	7:45	4.61	0.00	--	18.51	13.90	4-23	--	--	--	--	--	--	--	--
MW-3	Destroyed																	
MW-4	A	1	4/20/2020	8:00	5.05	0.00	23.22	19.38	14.33	5-25	4/20/2020	73.22	22.90	7.18	2,443	4	0.12	-128.6
MW-5	Destroyed																	
MW-6	Destroyed																	
MW-7	A	1	4/20/2020	7:34	6.70	0.00	17.75	18.06	11.36	4-24	4/20/2020	74.48	23.60	7.88	1,358	4	0.19	-382.1
MW-8	A	1	4/20/2020	10:55	6.87	0.00	24.15	17.89	11.02	5-25	4/20/2020	74.12	23.40	7.09	1,307	3	0.30	-90.5
MW-8B	B	1	4/20/2020	10:46	12.25	0.00	49.42	17.81	5.56	40-50	4/20/2020	70.52	21.40	6.74	18,593	27	0.53	-77.1
MW-8C	C	--	4/20/2020	10:48	19.53	0.00	80.10	17.89	-1.64	70-80	4/20/2020	72.14	22.3	7.03	17637	113	1.26	-129.2
MW-9	A	1	4/20/2020	9:36	5.56	0.00	24.68	17.65	12.09	5-25	4/20/2020	74.30	23.50	7.09	1619	7	0.61	-261.0
MW-9B	B	1	4/20/2020	9:42	12.45	0.00	49.92	17.51	5.06	45-50	4/20/2020	73.04	22.80	6.82	16,115	4	0.28	-120.9
MW-9C	C	--	4/20/2020	9:40	17.69	0.00	77.18	17.39	-0.30	72.5-77.5	4/20/2020	73.04	22.8	6.93	11699	84	0.21	-110.6
MW-10	A	1	4/20/2020	9:44	5.90	0.00	23.10	17.83	11.93	5-25	4/20/2020	73.40	23.00	7.16	4,801	6	0.37	-355.2
MW-11	Destroyed																	
MW-12	Destroyed																	
MW-13	A	1	4/20/2020	10:57	6.21	0.00	27.12	18.64	12.43	8-28	4/22/2020	76.28	24.60	7.14	3,583	1	0.39	-216.7
MW-13B	B	1	4/20/2020	11:00	14.51	0.00	60.04	18.78	4.27	50-60	4/22/2020	70.52	21.40	6.95	15,886	5	0.91	-87.5
MW-13C	C	1	4/20/2020	11:04	18.97	0.00	76.54	18.66	-0.31	72-77	4/22/2020	70.70	21.5	6.93	3097	5	0.61	-106.5
MW-14	Destroyed																	
MW-15	A	1	4/20/2020	11:09	5.43	0.00	26.84	19.00	13.57	5-30	4/22/2020	73.04	22.80	6.95	2,639	3	0.23	-220.6
MW-16	Destroyed																	

Notes:
1. "Post-purge" sample
2. Well was not gauged or sampled due to the presence of free product and an active \ passive skimmer in the well
3. Well not sampled due to free product/sheen in the well

Groundwater Elevation = Top of casing elevation - (Depth to Water - (0.8 * Standing Product Thickness))
-- = not analyzed/not measured/not sampled
btoc = below top of casing
MSL = mean sea level
bgs = below ground surface
mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius
µS/cm = microSiemens per centimeter
NTU = nephelometric turbidity units
DO = dissolved oxygen
mg/L = milligrams per liter
ORP = oxidation reduction potential

TABLE 2
SUMMARY OF DETECTED ANALYTES IN GROUNDWATER
2020 FIRST SEMI-ANNUAL GROUNDWATER MONITORING
RELLC-Dominguez Channel
Carson, California

DOMINGUEZ CHANNEL WELLS																								
WELL ID		**R-MW-1**	**R-MW-1**	**R-MW-1B**	**R-MW-1C**	**R-MW-2**	**R-MW-3**	**R-MW-5**	**R-MW-6B**	**R-MW-6B**	**R-MW-6C**	**R-MW-7A**	**R-MW-7B**	**R-MW-8A**	**R-MW-8B**	**R-MW-8B**	**R-MW-9B**	**R-MW-10A**	**R-MW-10C**	**R-MW-10C**	**R-MW-13B**	**R-MW-14B**	**R-MW-16A**	**R-MW-16B**	**DC-3**
SAMPLE DATE		**4/21/2020**	**4/21/2020**	**4/22/2020**	**4/22/2020**	**4/21/2020**	**4/21/2020**	**4/21/2020**	**4/21/2020**	**4/21/2020**	**4/22/2020**	**4/22/2020**	**4/22/2020**	**4/22/2020**	**4/22/2020**	**4/22/2020**	**4/22/2020**	**4/21/2020**	**4/21/2020**	**4/21/2020**	**4/21/2020**	**4/21/2020**	**4/22/2020**	**4/22/2020**	**4/21/2020**
SAMPLE NAME		**R-MW-1**	**DUP-1-DC**	**R-MW-1B**	**R-MW-1C**	**R-MW-2**	**R-MW-3**	**R-MW-5**	**R-MW-6B**	**DUP-2-DC**	**R-MW-6C**	**R-MW-7A**	**R-MW-7B**	**R-MW-8A**	**R-MW-8B**	**DUP-3-DC**	**R-MW-9B**	**R-MW-10A**	**R-MW-10C**	**DUP-4-DC**	**R-MW-13B**	**R-MW-14B**	**R-MW-16A**	**R-MW-16B**	**DC-3**
SAMPLE DELIVERY GROUP	**Unit**	**440-264972-1**	**440-264972-1**	**440-265038-1**	**440-265038-1**	**440-264972-1**	**440-264972-1**	**440-264972-1**	**440-264972-1**	**440-264972-1**	**440-265038-1**	**440-265038-1**	**440-265038-1**	**440-265038-1**	**440-265038-1**	**440-265038-1**	**440-265038-1**	**440-264972-1**	**440-264972-1**	**440-264972-1**	**440-264972-1**	**440-264972-1**	**440-265038-1**	**440-265038-1**	**440-264972-1**
Total Petroleum Hydrocarbons (TPH)																								
Gasoline Range Organics	µg/L	**27000**	**26000**	**34000**	**640**	**320**	**350**	**330**	**28000**	**29000**	**260**	**820**	**15000**	**59**	**11000**	**13000**	**690**	< 50	**110**	**100**	< 50	< 50	**110**	**36J**	**160**
TPH as Diesel	mg/L	**2.7**	**2.7**	**2.0**	**0.58**	**0.17J**	**0.22J**	**0.12J**	**2.0**	**1.9**	**0.26J**	**0.19J**	**1.3**	**0.18J**	**0.51**	**0.85**	**0.49**	< 0.47	**0.15J**	**0.13J**	< 0.47	< 0.48	**0.84**	**0.17J**	< 0.47
ORO (C29-C40)	mg/L	**0.23J**	**0.14J**	< 0.47	< 0.46	< 0.47	< 0.47	< 0.47	< 0.47	< 0.47	< 0.46	< 0.47	< 0.47	< 0.46	< 0.46	< 0.47	< 0.47	< 0.47	< 0.47	< 0.47	< 0.47	< 0.48	< 0.47	< 0.47	< 0.47
Volatile Organic Compounds (VOCs)																								
Benzene	µg/L	**2900**	**3100**	**7800**	**2.4**	**0.26J**	< 0.50	**11**	**6800**	**6700**	**1.2**	**2.2**	**3200**	**5.0**	**3500**	**3500**	**45**	**1.1**	< 0.50	**0.38J**	< 0.50	< 0.50	**1.9**	**0.82**	**0.70**
tert-Butyl Alcohol	µg/L	**490**	**750**	**170J**	< 10	< 10	< 10	**8.9J**	**1600**	**1800**	< 10	**82**	**200**	< 10	**180**	**210**	**240**	< 10	< 10	< 10	< 10	< 10	**15**	< 10	< 10
n-Butylbenzene	µg/L	**4.9J**	**4.7**	< 10	< 0.50	< 0.50	< 0.50	< 0.50	< 10	< 10	< 0.50	< 0.50	< 5.0	< 0.50	< 5.0	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
sec-Butylbenzene	µg/L	**5.0**	**4.6**	< 10	< 0.50	< 0.50	< 0.50	**0.35J**	< 10	< 10	< 0.50	**2.5**	< 5.0	< 0.50	< 5.0	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
tert-Butylbenzene	µg/L	< 5.0	< 1.0	< 10	< 0.50	< 0.50	< 0.50	< 0.50	< 10	< 10	< 0.50	< 0.50	< 5.0	< 0.50	< 5.0	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chloroform	µg/L	< 5.0	< 1.0	< 10	< 0.50	< 0.50	< 0.50	< 0.50	< 10	< 10	< 0.50	< 0.50	< 5.0	< 0.50	< 5.0	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichloroethane	µg/L	< 5.0	< 1.0	< 10	**7.9**	**6.7**	< 0.50	**0.32J**	**5.3J**	< 10	**23**	**4.5**	< 5.0	< 0.50	< 5.0	< 5.0	**0.56**	< 0.50	**14**	**12**	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
cis-1,2-Dichloroethene	µg/L	< 5.0	< 1.0	< 10	< 0.50	< 0.50	< 0.50	< 0.50	< 10	< 10	< 0.50	< 0.50	< 5.0	< 0.50	< 5.0	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Diisopropyl Ether	µg/L	**110**	**94**	**190**	**640**	**240**	**250**	**0.25J**	**310**	**290**	**160**	**11**	**510**	**1.9**	**110**	**130**	**120**	< 0.50	**83**	**63**	< 0.50	< 0.50	**2.5**	**0.65**	**150**
Ethylbenzene	µg/L	**300**	**280**	**270**	< 0.50	< 0.50	< 0.50	< 0.50	**330**	**290**	< 0.50	< 0.50	**96**	< 0.50	**12**	**11**	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Isopropylbenzene	µg/L	**41**	**39**	**18**	< 0.50	< 0.50	< 0.50	**4.0**	**32**	**28**	< 0.50	**21**	**9.0**	< 0.50	**12**	**13**	**0.33J**	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
p-Isopropyltoluene	µg/L	**8.3**	**8.1**	**5.7J**	< 0.50	< 0.50	< 0.50	< 0.50	< 10	< 10	< 0.50	< 0.50	< 5.0	< 0.50	< 5.0	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
MTBE	µg/L	< 5.0	< 1.0	< 10	< 0.50	**0.45J**	**0.65**	< 0.50	< 10	< 10	< 0.50	< 0.50	< 5.0	< 0.50	< 5.0	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	**1.1**
Naphthalene	µg/L	**15**	**18**	**15**	< 0.50	< 0.50	< 0.50	< 0.50	**38**	**34**	< 0.50	< 0.50	**14**	< 0.50	< 5.0	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
n-Propylbenzene	µg/L	**39**	**35**	**19**	< 0.50	< 0.50	< 0.50	**0.85**	**38**	**33**	< 0.50	**0.58**	**10**	< 0.50	**14**	**14**	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Toluene	µg/L	**150**	**150**	**380**	**0.25J**	< 0.50	< 0.50	**0.36J**	**600**	**480**	**1.7**	< 0.50	**410**	< 0.50	**25**	**26**	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trimethylbenzene	µg/L	**68**	**62**	**100**	< 0.50	< 0.50	< 0.50	< 0.50	**130**	**110**	< 0.50	< 0.50	**33**	< 0.50	< 5.0	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,3,5-Trimethylbenzene	µg/L	**44**	**41**	**24**	< 0.50	< 0.50	< 0.50	< 0.50	**21**	**16**	< 0.50	< 0.50	**4.8J**	< 0.50	< 5.0	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
m,p-Xylene	µg/L	**230**	**210**	**280**	< 1.0	< 1.0	< 1.0	< 1.0	**270**	**220**	< 1.0	< 1.0	**190**	< 1.0	**8.0J**	**8.5J**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/L	**32**	**30**	**24**	< 0.50	< 0.50	< 0.50	< 0.50	**29**	**23**	**0.28J**	< 0.50	**28**	< 0.50	**3.9J**	**3.9J**	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Xylenes, Total	µg/L	**260**	**240**	**300**	< 1.5	< 1.5	< 1.5	< 1.5	**300**	**240**	< 1.5	< 1.5	**220**	< 1.5	**12J**	**12J**	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5

Notes:

Gasoline Range Organics by U.S. Environmental Protection Agency (USEPA) Method 8015B

VOCs by USEPA Method 8260B

mg/L = milligrams per liter

µg/L = micrograms per liter

Bold text indicates results above laboratory reporting limit.

< = values reported less than laboratory reporting limit (RL)

J = Reported value is estimated.

TABLE 2
SUMMARY OF DETECTED ANALYTES IN GROUNDWATER
2020 FIRST SEMI-ANNUAL GROUNDWATER MONITORING
RELLC-Dominguez Channel
Carson, California

FORMER ACTIVE RV WELLS												
WELL ID		**MW-1A-RV**	**MW-1B-RV**	**MW-1B-RV**	**MW-2A-RV**	**MW-2B-RV**	**MW-3A-RV**	**MW-3B-RV**	**MW-4A-RV**	**MW-4B-RV**	**MW-5A-RV**	**MW-5B-RV**
SAMPLE DATE		**4/23/2020**	**4/23/2020**	**4/23/2020**	**4/23/2020**	**4/23/2020**	**4/23/2020**	**4/23/2020**	**4/23/2020**	**4/23/2020**	**4/23/2020**	**4/23/2020**
SAMPLE NAME		**MW-1A-RV**	**MW-1B-RV**	**DUP-1-RV**	**MW-2A-RV**	**MW-2B-RV**	**MW-3A-RV**	**MW-3B-RV**	**MW-4A-RV**	**MW-4B-RV**	**MW-5A-RV**	**MW-5B-RV**
SAMPLE DELIVERY GROUP	**Unit**	**440-265100-1**	**440-265100-1**	**440-265100-1**	**440-265100-1**	**440-265100-1**	**440-265100-1**	**440-265100-1**	**440-265100-1**	**440-265100-1**	**440-265100-1**	**440-265100-1**
Total Petroleum Hydrocarbons (TPH)												
Gasoline Range Organics	µg/L	**45000**	**1600**	**1600**	**54000**	**2900**	**40000**	**22000**	**20000**	**18000**	**4300**	**45000**
TPH as Diesel	mg/L	**3.2**	**0.70**	**0.55**	**4.2**	**1.1**	**1.8**	**1.9**	**1.2**	**1.1**	**1.2**	**2.1**
ORO (C29-C40)	mg/L	**0.36J**	< 0.47	< 0.47	**0.18J**	< 0.47	< 0.47	< 0.47	< 0.52	< 0.49	< 0.51	< 0.48
Volatile Organic Compounds (VOCs)												
Benzene	µg/L	**14000**	< 2.5	< 2.0	**12000**	**120**	**6900**	**2200**	**430**	**2900**	**250**	**7000**
tert-Butyl Alcohol	µg/L	< 500	**91**	**81**	< 500	**700**	< 200	**98J**	< 100	**120**	< 10	**310J**
n-Butylbenzene	µg/L	< 25	< 2.5	< 2.0	< 25	< 2.5	< 10	< 5.0	**5.1**	< 5.0	**2.0**	< 20
sec-Butylbenzene	µg/L	< 25	< 2.5	< 2.0	< 25	< 2.5	< 10	**4.1J**	**4.4**	< 5.0	**7.7**	< 20
tert-Butylbenzene	µg/L	< 25	< 2.5	< 2.0	< 25	< 2.5	< 10	< 5.0	< 1.0	< 5.0	**0.92**	< 20
Chloroform	µg/L	< 25	< 2.5	< 2.0	< 25	< 2.5	< 10	< 5.0	< 1.0	< 5.0	< 0.50	< 20
1,2-Dichloroethane	µg/L	< 25	< 2.5	< 2.0	< 25	< 2.5	< 10	< 5.0	< 1.0	< 5.0	< 0.50	< 20
cis-1,2-Dichloroethene	µg/L	< 25	< 2.5	< 2.0	< 25	< 2.5	< 10	< 5.0	< 1.0	< 5.0	< 0.50	< 20
Diisopropyl Ether	µg/L	**1200**	**1300**	**1400**	**1200**	**1000**	**250**	**250**	**3.5**	**140**	**14**	**200**
Ethylbenzene	µg/L	**230**	< 2.5	< 2.0	**830**	< 2.5	**620**	**71**	**140**	**180**	**5.1**	**610**
Isopropylbenzene	µg/L	**44**	< 2.5	< 2.0	**46**	**1.9J**	**60**	**32**	**48**	**27**	**68**	**39**
p-Isopropyltoluene	µg/L	< 25	< 2.5	< 2.0	< 25	< 2.5	**9.2J**	**7.4**	**6.9**	**2.5J**	**0.29J**	< 20
MTBE	µg/L	< 25	< 2.5	< 2.0	< 25	< 2.5	< 10	< 5.0	< 1.0	< 5.0	< 0.50	< 20
Naphthalene	µg/L	< 25	< 2.5	< 2.0	**150**	< 2.5	**130**	< 5.0	**85**	**11**	< 0.50	**62**
n-Propylbenzene	µg/L	**43**	< 2.5	< 2.0	**54**	< 2.5	**71**	**22**	**56**	**24**	**31**	**41**
Toluene	µg/L	**260**	< 2.5	< 2.0	**510**	**1.6J**	**460**	**45**	**140**	**69**	**24**	**540**
1,2,4-Trimethylbenzene	µg/L	**32**	< 2.5	< 2.0	< 25	< 2.5	**6.4J**	**2.8J**	**3.5**	**3.1J**	**0.52**	**15J**
1,3,5-Trimethylbenzene	µg/L	< 25	< 2.5	< 2.0	**33**	< 2.5	**31**	**4.5J**	**17**	**13**	< 0.50	**51**
m,p-Xylene	µg/L	**110**	< 5.0	< 4.0	**180**	< 5.0	**150**	**70**	**110**	**100**	**9.3**	**360**
o-Xylene	µg/L	**44**	< 2.5	< 2.0	**85**	< 2.5	**110**	< 5.0	**40**	**10**	**1.4**	**92**
Xylenes, Total	µg/L	**150**	< 7.5	< 6.0	**270**	< 7.5	**260**	**70**	**150**	**110**	**11**	**450**

Notes:

Gasoline Range Organics by U.S. Environmental Protection Agency (USEPA) Method 8015B

VOCs by USEPA Method 8260B

mg/L = milligrams per liter

µg/L = micrograms per liter

Bold text indicates results above laboratory reporting limit.

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J = Reported value is estimated.

TABLE 2
SUMMARY OF DETECTED ANALYTES IN GROUNDWATER
2020 FIRST SEMI-ANNUAL GROUNDWATER MONITORING
RELLC-Dominguez Channel
Carson, California

FORMER TEXACO SITE WELLS																	
WELL ID		**MW-1-TEX**	**MW-1-TEX**	**MW-4-TEX**	**MW-7-TEX**	**MW-8-TEX**	**MW-8-TEX**	**MW-8B-TEX**	**MW-8C-TEX**	**MW-9-TEX**	**MW-9B-TEX**	**MW-9C-TEX**	**MW-10-TEX**	**MW-13-TEX**	**MW-13B-TEX**	**MW-13C-TEX**	**MW-15-TEX**
SAMPLE DATE		**4/20/2020**	**4/20/2020**	**4/20/2020**	**4/20/2020**	**4/20/2020**	**4/20/2020**	**4/20/2020**	**4/20/2020**	**4/20/2020**	**4/20/2020**	**4/20/2020**	**4/20/2020**	**4/22/2020**	**4/22/2020**	**4/22/2020**	**4/22/2020**
SAMPLE NAME		**MW-1-TEX**	**Dup-1-TEX**	**MW-4-TEX**	**MW-7-TEX**	**MW-8-TEX**	**Dup-2-TEX**	**MW-8B-TEX**	**MW-8C-TEX**	**MW-9-TEX**	**MW-9B-TEX**	**MW-9C-TEX**	**MW-10-TEX**	**MW-13-TEX**	**MW-13B-TEX**	**MW-13C-TEX**	**MW-15-TEX**
SAMPLE DELIVERY GROUP	**Unit**	**440-264907-1**	**440-264907-1**	**440-264907-1**	**440-264907-1**	**440-264907-1**	**440-264907-1**	**440-264907-1**	**440-264907-1**	**440-264907-1**	**440-264907-1**	**440-264907-1**	**440-264907-1**	**440-265040-1**	**440-265040-1**	**440-265040-1**	**440-265040-1**
Total Petroleum Hydrocarbons (TPH)																	
Gasoline Range Organics	µg/L	**21000**	**21000**	**440**	**11000**	**9900**	**10000**	**1200**	**150**	**6500**	**2300**	**170**	**3000**	**360**	**2200**	**43J**	**500**
TPH as Diesel	mg/L	**1.1**	**1.2**	**0.33J**	**0.84**	**0.80**	**0.80**	**0.59**	< 0.50	**0.79**	**0.71**	**0.13J**	**0.52**	**0.55**	**0.76**	**0.42J**	**0.18J**
ORO (C29-C40)	mg/L	< 0.49	< 0.50	< 0.48	< 0.48	< 0.47	< 0.48	< 0.47	< 0.50	< 0.51	< 0.47	< 0.47	< 0.48	< 0.48	< 0.50	**0.15J**	< 0.48
Volatile Organic Compounds (VOCs)																	
Benzene	µg/L	**4900**	**5100**	**0.69**	**15**	**550**	**560**	< 2.0	< 0.50	**280**	< 5.0	< 0.50	**3.5**	**1.1**	**14**	**0.45J**	**0.36J**
tert-Butyl Alcohol	µg/L	< 20	< 20	< 10	< 10	**9.0J**	**9.1J**	< 40	< 10	< 10	**150**	**5.9J**	< 10	< 10	**340**	**6.7J**	< 10
n-Butylbenzene	µg/L	**2.7**	**2.3**	< 1.0	**8.0**	**10**	**11**	< 4.0	< 1.0	**4.0**	< 10	< 1.0	**0.79J**	< 1.0	< 5.0	< 1.0	< 1.0
sec-Butylbenzene	µg/L	**3.4**	**2.8**	< 0.50	**6.8**	**10**	**11**	< 2.0	< 0.50	**13**	< 5.0	< 0.50	**8.4**	< 0.50	< 2.5	< 0.50	< 0.50
tert-Butylbenzene	µg/L	< 1.0	< 1.0	< 0.50	**0.76**	**0.94**	**1.1**	< 2.0	< 0.50	**1.7**	< 5.0	< 0.50	**2.3**	**0.28J**	< 2.5	< 0.50	< 0.50
Chloroform	µg/L	**1.1**	< 1.0	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50	< 0.50	< 2.5	< 0.50	< 0.50
1,2-Dichloroethane	µg/L	< 1.0	< 1.0	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50	< 0.50	< 2.5	< 0.50	< 0.50
cis-1,2-Dichloroethene	µg/L	< 1.0	< 1.0	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50	**2.5**	< 2.5	< 0.50	< 0.50
Diisopropyl Ether	µg/L	**4.3**	**4.2**	**0.35J**	< 0.50	**13**	**13**	**760**	**97**	**17**	**1600**	**130**	**3.7**	**2.4**	**1100**	**19**	< 0.50
Ethylbenzene	µg/L	**230**	**200**	< 0.50	**55**	**9.3**	**9.9**	< 2.0	< 0.50	**7.1**	< 5.0	< 0.50	< 0.50	< 0.50	< 2.5	< 0.50	< 0.50
Isopropylbenzene	µg/L	**65**	**59**	< 0.50	**83**	**44**	**48**	< 2.0	< 0.50	**34**	< 5.0	< 0.50	**24**	< 0.50	< 2.5	< 0.50	< 0.50
p-Isopropyltoluene	µg/L	**3.7**	**3.1**	< 0.50	**7.7**	**2.5**	**2.7**	< 2.0	< 0.50	**1.9**	< 5.0	< 0.50	< 0.50	< 0.50	< 2.5	< 0.50	< 0.50
MTBE	µg/L	< 1.0	< 1.0	< 0.50	< 0.50	**0.68**	**0.68**	< 2.0	< 0.50	< 0.50	< 5.0	< 0.50	< 0.50	**2.7**	< 2.5	< 0.50	< 0.50
Naphthalene	µg/L	**35**	**32**	< 1.0	**1.6**	**17**	**20**	< 4.0	< 1.0	**7.2**	< 10	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 1.0
n-Propylbenzene	µg/L	**55**	**46**	< 0.50	**82**	**53**	**59**	< 2.0	< 0.50	**29**	< 5.0	< 0.50	**2.7**	< 0.50	< 2.5	< 0.50	< 0.50
Toluene	µg/L	**440**	**440**	< 0.50	**6.1**	**53**	**56**	< 2.0	< 0.50	**25**	< 5.0	< 0.50	**0.60**	< 0.50	< 2.5	< 0.50	< 0.50
1,2,4-Trimethylbenzene	µg/L	**91**	**80**	< 0.50	**0.56**	**0.58**	**0.63**	< 2.0	< 0.50	**1.4**	< 5.0	< 0.50	**0.47J**	< 0.50	< 2.5	< 0.50	< 0.50
1,3,5-Trimethylbenzene	µg/L	**4.5**	**4.0**	< 0.50	**1.3**	**0.64**	**0.71**	< 2.0	< 0.50	**2.4**	< 5.0	< 0.50	< 0.50	< 0.50	< 2.5	< 0.50	< 0.50
m,p-Xylene	µg/L	**310**	**290**	< 1.0	**28**	**22**	**24**	< 4.0	< 1.0	**24**	< 10	< 1.0	**0.94J**	< 1.0	< 5.0	< 1.0	< 1.0
o-Xylene	µg/L	**23**	**21**	< 0.50	**41**	**7.0**	**7.6**	< 2.0	< 0.50	**17**	< 5.0	< 0.50	< 0.50	< 0.50	< 2.5	< 0.50	< 0.50
Xylenes, Total	µg/L	**330**	**310**	< 1.0	**69**	**29**	**32**	< 4.0	< 1.0	**41**	< 10	< 1.0	**0.94J**	< 1.0	< 5.0	< 1.0	< 1.0

Notes:

Gasoline Range Organics by U.S. Environmental Protection Agency (USEPA) Method 8015B

VOCs by USEPA Method 8260B

mg/L = milligrams per liter

µg/L = micrograms per liter

Bold text indicates results above laboratory reporting limit.

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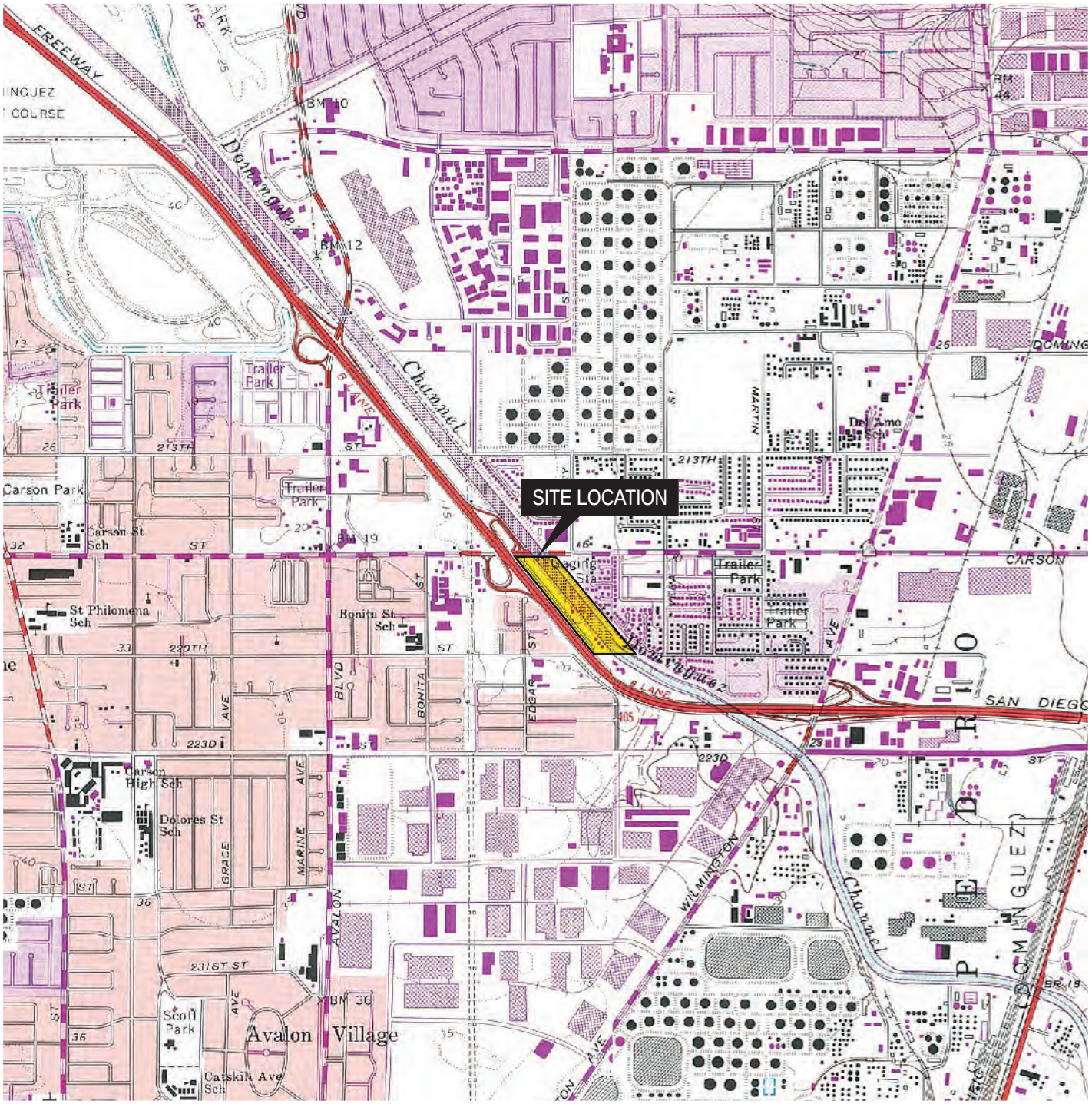
FIGURES



SCALE 1:24,000

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 1/2 0 1 KILOMETER

N

Quadrangle Location

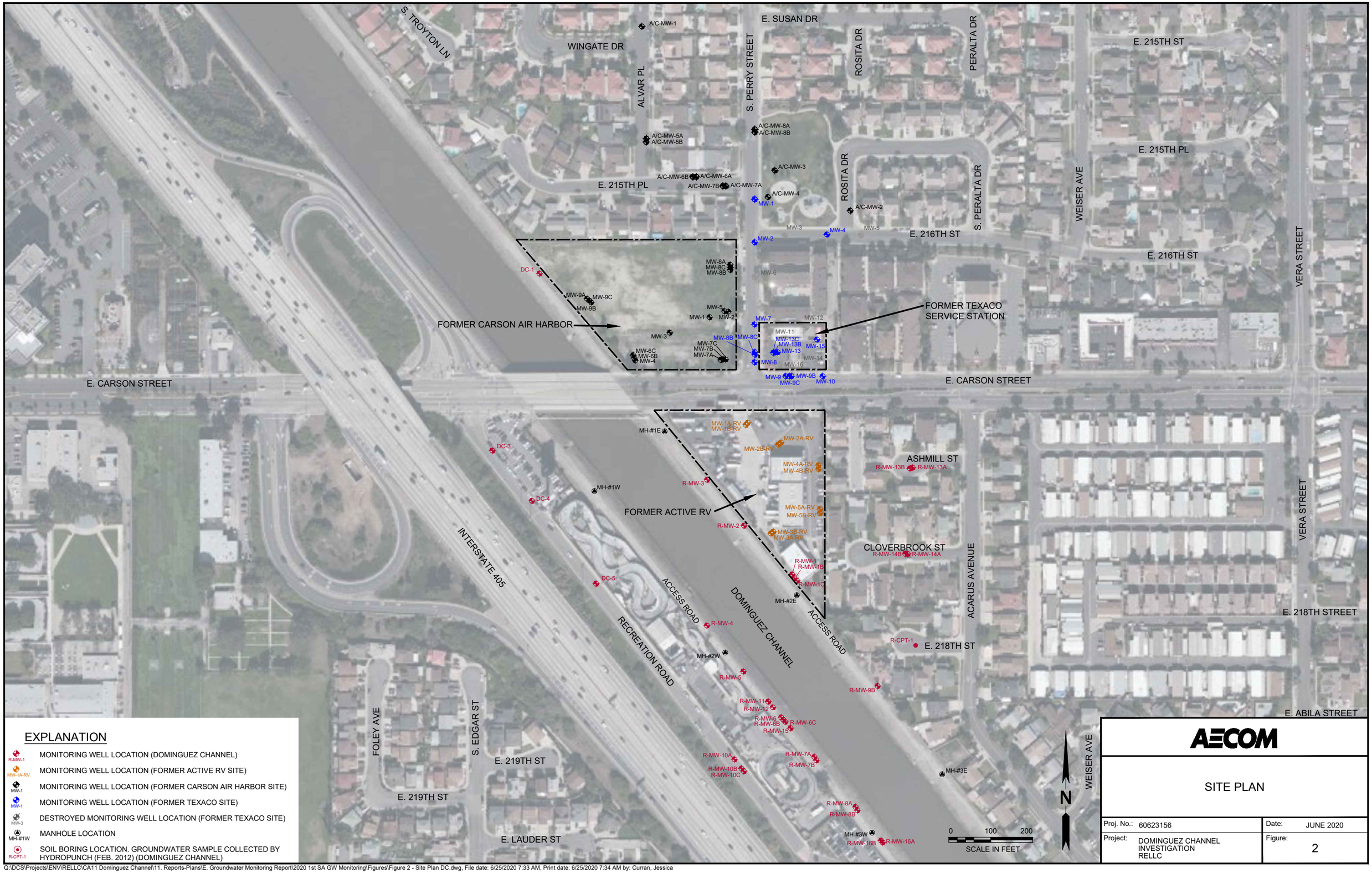
REFERENCE:
Portion of 7.5-minute Series (Topographic) Map
United States Department of the Interior Geological Survey
Long Beach and Torrance, California Quadrangle 1981

SITE VICINITY MAP

Project No.: 60623156	Date: JUNE 2020	Project: DOMINGUEZ CHANNEL INVESTIGATION RESOURCE ENVIRONMENTAL LLC (RELLC)	Figure 1

K:\2011\Dominguez Channel\Figure 1 Site Vic Map Dominguez Channel

AECOM



EXPLANATION

- R-MW-1 — MONITORING WELL LOCATION (DOMINGUEZ CHANNEL)
- MW-1A-RV — MONITORING WELL LOCATION (FORMER ACTIVE RV SITE)
- MW-1 — MONITORING WELL LOCATION (FORMER CARSON AIR HARBOR SITE)
- MW-1 — MONITORING WELL LOCATION (FORMER TEXACO SITE)
- MW-3 — DESTROYED MONITORING WELL LOCATION (FORMER TEXACO SITE)
- MH-#1W — MANHOLE LOCATION
- R-CPT-1 — SOIL BORING LOCATION. GROUNDWATER SAMPLE COLLECTED BY HYDROPUNCH (FEB. 2012) (DOMINGUEZ CHANNEL)

AECOM

SITE PLAN

Proj. No.: 60623156	Date: JUNE 2020
Project: DOMINGUEZ CHANNEL INVESTIGATION RELLC	Figure: 2

Q:\DCS\Projects\ENV\RELLC\CA11 Dominguez Channel\11. Reports-Plans\E. Groundwater Monitoring Report\2020 1st SA GW Monitoring\Figures\Figure 2 - Site Plan DC.dwg, File date: 6/25/2020 7:33 AM, Print date: 6/25/2020 7:34 AM by: Curran, Jessica

EXPLANATION

- R-MW-1 — MONITORING WELL LOCATION (DOMINGUEZ CHANNEL)
- MW-1A-RV — MONITORING WELL LOCATION (FORMER ACTIVE RV SITE)
- MW-1 — MONITORING WELL LOCATION (FORMER CARSON AIR HARBOR SITE)
- MW-1 — MONITORING WELL LOCATION (FORMER TEXACO SITE)
- MW-3 — DESTROYED MONITORING WELL LOCATION (FORMER TEXACO SITE)
- INDICATES DIRECTION OF GROUNDWATER FLOW
- - - 4 - - GROUNDWATER ELEVATION CONTOUR (FEET MSL)

NOTE:
CONTOURING USING KRIGING

GROUNDWATER LEVELS
RELLC - Dominguez Channel
Carson, California

Monitoring Well ID	Gauging Date	Groundwater Elevation (feet MSL)	Depth to Groundwater (feet btoc)
DOMINGUEZ CHANNEL			
R-MW-1*	04/20/2020	4.03	12.92
R-MW-2*	04/20/2020	3.76	16.67
R-MW-3*	04/20/2020	3.74	17.10
R-MW-4*	04/20/2020	3.05	17.09
R-MW-5*	04/20/2020	3.08	17.30
R-MW-6*	04/20/2020	4.17	15.50
R-MW-7A*	04/20/2020	4.26	15.71
R-MW-8A*	04/20/2020	3.44	16.30
R-MW-10A*	04/20/2020	5.03	12.03
R-MW-[illegible]*	04/20/2020	4.25	16.75
R-MW-[illegible]*	04/20/2020	3.36	17.65
R-MW-13A	04/20/2020	12.57	6.81
R-MW-14A*	04/20/2020	14.23	5.75
R-MW-15*	04/20/2020	3.23	16.44
R-MW-16A*	04/20/2020	3.06	16.53
DC-1*	04/20/2020	3.90	16.40
DC-3*	04/20/2020	2.76	14.97
DC-4*	04/20/2020	2.68	13.95
DC-5*	04/20/2020	2.36	13.82
ACTIVE RV			
MW-1A-RV	04/20/2020	7.70	11.33
MW-2A-RV	04/20/2020	8.53	11.21
MW-3A-RV	04/20/2020	4.49	15.85
MW-4A-RV	04/20/2020	9.97	10.94
MW-5A-RV	04/20/2020	7.78	13.91
CARSON AIR HARBOR			
MW-1	04/20/2020	7.50	9.91
MW-2	04/20/2020	8.23	9.75
MW-3*	04/20/2020	8.36	8.87
MW-4	04/20/2020	7.41	10.55
MW-5	04/20/2020	7.10	10.43
MW-7A	04/20/2020	7.87	10.65
MW-8A	04/20/2020	10.79	6.61
MW-9A	04/20/2020	8.26	11.21
A/C-MW-1	04/20/2020	12.86	5.21
A/C-MW-2	04/20/2020	14.15	5.29
A/C-MW-3	04/20/2020	15.35	3.83
A/C-MW-4	04/20/2020	15.20	3.62
A/C-MW-5A	04/20/2020	13.22	7.40
A/C-MW-6A	04/20/2020	12.42	7.97
A/C-MW-7A	04/20/2020	13.20	6.18
A/C-MW-8A	04/20/2020	14.85	3.67
FORMER TEXACO SERVICE STATION			
MW-1	04/20/2020	12.53	5.11
MW-2	04/20/2020	13.50	4.67
MW-3	04/20/2020	Destroyed	
MW-4	04/20/2020	14.33	5.05
MW-5	04/20/2020	Destroyed	
MW-6	04/20/2020	Destroyed	
MW-7	04/20/2020	11.36	6.70
MW-8	04/20/2020	11.02	6.87
MW-9	04/20/2020	12.09	5.56
MW-10	04/20/2020	11.03	5.90
MW-11	04/20/2020	Destroyed	
MW-12	04/20/2020	Destroyed	
MW-13	04/20/2020	12.43	6.21
MW-14	04/20/2020	Destroyed	
MW-15	04/20/2020	13.57	5.13
MW-16	04/20/2020	Destroyed	

Notes:
MSL = mean sea level
btoc = below top of casing
* Well not used for contouring

AECOM

GROUNDWATER ELEVATION CONTOUR MAP
A ZONE
APRIL 20, 2020
(KRIGING)

Proj. No.:	60623156	Date:	JUNE 2020
Project:	DOMINGUEZ CHANNEL INVESTIGATION RELLC	Figure:	3A

Q:\DCS\Projects\ENV\RELLC\CA11 Dominguez Channel\11. Reports-Plans\E. Groundwater Monitoring Report\2020 1st SA GW Monitoring\Figures\Figure 3A - 3F (Contour Maps).dwg Layout Name: 3A - A Zone Kriging, File date: 6/25/2020 7:27 AM, Print date: 7/14/2020 7:47 AM by: Curran, Jessica

EXPLANATION

- R-MW-1 — MONITORING WELL LOCATION (DOMINGUEZ CHANNEL)
- MW-1A-RV — MONITORING WELL LOCATION (FORMER ACTIVE RV SITE)
- MW-1 — MONITORING WELL LOCATION (FORMER CARSON AIR HARBOR SITE)
- MW-1 — MONITORING WELL LOCATION (FORMER TEXACO SITE)
- MW-3 — DESTROYED MONITORING WELL LOCATION (FORMER TEXACO SITE)
- INDICATES DIRECTION OF GROUNDWATER FLOW
- - 6 - - GROUNDWATER ELEVATION CONTOUR (FEET MSL)

NOTE:
CONTOURING USING POLYNOMIAL REGRESSION.

GROUNDWATER LEVELS
RELLC - Dominguez Channel
Carson, California

Monitoring Well ID	Gauging Date	Groundwater Elevation (feet MSL)	Depth to Groundwater (feet btoc)
DOMINGUEZ CHANNEL			
R-MW-1*	04/20/2020	4.03	12.92
R-MW-2*	04/20/2020	3.78	16.67
R-MW-3*	04/20/2020	3.74	17.10
R-MW-4*	04/20/2020	3.05	17.09
R-MW-5*	04/20/2020	3.08	17.30
R-MW-6*	04/20/2020	4.17	15.90
R-MW-7A*	04/20/2020	4.26	15.71
R-MW-8A*	04/20/2020	3.44	16.30
R-MW-10A*	04/20/2020	5.03	17.02
R-MW-11*	04/20/2020	4.20	16.75
R-MW-12*	04/20/2020	2.38	17.00
R-MW-13A	04/20/2020	12.57	6.67
R-MW-14A*	04/20/2020	14.23	5.75
R-MW-15*	04/20/2020	3.23	16.44
R-MW-16A*	04/20/2020	3.00	16.93
DC-1*	04/20/2020	3.97	16.40
DC-3*	04/20/2020	2.78	14.97
DC-4*	04/20/2020	2.08	13.95
DC-5*	04/20/2020	2.38	13.82
ACTIVE RV			
MW-1A-RV	04/20/2020	7.70	11.33
MW-2A-RV	04/20/2020	8.53	11.21
MW-3A-RV	04/20/2020	9.45	15.85
MW-4A-RV	04/20/2020	9.97	10.94
MW-5A-RV	04/20/2020	7.78	13.91
CARSON AIR HARBOR			
MW-1	04/20/2020	7.50	9.97
MW-2	04/20/2020	6.23	9.75
MW-3*	04/20/2020	8.36	8.87
MW-4	04/20/2020	7.41	10.56
MW-5	04/20/2020	7.10	10.43
MW-7A	04/20/2020	7.97	10.65
MW-8A	04/20/2020	10.70	6.65
MW-9A	04/20/2020	6.26	11.21
A/C-MW-1	04/20/2020	14.86	5.27
A/C-MW-2	04/20/2020	14.15	5.29
A/C-MW-3	04/20/2020	15.35	3.63
A/C-MW-4	04/20/2020	15.26	3.62
A/C-MW-5A	04/20/2020	13.32	7.40
A/C-MW-6A	04/20/2020	12.42	7.97
A/C-MW-7A	04/20/2020	13.00	6.16
A/C-MW-8A	04/20/2020	14.85	3.67
FORMER TEXACO SERVICE STATION			
MW-1	04/20/2020	12.93	5.11
MW-2	04/20/2020	13.90	4.67
MW-3	04/20/2020	Destroyed	
MW-4	04/20/2020	14.33	5.05
MW-5	04/20/2020	Destroyed	
MW-6	04/20/2020	Destroyed	
MW-7	04/20/2020	11.36	6.70
MW-8	04/20/2020	11.02	6.87
MW-9	04/20/2020	12.09	5.56
MW-10	04/20/2020	11.93	5.90
MW-11	04/20/2020	Destroyed	
MW-12	04/20/2020	Destroyed	
MW-13	04/20/2020	12.43	6.27
MW-14	04/20/2020	Destroyed	
MW-15	04/20/2020	13.57	5.43
MW-16	04/20/2020	Destroyed	

Notes:
MSL = mean sea level
btoc = below top of casing
* We not used for contouring

AECOM

GROUNDWATER ELEVATION CONTOUR MAP
A ZONE
APRIL 20, 2020
(POLYNOMIAL REGRESSION)

Proj. No.: 60623156	Date: JUNE 2020
Project: DOMINGUEZ CHANNEL INVESTIGATION RELLC	Figure: 3B

Q:\DCS\Projects\ENV\RELLC\CA11 Dominguez Channel\11. Reports-Plans\E. Groundwater Monitoring Report\2020 1st SA GW Monitoring\Figures\Figure 3A - 3F (Contour Maps).dwg Layout Name: 3B - A Zone Poly, File date: 6/25/2020 7:27 AM, Print date: 7/14/2020 7:48 AM by: Curran, Jessica

EXPLANATION

- R-MW-1 — MONITORING WELL LOCATION (DOMINGUEZ CHANNEL)
- MW-1A-RV — MONITORING WELL LOCATION (FORMER ACTIVE RV SITE)
- MW-1 — MONITORING WELL LOCATION (FORMER CARSON AIR HARBOR SITE)
- MW-1 — MONITORING WELL LOCATION (FORMER TEXACO SITE)
- MW-3 — DESTROYED MONITORING WELL LOCATION (FORMER TEXACO SITE)
- INDICATES DIRECTION OF GROUNDWATER FLOW
- - - 4 - - - GROUNDWATER ELEVATION CONTOUR (FEET MSL)

NOTE:
CONTOURING USING KRIGING

GROUNDWATER LEVELS
RELLC - Dominguez Channel
Carson, California

Monitoring Well ID	Gauging Date	Groundwater Elevation (feet MSL)	Depth to Groundwater (feet btoc)
DOMINGUEZ CHANNEL			
R-MW-1B	04/20/2020	3.88	*2.88
R-MW-5B*	04/20/2020	3.37	*6.75
R-MW-7B*	04/20/2020	3.26	*6.87
R-MW-8B*	04/20/2020	3.47	*6.46
R-MW-9B	04/20/2020	3.86	*5.36
R-MW-10B*	04/20/2020	3.24	*3.87
R-MW-13B	04/20/2020	5.26	*4.29
R-MW-14B	04/20/2020	4.86	*4.54
R-MW-16B*	04/20/2020	3.36	*6.47
ACTIVE RV			
MW-1B-RV	04/20/2020	4.17	*4.88
MW-2B-RV	04/20/2020	4.09	*5.89
MW-3B-RV	04/20/2020	3.67	*6.58
MW-4B-RV	04/20/2020	3.89	*7.23
MW-5B-RV	04/20/2020	4.09	*7.70
CARSON AIR HARBOR			
MW-6B	04/20/2020	4.46	*3.04
MW-7B	04/20/2020	3.83	*4.48
MW-8B	04/20/2020	6.49	*0.85
MW-9B	04/20/2020	5.03	*2.80
A/C-MW-5B	04/20/2020	5.38	*4.15
A/C-MW-6B	04/20/2020	6.66	*3.03
A/C-MW-7B	04/20/2020	7.22	*1.59
A/C MW 8B	04/20/2020	7.07	*1.23
FORMER TEXACO SERVICE STATION			
MW-8B*	04/20/2020	5.56	*2.25
MW-9B	04/20/2020	5.06	*2.45
MW-13B*	04/20/2020	4.27	*4.51

Notes:
MSL = mean sea level
btoc = below top of casing
* Well not used for contouring

AECOM

GROUNDWATER ELEVATION CONTOUR MAP
B ZONE
APRIL 20, 2020
(KRIGING)

Proj. No.:	60623156	Date:	JUNE 2020
Project:	DOMINGUEZ CHANNEL INVESTIGATION RELLC	Figure:	3C

Q:\DCS\Projects\ENV\RELLC\CA11 Dominguez Channel\11. Reports-Plans\E. Groundwater Monitoring Report\2020 1st SA GW Monitoring\Figures\Figure 3A - 3F (Contour Maps).dwg Layout Name: 3C - B Zone Kriging, File date: 6/25/2020 7:27 AM, Print date: 7/14/2020 7:49 AM by: Curran, Jessica

EXPLANATION

- R-MW-1 — MONITORING WELL LOCATION (DOMINGUEZ CHANNEL)
- MW-1A-RV — MONITORING WELL LOCATION (FORMER ACTIVE RV SITE)
- MW-1 — MONITORING WELL LOCATION (FORMER CARSON AIR HARBOR SITE)
- MW-1 — MONITORING WELL LOCATION (FORMER TEXACO SITE)
- MW-3 — DESTROYED MONITORING WELL LOCATION (FORMER TEXACO SITE)
- INDICATES DIRECTION OF GROUNDWATER FLOW
- --2.0-- GROUNDWATER ELEVATION CONTOUR (FEET MSL)

NOTE:
CONTOURING USING POLYNOMIAL REGRESSION.

GROUNDWATER LEVELS
RELLC - Dominguez Channel
Carson, California

Monitoring Well ID	Gauging Date	Groundwater Elevation (feet MSL)	Depth to Groundwater (feet btoc)
DOMINGUEZ CHANNEL			
R-MW-1B	04/20/2020	3.68	12.88
R-MW-6B*	04/20/2020	3.37	16.75
R-MW-7B*	04/20/2020	3.28	16.87
R-MW-8B*	04/20/2020	3.47	16.46
R-MW-9B	04/20/2020	3.86	15.35
R-MW-10B*	04/20/2020	3.24	13.87
R-MW-13B	04/20/2020	5.26	14.28
R-MW-14B	04/20/2020	4.68	14.94
R-MW-16B*	04/20/2020	3.36	16.47
ACTIVE RV			
MW-1B-RV	04/20/2020	4.17	14.55
MW-2B-RV	04/20/2020	4.09	15.82
MW-3B-RV	04/20/2020	3.67	16.58
MW-4B-RV	04/20/2020	3.89	17.23
MW-5B-RV	04/20/2020	4.09	17.70
CARSON AIR HARBOR			
MW-6B	04/20/2020	4.46	13.04
MW-7B	04/20/2020	3.83	14.49
MW-8B	04/20/2020	6.49	10.85
MW-9B	04/20/2020	5.03	12.60
A/C-MW-5B	04/20/2020	6.38	14.15
A/C-MW-6B	04/20/2020	6.68	13.63
A/C-MW-7B	04/20/2020	7.22	11.88
A/C-MW-8B	04/20/2020	7.07	11.23
FORMER TEXACO SERVICE STATION			
MW-8B*	04/20/2020	5.56	12.25
MW-9B	04/20/2020	5.06	12.45
MW-13B*	04/20/2020	4.27	14.51

Notes:
MSL = mean sea level
btoc = below top of casing
* Well not used for contouring

AECOM

GROUNDWATER ELEVATION CONTOUR MAP B ZONE APRIL 20, 2020 (POLYNOMIAL REGRESSION)

Proj. No.:	60623156	Date:	JUNE 2020
Project:	DOMINGUEZ CHANNEL INVESTIGATION RELLC	Figure:	3D

Q:\DCS\Projects\ENV\RELLC\CA11 Dominguez Channel\11. Reports-Plans\E. Groundwater Monitoring Report\2020 1st SA GW Monitoring\Figures\Figure 3A - 3F (Contour Maps).dwg Layout Name: 3D - B Zone Poly, File date: 6/25/2020 7:27 AM, Print date: 7/14/2020 7:42 AM by: Curran, Jessica

EXPLANATION

- R-MW-1 — MONITORING WELL LOCATION (DOMINGUEZ CHANNEL)
- MW-1A-RV — MONITORING WELL LOCATION (FORMER ACTIVE RV SITE)
- MW-1 — MONITORING WELL LOCATION (FORMER CARSON AIR HARBOR SITE)
- MW-1 — MONITORING WELL LOCATION (FORMER TEXACO SITE)
- MW-3 — DESTROYED MONITORING WELL LOCATION (FORMER TEXACO SITE)
- INDICATES DIRECTION OF GROUNDWATER FLOW
- -3.6 — GROUNDWATER ELEVATION CONTOUR (FEET MSL)

NOTE:
CONTOURING USING KRIGING

GROUNDWATER LEVELS
RELLC - Dominguez Channel
Carson, California

Monitoring Well ID	Gauging Date	Groundwater Elevation (feet MSL)	Depth to Groundwater (feet btoc)
DOMINGUEZ CHANNEL			
R-MW-1C	04/20/2020	0.07	*6.86
R-MW-6C*	04/20/2020	1.12	*6.87
R-MW-10C*	04/20/2020	1.75	*5.32
CARSON AIR HARBOR			
MW-6C	04/20/2020	0.81	*7.89
MW-7C	04/20/2020	-0.77	*9.44
MW-8C	04/20/2020	-1.11	*8.55
MW-9C	04/20/2020	-1.25	*8.53
FORMER TEXACO SERVICE STATION			
MW-8C*	04/20/2020	-1.84	*9.53
MW-9C	04/20/2020	0.30	*7.89
MW-13C	04/20/2020	-0.31	*8.97

Notes:
MSL = mean sea level
btoc = below top of casing
* We not used for contouring

AECOM

GROUNDWATER ELEVATION CONTOUR MAP
C ZONE
APRIL 20, 2020
(KRIGING)

Proj. No.:	60623156	Date:	JUNE 2020
Project:	DOMINGUEZ CHANNEL INVESTIGATION RELLC	Figure:	3E

0 100 200
SCALE IN FEET

N

Q:\DCS\Projects\ENV\RELLC\CA11 Dominguez Channel\11. Reports-Plans\E. Groundwater Monitoring Report\2020 1st SA GW Monitoring\Figures\Figure 3A - 3F (Contour Maps).dwg Layout Name: 3E - C Zone Kriging, File date: 6/25/2020 7:27 AM, Print date: 7/14/2020 7:52 AM by: Curran, Jessica

EXPLANATION

- R-MW-1 — MONITORING WELL LOCATION (DOMINGUEZ CHANNEL)
- MW-1A-RV — MONITORING WELL LOCATION (FORMER ACTIVE RV SITE)
- MW-1 — MONITORING WELL LOCATION (FORMER CARSON AIR HARBOR SITE)
- MW-1 — MONITORING WELL LOCATION (FORMER TEXACO SITE)
- MW-3 — DESTROYED MONITORING WELL LOCATION (FORMER TEXACO SITE)
- INDICATES DIRECTION OF GROUNDWATER FLOW
- -3.5- GROUNDWATER ELEVATION CONTOUR (FEET MSL)

NOTE:
CONTOURING USING POLYNOMIAL REGRESSION.

GROUNDWATER LEVELS
RELLC - Dominguez Channel
Carson, California

Monitoring Well ID	Gauging Date	Groundwater Elevation (feet MSL)	Depth to Groundwater (feet btoc)
DOMINGUEZ CHANNEL			
R-MW-1C	04/20/2020	0.07	6.86
R-MW-9C*	04/20/2020	1.12	6.87
R-MW-10C*	04/20/2020	1.75	5.32
CARSON AIR HARBOR			
MW-6C	04/20/2020	-0.81	7.09
MW-7C	04/20/2020	-0.77	9.44
MW-8C	04/20/2020	-1.11	6.55
MW-9C	04/20/2020	-1.03	6.63
FORMER TEXACO SERVICE STATION			
MW-8C*	04/20/2020	1.04	9.53
MW-9C	04/20/2020	-0.30	7.09
MW-13C	04/20/2020	-0.31	6.57

Notes:
MSL = mean sea level
btoc = below top of casing
* Well not used for contouring

AECOM

GROUNDWATER ELEVATION CONTOUR MAP
C ZONE
APRIL 20, 2020
(POLYNOMIAL REGRESSION)

Proj. No.:	60623156	Date:	JUNE 2020
Project:	DOMINGUEZ CHANNEL INVESTIGATION RELLC	Figure:	3F

0 100 200
SCALE IN FEET

N

Q:\DCS\Projects\ENV\RELLC\CA11 Dominguez Channel\11. Reports-Plans\E. Groundwater Monitoring Report\2020 1st SA GW Monitoring\Figures\Figure 3A - 3F (Contour Maps).dwg Layout Name: 3F - C Zone Poly, File date: 6/25/2020 7:27 AM, Print date: 7/14/2020 7:54 AM by: Curran, Jessica

EXPLANATION

R-MW-1	MONITORING WELL LOCATION (DOMINGUEZ CHANNEL)
MW-1A-RV	MONITORING WELL LOCATION (FORMER ACTIVE RV SITE)
MW-1	MONITORING WELL LOCATION (FORMER CARSON AIR HARBOR SITE)
MW-1	MONITORING WELL LOCATION (FORMER TEXACO SITE)
MW-3	DESTROYED WELL LOCATION (FORMER TEXACO SITE)
R-CPT-1	SOIL BORING LOCATION. GROUNDWATER SAMPLE COLLECTED BY HYDROPUNCH (FEB. 2012) (DOMINGUEZ CHANNEL)
TPHg	TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
	TPHg ISOCONCENTRATION CONTOUR (µg/L) DASHED WHERE INFERRED
(46,000)	TPHg CONCENTRATION IN GROUNDWATER (µg/L)
(LNAPL)	LIGHT NON-AQUEOUS PHASE LIQUID
µg/L	MICROGRAMS PER LITER
ND<50	NOT DETECTED
*	WELL NOT USED FOR CONTOURING
NS	NOT SAMPLED

THE WELLS LISTED BELOW ARE SCREENED IN BOTH THE A-ZONE AND B-ZONE (SEE TABLE 1). POSTED VALUES ARE USED FOR CONTOURING IN BOTH ZONES.

R-MW-1	DC-1
R-MW-2	DC-3
R-MW-3	DC-4
R-MW-4	DC-5
R-MW-5	
R-MW-6	
R-MW-11	
R-MW-12	
R-MW-15	

0 100 200
SCALE IN FEET

N

AECOM

TPHg
ISOCONCENTRATION CONTOUR MAP
A ZONE
APRIL 2020

Proj. No.:	60623156	Date:	JUNE 2020
Project:	DOMINGUEZ CHANNEL INVESTIGATION RELLC	Figure:	4A

Q:\DCS\Projects\ENV\RELLC\CA11 Dominguez Channel\11. Reports-Plans\E. Groundwater Monitoring Report\2020 1st SA GW Monitoring\Figures\Figure 4A - A Zone - TPHg.dwg, File date: 6/25/2020 7:38 AM, Print date: 6/25/2020 7:38 AM by: Curran, Jessica

EXPLANATION

- R-MW-1 — MONITORING WELL LOCATION (DOMINGUEZ CHANNEL)
- MW-1A-RV — MONITORING WELL LOCATION (FORMER ACTIVE RV SITE)
- MW-1 — MONITORING WELL LOCATION (FORMER CARSON AIR HARBOR SITE)
- MW-1 — MONITORING WELL LOCATION (FORMER TEXACO SITE)
- MW-3 — DESTROYED MONITORING WELL LOCATION (FORMER TEXACO SITE)
- R-CPT-1 — SOIL BORING LOCATION. GROUNDWATER SAMPLE COLLECTED BY HYDROPUNCH (FEB. 2012) (DOMINGUEZ CHANNEL)
- TPHg — TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
- TPHg ISOCONCENTRATION CONTOUR (µg/L) DASHED WHERE INFERRED
- (1,100) — TPHg CONCENTRATION IN GROUNDWATER (µg/L)
- (LNAPL) — LIGHT NON-AQUEOUS PHASE LIQUID
- µg/L — MICROGRAMS PER LITER
- ND<50 — NOT DETECTED
- J — VALUE IS ESTIMATED
- NS — NOT SAMPLED

THE WELLS LISTED BELOW ARE SCREENED IN BOTH THE A-ZONE AND B-ZONE (SEE TABLE 1). POSTED VALUES ARE USED FOR CONTOURING IN BOTH ZONES.

R-MW-1	DC-1
R-MW-2	DC-3
R-MW-3	DC-4
R-MW-4	DC-5
R-MW-5	
R-MW-6	
R-MW-11	
R-MW-12	
R-MW-15	

AECOM

TPHg ISOCONCENTRATION CONTOUR MAP B ZONE APRIL 2020

Proj. No.:	60623156	Date:	JUNE 2020
Project:	DOMINGUEZ CHANNEL INVESTIGATION RELLC	Figure:	4B

Q:\DCS\Projects\ENV\RELLC\CA11 Dominguez Channel\11. Reports-Plans\E. Groundwater Monitoring Report\2020 1st SA GW Monitoring\Figures\Figure 4B - B Zone - TPHg.dwg, File date: 6/23/2020 3:45 PM, Print date: 6/25/2020 7:41 AM by: Curran, Jessica

EXPLANATION

R-MW-1	MONITORING WELL LOCATION (DOMINGUEZ CHANNEL)
MW-1A-RV	MONITORING WELL LOCATION (FORMER ACTIVE RV SITE)
MW-1	MONITORING WELL LOCATION (FORMER CARSON AIR HARBOR SITE)
MW-1	MONITORING WELL LOCATION (FORMER TEXACO SITE)
MW-3	DESTROYED MONITORING WELL LOCATION (FORMER TEXACO SITE)
R-CPT-1	SOIL BORING LOCATION. GROUNDWATER SAMPLE COLLECTED BY HYDROPUNCH (FEB. 2012) (DOMINGUEZ CHANNEL)
	BENZENE ISOCONCENTRATION CONTOUR (µg/L) DASHED WHERE INFERRED
(13,000)	BENZENE CONCENTRATION IN GROUNDWATER (µg/L)
(LNAPL)	LIGHT NON-AQUEOUS PHASE LIQUID
µg/L	MICROGRAMS PER LITER
ND<0.50	NOT DETECTED
J	VALUE IS ESTIMATED
NS	NOT SAMPLED

THE WELLS LISTED BELOW ARE SCREENED IN BOTH THE A-ZONE AND B-ZONE (SEE TABLE 1). POSTED VALUES ARE USED FOR CONTOURING IN BOTH ZONES.

R-MW-1
R-MW-2
R-MW-3
R-MW-4
R-MW-5
R-MW-6
R-MW-11
R-MW-12
R-MW-15
DC-1
DC-3
DC-4
DC-5

0 100 200
SCALE IN FEET

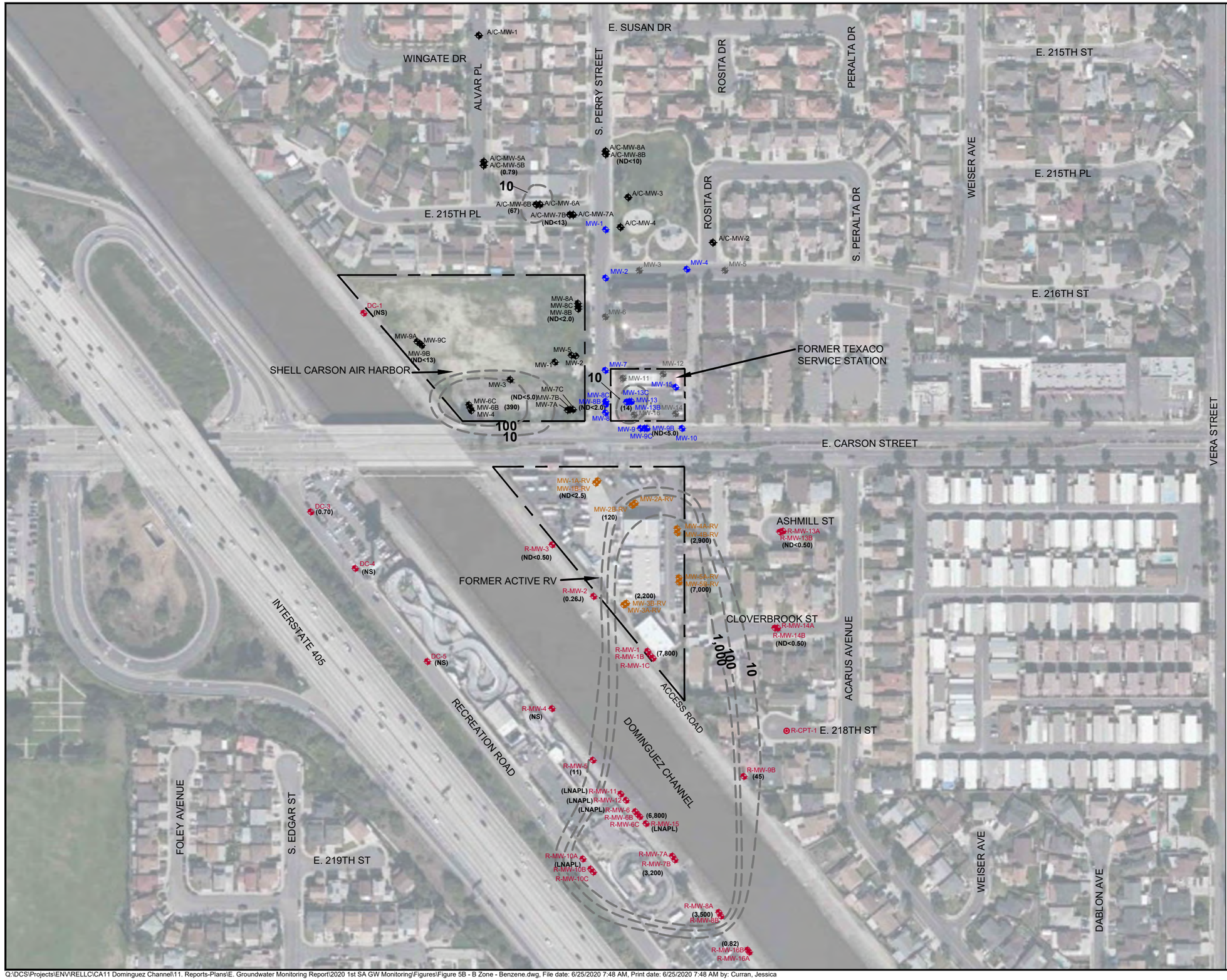
N

AECOM

BENZENE ISOCONCENTRATION CONTOUR MAP A ZONE APRIL 2020

Proj. No.:	60623156	Date:	JUNE 2020
Project:	DOMINGUEZ CHANNEL INVESTIGATION RELLC	Figure:	5A

Q:\DCS\Projects\ENV\RELLC\CA11 Dominguez Channel\11. Reports-Plans\E. Groundwater Monitoring Report\2020 1st SA GW Monitoring\Figures\Figure 5A - A Zone - Benzene.dwg, File date: 6/25/2020 7:44 AM, Print date: 6/25/2020 7:45 AM by: Curran, Jessica



EXPLANATION

R-MW-1	MONITORING WELL LOCATION (DOMINGUEZ CHANNEL)
MW-1A-RV	MONITORING WELL LOCATION (FORMER ACTIVE RV SITE)
MW-1	MONITORING WELL LOCATION (FORMER CARSON AIR HARBOR SITE)
MW-1	MONITORING WELL LOCATION (FORMER TEXACO SITE)
MW-3	DESTROYED MONITORING WELL LOCATION (FORMER TEXACO SITE)
R-CPT-1	SOIL BORING LOCATION. GROUNDWATER SAMPLE COLLECTED BY HYDROPUNCH (FEB. 2012) (DOMINGUEZ CHANNEL)
	BENZENE ISOCONCENTRATION CONTOUR (µg/L) DASHED WHERE INFERRED
(14)	BENZENE CONCENTRATION IN GROUNDWATER (µg/L)
(LNAPL)	LIGHT NON-AQUEOUS PHASE LIQUID
µg/L	MICROGRAMS PER LITER
ND<0.50	NOT DETECTED
J	VALUE IS ESTIMATED
NS	NOT SAMPLED

THE WELLS LISTED BELOW ARE SCREENED IN BOTH THE A-ZONE AND B-ZONE (SEE TABLE 1). POSTED VALUES ARE USED FOR CONTOURING IN BOTH ZONES.

R-MW-1
R-MW-2
R-MW-3
R-MW-4
R-MW-5
R-MW-6
R-MW-11
R-MW-12
R-MW-15

DC-1
DC-3
DC-4
DC-5

0 100 200
SCALE IN FEET

N

AECOM

BENZENE ISOCONCENTRATION CONTOUR MAP B ZONE APRIL 2020

Proj. No.:	60623156	Date:	JUNE 2020
Project:	DOMINGUEZ CHANNEL INVESTIGATION RELLC	Figure:	5B

Q:\DCS\Projects\ENV\RELLC\CA11 Dominguez Channel\11. Reports-Plans\E. Groundwater Monitoring Report\2020 1st SA GW Monitoring\Figures\Figure 5B - B Zone - Benzene.dwg, File date: 6/25/2020 7:48 AM, Print date: 6/25/2020 7:48 AM by: Curran, Jessica

EXPLANATION

R-MW-1	MONITORING WELL LOCATION (DOMINGUEZ CHANNEL)
MW-1A-RV	MONITORING WELL LOCATION (FORMER ACTIVE RV SITE)
MW-1	MONITORING WELL LOCATION (FORMER CARSON AIR HARBOR SITE)
MW-1	MONITORING WELL LOCATION (FORMER TEXACO SITE)
MW-3	DESTROYED MONITORING WELL LOCATION (FORMER TEXACO SITE)
R-CPT-1	SOIL BORING LOCATION. GROUNDWATER SAMPLE COLLECTED BY HYDROPUNCH (FEB. 2012) (DOMINGUEZ CHANNEL)
DIPE	DIISOPROPYL EHTER
	DIPE ISOCONCENTRATION CONTOUR (µg/L) DASHED WHERE INFERRED
(LNAPL)	LIGHT NON-AQUEOUS PHASE LIQUID
(1,200)	DIPE CONCENTRATION IN (µg/L)
µg/L	MICROGRAMS PER LITER
ND<0.50	NOT DETECTED
J	VALUE IS ESTIMATED
*	WELL NOT USED FOR CONTOURING
NS	NOT SAMPLED

THE WELLS LISTED BELOW ARE SCREENED IN BOTH THE A-ZONE AND B-ZONE (SEE TABLE 1). POSTED VALUES ARE USED FOR CONTOURING IN BOTH ZONES.

R-MW-1
R-MW-2
R-MW-3
R-MW-4
R-MW-5
R-MW-6
R-MW-11
R-MW-12
R-MW-15
DC-1
DC-3
DC-4
DC-5

0 100 200
SCALE IN FEET

N

AECOM

DIPE
ISOCONCENTRATION CONTOUR MAP
A ZONE
APRIL 2020

Proj. No.:	60623156	Date:	JUNE 2020
Project:	DOMINGUEZ CHANNEL INVESTIGATION RELLC	Figure:	6A

Q:\DCS\Projects\ENV\RELLC\CA11 Dominguez Channel\11. Reports-Plans\E. Groundwater Monitoring Report\2020 1st SA GW Monitoring\Figures\Figure 6A - A Zone - DIPE.dwg, File date: 6/23/2020 4:29 PM, Print date: 6/25/2020 7:52 AM by: Curran, Jessica

EXPLANATION

R-MW-1	MONITORING WELL LOCATION (DOMINGUEZ CHANNEL)
MW-1A-RV	MONITORING WELL LOCATION (FORMER ACTIVE RV SITE)
MW-1	MONITORING WELL LOCATION (FORMER CARSON AIR HARBOR SITE)
MW-1	MONITORING WELL LOCATION (FORMER TEXACO SITE)
MW-3	DESTROYED MONITORING WELL LOCATION (FORMER TEXACO SITE)
R-CPT-1	SOIL BORING LOCATION, GROUNDWATER SAMPLE COLLECTED BY HYDROPUNCH (FEB. 2012) (DOMINGUEZ CHANNEL)
DIPE	DIISOPROPYL ETHER
	DIPE ISOCONCENTRATION CONTOUR (µg/L) DASHED WHERE INFERRED
(2,700)	DIPE CONCENTRATION IN GROUNDWATER (µg/L)
(LNAPL)	LIGHT NON-AQUEOUS PHASE LIQUID
µg/L	MICROGRAMS PER LITER
ND<0.50J	NOT DETECTED
NS	NOT SAMPLED
*	WELL NOT USED FOR CONTOURING

THE WELLS LISTED BELOW ARE SCREENED IN BOTH THE A-ZONE AND B-ZONE (SEE TABLE 1). POSTED VALUES ARE USED FOR CONTOURING IN BOTH ZONES.

R-MW-1	DC-1
R-MW-2	DC-3
R-MW-3	DC-4
R-MW-4	DC-5
R-MW-5	
R-MW-6	
R-MW-11	
R-MW-12	
R-MW-15	

0 100 200
SCALE IN FEET

N

AECOM

DIPE
ISOCONCENTRATION CONTOUR MAP
B ZONE
APRIL 2020

Proj. No.:	60623156	Date:	JUNE 2020
Project:	DOMINGUEZ CHANNEL INVESTIGATION RELLC	Figure:	6B

Q:\DCS\Projects\ENV\RELLC\CA11 Dominguez Channel\11. Reports-Plans\E. Groundwater Monitoring Report\2020 1st SA GW Monitoring\Figures\Figure 6B - B Zone - DIPE.dwg, File date: 5/18/2020 4:36 PM, Print date: 6/25/2020 8:09 AM by: Curran, Jessica

APPENDIX B
TITLE REPORT

Commonwealth Land Title Company
888 S. Figueroa Street, Suite 2100
Los Angeles, CA 90017
Phone: (800) 432-0706

Commonwealth Land Title Company
888 S. Figueroa St #2100
Los Angeles, CA 90017

Attn: **Jenny Wong**

Our File No: 09174014
Title Officer: Eric Gile
e-mail: titleunit27@cltic.com
Phone: (213) 330-3100
Fax:

Your Reference No: 9174014

Property Address: 21611 South Perry Street, Carson, California

PRELIMINARY REPORT

Dated as of August 4, 2020 at 7:30 a.m.

In response to the application for a policy of title insurance referenced herein, Commonwealth Land Title Company hereby reports that it is prepared to issue, or cause to be issued, as of the date hereof, a policy or policies of title insurance describing the land and the estate or interest therein hereinafter set forth, insuring against loss which may be sustained by reason of any defect, lien or encumbrance not shown or referred to as an exception herein or not excluded from coverage pursuant to the printed Schedules, Conditions and Stipulations or Conditions of said policy forms.
The printed Exceptions and Exclusions from the coverage and Limitations on Covered Risks of said policy or policies are set forth in Attachment One. The policy to be issued may contain an arbitration clause. When the Amount of Insurance is less than that set forth in the arbitration clause, all arbitrable matters shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties. Limitation on Covered Risks applicable to the CLTA and ALTA Homeowner's Policies of Title Insurance which establish a Deductible Amount and a Maximum Dollar Limit of Liability for certain coverages are also set forth in Attachment One. Copies of the policy forms should be read. They are available from the office which issued this report.

The policy(s) of title insurance to be issued hereunder will be policy(s) of **Commonwealth Land Title Insurance Company.**

Please read the exceptions shown or referred to below and the exceptions and exclusions set forth in Attachment One of this report carefully. The exceptions and exclusions are meant to provide you with notice of matters which are not covered under the terms of the title insurance policy and should be carefully considered. It is important to note that this preliminary report is not a written representation as to the condition of title and may not list all liens, defects, and encumbrances affecting title to the land.

This report (and any supplements or amendments hereto) is issued solely for the purpose of facilitating the issuance of a policy of title insurance and no liability is assumed hereby. If it is desired that liability be assumed prior to the issuance of a policy of title insurance, a Binder or Commitment should be requested.

SCHEDULE A

The form of policy of title insurance contemplated by this report is:

ALTA Standard Owner's Policy of Title Insurance (6-17-06)

ALTA Extended Loan Policy of Title Insurance (6-17-06)

The estate or interest in the land hereinafter described or referred to covered by this report is:

A FEE

Title to said estate or interest at the date hereof is vested in:

RECREATION ROAD, LLC, a California limited liability company

The land referred to herein is situated in the County of Los Angeles, State of California, and is described as follows:

SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF

EXHIBIT "A"

ALL THAT CERTAIN REAL PROPERTY SITUATED IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

THAT PORTION OF LOT 15 OF TRACT NO. 4054, IN THE CITY OF CARSON, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 44, PAGES 39 THROUGH 41 INCLUSIVE OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE NORTHERLY LINE OF THE SOUTHERLY 20 FEET OF SAID LOT WITH A LINE PARALLEL WITH AND NORTHEASTERLY 27 FEET, MEASURED AT RIGHT ANGLES, FROM THE SOUTHWESTERLY LINE OF SAID LOT; THENCE ALONG SAID PARALLEL LINE NORTH 39°21'48" WEST 245.64 FEET; THENCE SOUTH 89°22'27" WEST 25.48 FEET; THENCE NORTH 39°21'48" WEST 2.11 FEET; THENCE NORTH 00°37'33" WEST 17.38 FEET TO A LINE PARALLEL WITH AND NORTHEASTERLY 18 FEET, MEASURED AT RIGHT ANGLES, FROM SAID SOUTHWESTERLY LINE; THENCE ALONG SAID LAST MENTIONED PARALLEL LINE NORTH 39°21'48" WEST TO THE SOUTHERLY LINE OF TRACT NO. 29360, AS PER MAP RECORDED IN BOOK 734, PAGES 45 AND 46 OF MAPS; THENCE EASTERLY ALONG SAID SOUTHERLY LINE TO THE EASTERLY LINE OF SAID LOT 15; THENCE SOUTHERLY ALONG SAID EASTERLY LINE TO SAID NORTHERLY LINE; THENCE WESTERLY ALONG SAID NORTHERLY LINE TO THE POINT OF BEGINNING.

EXCEPT THEREFROM THAT PORTION OF SAID LAND DESIGNATED AS PARCELS 2-36 INCLUSIVE IN THE FINAL DECREE OF CONDEMNATION ENTERED IN SUPERIOR COURT, LOS ANGELES COUNTY, CASE NO. 909,461, A CERTIFIED COPY OF WHICH WAS RECORDED AUGUST 26, 1969 AS INSTRUMENT NO. 2734, IN BOOK D-4478, PAGE 350 OF OFFICIAL RECORDS OF SAID COUNTY AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE EASTERLY LINE OF SAID LOT WITH THE NORTHERLY LINE OF THE SOUTHERLY 20 FEET OF SAID LOT; THENCE WESTERLY ALONG SAID NORTHERLY LINE 19.99 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE NORTHWEST, HAVING A RADIUS OF 15 FEET, TANGENT TO SAID NORTHERLY LINE AND TANGENT TO THE WESTERLY LINE OF THE EASTERLY 5 FEET OF SAID LOT; THENCE NORTHEASTERLY ALONG SAID CURVE 23.55 FEET TO SAID WESTERLY LINE; THENCE EASTERLY AT RIGHT ANGLES FROM SAID WESTERLY LINE 5 FEET TO SAID EASTERLY LINE; THENCE SOUTHERLY ALONG SAID EASTERLY LINE 14.99 FEET TO THE POINT OF BEGINNING.

ALSO EXCEPT 1/2 OF ALL OIL, GAS, HYDROCARBON, AND MINERAL SUBSTANCES IN AND UNDER SAID LAND, BUT WITHOUT RIGHT OF SURFACE ENTRY, AS RESERVED BY MARY M. REGAN, IN DEED RECORDED OCTOBER 04, 1957 AS INSTRUMENT NO. 504, IN BOOK 44767, PAGE 300 OF OFFICIAL RECORDS.

APN 7327-010-014; APN 7327-010-015

SCHEDULE B – Section A

The following exceptions will appear in policies when providing standard coverage as outlined below:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

2. Any facts, rights, interests or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.

3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.

4. Any encroachment, encumbrance, violation, variation or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.

5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b) or (c) are shown by the Public Records.

6. Any lien or right to a lien for services, labor or material not shown by the Public Records.

SCHEDULE B – Section B

At the date hereof Exceptions to coverage in addition to the printed exceptions and exclusions in said policy form would be as follows:

A. Property taxes, which are a lien not yet due and payable, including any assessments collected with taxes to be levied for the fiscal year 2020-2021.

B. The lien of supplemental or escaped assessments of property taxes, if any, made pursuant to the provisions of Chapter 3.5 (commencing with Section 75) or Part 2, Chapter 3, Articles 3 and 4, respectively, of the Revenue and Taxation Code of the State of California as a result of the transfer of title to the vestee named in Schedule A or as a result of changes in ownership or new construction occurring prior to Date of Policy.

1. Water rights, claims or title to water, whether or not disclosed by the public records.

2. Easement(s) for the purpose(s) shown below and rights incidental thereto as set forth in a document:

Purpose:	Pipelines
Recording Date:	September 23, 1930
Recording No:	Book 10027, Page 310 of Official Records
Affects:	A portion of said land as more particularly described in said document

3. Easement(s) for the purpose(s) shown below and rights incidental thereto as set forth in a document:

Purpose:	Pipelines and water distribution system
Recording Date:	November 09, 1922
Recording No:	Book 1515, Page 265 of Official Records
Affects:	A portion of said land as more particularly described in said document

4. Easement(s) for the purpose(s) shown below and rights incidental thereto as set forth in a document:

Purpose:	Pole lines
Recording Date:	June 07, 1962
Recording No:	6424, in Book D1640, Page 796 of Official Records
Affects:	A portion of said land as more particularly described in said document

5. Easement(s) for the purpose(s) shown below and rights incidental thereto as set forth in a document:

Purpose:	Public road and highway
Recording Date:	December 19, 1967
Recording No:	2944 of Official Records
Affects:	A portion of said land as more particularly described in said document

6. The Land described herein is included within a project area of the Redevelopment Agency shown below, and that proceedings for the redevelopment of said project have been instituted under the Redevelopment Law (such redevelopment to proceed only after the adoption of the Redevelopment Plan) as disclosed by a document.

Redevelopment Agency:	Redevelopment Agency of the City of Carson
Recording Date:	December 23, 1971
Recording No:	2747, in Book M3933, Page 436 of Official Records
and Recording Date:	October 29, 2007
and Recording No:	20072435437 of Official Records
and Recording Date:	October 29, 2007
and Recording No:	20072435438 of Official Records
and Recording Date:	October 29, 2007
and Recording No:	20072435439 of Official Records
and Recording Date:	October 29, 2007
and Recording No:	20072435440 of Official Records

7. Easement(s) for the purpose(s) shown below and rights incidental thereto as set forth in a document:

Purpose:	Public street or highway
Recording Date:	November 04, 1975
Recording No:	3450 of Official Records
Affects:	A portion of said land as more particularly described in said document

8. An instrument entitled “Covenant and Environmental Restriction on Property”

Recording Date:	August 05, 2015
Recording No:	20150955134 of Official Records

Reference is hereby made to said document for full particulars.

9. Matters contained in that certain document

Entitled:	Grant Deed of Restrictive Covenants
Recording Date:	November 20, 2015
Recording No:	20151459779 of Official Records

Reference is hereby made to said document for full particulars.

10. Matters contained in that certain document

Entitled:	Access Agreement
Recording Date:	November 20, 2015
Recording No:	20151459780 of Official Records

Reference is hereby made to said document for full particulars.

11. A deed of trust to secure an indebtedness in the amount shown below,

Amount:	$3,220,000.00
Dated:	March 19, 2019
Trustor/Grantor:	Recreation Road, LLC, a California limited liability company
Trustee:	Chicago Title Company, a California corporation
Beneficiary:	Hyundai Capital America, a California corporation
Recording Date:	March 21, 2019
Recording No:	20190252070 of Official Records

A document entitled "Amended and Restated Cross-Default and Cross-Collateralization Agreement" recorded April 04, 2019 as Instrument No. 20190295773 of Official Records.

A document entitled "Amended and Restated Cross-Default and Cross-Collateralization Agreement" recorded September 27, 2019 as Instrument No. 20191017318 of Official Records.

An agreement to modify the terms and provisions of said deed of trust as therein provided

Recording Date:	October 02, 2019
Recording No:	20191038421 of Official Records

12. A financing statement as follows:

Debtor:	Recreation Road, LLC
Secured Party:	Hyundai Capital America
Recording Date:	March 21, 2019
Recording No:	20190252071 of Official Records

13. Any rights of the parties in possession of a portion of, or all of, said Land, which rights are not disclosed by the public records.

The Company will require, for review, a full and complete copy of any unrecorded agreement, contract, license and/or lease, together with all supplements, assignments and amendments thereto, before issuing any policy of title insurance without excepting this item from coverage.

The Company reserves the right to except additional items and/or make additional requirements after reviewing said documents.

14. Any easements not disclosed by the public records as to matters affecting title to real property, whether or not said easements are visible and apparent.

15. Matters which may be disclosed by an inspection and/or by a correct ALTA/NSPS Land Title Survey of said Land that is satisfactory to the Company, and/or by inquiry of the parties in possession thereof.

END OF SCHEDULE B EXCEPTIONS

PLEASE REFER TO THE "NOTES AND REQUIREMENTS SECTION" WHICH FOLLOWS FOR INFORMATION NECESSARY TO COMPLETE THIS TRANSACTION

REQUIREMENTS SECTION:

1. The Company will require the following documents for review prior to the issuance of any title insurance predicated upon a conveyance or encumbrance from the entity named below:

   Limited Liability Company: Recreation Road, LLC, a California limited liability company

   a) A copy of its operating agreement, if any, and all amendments, supplements and/or modifications thereto, certified by the appropriate manager or member.

   b) If a domestic Limited Liability Company, a copy of its Articles of Organization and all amendments thereto with the appropriate filing stamps.

   c) If the Limited Liability Company is member-managed, a full and complete current list of members certified by the appropriate manager or member.

   d) A current dated certificate of good standing from the proper governmental authority of the state in which the entity is currently domiciled.

   e) If less than all members, or managers, as appropriate, will be executing the closing documents, furnish evidence of the authority of those signing.

   f) If Limited Liability Company is a Single Member Entity, a Statement of Information for the Single Member will be required.

   g) Each member and manager of the LLC without an Operating Agreement must execute in the presence of a notary public the Certificate of California LLC (Without an Operating Agreement) Status and Authority form.

2. Unrecorded matters which may be disclosed by an Owner's Affidavit or Declaration. A form of the Owner's Affidavit/Declaration is attached to this Preliminary Report/Commitment. This Affidavit/Declaration is to be completed by the record owner of the land and submitted for review prior to the closing of this transaction. Your prompt attention to this requirement will help avoid delays in the closing of this transaction. Thank you.

   The Company reserves the right to add additional items or make further requirements after review of the requested Affidavit/Declaration.

INFORMATIONAL NOTES SECTION

1. The information on the attached plat is provided for your convenience as a guide to the general location of the subject property. The accuracy of this plat is not guaranteed, nor is it a part of any policy, report or guarantee to which it may be attached.

2. For wiring Instructions please contact your Title Officer or Title Company Escrow officer.

3. Notice: Please be aware that due to the conflict between federal and state laws concerning the cultivation, distribution, manufacture or sale of marijuana, the Company is not able to close or insure any transaction involving Land that is associated with these activities.

4. Pursuant to Government Code Section 27388.1, as amended and effective as of 1-1-2018, a Documentary Transfer Tax (DTT) Affidavit may be required to be completed and submitted with each document when DTT is being paid or when an exemption is being claimed from paying the tax. If a governmental agency is a party to the document, the form will not be required. DTT Affidavits may be available at a Tax Assessor-County Clerk-Recorder.

5. The policy of title insurance will include an arbitration provision. The Company or the insured may demand arbitration. Arbitrable matters may include, but are not limited to, any controversy or claim between the Company and the insured arising out of or relating to this policy, any service of the Company in connection with its issuance or the breach of a policy provision or other obligation. Please ask your escrow or title officer for a sample copy of the policy to be issued if you wish to review the arbitration provisions and any other provisions pertaining to your Title Insurance coverage.

6. Property taxes, including any personal property taxes and any assessments collected with taxes, are paid. For proration purposes the amounts were:

Tax Identification No.:	7327-010-014
Fiscal Year:	2019-2020
1st Installment:	$26,215.17
2nd Installment:	$26,215.15
Exemption:	$0.00
Code Area:	01183

   Property taxes, including any personal property taxes and any assessments collected with taxes, are paid. For proration purposes the amounts were:

Tax Identification No.:	7327-010-015
Fiscal Year:	2019-2020
1st Installment:	$4,606.59
2nd Installment:	$4,606.57
Exemption:	$0.00
Code Area:	01246

7. None of the items shown in this report will cause the Company to decline to attach ALTA Endorsement Form 9 to an Extended Coverage Loan Policy, when issued.

8. There are NO conveyances affecting said Land recorded within 24 months of the date of this report.

Typist: ah1
Date Typed: August 20, 2020

Wire Fraud Alert

This Notice is not intended to provide legal or professional advice. If you have any questions, please consult with a lawyer.

All parties to a real estate transaction are targets for wire fraud and many have lost hundreds of thousands of dollars because they simply relied on the wire instructions received via email, without further verification. **If funds are to be wired in conjunction with this real estate transaction, we strongly recommend verbal verification of wire instructions through a known, trusted phone number prior to sending funds.**

In addition, the following non-exclusive self-protection strategies are recommended to minimize exposure to possible wire fraud.

- **NEVER RELY** on emails purporting to change wire instructions. Parties to a transaction rarely change wire instructions in the course of a transaction.
- **ALWAYS VERIFY** wire instructions, specifically the ABA routing number and account number, by calling the party who sent the instructions to you. DO NOT use the phone number provided in the email containing the instructions, use phone numbers you have called before or can otherwise verify. **Obtain the phone number of relevant parties to the transaction as soon as an escrow account is opened**. DO NOT send an email to verify as the email address may be incorrect or the email may be intercepted by the fraudster.
- **USE COMPLEX EMAIL PASSWORDS** that employ a combination of mixed case, numbers, and symbols. Make your passwords greater than eight (8) characters. Also, change your password often and do NOT reuse the same password for other online accounts.
- **USE MULTI-FACTOR AUTHENTICATION** for email accounts. Your email provider or IT staff may have specific instructions on how to implement this feature.

For more information on wire-fraud scams or to report an incident, please refer to the following links:

Federal Bureau of Investigation:
http://www.fbi.gov

Internet Crime Complaint Center:
http://www.ic3.gov

Commonwealth Land Title Company
888 S. Figueroa Street, Suite 2100
Los Angeles, CA 90017
Phone: (800) 432-0706

Notice of Available Discounts

Pursuant to Section 2355.3 in Title 10 of the California Code of Regulations Fidelity National Financial, Inc. and its subsidiaries ("FNF") must deliver a notice of each discount available under our current rate filing along with the delivery of escrow instructions, a preliminary report or commitment. Please be aware that the provision of this notice does not constitute a waiver of the consumer's right to be charged the filed rate. As such, your transaction may not qualify for the below discounts.

You are encouraged to discuss the applicability of one or more of the below discounts with a Company representative. These discounts are generally described below; consult the rate manual for a full description of the terms, conditions and requirements for such discount. These discounts only apply to transactions involving services rendered by the FNF Family of Companies. This notice only applies to transactions involving property improved with a one-to-four family residential dwelling.

Not all discounts are offered by every FNF Company. The discount will only be applicable to the FNF Company as indicated by the named discount.

FNF Underwritten Title Company

CTC – Chicago Title company
CLTC – Commonwealth Land Title Company
FNTC – Fidelity National Title Company of California
FNTCCA - Fidelity National Title Company of California
TICOR – Ticor Title Company of California
LTC – Lawyer's Title Company
SLTC – ServiceLink Title Company

Underwritten by FNF Underwriters

CTIC – Chicago Title Insurance Company
CLTIC - Commonwealth Land Title Insurance Company
FNTIC – Fidelity National Title Insurance Company
FNTIC - Fidelity National Title Insurance Company
CTIC – Chicago Title Insurance Company
CLTIC – Commonwealth Land Title Insurance Company
CTIC – Chicago Title Insurance Company

Available Discounts

DISASTER LOANS (CTIC, CLTIC, FNTIC)

The charge for a Lender's Policy (Standard or Extended coverage) covering the financing or refinancing by an owner of record, within twenty-four (24) months of the date of a declaration of a disaster area by the government of the United States or the State of California on any land located in said area, which was partially or totally destroyed in the disaster, will be fifty percent (50%) of the appropriate title insurance rate.

CHURCHES OR CHARITABLE NON-PROFIT ORGANIZATIONS (CTIC, FNTIC)

On properties used as a church or for charitable purposes within the scope of the normal activities of such entities, provided said charge is normally the church's obligation the charge for an owner's policy shall be fifty percent (50%) to seventy percent (70%) of the appropriate title insurance rate, depending on the type of coverage selected. The charge for a lender's policy shall be forty (40%) to fifty percent (50%) of the appropriate title insurance rate, depending on the type of coverage selected.

FIDELITY NATIONAL FINANCIAL, INC.
PRIVACY NOTICE

Effective April 9, 2020

Fidelity National Financial, Inc. and its majority-owned subsidiary companies (collectively, "FNF," "our," or "we") respect and are committed to protecting your privacy. This Privacy Notice explains how we collect, use, and protect personal information, when and to whom we disclose such information, and the choices you have about the use and disclosure of that information.

A limited number of FNF subsidiaries have their own privacy notices. If a subsidiary has its own privacy notice, the privacy notice will be available on the subsidiary's website and this Privacy Notice does not apply.

Collection of Personal Information

FNF may collect the following categories of Personal Information:

- contact information (*e.g.*, name, address, phone number, email address);
- demographic information (*e.g.*, date of birth, gender, marital status);
- identity information (*e.g.* Social Security Number, driver's license, passport, or other government ID number);
- financial account information (*e.g.* loan or bank account information); and
- other personal information necessary to provide products or services to you.

We may collect Personal Information about you from:

- information we receive from you or your agent;
- information about your transactions with FNF, our affiliates, or others; and
- information we receive from consumer reporting agencies and/or governmental entities, either directly from these entities or through others.

Collection of Browsing Information

FNF automatically collects the following types of Browsing Information when you access an FNF website, online service, or application (each an "FNF Website") from your Internet browser, computer, and/or device:

- Internet Protocol (IP) address and operating system;
- browser version, language, and type;
- domain name system requests; and
- browsing history on the FNF Website, such as date and time of your visit to the FNF Website and visits to the pages within the FNF Website.

Like most websites, our servers automatically log each visitor to the FNF Website and may collect the Browsing Information described above. We use Browsing Information for system administration, troubleshooting, fraud investigation, and to improve our websites. Browsing Information generally does not reveal anything personal about you, though if you have created a user account for an FNF Website and are logged into that account, the FNF Website may be able to link certain browsing activity to your user account.

Other Online Specifics

Cookies. When you visit an FNF Website, a "cookie" may be sent to your computer. A cookie is a small piece of data that is sent to your Internet browser from a web server and stored on your computer's hard drive. Information gathered using cookies helps us improve your user experience. For example, a cookie can help the website load properly or can customize the display page based on your browser type and user preferences. You can choose whether or not to accept cookies by changing your Internet browser settings. Be aware that doing so may impair or limit some functionality of the FNF Website.

Web Beacons. We use web beacons to determine when and how many times a page has been viewed. This information is used to improve our websites.

Do Not Track. Currently our FNF Websites do not respond to "Do Not Track" features enabled through your browser.

Links to Other Sites. FNF Websites may contain links to unaffiliated third-party websites. FNF is not responsible for the privacy practices or content of those websites. We recommend that you read the privacy policy of every website you visit.

Use of Personal Information

FNF uses Personal Information for three main purposes:

- To provide products and services to you or in connection with a transaction involving you.
- To improve our products and services.
- To communicate with you about our, our affiliates', and others' products and services, jointly or independently.

When Information Is Disclosed

We may disclose your Personal Information and Browsing Information in the following circumstances:

- to enable us to detect or prevent criminal activity, fraud, material misrepresentation, or nondisclosure;
- to nonaffiliated service providers who provide or perform services or functions on our behalf and who agree to use the information only to provide such services or functions;

- to nonaffiliated third party service providers with whom we perform joint marketing, pursuant to an agreement with them to jointly market financial products or services to you;
- to law enforcement or authorities in connection with an investigation, or in response to a subpoena or court order; or
- in the good-faith belief that such disclosure is necessary to comply with legal process or applicable laws, or to protect the rights, property, or safety of FNF, its customers, or the public.

The law does not require your prior authorization and does not allow you to restrict the disclosures described above. Additionally, we may disclose your information to third parties for whom you have given us authorization or consent to make such disclosure. We do not otherwise share your Personal Information or Browsing Information with nonaffiliated third parties, except as required or permitted by law. We may share your Personal Information with affiliates (other companies owned by FNF) to directly market to you. Please see "Choices with Your Information" to learn how to restrict that sharing.

We reserve the right to transfer your Personal Information, Browsing Information, and any other information, in connection with the sale or other disposition of all or part of the FNF business and/or assets, or in the event of bankruptcy, reorganization, insolvency, receivership, or an assignment for the benefit of creditors. By submitting Personal Information and/or Browsing Information to FNF, you expressly agree and consent to the use and/or transfer of the foregoing information in connection with any of the above described proceedings.

Security of Your Information
We maintain physical, electronic, and procedural safeguards to protect your Personal Information.

Choices With Your Information
If you do not want FNF to share your information among our affiliates to directly market to you, you may send an "opt out" request by email, phone, or physical mail as directed at the end of this Privacy Notice. We do not share your Personal Information with nonaffiliates for their use to direct market to you without your consent.

Whether you submit Personal Information or Browsing Information to FNF is entirely up to you. If you decide not to submit Personal Information or Browsing Information, FNF may not be able to provide certain services or products to you.

For California Residents: We will not share your Personal Information or Browsing Information with nonaffiliated third parties, except as permitted by California law. For additional information about your California privacy rights, please visit the "California Privacy" link on our website (https://fnf.com/pages/californiaprivacy.aspx) or call (888) 413-1748.

For Nevada Residents: You may be placed on our internal Do Not Call List by calling (888) 934-3354 or by contacting us via the information set forth at the end of this Privacy Notice. Nevada law requires that we also provide you with the following contact information: Bureau of Consumer Protection, Office of the Nevada Attorney General, 555 E. Washington St., Suite 3900, Las Vegas, NV 89101; Phone number: (702) 486-3132; email: BCPINFO@ag.state.nv.us.
For Oregon Residents: We will not share your Personal Information or Browsing Information with nonaffiliated third parties for marketing purposes, except after you have been informed by us of such sharing and had an opportunity to indicate that you do not want a disclosure made for marketing purposes.

For Vermont Residents: We will not disclose information about your creditworthiness to our affiliates and will not disclose your personal information, financial information, credit report, or health information to nonaffiliated third parties to market to you, other than as permitted by Vermont law, unless you authorize us to make those disclosures.

Information From Children
The FNF Websites are not intended or designed to attract persons under the age of eighteen (18).We do not collect Personal Information from any person that we know to be under the age of thirteen (13) without permission from a parent or guardian.

International Users
FNF's headquarters is located within the United States. If you reside outside the United States and choose to provide Personal Information or Browsing Information to us, please note that we may transfer that information outside of your country of residence. By providing FNF with your Personal Information and/or Browsing Information, you consent to our collection, transfer, and use of such information in accordance with this Privacy Notice.

FNF Website Services for Mortgage Loans
Certain FNF companies provide services to mortgage loan servicers, including hosting websites that collect customer information on behalf of mortgage loan servicers (the "Service Websites"). The Service Websites may contain links to both this Privacy Notice and the mortgage loan servicer or lender's privacy notice. The sections of this Privacy Notice titled When Information is Disclosed, Choices with Your Information, and Accessing and Correcting Information do not apply to the Service Websites. The mortgage loan servicer or lender's privacy notice governs use, disclosure, and access to your Personal Information. FNF does not share Personal Information collected through the Service Websites, except as required or authorized by contract with the mortgage loan servicer or lender, or as required by law or in the good-faith belief that such disclosure is necessary: to comply with a legal process or applicable law, to enforce this Privacy Notice, or to protect the rights, property, or safety of FNF or the public.

Your Consent To This Privacy Notice; Notice Changes; Use of Comments or Feedback

By submitting Personal Information and/or Browsing Information to FNF, you consent to the collection and use of the information in accordance with this Privacy Notice. We may change this Privacy Notice at any time. The Privacy Notice's effective date will show the last date changes were made. If you provide information to us following any change of the Privacy Notice, that signifies your assent to and acceptance of the changes to the Privacy Notice. We may use comments or feedback that you submit to us in any manner without notice or compensation to you.

Accessing and Correcting Information; Contact Us

If you have questions, would like to correct your Personal Information, or want to opt-out of information sharing for affiliate marketing, send your requests to privacy@fnf.com, by phone to (888) 934-3354, or by mail to:

Fidelity National Financial, Inc.
601 Riverside Avenue
Jacksonville, Florida 32204
Attn: Chief Privacy Officer

ATTACHMENT ONE (Revised 05-06-16)

CALIFORNIA LAND TITLE ASSOCIATION
STANDARD COVERAGE POLICY – 1990

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building or zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien, or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
   (c) resulting in no loss or damage to the insured claimant;
   (d) attaching or created subsequent to Date of Policy; or
   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable doing business laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any claim, which arises out of the transaction vesting in the insured the estate of interest insured by this policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

EXCEPTIONS FROM COVERAGE - SCHEDULE B, PART I

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
   Proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.
3. Easements, liens or encumbrances, or claims thereof, not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b) or (c) are shown by the public records.
6. Any lien or right to a lien for services, labor or material not shown by the public records.

CLTA HOMEOWNER'S POLICY OF TITLE INSURANCE (12-02-13)
ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE

EXCLUSIONS

In addition to the Exceptions in Schedule B, You are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of those portions of any law or government regulation concerning:
   a. building;
   b. zoning;
   c. land use;
   d. improvements on the Land;
   e. land division; and
   f. environmental protection.
   This Exclusion does not limit the coverage described in Covered Risk 8.a., 14, 15, 16, 18, 19, 20, 23 or 27.
2. The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes. This Exclusion does not limit the coverage described in Covered Risk 14 or 15.
3. The right to take the Land by condemning it. This Exclusion does not limit the coverage described in Covered Risk 17.
4. Risks:
   a. that are created, allowed, or agreed to by You, whether or not they are recorded in the Public Records;
   b. that are Known to You at the Policy Date, but not to Us, unless they are recorded in the Public Records at the Policy Date;

c. that result in no loss to You; or
d. that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.e., 25, 26, 27 or 28.

5. Failure to pay value for Your Title.
6. Lack of a right:
   a. to any land outside the area specifically described and referred to in paragraph 3 of Schedule A; and
   b. in streets, alleys, or waterways that touch the Land.
   This Exclusion does not limit the coverage described in Covered Risk 11 or 21.
7. The transfer of the Title to You is invalid as a preferential transfer or as a fraudulent transfer or conveyance under federal bankruptcy, state insolvency, or similar creditors' rights laws.
8. Contamination, explosion, fire, flooding, vibration, fracturing, earthquake, or subsidence.
9. Negligence by a person or an Entity exercising a right to extract or develop minerals, water, or any other substances.

LIMITATIONS ON COVERED RISKS

Your insurance for the following Covered Risks is limited on the Owner's Coverage Statement as follows:

- For Covered Risk 16, 18, 19, and 21 Your Deductible Amount and Our Maximum Dollar Limit of Liability shown in Schedule A.

The deductible amounts and maximum dollar limits shown on Schedule A are as follows:

	Your Deductible Amount	Our Maximum Dollar Limit of Liability
Covered Risk 16:	1.00% of Policy Amount Shown in Schedule A or $2,500.00 (whichever is less)	$ 10,000.00
Covered Risk 18:	1.00% of Policy Amount Shown in Schedule A or $5,000.00 (whichever is less)	$ 25,000.00
Covered Risk 19:	1.00% of Policy Amount Shown in Schedule A or $5,000.00 (whichever is less)	$ 25,000.00
Covered Risk 21:	1.00% of Policy Amount Shown in Schedule A or $2,500.00 (whichever is less)	$ 5,000.00

2006 ALTA LOAN POLICY (06-17-06)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions, or location of any improvement erected on the Land;
   (iii) the subdivision of land; or
   (iv) environmental protection;
   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed, or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13 or 14); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.
6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
   (a) a fraudulent conveyance or fraudulent transfer, or
   (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

EXCEPTIONS FROM COVERAGE

{Except as provided in Schedule B - Part II,{ t{or T}his policy does not insure against loss or damage, and the Company will not pay costs, attorneys' fees or expenses, that arise by reason of:

{PART I

{The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.
6. Any lien or right to a lien for services, labor or material not shown by the Public Records.}

PART II

In addition to the matters set forth in Part I of this Schedule, the Title is subject to the following matters, and the Company insures against loss or damage sustained in the event that they are not subordinate to the lien of the Insured Mortgage:}

2006 ALTA OWNER'S POLICY (06-17-06)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions, or location of any improvement erected on the Land;
   (iii) the subdivision of land; or
   (iv) environmental protection;
   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed, or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 9 and 10); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.
4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction vesting the Title as shown in Schedule A, is
   (a) a fraudulent conveyance or fraudulent transfer; or
   (b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.
5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage, and the Company will not pay costs, attorneys' fees or expenses, that arise by reason of:
{The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown in the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and that are not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.
6. Any lien or right to a lien for services, labor or material not shown by the Public Records. }
7. {Variable exceptions such as taxes, easements, CC&R's, etc. shown here.}

ALTA EXPANDED COVERAGE RESIDENTIAL LOAN POLICY – ASSESSMENTS PRIORITY (04-02-15)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions, or location of any improvement erected on the Land;
   (iii) the subdivision of land; or
   (iv) environmental protection;
   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed, or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27 or 28); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury, or any consumer credit protection or truth-in-lending law. This Exclusion does not modify or limit the coverage provided in Covered Risk 26.
6. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to Advances or modifications made after the Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching subsequent to Date of Policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11(b) or 25.
8. The failure of the residential structure, or any portion of it, to have been constructed before, on or after Date of Policy in accordance with applicable building codes. This Exclusion does not modify or limit the coverage provided in Covered Risk 5 or 6.
9. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
   (a) a fraudulent conveyance or fraudulent transfer, or
   (b) a preferential transfer for any reason not stated in Covered Risk 27(b) of this policy.
10. Contamination, explosion, fire, flooding, vibration, fracturing, earthquake, or subsidence.
11. Negligence by a person or an Entity exercising a right to extract or develop minerals, water, or any other substances.

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SCALE 1" = 100'

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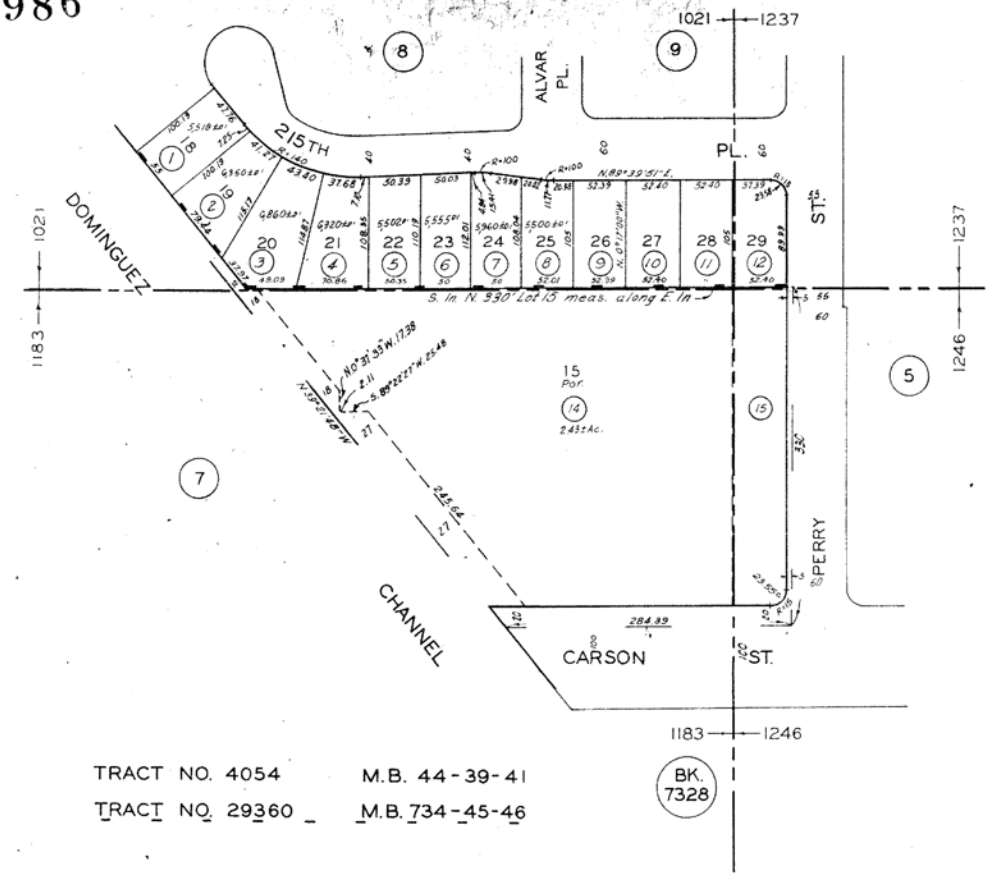

CODE
1237
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1183
1246

FOR PREV. ASSM'T. SEE:
7325-33

ASSESSOR'S MAP
COUNTY OF LOS ANGELES, CALIF.

OWNER'S DECLARATION

The undersigned hereby declares as follows:

1. (Fill in the applicable paragraph and strike the other)

   a. Declarant ("Owner") is the owner or lessee, as the case may be, of certain premises located at _____, further described as follows: See Preliminary Report/Commitment No. 09174014-917-JW7-EGL for full legal description (the "Land").

   b. Declarant is the _____ of _____ ("Owner"), which is the owner or lessee, as the case may be, of certain premises located at _____, further described as follows: See Preliminary Report/Commitment No. 09174014-917-JW7-EGL for full legal description (the "Land").

2. (Fill in the applicable paragraph and strike the other)

   a. During the period of six months immediately preceding the date of this declaration no work has been done, no surveys or architectural or engineering plans have been prepared, and no materials have been furnished in connection with the erection, equipment, repair, protection or removal of any building or other structure on the Land or in connection with the improvement of the Land in any manner whatsoever.

   b. During the period of six months immediately preceding the date of this declaration certain work has been done and materials furnished in connection with _____ upon the Land in the approximate total sum of $_____, but no work whatever remains to be done and no materials remain to be furnished to complete the construction in full compliance with the plans and specifications, nor are there any unpaid bills incurred for labor and materials used in making such improvements or repairs upon the Land, or for the services of architects, surveyors or engineers, except as follows: _____. Owner, by the undersigned Declarant, agrees to and does hereby indemnify and hold harmless Commonwealth Land Title Company against any and all claims arising therefrom.

3. Owner has not previously conveyed the Land; is not a debtor in bankruptcy (and if a partnership, the general partner thereof is not a debtor in bankruptcy); and has not received notice of any pending court action affecting the title to the Land.

4. Except as shown in the above-referenced Preliminary Report/Commitment, there are no unpaid or unsatisfied mortgages, deeds of trust, Uniform Commercial Code financing statements, regular assessments, or taxes that constitute a lien against the Land or that affect the Land but have not been recorded in the public records.

5. The Land is currently in use as _____ ; _____occupy/occupies the Land; and the following are all of the leases or other occupancy rights affecting the Land:

   _____

6. There are no other persons or entities that assert an ownership interest in the Land, nor are there unrecorded easements, claims of easement, or boundary disputes that affect the Land.

7. There are no outstanding options to purchase or rights of first refusal affecting the Land.

8. There are no material violations of any current, enforceable covenant affecting the Property and the Undersigned has received no written notice from any third party claiming that there is a present violation of any current, enforceable covenant affecting the Property.

This declaration is made with the intention that Commonwealth Land Title Company and Commonwealth Land Title Insurance Company (the "Company") and its policy issuing agents will rely upon it in issuing their title insurance policies and endorsements. Owner, by the undersigned Declarant, agrees to indemnify the Company against loss or damage (including attorneys fees, expenses, and costs) incurred by the Company as a result of any untrue statement made herein.

I declare under penalty of perjury that the foregoing is true and correct and that this declaration was executed on ___ at _____.

Signature: _____ Signature: _____

APPENDIX C

COVENANT AND ENVIRONMENTAL RESTRICTION
AND SOIL MANAGEMENT PLAN

Greg Bishop

Recording Requested By:
Triton Diagnostics Inc.
910 Louisiana Street, Office 44002C
Houston, Texas 77002

When Recorded, Mail To:
Samuel Unger, Executive Officer
California Regional Water Quality Control Board
Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, California 90013

COVENANT AND ENVIRONMENTAL RESTRICTION ON PROPERTY

CARSON AIR HARBOR
ASSESSOR'S PARCEL NUMBER (APN): 7327-010-014 AND 7327-010-015
21611 SOUTH PERRY STREET, CARSON, CALIFORNIA
LARWQCB SITE CLEANUP PROGRAM NO 0490C

This Covenant and Environmental Restriction on Property ("Covenant") is made as of the 8th day of July, 2015 by Triton Diagnostics Inc. ("Covenantor") who is the Owner of record of that certain property identified as APN 7327-010-014 and 7327-010-015 and situated at 21611 South Perry Street, in the City of Carson, County of Los Angeles, State of California, which is more particularly described in Exhibits A and B attached hereto and incorporated herein by this reference (hereinafter referred to as the "Burdened Property"), for the benefit of the California Regional Water Quality Control Board, Los Angeles Region ("Board"), with reference to the following facts:

A. Nature of Covenant. This Covenant is an environmental covenant provided for by Civil Code section 1471 and required by the Board pursuant to Water Code section 13304 because the Board has determined that the Burdened Property is not suitable for unrestricted use and that a land use restriction is necessary for the protection of present or future human health, safety, or the environment as result of the presence of hazardous materials, as defined in section 25260 of the Health and Safety Code, in the soil and/or groundwater at the Burdened Property.

B. Contamination of the Burdened Property. The soil at the Burdened Property is contaminated by releases from offsite pipelines and a converted septic tank onsite, which was used by a former owner and/or operator during the 1960s and 1970s as an underground storage tank (UST) for waste oil. The known contamination originally consisted of petroleum hydrocarbons which constitute hazardous materials. By means of excavation, the known contamination in soil has been reduced to levels protective of commercial/industrial workers. Groundwater beneath the Burdened Property is also contaminated with petroleum hydrocarbons from onsite and offsite sources. Groundwater impacts are being addressed separately and do not affect the development and use restrictions included in this Covenant. Potential migration of

contamination in soil and groundwater into indoor air will be addressed through the required construction of engineered controls, such as a vapor barrier beneath any building constructed onsite.

C. Exposure Pathways. The contaminants addressed in this Covenant are present in the soil at the Burdened Property. Without the mitigation measures which have been performed on the Burdened Property, exposure to these contaminants could take place via in-place contact, resulting in dermal contact, inhalation, or ingestion by humans, etc. The risk of public exposure to the contaminants has been substantially lessened by the remediation described herein. With the Board-approved Soil Management Plan (included in Exhibit C) and use restrictions for the Burdened Property in place, exposure to contaminants in deeper soil and potentially groundwater is largely mitigated. Potential exposure during excavation for utilities would be mitigated by the implementation of the Soil Management Plan.

D. Land Uses and Population Potentially Affected. The Burdened Property is currently vacant, but will be used for commercial or industrial purposes and is adjacent to residential and commercial land uses.

E. Disclosure and Sampling. Disclosure of the presence of hazardous materials on the Burdened Property has been made to the Board and extensive sampling of the Burdened Property has been conducted.

F. Use of Burdened Property. Covenantor desires and intends that in order to benefit the Board, and to protect present and future human health, safety, or the environment, the Burdened Property shall be used in a manner consistent with this Covenant as to avoid potential harm to persons or property that might result from any hazardous materials that might remain deposited on portions of the Burdened Property.

ARTICLE I
GENERAL PROVISIONS

1.1 Provisions to Run with the Land. This Covenant sets forth protective provisions, covenants, conditions and restrictions (collectively referred to as "Restrictions") upon and subject to which the Burdened Property and every portion thereof shall be improved, held, used, occupied, leased, sold, hypothecated, encumbered, and/or conveyed. These Restrictions are reasonably necessary to protect present and future human health or safety or the environment as a result of the presence of hazardous materials at the Burdened Property. Each and all of the Restrictions shall run with the land and pass with each and every portion of the Burdened Property, and shall apply to, inure to the benefit of, and bind the respective successors, assigns, and lessees thereof for the benefit of the Board and all Owners and Occupants. Each and all of the Restrictions: (a) are imposed upon the entire Burdened Property, unless expressly stated as applicable to a specific portion of the Burdened Property; (b) run with the land pursuant to Civil Code section 1471; and (c) are enforceable by the Board.

1.2 Concurrence of Owners and Lessees Presumed. After the date of recordation hereof, all purchasers, lessees, and possessors of all or any portion of the Burdened Property shall become

Owners or Occupants as defined herein and shall be deemed by their purchase, leasing, or possession of the Burdened Property to be bound by the Restrictions and to agree for and among themselves, their heirs, successors, and assignees, and the agents, employees, and lessees of such owners, heirs, successors, and assignees, that the Restrictions herein established must be adhered to for the benefit of the Board and all Owners and Occupants, and that the interest of all Owners and Occupants of the Burdened Property shall be subject to the Restrictions.

1.3 Incorporation into Deeds and Leases. Covenantor desires and covenants that the Restrictions shall be deemed incorporated in each and all deeds and leases of all or any portion of the Burdened Property by the recording of this Covenant. Recordation of this Covenant shall be deemed binding on all successors, assigns, and lessees, regardless of whether a copy of this Covenant has been attached to or incorporated into any given deed or lease.

1.4 Purpose. It is the purpose of this instrument to convey to the Board access rights as specified in this Covenant, which will run with the land, to facilitate the remediation of past environmental contamination and to protect present and future human health, safety, or the environment by reducing the risk of exposure to residual hazardous materials.

ARTICLE II
DEFINITIONS

2.1 Board. "Board" shall mean the California Regional Water Quality Control Board, Los Angeles Region and shall include its successor agencies, if any.

2.2 Improvements. "Improvements" shall mean all buildings, structures, roads, driveways, gradings, re-gradings, and paved areas, constructed or placed upon any portion of the Burdened Property.

2.3 Occupant or Occupants. "Occupant" or "Occupants" shall mean Owners and those persons entitled by ownership, leasehold, or other legal relationship to the right to use and/or occupy all or any portion of the Burdened Property.

2.4 Owner or Owners. "Owner" or "Owners" shall mean the Covenantor and Covenantor's successors in interest who hold title to all or any portion of the Burdened Property.

ARTICLE III
DEVELOPMENT, USE, AND CONVEYANCE OF THE BURDENED PROPERTY

3.1 Restrictions on Development and Use. Covenantor promises to restrict the use of the Burdened Property as follows:

a. Development and use of the Burdened Property shall be restricted to industrial, commercial, and/or office space uses;

b. No residence for human habitation shall be permitted on the Burdened Property;

c. No hospitals shall be permitted on the Burdened Property;

d. No public or private schools for persons under 21 years of age shall be permitted on the Burdened Property;

e. No care or community centers for children or senior citizens, parks, playgrounds, or other uses that would involve the regular congregation of children or senior citizens, shall be authorized on the Burdened Property;

f. All excavation work will be conducted per the Board-approved Soil Management Plan. No basement, underground parking, or subsurface storage space will be constructed on the Burdened Property; excavation of the subsurface for the development or construction of these facilities is strictly prohibited. Any contaminated soils brought to the surface by grading, excavation, trenching, or backfilling shall be managed by the Owner, Owner's agent, Occupant, or Occupant's agent in accordance with all applicable provisions of local, state and federal law;

g. Any penetrations deeper than 15 feet below ground surface will be backfilled from the bottom of the penetration up with a bentonite or cement-bentonite grout to minimize the potential for shallow impacts migrating to deeper zones. The cement-bentonite mix will contain roughly 5 percent bentonite by weight or as required by the permitting agency, as applicable.

h. Any excavation deeper than one (1) foot that is conducted on the Burdened Property shall be performed pursuant to an appropriate and fully implemented Health and Safety Plan in accordance with Title 29 Code of Federal Regulations, Section 1910.120 and as required by the California Occupational Safety and Health Administration;

i. No underground storage tanks will be installed on the Burdened Property;

j. The Burdened Property shall not be used for agricultural purposes. Landscaping of the Burdened Property in connection with redevelopment in accordance with the regulatory requirements of the City of Carson is permitted, but groundwater associated with the Burdened Property shall not be used for such landscaping;

k. Any construction at the Burdened Property shall comply with all regulatory requirements, including but not limited to all requirements relating to indoor air quality and the potential for vapor intrusion. Further, the Owner shall apply engineered controls to any building or structure that is constructed on the Burdened Property that has indoor air in order to mitigate the risk of vapor intrusion from the subsurface (i.e., a vapor barrier);

l. No Owner or Occupant shall drill, bore, otherwise construct, or use a well for the purpose of extracting water for any use, including but not limited to, domestic, potable, irrigation, or industrial uses, unless expressly permitted in writing by the Board; nor shall the Owner or Occupant permit or engage any third party to do such acts;

m. The Owner and/or Occupant shall notify the Board of each of the following: (1) the type, cause, location and date of any disturbance to any remedial measures taken or remedial

equipment installed, and of the groundwater monitoring system installed on the Burdened Property pursuant to the requirements of the Board, which could affect the ability of such remedial measures, remedial equipment, or monitoring system to perform their respective functions, and (2) the type and date of repair of such disturbance. Notifications to the Board shall be made by registered mail within ten (10) working days of both the date of discovery of such disturbance and the date of completion of repairs;

j. The Covenantor agrees that the Board, and any persons acting pursuant to Board orders, shall have reasonable access to the Burdened Property for the purposes of inspection, surveillance, maintenance, or monitoring as provided in Division 7 of the Water Code after providing reasonable prior written notice to the then current Owner; and

k. No Owner or Occupant shall act in any manner that threatens or is likely to aggravate or contribute to the existing contaminated conditions of the Burdened Property.

3.2 Enforcement. Nothing in this Covenant shall limit the Board's authority under Division 7 (commencing with section 13000) of the Water Code or other applicable laws.

3.3 Notice in Agreements. After the date of recordation hereof, all Owners and Occupants shall execute a written instrument which shall accompany all purchase agreements or leases relating to all or any portion of the Burdened Property. Any such instrument shall contain the following statement:

> The land described herein contains hazardous materials in the soils and/or groundwater under the property, and is subject to a Covenant and Environmental Restriction on Property dated as of _____, 20___, and recorded on _____, 20___, in the Official Records of _____ County, California, as Document No. _____, which Covenant and Environmental Restriction on Property imposes certain covenants, conditions, and restrictions on usage of the property described herein. This statement is not a declaration that a hazard exists.

ARTICLE IV
VARIANCE, TERMINATION, AND TERM

4.1 Variance. Any Owner or, with the Owner's written consent, any Occupant may apply to the Board for a written variance from the provisions of this Covenant.

4.2 Termination. Any Owner or, with the Owner's written consent, any Occupant may apply to the Board for a termination of the Restrictions as they apply to all or any portion of the Burdened Property.

4.3 Term. Unless terminated in accordance with Paragraph 4.2 above, by law or otherwise, this Covenant shall continue in effect in perpetuity.

ARTICLE V
MISCELLANEOUS

5.1 No Dedication Intended. Nothing set forth herein shall be construed to be a gift or dedication, or offer of a gift or dedication, of the Burdened Property or any portion thereof to the general public.

5.2 Notices. Whenever any person gives or serves any notice, demand, or other communication with respect to this Covenant, each such notice, demand, or other communication shall be in writing and shall be deemed effective (a) when delivered, if personally delivered to the person being served or an official of a government agency being served, or (b) three (3) business days after deposit in the mail if mailed by United States mail, postage paid certified, return receipt requested, and addressed:

If To: "Covenantor"	Shell Oil Company Attn: Post Closing Rights & Obligations, Environmental Claims One Shell Plaza 910 Louisiana – 29th Floor Houston, TX 77002
If To: "Board"	Regional Water Quality Control Board Los Angeles Region Attention: Executive Officer 320 W. 4th Street, Suite 200 Los Angeles, California 90013

5.3 Partial Invalidity. If any portion of the Restrictions or terms set forth herein is determined by a court having jurisdiction to be invalid for any reason, the remaining portion shall remain in full force and effect as if such portion had not been included herein.

5.4 Recordation. This instrument shall be executed by the Covenantor and by the Executive Officer of the Board. This instrument shall be recorded by the Covenantor in the County of Los Angeles within ten (10) days of the date of execution.

5.5 References. All references to Code sections include successor provisions.

5.6 Construction. Any general rule of construction to the contrary notwithstanding, this instrument shall be liberally construed in favor of the Covenant to preserve and implement the purpose of this instrument and the policies and purposes of the Water Code. If any provision of this instrument is found to be ambiguous, an interpretation consistent with the purpose of this instrument that would render the provision valid shall be favored over any interpretation that would render it invalid.

IN WITNESS WHEREOF, the parties execute this Covenant as of the date set forth above.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK;
SIGNATURES ON FOLLOWING PAGES]

Covenantor: Triton Diagnostics

Print Name: Keith Probyn

Signature: [signature]

Title: VP Real Estate

Date: July 8 2015

CERTIFICATE OF ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of ~~California~~ Texas
County of ~~Los Angeles~~ Harris

On July 8, 2015 before me, Keith Probyn, VP Real Estate
(insert name and title of the officer)

personally appeared as Covenantor,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature [signature] **(Seal)**

JAKELINE SAUCEDO
Notary Public, State of Texas
My Commission Expires
January 16, 2018

California Regional Water Quality Control Board, Los Angeles Region

Print Name: Samuel Unger

Signature: Samuel Unger

Title: Executive Officer

Date: July 21, 2015

CERTIFICATE OF ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Los Angeles

On JULY 21, 2015 before me, GWENDOLYN RACHELLE MONROE, NOTARY PUBLIC
(insert name and title of the officer)

personally appeared SAMUEL UNGER,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Gwendolyn Rachelle Monroe (Seal)

GWENDOLYN RACHELLE MONROE
Commission # 2058467
Notary Public - California
Los Angeles County
My Comm. expires Mar 20, 2018

EXHIBIT A

LEGAL DESCRIPTION OF THE BURDENED PROPERTY

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

THAT PORTION OF LOT 15 OF TRACT NO. 4054, IN THE CITY OF CARSON, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 44, PAGE 39 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE NORTHERLY LINE OF THE SOUTHERLY 20 FEET OF SAID LOT WITH A LINE PARALLEL WITH AND NORTHEASTERLY 27 FEET, MEASURED AT RIGHT ANGLES, FROM THE SOUTHWESTERLY LINE OF SAID LOT; THENCE ALONG SAID PARALLEL LINE NORTH 39° 21' 48" WEST 245.64 FEET; THENCE SOUTH 89° 22' 27" WEST 25.48 FEET; THENCE NORTH 39° 21' 48" WEST 2.11 FEET; THENCE NORTH 0° 37' 33" WEST 17.38 FEET TO A LINE PARALLEL WITH AND NORTHEASTERLY 18 FEET, MEASURED AT RIGHT ANGLES, FROM SAID SOUTHWESTERLY LINE; THENCE ALONG SAID LAST MENTIONED PARALLEL LINE NORTH 39° 21' 48" WEST TO THE SOUTHERLY LINE OF TRACT NO. 29360, AS PER MAP RECORDED IN BOOK 734, PAGE 45 OF MAPS; THENCE EASTERLY ALONG SAID SOUTHERLY LINE TO THE EASTERLY LINE OF SAID LOT 15; THENCE SOUTHERLY ALONG SAID EASTERLY LINE TO SAID NORTHERLY LINE; THENCE WESTERLY ALONG SAID NORTHERLY LINE TO THE POINT OF BEGINNING.

EXCEPT THEREFROM THAT PORTION OF SAID LAND DESIGNATED AS PARCELS 2-36 INCLUSIVE IN THE FINAL DECREE OF CONDEMNATION ENTERED IN SUPERIOR COURT, LOS ANGELES COUNTY, CASE NO. 909461, A CERTIFIED COPY OF WHICH WAS RECORDED AUGUST 26, 1969, AS INSTRUMENT NO. 2734, IN BOOK D-4478, PAGE 350, OFFICIAL RECORDS OF SAID COUNTY AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE EASTERLY LINE OF SAID LOT WITH THE NORTHERLY LINE OF THE SOUTHERLY 20 FEET OF SAID LOT; THENCE WESTERLY ALONG SAID NORTHERLY LINE 19.99 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE NORTHWEST, HAVING A RADIUS OF 15 FEET, TANGENT TO SAID NORTHERLY LINE AND TANGENT TO THE WESTERLY LINE OF THE EASTERLY 5 FEET OF SAID LOT; THENCE NORTHEASTERLY ALONG SAID CURVE 23.55 FEET TO SAID WESTERLY LINE; THENCE EASTERLY AT RIGHT ANGLES FROM SAID WESTERLY LINE 5 FEET TO SAID EASTERLY LINE; THENCE SOUTHERLY ALONG SAID EASTERLY LINE 14.99 FEET TO THE POINT OF BEGINNING.

ALSO EXCEPT 1/2 OF ALL OIL, GAS, HYDROCARBON AND MINERAL SUBSTANCES IN AND UNDER SAID LAND, BUT WITHOUT RIGHT OF SURFACE ENTRY, AS RESERVED BY MARY M. REGAN, IN DEED RECORDED OCTOBER 4, 1957, AS INSTRUMENT NO. 504, IN BOOK 44767, PAGE 300, OFFICIAL RECORDS.

Assessor's Parcel Number(s): 7327-010-014 and 7327-010-015

EXHIBIT B

MAPS OF THE BURDENED PROPERTY

Figure 1 – Site Vicinity Map
Figure 2 – Site Plan
Figure 3 – Assessor's Parcel Map

Source: Thomas Bros. Maps, Los Angeles Street Guide, 1998.

0 2400' 4800'

Scale in Feet

N

URS

Site Vicinity Map

Proj. No.: 29868838	Date: JUNE 2011
Project: CARSON AIR HARBOR 21611 PERRY STREET CARSON, CA	Figure: 1

S:\Gabriel Negrete\Chevron Air Harbor\Figure 01 - Site Vicinity Map.dwg , File date: 6/29/2011 5:17 PM, Print date: 6/30/2011 11:06 AM by: Gabriel Negrete

EXPLANATION

PROPERTY BOUNDARY

N

0 40 80

SCALE IN FEET

URS

SITE PLAN

Proj. No.: 49194145	Date: DECEMBER 2014
Project: SHELL CARSON AIR HARBOR	Figure: 2

7327 | 10

SCALE 1" = 100'

1986

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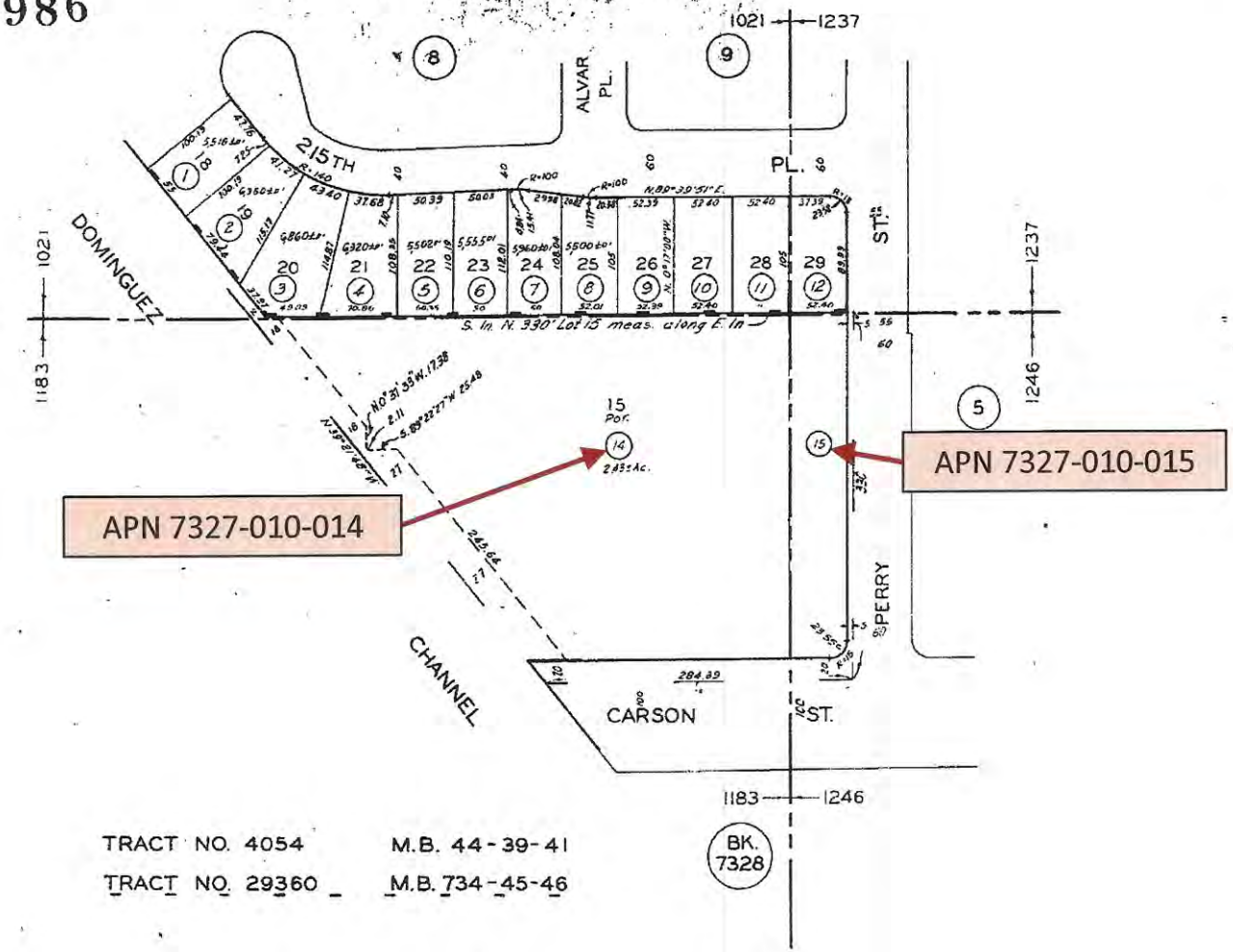

CODE
1237
1021
1183
1246

FOR PREV. ASSM'T. SEE:
7325-33

ASSESSOR'S MAP
COUNTY OF LOS ANGELES, CALIF.

Figure 3 – Assessor's Parcel Map

EXHIBIT C

SOIL MANAGEMENT PLAN
WITH
REGIONAL BOARD APPROVAL LETTER

CALIFORNIA
Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Los Angeles Regional Water Quality Control Board

May 29, 2015

Mr. Joseph Lentini
Environmental Services
Shell Oil Products US
20945 S. Wilmington Ave.
Carson, CA 90810

SUBJECT: **APPROVAL OF SOIL MANAGEMENT PLAN**

SITE: **FORMER CARSON AIR HARBOR SITE**
21611 PERRY STREET, CARSON, CALIFORNIA (SCP NO. 0490C)

Dear Mr. Lentini:

The subject Site was occupied by several industrial/commercial tenants since the early 1960s, including Plan Hold Corporation; Picket Industries; Air Harbor Machine Company, Inc.; Focus Engineering Services; Aire RV and Sports Den; and Carson Trailer, Inc. The last tenant vacated the property in December 2009 and building demolition occurred in May 2011. All structures, walls, footings, foundations, and known subsurface features have been removed and the Site is currently vacant. The Site is owned by Shell Oil Products US (SOPUS). Environmental assessment at the Site has been performed under the oversight of the Regional Board Site Cleanup Program. Contaminants of concern include petroleum hydrocarbons sourced from a former septic system that was converted to a waste oil tank and from petroleum pipelines within Carson Street and Perry Avenue adjacent to the Site. On April 21, 2014, the Regional Board approved a soil excavation work plan for the Site. The approval was contingent upon a commercial/industrial land use deed covenant being recorded for the property prior to the issuance of any No Further Action (NFA) determination being made by the Regional Board.

Soil excavation has been performed, as documented in *Soil Excavation Report* (Report), dated December 15, 2014, prepared by URS Corporation. The Report requests a no further action letter for vadose zone soil. It also includes a *Soil Management Plan* as Appendix K in the Report. The soil management plan was prepared to facilitate sale of the property and the filing of the commercial/industrial land use deed covenant. This letter is intended as a response to the Soil Management Plan only; a decision regarding the vadose zone soil no further action request will be made by this Regional Board following the filing of the commercial/industrial land use deed covenant with the County of Los Angeles Registrar-Recorder/County Clerk.

The Soil Management Plan provides a brief outline of health and safety, air monitoring, boring backfill requirements, and soil profiling and disposal requirements which are intended to serve as a framework for how residual hydrocarbons in soil at the Site will be managed if soil excavation or boring work occurs in the future. The Regional Board concurs with the framework provided in the Soil Management Plan.

If you have any questions, please contact Greg Bishop, Engineering Geologist, at the Regional Board at (213) 576-6727 or via email at greg.bishop@waterboards.ca.gov.

Sincerely,

Greg Bishop, PG, CHg
Engineering Geologist

Cc: Joe Liles, AECOM

SOIL MANAGEMENT PLAN
CARSON AIR HARBOR
21611 South Perry Street
Carson, California

December 2014

Prepared for

Shell Oil Products US
20945 S. Wilmington Ave.
Carson, California 90810

Prepared by

URS Corporation
2020 E. First Street, Suite 400
Santa Ana, California

Joseph Liles, PG, CHg
Senior Project Geologist

Rebecca Frend, PG, CHg
Principal Geologist

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FIGURES

Figure 1 Site Vicinity Map
Figure 2 Site Plan

SOIL MANAGEMENT PLAN
CARSON AIR HARBOR

1.0 INTRODUCTION

URS Corporation (URS) prepared this soil management plan (SMP) at the request of Equilon Enterprises, LLC, doing business as Shell Oil Products US (SOPUS) for the former Carson Air Harbor facility located at 21611 South Perry Street in Carson, California (Site; Figure 1). The Site is located within Assessor's Parcel Numbers (APN) 7327010014 and 7327010015 and is part of an open California Regional Water Quality Control Board, Los Angeles Region (LARWQCB) case (Case No. 0490C).

This SMP is intended to provide a framework for how soil with residual hydrocarbons will be managed at this Site. This SMP will be documented in the deed covenant so that implementation of this plan will continue to be a requirement to future owners or developers of the property.

The landowner needs to conduct all activities disturbing or managing soil at the Site (e.g., excavation, grading, trenching, stockpiling, disposal, etc.) in accordance with city, county, state, and federal rules, laws, and regulations.

2.0 SITE CONDITIONS

2.1 SITE DESCRIPTION

The Site is located at 21611 South Perry Street in Carson, California (Figure 1). The Site is approximately 2.82 acres and is currently undeveloped (Figure 2). The Site is zoned light industrial, and was previously developed with a single industrial building. Future development of the property will be limited to industrial/commercial uses, based on a recorded deed restriction. This SMP applies to the entire site.

2.2 SITE HISTORY

Prior to development in the early 1960s, the Site was farm land. Since the early 1960s, tenants have included Plan Hold Corporation, Picket Industries, Air Harbor Machine Company, Inc., Focus Engineering Service, Aire RV and Sports Den, and Carson Trailer, Inc. The last tenant vacated the property in December 2009, and building demolition occurred in May 2011.

A septic tank was previously present at the Site adjacent to the southern boundary of the warehouse building. This tank was used by a former owner and/or operator during the 1960s-1970s as an underground storage tank (UST) for waste oil. The converted septic tank/UST was removed in May 1990 (Law Environmental, Inc., 1990).

Following removal of the converted septic tank/UST, soil samples were collected from the excavation pit under the supervision of the Los Angeles County Department of Public Works (LACDPW). Petroleum hydrocarbons were detected at concentrations exceeding the County's Pilot Program for Leaking Underground Storage Tanks. A subsequent investigation conducted by Conservtech in early 1991 concluded that contamination appeared to originate from multiple sources.

Since then additional investigations were conducted and on April 15, 2014, URS submitted a workplan to remove vadose zone soil above California Regional Water Quality Control Board,

San Francisco Bay Region (SFRWQCB) Environmental Screening Levels (ESLs) for the protection of commercial/industrial workers from direct exposure to soils. The primary risk drivers were benzene and total petroleum hydrocarbons (TPH) in the gasoline range. The excavations were limited to a 5-foot depth in three of the four excavations and to an 8-foot depth in the fourth excavation. Groundwater is present at depths ranging from approximately 8 to 14 feet below ground surface (bgs) at the Site. This work was approved by the LARWQCB on April 21, 2014, and was implemented in September/October 2014. This SMP is included in the December 15, 2014 report documenting the soil excavation work and is a necessary condition for a vadose zone only no further action by the LARWQCB (URS, 2014).

3.0 SOIL MANAGEMENT

3.1 HEALTH AND SAFETY

Residual hydrocarbons are present in soil at the Site. Thus, standard health and safety precautions need to be followed for all soil management activities, including excavation, grading, trenching, etc. The landowner or their contractor needs to evaluate health and safety requirements for their employees and develop a Site-specific Health and Safety Plan for their use. Monitoring for worker safety may be necessary. The Health and Safety Plan needs to be prepared and implemented by a competent person and should refer to relevant provisions of this SMP.

3.2 AIR MONITORING (ODOR, DUST, AND VAPORS)

Vapors from soil excavations at a minimum will need to be managed as required by South Coast Air Quality Management District (SCAQMD) Rule 1166, odors will need to be addressed as required by SCAQMD Rule 402 nuisance provisions, and dust will need to be managed as required by SCAQMD Rule 403 dust monitoring requirements. Hydrocarbon odors from soil will need to be carefully managed to minimize nuisance impact to the general public and neighbors. The landowner will need to mitigate any odor generation during soil excavation and grading.

3.3 SPECIAL REQUIREMENTS FOR DEEPER PENETRATIONS

Any boring, such as cone penetrometer test (CPT) borings, needs to be backfilled from the bottom of the penetration up with a bentonite or cement-bentonite grout to minimize the potential for shallow impacts migrating to deeper zones. The cement-bentonite mix must contain roughly 5 percent bentonite by weight or as required by the permitting agency.

3.4 SOIL PROFILING AND DISPOSAL

Excavated soils that cannot be reused onsite and soil generated during any deeper excavations or penetrations will need to be `appropriately profiled, transported, and disposed of in accordance with all local, state, and federal rules, laws, and regulations.

4.0 REFERENCES

Law Environmental, Inc., 1990. *Underground Storage Tank, Leak Detection Investigation.* June 7.

URS Corporation, 2014. *Soil Excavation Report, Carson Air Harbor, 21611 South Perry Street, Carson, California.* December 15.

FIGURES

Source: Thomas Bros. Maps, Los Angeles Street Guide, 1998.

URS

Site Vicinity Map

Proj. No.: 29868838	Date: JUNE 2011
Project: CARSON AIR HARBOR 21611 PERRY STREET CARSON, CA	Figure: 1

S:\Gabriel Negrete\Chevron Air Harbor\Figure 01 - Site Vicinity Map.dwg , File date: 6/29/2011 5:17 PM, Print date: 6/30/2011 11:06 AM by: Gabriel Negrete

EXPLANATION

PROPERTY BOUNDARY

N

0 40 80

SCALE IN FEET

URS

SITE PLAN

Proj. No.: 49194145	Date: DECEMBER 2014
Project: SHELL CARSON AIR HARBOR	Figure: 2

APPENDIX D
ACCESS AGREEMENT

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20151459780

Recorded/Filed In Official Records
Recorder's Office, Los Angeles County,
California

11/20/15 AT 08:00AM

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0014

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TAXES:	0.00
OTHER:	0.00
PAID:	72.00

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DAR - Title Company (Hard Copy)

THIS FORM IS NOT TO BE DUPLICATED

T72

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CHICAGO TITLE COMPANY

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This instrument prepared by
And after recording, return to:
Belinda Senneway
Agent for Triton Diagnostics Inc.
910 Louisiana Street, Office 44002C
Houston, Texas 77002

11/20/2015
20151459780

APNS: 7327-010-014 and 7327-010-015

ACCESS AGREEMENT

This Access Agreement ("Agreement") is made as of November 19, 2015 ("Effective Date") by and between the following entities, referred to herein as the Parties:

Triton Diagnostics Inc.
One Shell Plaza
910 Louisiana, 31st Floor
Houston, TX 77002
Attn: Post Closing Rights & Obligations, Environmental Claims
Facsimile: 713/241-6926
("**Triton**")

Perry XC, LLC
3010 Old Ranch Parkway, Suite 470
Seal Beach, CA 90740
Attn: Gretchen Sauer
Facsimile: 562/546-0255
("**Purchaser**")

SEE EXHIBIT "A" ATTACHED

WHEREAS, Purchaser purchased from Triton real property located in the City of Carson, County of Los Angeles, State of California, more particularly described in Exhibit A attached hereto ("Premises"), including all improvements located thereon, pursuant to the terms of a certain Purchase and Sale Agreement dated effective February 17, 2015, between Triton and Xebec Realty Partners, Inc., Purchaser's predecessor in interest, as amended the "Purchase and Sale Agreement"; capitalized terms used herein and not otherwise defined have the meanings set forth in the Purchase and Sale Agreement, and

WHEREAS, the Premises requires additional remedial activities by Triton or its affiliates, including but not limited to groundwater monitoring; and

WHEREAS, Purchaser was willing to purchase Triton's interest in the Premises with full knowledge of the potential for continued remedial activities by Triton.

NOW, THEREFORE, in exchange for the mutual promises and considerations stated herein the Parties agree as follows:

1. **GRANT OF LICENSE**. Purchaser hereby grants, on behalf of itself, its heirs, successors, and assigns, a nonexclusive, irrevocable license from the Effective Date to Triton, and its affiliates and their respective employees, authorized agents, and contractors, and any relevant governmental agency with jurisdiction ("Agency") and its

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employees, authorized agents, and contractors, who have prior to any such entry demonstrated in writing to Purchaser the authority from Triton to so enter in accordance with this Agreement (collectively, the "Permitted Entrants"), to enter onto those portions of the Premises reasonably necessary to perform certain monitoring and remedial activities, including but not limited to, all monitoring well and piping installations, relocations and closures, remediation systems installations (including installation of any utilities needed for such system), tests, inspections, borings, sampling, monitoring, engineering studies, surveys, appraisals, environmental studies, remediation operations or other activities related to open case(s) with the Los Angeles Regional Water Quality Control Board ("LARWQCB") as of the Effective Date hereof related to groundwater impacts at the Premises (hereinafter referred to as "Corrective Action") in order to comply with all applicable federal, state and local statutes, regulations, ordinances directives, orders and standards and required by the LARWQCB. Purchaser also grants Triton and its Permitted Entrants the right to occupy up to a total of three (3) parking spaces on the Premises, if Triton or its affiliates requires them for the Corrective Action, which spaces shall be designated by Purchaser. The grant of parking set forth in the preceding sentence shall not be required during periods of redevelopment, and repair, of the Premises when parking is not reasonably available. This Agreement is intended, and shall be construed only, as a temporary license to enter upon the Premises to conduct the Corrective Action and to occupy parking spaces and not a grant of easement or any other interest in the Premises. Purchaser shall, as soon as possible, but not later than thirty (30) days after damage or destruction caused by Purchaser, replace or repair, at its sole expense, such of the monitoring wells, monitoring well pads, remediation equipment or piping installed by Triton or its Permitted Entrants on the Premises required by the Corrective Action and damaged or destroyed by Purchaser, unless same are no longer in service for the Corrective Action. If no longer in service, then Triton or its Permitted Entrants shall promptly remove, plug, or abandon same at its sole cost and in accordance with all applicable federal, state and local statutes, regulations, ordinances and standards and all Environmental Laws (as defined in the Purchase and Sale Agreement).

2. ENVIRONMENTAL INVESTIGATION AND REMEDIATION. Triton, at its sole expense, agrees to conduct any necessary Corrective Action at the Premises in accordance with, and shall at all times comply with, all applicable federal, state and local statutes, regulations, ordinances and standards and all Environmental Laws; however, Purchaser agrees Triton is under no obligation to Purchaser to perform corrective or remedial action with respect to: (a) any environmental condition (i) caused or created on or about the Premises on and after the Effective Date, or (ii) if caused or created by Purchaser, and (b) any substance that in the past migrated or in the future migrates onto the Premises from property other than property owned by Triton at the time of migration, unless any such obligation arises as a part of the Corrective Action or arises in connection with the re-opening of the "Soils Only" No Further Action (as defined in the Purchase and Sale Agreement). Purchaser acknowledges and agrees that Triton shall perform the Corrective Action consistent only with commercial, industrial, or similar non-residential assessment or cleanup standards established by the Agency.

Notwithstanding the foregoing, in addition to any groundwater obligations that are Triton's responsibility as of the Effective Date, if the "Soils Only" No Further Action (as defined in the Purchase and Sale Agreement) is re-opened by the LARWQCB, or the Corrective Action is modified not as a result of Purchaser or its successor's acts or omissions, then Triton shall be solely responsible, at its cost, for completing all work so

required by the LARWQCB, and all other Agencies that may get involved, pursuant to the modified Corrective Action and the re-opened "Soils Only" No Further Action, including, without limitation, testing, inspections, borings, engineering studies, surveys, appraisals, environmental studies, remediation operations, reporting, installing new monitoring wells and piping, potentially installing a remediation system including any utilities needed for such system, relocating and closing existing monitoring wells and piping, and other related activities.

Except as set forth above, a landowner shall only be responsible for any costs related to soil or groundwater impacts, related to its acts or omissions, including any redevelopment activities on the Property and any dewatering activities at the Property, and not for the acts or omissions of any other landowner.

Triton or its affiliate, if applicable, shall be designated the generator of any and all waste produced related to Triton's Corrective Action activities on the Premises, and Triton shall be solely responsible for preparing and executing manifests for such waste, arranging for timely removal of such waste from the Premises, and shall bear all liability associated with such waste. Triton shall be solely responsible for all reporting requirements under any applicable laws and arising in any way from Triton's performance of the Corrective Action and if the "Soils Only" No Further Action is re-opened by the LARWQCB. Purchaser shall be listed as the "generator" in any manifest related to excavation undertaken by Purchaser or shallow soil impacts caused by Purchaser, except if Triton's "Soils Only" No Further Action is re-opened by the LARWQCB.

3. **REGULATIONS.** Except for the Corrective Action and in connection with any re-opening of the "Soils Only" No Further Action, which are Triton's sole responsibility, Purchaser hereby agrees to comply with all Environmental Laws, including but not limited to those requiring insurance, inventory records, leak detection devices, system inspections, tank and line tests and tank field monitoring well tests. Purchaser further agrees to provide Triton, at Purchaser's expense, within fifteen (15) days of the date request is made by Triton, with copies (with portable document or similar format made available by email or through the internet, being acceptable methods of delivery) of any records in Purchaser's possession required by applicable law to be kept with respect to any operations conducted on the Premises that may disturb or alter the existing condition of soil and/or groundwater on the Premises or pertaining to any violation of the above. Further, upon written request by Triton, Purchaser shall make available all records required by Environmental Laws to be made public for review by Triton, at its sole cost, at the Premises or at Purchaser's office during normal business hours. Purchaser also agrees to notify Triton promptly if Purchaser discovers any soil or groundwater containing "Hazardous Substance" or if Purchaser discovers any "Release" or "Environmental Condition" on any portion of the Premises, as those terms are defined under the Purchase and Sale Agreement, that Purchaser is obliged by applicable law to report to an Agency.

4. **CONSTRUCTION ON THE PREMISES.** Until Triton receives a no further action letter or its equivalent from the LARWQCB with respect to groundwater impacts at the Premises relating to the Corrective Action, Purchaser shall provide Triton and LARWQCB with written notification at least thirty (30) days in advance of the date on which Purchaser plans to begin excavation, grading, removal of soil from the Premises, trenching, filling, earth movement, mining, or disturbance of soils (including but not

limited to soils that are below shallow soils) at the Premises for development purposes ("Development").

Purchaser's written notification to Triton shall state the dates during which the Development work will be performed and shall contain detailed work plans, which may be changed from time to time;

4.1 During the thirty (30) day period following the notice from Purchaser, the Parties will coordinate and cooperate with each other in planning the simultaneous performance of the Development and activities at the Premises in such a manner as to minimize cost and time for each Party, including agreeing upon the scope and schedule of the removal activities and the schedule of the transporters and trucks needed for disposal. Purchaser shall not commence excavation activities on the Premises until the expiration of the thirty (30) day notice period;

Purchaser shall notify Triton no later than forty-eight (48) hours in advance of excavation of any soils undertaken by Purchaser at the Premises. For purposes of this sub-section, notification may be made by facsimile or electronic mail. Triton may collect, at its expense, representative soil samples for analysis of substances. Soil from such excavation with substances levels below the applicable State cleanup standard for commercial/industrial property use will be considered "clean." Soil from such excavation determined to be "clean" may be used by Purchaser for back-filling or other Development purposes at the Premises, subject to any restrictions in the deed from Triton to Purchaser and any applicable Agency requirements. Purchaser shall, at its cost and expense, remove and properly dispose of any such clean soil if Purchaser decides not to use such clean soil for back-filling or other Development purpose. Soil from such excavation with levels of substances above the applicable State cleanup standard for commercial/industrial property use will be considered "contaminated." If it is determined that such contaminated soil may not be used on the Premises, then Purchaser, at its sole cost and expense, shall segregate any such contaminated soil from clean soil and transport and properly dispose of any such contaminated soil at a permitted treatment, storage and disposal facility, or any other facility legally capable of accepting such soil. Further, Purchaser shall be listed as the "generator" in any manifest related to such excavation matters, except if Triton's "Soils Only" No Further Action is re-opened by the LARWQCB.

4.2 Triton shall be responsible for all costs and expenses associated with the disposal of contaminated groundwater (a) related to the Corrective Action or Triton's "Soils Only" No Further Action, if re-opened by the LARWQCB; and (b) caused by Triton's use and occupation of the Premises unless such costs and expenses would not have been incurred but for Purchaser's Development for which removal and special handling is required by applicable law. Purchaser shall notify Triton no later than forty-eight (48) hours in advance of the removal of any liquids taken by Purchaser from the groundwater at the Premises. For purposes of this sub-section, notification may be made by facsimile or electronic mail. Liquids with substances levels below the applicable State cleanup standard for commercial/industrial property use will be considered "clean." Except as set forth above, Purchaser shall, at its cost and expense, remove and properly dispose of any such clean liquids. Liquids from groundwater with levels of substances above the applicable State cleanup standard for commercial/industrial property use will be considered "contaminated." Purchaser shall, at its sole cost and expense, transport and properly dispose of any such contaminated liquids at a permitted treatment, storage and disposal facility, or any other facility legally capable of accepting such liquids.

Any Development activities by Purchaser shall be in compliance with all applicable Agency regulatory requirements. In the event one of the monitoring wells and relating piping at the Premises must be relocated as a result of Purchaser's Development and subject to approval from the LARWQCB and any Agency with jurisdiction and authority, Purchaser agrees to cooperate, at no cost or liability to Purchaser, with Triton and any Permitted Entrants in relocating such well(s) and related piping to such other part of the Premises mutually agreed to by Triton and Purchaser. All well relocation work will be done by Triton or Triton's contractor or agent, at Triton's instruction and at Triton's cost, and subject to Agency approval.

As between Triton and Purchaser, Purchaser shall be liable for and will perform or have performed, at Purchaser's sole expense, any corrective action required by an Agency by reason of violations of Environmental Laws, other than the Corrective Action and except if Triton's "Soils Only" No Further Action is re-opened by the LARWQCB, with respect to (a) any environmental condition caused or created by Purchaser; (b) any environmental condition caused or created on or about the Premises on and after the Effective Date; and (c) any new contributions to soil and groundwater impacts on and after the Effective Date that are above the baseline created by reports on record with the LARWQCB as of the Effective Date.

Failure of Purchaser to give Triton notice of Development activities as required herein and within thirty (30) days after Development activities have commenced shall relieve Triton from any responsibility or liability to Purchaser for any costs, expenses or consequential damages that may result from Purchaser undertaking such Development activities. For purposes of this section, all notifications shall be made to Shell Oil Company's soil and groundwater project manager related to the Property, which as of the Effective Date of this Agreement is Joe Lentini, Principal Program Manager, Soil and Groundwater Focused Delivery Group, Shell Oil Company, at (310) 376-0649, Joseph.Lentini@shell.com. Triton shall provide written notice to landowner of any change in this contact.

4.3 All amounts payable by Triton to Purchaser shall be paid to Purchaser within twenty (20) business days following demand. To be effective, Purchaser's demand shall include copies of invoices and proof of payment for which payment is required.

5. TERMINATION. Upon completion of its Corrective Action at the Premises, this Agreement shall terminate and Triton shall have no further obligation or responsibility to perform Corrective Action at the Premises. Purchaser agrees that Triton will have "completed" its Corrective Action upon a determination by the Agency in writing that no further action is required with respect to the Corrective Action.

6. MUTUAL COOPERATION. Triton agrees to coordinate its activities with Purchaser to minimize any inconvenience to or interruption of the conduct of Purchaser's business or development of the Premises including, but not limited to, providing reasonable notice prior to all activities which Triton believes may interrupt the conduct of Purchaser's business. Purchaser agrees to cooperate, at no cost to Purchaser, with Triton or its affiliates, and execute any additional documents including, without limitation, any required municipal and/or state permits or applications, which may reasonably be required to effectuate the purpose of this Agreement and to facilitate Triton's Corrective Action. Purchaser further agrees not to interfere with the activities conducted by Triton on the Premises.

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7. **ENTRY REQUIREMENTS.** Prior to any entry on to the Premises,

(a) Triton shall give reasonable advance notice (not less than twenty-four (24) hours, except in the event of an emergency, which may be telephonic or by e-mail) to Purchaser and any other person whose identity and contact information has been provided to Triton by Purchaser. Notwithstanding the foregoing, no notice need be given if the entry is solely for the purpose of inspecting or monitoring any Corrective Action facilities, including any wells, which are located outside of any buildings on the Premises, and which do not involve the repair, maintenance, or alteration to such facilities. Purchaser may have its representatives present to inspect the Corrective Action activities.

(b) Triton, with the reasonable cooperation of Purchaser, but at no expense to Purchaser, shall obtain and deliver copies to Purchaser, any and all permits, which may be required for the Corrective Action it conducts pursuant to this Agreement; and

(c) Triton shall require its contractors performing work on the Premises to maintain in effect insurance coverage appropriate (as reasonably determined by Triton and Purchaser) for the type and cost of work being performed for the Corrective Action contemplated under this Agreement. Triton shall, to the fullest extent permitted by law, be allowed to self-insure to the limits required under this Agreement.

8. **REPORTS.** Triton agrees to provide promptly to Purchaser copies of reports that are submitted to the Agency outlining the results of Triton's Corrective Action performed pursuant to this Agreement.

9. **SITE RESTORATION.** Triton agrees, upon completion of the Corrective Action contemplated by this Agreement as set forth in Section 5, at its expense, (i) to restore the disturbed surface areas of the Premises damaged by the Corrective Action to as near the approximate grade and pavement as existed prior to said Corrective Action as is reasonably possible, including proper plugging, abandonment or removal of any monitoring well as may be required in accordance with applicable law; and (ii) to repair any damage to the Premises caused by such removal, wear and tear excepted;. Triton shall not be responsible for the repair or replacement of underground utilities (except for public underground utilities damaged by Triton) on the Premises.

If it is determined, in Triton's reasonable discretion, from time to time that a portion of the Corrective Action facilities is no longer necessary in connection with the Corrective Action, then Triton shall, promptly following such determination, remove that portion of the Corrective Action facilities in accordance with the requirements of the preceding paragraph.

10. **INDEMNITIES.**

10.1 TRITON'S INDEMNIFICATION. FROM AND AFTER THE EFFECTIVE DATE, TRITON AGREES TO INDEMNIFY, DEFEND AND HOLD HARMLESS PURCHASER AND ITS SHAREHOLDERS, MEMBERS, PARTNERS, LENDERS AND THEIR RESPECTIVE OFFICERS, AND EMPLOYEES (COLLECTIVELY, THE "INDEMNIFIED PARTIES") FROM AND AGAINST ALL DEMANDS, CLAIMS, CAUSES OF ACTIONS, LOSSES, DAMAGES, LIABILITIES (INCLUDING WITHOUT LIMITATION ALL ENVIRONMENTAL LIABILITIES), COSTS AND EXPENSES (INCLUDING ATTORNEY'S FEES), (COLLECTIVELY,

"PURCHASER'S LOSSES") ARISING FROM TRITON'S BREACH OF THIS AGREEMENT AND ITS ACTS OR FAILURES TO ACT RELATED TO THE PERFORMANCE OF TRITON'S CORRECTIVE ACTION, BUT TRITON SHALL NOT INDEMNIFY, DEFEND, OR HOLD HARMLESS THE INDEMNIFIED PARTIES FOR THE GROSS NEGLIGENCE OR WILLFUL MISCONDUCT OF ANY OF THE INDEMNIFIED PARTIES. HOWEVER, TRITON'S INDEMNITY SHALL NOT COVER PURCHASER'S LOSSES ARISING FROM (A) ANY MATTERS CAUSED BY OR ARISING FROM MIGRATION OF CONTAMINANTS FROM PROPERTY OTHER THAN THE PREMISES, WHETHER SAID MIGRATION OCCURRED PRIOR TO THE EFFECTIVE DATE OR OCCURS AFTER THE EFFECTIVE DATE, UNLESS SAME ARE PART OF THE CORRECTIVE ACTION; (B) CONTAMINATION OF THE PREMISES THAT IS NOT SUBJECT TO TRITON'S CORRECTIVE ACTION; OR (C) THE CONDITION OF THE ASSETS, INCLUDING THE PREMISES AS OF THE DATE HEREOF, IT BEING UNDERSTOOD THAT PURCHASER HAS PURCHASED THE ASSETS DESCRIBED IN THE PURCHASE AND SALE AGREEMENT, INCLUDING THE PREMISES, ON AN "AS IS" BASIS, AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES OR REPRESENTATIONS ON THE PART OF TRITON AS TO WHAT THAT CONDITION MAY BE, EXCEPT AS EXPRESSLY SET FORTH HEREIN OR IN THE PURCHASE AND SALE AGREEMENT, INCLUDING THE EXHIBITS THERETO. NOTWITHSTANDING THE FOREGOING, ANY RIGHTS OR OBLIGATIONS RELATED TO ANY ENVIRONMENTAL CONDITION CAUSED OR CREATED ON OR ABOUT THE PREMISES WHICH ORIGINATES FROM SUBSTANCES THAT MIGRATE FROM ANY ADJOINING PROPERTY OWNED BY TRITON AT THE TIME OF MIGRATION SHALL NOT BE ALTERED BY THIS ARTICLE 10, OR GOVERNED HEREBY. TRITON'S INDEMNITY SHALL SURVIVE THE EXPIRATION OR TERMINATION OF THIS AGREEMENT FOR ONE (1) YEAR.

10.2 In furtherance thereof, Triton will not permit any mechanics', materialmen's or other liens of any type to be filed against any portion of the Property in connection with any Corrective Action. Purchaser shall have the right at all reasonable times to post and keep posted on the Premises any notices which it deems necessary for protection from such liens. If any such liens are filed which are not released or bonded around by Triton within thirty (30) days after notice from Purchaser, Purchaser may, without waiving its rights and remedies based on such breach of Triton, and without releasing Triton from any of its obligations, cause such liens to be released by any means it shall deem proper, including payments in satisfaction of the claim giving rise to such lien. Triton shall pay to Purchaser, within ten (10) days following demand by Purchaser, any amounts paid by Purchaser to remove such liens, together with interest on that sum at the higher of five percent (5%) above the discount rate charged by the San Francisco Federal Reserve Bank to its member banks, or the maximum rate allowed by applicable usury law (the "License Interest Rate") from the date of Purchaser's payment.

10.3 Purchaser's Indemnification. FROM AND AFTER THE EFFECTIVE DATE HEREOF, THE PURCHASER AGREES TO INDEMNIFY, DEFEND AND HOLD HARMLESS TRITON, ITS MEMBERS, SUBSIDIARIES, AFFILIATES, OFFICERS, DIRECTORS, EMPLOYEES, AND EACH OF THEIR, SUCCESSORS, HEIRS AND ASSIGNS (COLLECTIVELY, THE "TRITON INDEMNIFIED PARTIES") , FROM AND AGAINST ANY AND ALL DEMANDS, CLAIMS, CAUSES OF ACTION, LOSSES, DAMAGES, LIABILITIES (INCLUDING WITHOUT

LIMITATION ALL ENVIRONMENTAL LIABILITIES), COSTS AND EXPENSES (INCLUDING ATTORNEY'S FEES) (COLLECTIVELY, "TRITON'S LOSSES") ARISING FROM PURCHASER'S BREACH OF THIS AGREEMENT, BUT EXCLUDING HOWEVER ANY SUCH ACTS, FAILURES TO ACT OR CONDITIONS RELATED TO THE CORRECTIVE ACTION FOR WHICH TRITON SHALL REMAIN SOLELY AND FULLY RESPONSIBLE AND PURCHASER SHALL NOT INDEMNIFY, DEFEND, OR HOLD HARMLESS THE TRITON INDEMNIFIED PARTIES FOR THE GROSS NEGLIGENCE OR WILLFUL MISCONDUCT OF ANY OF THE TRITON INDEMNIFIED PARTIES. WITHOUT LIMITING THE FOREGOING, PURCHASER'S INDEMNIFICATION OBLIGATIONS SHALL COVER TRITON'S LOSSES ARISING FROM (A) MIGRATION OF CONTAMINANTS FROM PROPERTY OTHER THAN THE PREMISES, OR FROM ANY ADJOINING PROPERTY OWNED BY TRITON; AND (B) CONTAMINATION OF THE PREMISES THAT IS NOT SUBJECT TO TRITON'S CORRECTIVE ACTION, EXCEPT AS SET FORTH IN THIS AGREEMENT. NOTWITHSTANDING THE FOREGOING, ANY RIGHTS OR OBLIGATIONS RELATED TO ANY ENVIRONMENTAL CONDITION CAUSED OR CREATED ON OR ABOUT THE PREMISES WHICH ORIGINATES FROM SUBSTANCES THAT MIGRATE FROM ANY ADJOINING PROPERTY OWNED BY TRITON AT THE TIME OF MIGRATION SHALL NOT BE ALTERED BY THIS ARTICLE 10.3 OR GOVERNED BY THIS AGREEMENT. PURCHASER'S INDEMNITY SHALL SURVIVE THE EXPIRATION OR TERMINATION OF THIS AGREEMENT.

Further, neither party to this Agreement shall be liable to the other or to the Indemnified Parties for any punitive cost, expense, or damage, arising out of or in connection with this Agreement or any breach thereof.

11. DEFAULT.

(a) If Triton defaults in any of its obligations under this Agreement, Purchaser shall give notice to Triton identifying the default. If Triton fails to cure the default within thirty (30) days thereafter (or sooner, if the default is likely to cause immediate damages or injury to persons or property) then Purchaser may, by notice to Triton, immediately terminate this Agreement and take such other actions against Triton at law or equity as it shall determine in its sole discretion, including without limitation the right of self-help described below. Such termination is without prejudice to any other rights of remedy of Purchaser under applicable law. Provided, however, if such default is not reasonably capable of being cured within such thirty (30) day period (it being agreed that the payment of money is a curable default within such period), Triton will have an additional reasonable time to cure the default as long as it commences the cure within such thirty (30) day period and diligently pursues the cure to completion.

(b) In the event of a default by Triton, which is not cured within the times set forth in clause (a) above (or, in the case where Triton has an additional reasonable time to cure the default, if the default is not cured within ninety (90) days after the end of such thirty (30) day period), Purchaser shall have the right, but not the obligation, to cure such default for the account of, and at the expense of Triton; provided, however, that in the event of emergency conditions posing an immediate threat to persons or property and constituting a default, Purchaser acting in good faith shall have the right to cure such default upon such advance notice as is reasonably possible under the

circumstances. Any notice hereunder shall specify with particularity the nature of the default claimed and shall set forth the action which Purchaser proposes to take in order to cure the claimed default.

(c) Each party hereto shall have the right to prosecute any proceedings at law or in equity against any other party hereto, or any other person, violating, attempting to violate, threatening to violate, or defaulting upon any of the provisions contained in this Agreement, in order to prevent the violating or defaulting party or any such person from violating, attempting to violate, threatening to violate or defaulting upon the provisions of this Agreement and to recover damages for any such violation or default.

(d) All costs and expenses reasonably incurred by any party to cure a default of a defaulting party, together with interest thereon at the License Interest Rate, and all costs and expenses of any proceedings at law or in equity, including reasonable attorneys' fees awarded to any party by an order of court, shall be assessed against and paid by the defaulting or violating party within thirty (30) days following demand therefor, with reasonable documentation.

(e) It shall be a default by Triton under this Agreement if Triton discontinues or abandons the Corrective Action without the approval of the LARWQCB, and fails to resume the Corrective Action within thirty (30) days after receipt of notice from Purchaser (subject to delays due to events of "force majeure").

12. DISPUTE RESOLUTION. The Parties agree that should any dispute arise under this Agreement which cannot be amicably resolved, the dispute shall be submitted to mediation prior to being submitted to Arbitration under the rules and procedures of the American Arbitration Association and judgment upon the award rendered by the arbitrator(s) may be entered in any court having jurisdiction thereof. Any mediator or arbitrator selected by the Parties shall be knowledgeable in environmental law and/or remediation technologies.

13. EXECUTION OF AGREEMENT. Each of the undersigned hereby represents and warrants that it is authorized to execute this Agreement on behalf of the respective Party to the Agreement and that this Agreement, when executed by those Parties, shall become a valid and binding obligation, enforceable in accordance with its terms. Purchaser represents and warrants that, subject to the Closing under the Purchase and Sale Agreement, it is the owner of the Premises or that it has full lawful authority to grant access to the Premises for the purposes described herein.

14. ASSIGNMENT, SUCCESSOR AND ASSIGNS. In the event Purchaser's interests in the Premises are conveyed, transferred or in any way assigned in whole or in part to any other person or entity, whether by contract, operation of law or otherwise, Purchaser shall take any and all reasonable actions to render any such conveyance, transfer or assignment subject to the terms of this Agreement and shall provide notice thereof to Triton.

15. NOTICE. Any notice, consent, request, report, demand, or other document required to be given to one Party by the other shall be in writing and be delivered to or mailed to the receiving Party at its address, referenced on page 1 above. Facsimile copies, or email sent by read receipt with an additional confirmatory email of receipt from the recipient, shall be sufficient. A Party may change its address by written notice to the other Party.

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16. **MODIFICATIONS**. This Agreement contains the entire understanding of the Parties with respect to the matters set forth herein. Any change, amendment, or alteration must be in writing and signed by both Parties to this Agreement to be effective. This Agreement supersedes all prior discussions and agreements between the Parties with respect to the subject matter hereof and thereof.

17. **NO ADMISSIONS**. Nothing contained in this Agreement shall be construed as an admission of any fact or liability of any Party to this Agreement.

18. **GOVERNING LAW**. THIS AGREEMENT SHALL BE GOVERNED IN ALL RESPECTS BY THE LAWS OF THE STATE OF CALIFORNIA WITHOUT REGARD TO THE CONFLICT OF LAWS PRINCIPLES THEREOF.

19. **COUNTERPARTS**. This Agreement may be executed in multiple counterparts, each of which shall be deemed to be an original and of equal force and effect.

[Remainder of page intentionally left blank. Signatures on following pages.]

12

IN WITNESS WHEREOF, the Parties have executed this Agreement on the dates set forth below, but effective as of the Effective Date first above written.

TRITON DIAGNOSTICS INC.,
a Delaware corporation

By: _____
Name: Keith Probyn
Title: President

STATE OF TEXAS §
§
COUNTY OF HARRIS §

This instrument was acknowledged before me on the 12 day of November, 2015, by Keith Probyn, as President of Triton Diagnostics Inc., a Delaware corporation, on behalf of said corporation.

Alison R. Gilmore
Notary Public in and for The State of Texas
2/26/2018
Commission Expiration Date

ALISON R GILMORE
MY COMMISSION EXPIRES
February 26, 2018

13

PERRY XC, LLC,
a Delaware limited liability company

By: John Lehr
Name: John Lehr
Title: President

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached and not the truthfulness, accuracy, or validity of that document.

~~ALL PURPOSE ACKNOWLEDGMENT~~ CA

STATE OF ARKANSAS §
§
COUNTY OF WASHINGTON §

On November 13, 2015, before me, Chelsea Hand, a Notary Public, personally appeared JOHN LEHR, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of Arkansas that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature: _____

CHELSEA HAND Commission No. 12387026 NOTARY PUBLIC (NOTARY SEAL) My Commission Expires: 2022 BENTON CO., ARKANSAS

ATTENTION NOTARY: Although the information requested below is OPTIONAL, it could prevent fraudulent attachment of this certificate to another document.

THIS CERTIFICATE MUST BE ATTACHED TO THE DOCUMENT DESCRIBED AT RIGHT.

Title of Document Type _____
Number of Pages ____
Date of Document _____
Signer(s) Other Than Named Above
_____
_____

EXHIBIT A
TO ACCESS AGREEMENT
DESCRIPTION OF PREMISES

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

THAT PORTION OF LOT 15 OF TRACT NO. 4054, IN THE CITY OF CARSON, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 44, PAGE 39 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE NORTHERLY LINE OF THE SOUTHERLY 20 FEET OF SAID LOT WITH A LINE PARALLEL WITH AND NORTHEASTERLY 27 FEET, MEASURED AT RIGHT ANGLES, FROM THE SOUTHWESTERLY LINE OF SAID LOT; THENCE ALONG SAID PARALLEL LINE NORTH 39° 21' 48" WEST 245.64 FEET; THENCE SOUTH 89° 22' 27" WEST 25.48 FEET; THENCE NORTH 39° 21' 48" WEST 2.11 FEET; THENCE NORTH 0° 37' 33" WEST 17.38 FEET TO A LINE PARALLEL WITH AND NORTHEASTERLY 18 FEET, MEASURED AT RIGHT ANGLES, FROM SAID SOUTHWESTERLY LINE; THENCE ALONG SAID LAST MENTIONED PARALLEL LINE NORTH 39° 21' 48" WEST TO THE SOUTHERLY LINE OF TRACT NO. 29360, AS PER MAP RECORDED IN BOOK 734, PAGE 45 OF MAPS; THENCE EASTERLY ALONG SAID SOUTHERLY LINE TO THE EASTERLY LINE OF SAID LOT 15; THENCE SOUTHERLY ALONG SAID EASTERLY LINE TO SAID NORTHERLY LINE; THENCE WESTERLY ALONG SAID NORTHERLY LINE TO THE POINT OF BEGINNING.

EXCEPT THEREFROM THAT PORTION OF SAID LAND DESIGNATED AS PARCELS 2-36 INCLUSIVE IN THE FINAL DECREE OF CONDEMNATION ENTERED IN SUPERIOR COURT, LOS ANGELES COUNTY, CASE NO. 909461, A CERTIFIED COPY OF WHICH WAS RECORDED AUGUST 26, 1969, AS INSTRUMENT NO. 2734, IN BOOK D-4478, PAGE 350, OFFICIAL RECORDS OF SAID COUNTY AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE EASTERLY LINE OF SAID LOT WITH THE NORTHERLY LINE OF THE SOUTHERLY 20 FEET OF SAID LOT; THENCE WESTERLY ALONG SAID NORTHERLY LINE 19.99 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE NORTHWEST, HAVING A RADIUS OF 15 FEET, TANGENT TO SAID NORTHERLY LINE AND TANGENT TO THE WESTERLY LINE OF THE EASTERLY 5 FEET OF SAID LOT; THENCE NORTHEASTERLY ALONG SAID CURVE 23.55 FEET TO SAID WESTERLY LINE; THENCE EASTERLY AT RIGHT ANGLES FROM SAID WESTERLY LINE 5 FEET TO SAID EASTERLY LINE; THENCE SOUTHERLY ALONG SAID EASTERLY LINE 14.99 FEET TO THE POINT OF BEGINNING.

ALSO EXCEPT 1/2 OF ALL OIL, GAS, HYDROCARBON AND MINERAL SUBSTANCES IN AND UNDER SAID LAND, BUT WITHOUT RIGHT OF SURFACE ENTRY, AS RESERVED BY MARY M. REGAN, IN DEED RECORDED OCTOBER 4, 1957, AS INSTRUMENT NO. 504, IN BOOK 44767, PAGE 300, OFFICIAL RECORDS.

APPENDIX E
SOIL EXCAVATION REPORT EXCERPTS

SOIL EXCAVATION REPORT

CARSON AIR HARBOR
21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

Prepared for

Shell Oil Products US
20945 S. Wilmington Ave.
Carson, California 90810

URS Project No. 49194108

December 15, 2014

URS

2020 East First Street, Suite 400
Santa Ana, CA 92705
714-835-6886 Fax: 714-667-7147

SOIL EXCAVATION REPORT

CARSON AIR HARBOR
21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

On behalf of the Equilon Enterprises, LLC, doing business as Shell Oil Products US (SOPUS), URS Corporation has prepared this Soil Excavation Report for the soil removal project at the Carson Air Harbor (CAH) facility ("Site"). This document is for the sole use and benefit of the SOPUS.

This report was prepared in a manner consistent with the level of care and skill ordinarily exercised by professional engineers, geologists, and environmental scientists, under the technical direction of the undersigned.

URS CORPORATION

Joseph Liles, PG, CHg
Senior Project Geologist

PROFESSIONAL GEOLOGIST
Joseph Raymond Liles
No. 8297
4/30/2015
STATE OF CALIFORNIA

Laurie S. Fernandez, PG
Principal Geologist

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This report documents the excavation and offsite disposal of shallow vadose zone impacted soils at the Carson Air Harbor (CAH or Site) property. The Site is located at 21611 South Perry Street in Carson, California, and is currently owned by Triton Diagnostics, Inc. (Triton), a subsidiary of Shell Oil Company. A Site vicinity map is provided as Figure 1, and a Site plan is provided as Figure 2.

Petroleum hydrocarbon-impacted soil and groundwater were identified at the Site during various investigations beginning in 1990. Onsite historical metal fabrication operations and migration of offsite impacts onto the Site are the sources of the petroleum hydrocarbons. To address onsite impacts to soil in order to redevelop the Site for commercial/industrial use, a Soil Excavation Workplan (URS, 2014b) was developed by URS Corporation (URS) following a September 30, 2013 meeting and subsequent follow-up phone conversations and e-mail with the California Regional Water Quality Control Board, Los Angeles Region (LARWQCB) regarding the cleanup goals and excavation limits. The Soil Excavation Workplan was approved by the LARWQCB on April 21, 2014.

This Soil Excavation Report has been prepared by URS on behalf of the Equilon Enterprises, LLC, doing business as Shell Oil Products US (SOPUS) for submittal to the LARWQCB, and documents implementation of the Soil Excavation Workplan, which was approved by the LARWQCB in a letter dated April 21, 2014.

2.1 SITE GEOLOGY AND HYDROGEOLOGY

The shallow native materials consist of laterally discontinuous units of sandy to silty clays, silt, and silty to clayey sands typical of fluvial deposits. Root casts present in shallow soils in the area indicate the possibility of a former marsh or vegetated area with semi-saturated conditions (C2REM, 2010). In general, poorly consolidated clay dominates the subsurface.

Depth to groundwater onsite ranges from approximately 8 to 14 feet below ground surface (bgs). Water-bearing zones that do exist consist of discontinuous, interbedded silty to sandy perched zones in a poorly consolidated and saturated clay from about 10 to 30 feet bgs (A Zone), a silt-sand perched zone from about 35 to 50 feet bgs (B Zone), and interbedded silty to sandy perched zones from about 70 to 80 feet bgs (C Zone). Of these, the B Zone appears to be the most contiguous unit with the least amount of silt-clay interbeds (URS, 2011).

2.2 SITE HISTORY AND PREVIOUS ASSESSMENTS

Prior to development in the early 1960s, the Site was farm land. Since the early 1960s, tenants have included Plan Hold Corporation, Picket Industries, Air Harbor Machine Company, Inc., Focus Engineering Service, Aire RV and Sports Den, and Carson Trailer, Inc. (C2REM, 2004). The last tenant vacated the property in December 2009, and building demolition occurred in May 2011.

A septic tank was previously present at the Site adjacent to the southern boundary of the warehouse building. This tank was used by a former owner and/or operator during the 1960s-1970s as an underground storage tank (UST) for waste oil. The converted septic tank/UST was removed in May 1990 (Law Environmental, Inc., 1990). The approximate location of the former septic/waste soil tank is shown on Figure 2. Following its removal, soil samples were collected from the excavation pit under the supervision of the Los Angeles County Department of Public Works (LACDPW). Petroleum hydrocarbons were detected at concentrations exceeding the County's Pilot Program for Leaking Underground Storage Tanks. A subsequent investigation conducted by Conservtech in early 1991 concluded that contamination appeared to originate from multiple sources.

In January 1994, groundwater monitoring Well MW-1 was installed to 40 feet bgs near the southern wall of the warehouse in the area of the former septic tank/UST (Figure 2). Light non-aqueous phase liquid (LNAPL) was observed and volatile organic compound (VOC) and gas constituents were detected in the well (C2REM, 2010).

In 1997, during an investigation of petroleum hydrocarbons in the vicinity of South Perry Street, Montgomery Watson Harza (MWH) collected soil and groundwater samples on the Site. Results of the investigation indicated that LNAPL was present in a limited area around the former septic tank/UST (MWH, 1997). In March 1999, soil and groundwater sampling was conducted by URS Greiner Woodward Clyde on the Site to determine potential hydrocarbon impacts from the adjacent subsurface pipelines (C2REM, 2010). In 2001, additional groundwater sampling was conducted, and benzene was detected at concentrations up to 1.6 milligrams per liter (mg/L; MWH, 2002).

In early 2002, the tenant complained of "sewer like" odors in a portion of the building. This prompted additional assessment of environmental conditions at the Site in June and July 2002. C2REM with the support of MWH collected soil vapor samples at the CAH site from approximately 18 inches bgs. Elevated methane and benzene were detected in soil vapor near the former septic tank/UST; however, no significant methane or VOC concentrations were impacting adjacent residences to the north (C2REM, 2002). In January 2003, a limited vapor collection and treatment system was installed to mitigate the potential for vapor intrusion of methane to the area immediately beneath the building and some additional soil and groundwater sampling was conducted (C2REM, 2004).

In 2004, during their Perry Street Investigation Area (PSIA) sampling effort, C2REM installed soil vapor probes and collected soil samples in the former parking area of CAH in the southeastern portion of the Site. Benzene was detected in soil vapor at concentrations up to 1.000 parts per billion (ppb) at 2.5 feet bgs, up to 2,000 ppb at 5 feet bgs, and up to 7,700 ppb at 12 feet bgs. Soil samples collected during the vapor probe installation at 5 to 6 feet bgs contained concentrations of benzene up to 6.8 milligrams per kilogram (mg/kg), total petroleum hydrocarbons (TPH) as gasoline range organics (TPHg) up to 3,900 mg/kg, and TPH C_7-C_{44} up to 1,500 mg/kg.

In March through May 2011, at the request of the LARWQCB, URS, on behalf of SOPUS, advanced 21 Cone Penetrometer Test/Rapid Optical Screening Tool™ (CPT/ROST™) borings at the Site and installed groundwater monitoring wells at two locations. The borings were generally cleared with an air-knife as part of borehole clearance procedures to avoid accidently drilling through subsurface structures. As a result, limited soil analytical data was collected from the vadose zone during this investigation.

In July and August 2011, URS, on behalf of Resource Environmental L.L.C. (RELLC, an environmental management company), conducted an investigation of Dominguez Channel and the surrounding area, including the CAH facility, due to the presence of an LNAPL sheen in the channel (URS, 2011). The following is a summary of the shallow soil TPH results at the Site from investigations implemented by RELLC:

Sample ID	Detected Compound	Concentration (mg/kg)	Sample Depth (feet bgs)
MW-3-10	TPHg	2300	10
	TPHd	85	
	TPHo	3.5	
MW-5-10	TPHg	790	10
	TPHd	34	
	TPHo	ND	

Sample ID	Detected Compound	Concentration (mg/kg)	Sample Depth (feet bgs)
MW-6B-10	TPHg	1400	10
	TPHd	42	
	TPHo	ND	
MW-6C-10	TPHg	1500	10
	TPHd	130	
	TPHo	ND	
MW-7A-10	TPHg	3600	10
	TPHd	940	
	TPHo	ND	
MW-7B-10	TPHg	1800	10
	TPHd	330	
	TPHo	ND	
MW-7C-10	TPHg	2400	10
	TPHd	68	
	TPHo	ND	
MW-8B-7.5	TPHg	51	7.5
	TPHd	ND	
	TPHo	ND	
MW-8C-7.5	TPHg	ND	7.5
	TPHd	ND	
	TPHo	ND	
MW-9C-10	TPHg	0.55	10
	TPHd	ND	
	TPHo	ND	

mg/kg milligrams per kilogram
ND Not detected above the reporting limit shown in parentheses
TPHg total petroleum hydrocarbons as gasoline range organics
TPHd total petroleum hydrocarbons as diesel range organics
TPHo total petroleum hydrocarbons as oil range organics

Based on the results of the LNAPL assessment, the Site was not associated with LNAPL seepage into the Dominguez Channel (URS, 2011). Therefore, the LARWQCB determined that no additional actions related to the Section 13267 Investigative Order for Dominguez Channel, South of Carson Street were needed for this Site (LARWQCB, 2012). In August 2012, the Site was transferred from RELLC back to SOPUS.

2.2.1 2012 Vadose Zone Soil Investigation

In October 2012, URS conducted an investigation of shallow (0 to 10 feet bgs) soils below the CAH property to support preparation of a remedial action plan for TPH- and VOC-impacted shallow soil in the upper 10 feet of the Site (URS, 2013). During this investigation, soil samples were collected from 44 hand-auger borings and analyzed for a combination of VOCs, TPH, semi-volatile organic

compounds (SVOCs), and Title 22 metals. Soils observed consisted primarily of clay, silty clay, and gravelly clay. Groundwater was encountered in one boring, HA-44, at approximately 9.5 feet bgs. Soil staining and odor was observed in numerous borings from approximately 1.5 feet bgs to the total depth drilled. PID readings ranged from 0 parts per million (ppm) to 3,424 ppm (Boring HA-43 at 9.5 feet bgs).

The analytical results from this investigation are discussed below, and the TPHg, TPHd, TPHo, and benzene concentrations are shown on Figure 3. The results are compared to available San Francisco Bay Regional Water Quality Control Board (SFRWQCB) Environmental Screening Levels (ESLs) for the protection of commercial/industrial workers from direct exposure to soils. The results that exceed the respective screening level are shown in color shading on Figure 3.

Volatile Organic Compounds

Twenty-three VOCs (including benzene, toluene, ethylbenzene, and xylenes [BTEX], methyl tert-butyl ether [MTBE], tert-butyl alcohol [TBA], and 1,2-dichloroethane) were detected at least once in 122 of the 134 soil samples collected and analyzed for VOCs. Detected concentrations were below the commercial/industrial worker SFRWQCB ESLs with the exception of benzene and ethylbenzene, as follows.

- Benzene was detected in 110 of 134 samples at concentrations up to 22,000 microgram per kilogram (µg/kg). Concentrations exceeding the commercial/industrial worker SFRWQCB ESL (3,700 µg/kg) were detected in 15 samples (at 12 locations).
- Ethylbenzene was detected in 83 of 134 samples at concentrations up to 50,000 µg/kg. Concentrations exceeding the commercial/industrial worker SFRWQCB ESL (24,000 µg/kg) were detected at six locations, which were co-located with benzene exceedences.

Petroleum Hydrocarbons

Petroleum hydrocarbons (TPHg, TPHd, and TPHo) were detected above laboratory reporting limits in 42 of the 44 soil borings, as follows.

- Concentrations of TPHg (C_6-C_{12}) greater than the commercial/industrial worker SFRWQCB ESL of 4,000 mg/kg were detected in four of 134 soil samples. The highest concentration (5,100 mg/kg) was detected at Boring HA-18 at an approximate depth of 10 feet.
- Concentrations of TPHd (C_{13}-C_{22}) greater than the commercial/industrial worker SFRWQCB ESL of 1,100 mg/kg were detected in 12 of 134 soil samples. The highest concentration (35,000 mg/kg) was detected in Boring HA-3 at a depth of 2 feet.
- TPHo (C_{23}-C_{44}) was not detected in the 134 soil samples analyzed at a concentration greater than the commercial/industrial worker SFRWQCB ESL of 100,000 mg/kg. The highest concentration detected was 78,000 mg/kg in Boring HA-3 at a depth of 2 feet.

Semi-Volatile Organic Compounds

Twenty soil samples collected from 20 borings at depths ranging from 2 to 10 feet bgs were selected for analysis of SVOCs. Seventeen SVOCs, including 15 PAHs, were detected in 14 of the 20 samples analyzed. Detected concentrations were below the commercial/industrial worker SFRWQCB ESLs, and based on this, do not pose a significant risk to human health.

Title 22 Metals

Twenty soil samples collected from 20 borings at depths ranging from 2 to 10 feet bgs were selected for analysis of Title 22 metals. Detected concentrations were below commercial/industrial worker SFRWQCB ESLs with the exception of arsenic. Arsenic concentrations ranged from 2.93 (Boring HA-44) to 7.86 mg/kg (Boring HA-1). The ESL for arsenic for the protection of commercial/industrial workers from direct exposure to soils is 1.6 mg/kg. However, the Department of Toxic Substances Control (DTSC) evaluated a large amount of arsenic data in Southern California and established an upper-bound background concentration of 12 mg/kg (Chernoff, et al., 2008). All the arsenic concentrations that were detected fall within the background concentration range; therefore, no further action with respect to arsenic should be required.

2.2.2 2014 Vadose Zone Supplemental Soil Investigation

On January 30, 2014, URS conducted a supplemental investigation of shallow (0 to 10 feet bgs) soils to further delineate subsurface impacts within the central, southern, and eastern portions of the Site to assist with remedial action planning (URS, 2014a). During this investigation, soil samples were collected from 12 hand-auger borings (HA-45 through HA-56) and analyzed for VOCs, TPHg, TPHd, and TPHo. The boring locations are shown on Figure 3.

The analytical results were compared to the commercial/industrial worker SFRWQCB ESL. The ESLs for benzene (3,700 µg/kg), TPHg (4,000 µg/kg), TPHd (1,100 µg/kg), and TPHo (100,000 µg/kg) were not exceeded in any of the 3- and 5-foot soil samples collected and analyzed. Benzene was detected in six of the 12 10-foot soil samples at concentrations exceeding its ESL, and TPHg was detected in one 10-foot soil sample above its ESL. The elevated concentrations of benzene and TPHg were located in the southern portion of the Site (HA-51, HA-52, and HA-53), in the southwestern portion of the Site (HA-55), in the north-central portion of the Site (HA-56), and in the east-central portion of the Site (HA-46). Additional VOCs were detected in many of the soil samples; however, the concentrations were well below established ESLs with the exception of ethylbenzene (ESL of 24,000 µg/kg) in the 10-foot samples collected from Borings HA-52 (27,000 µg/kg) and HA-56 (38,000 µg/kg).

2.3 SOIL EXCAVATION WORKPLAN

A Soil Excavation Workplan dated April 15, 2014 was prepared to address the impacted soil identified at the Site (URS, 2014b). The workplan was approved by the LARWQCB on April 21, 2014.

Based on the investigative results, the estimated total volume of in-place impacted soil was 4,318 in-place cubic yards (or 6,477 tons assuming 1.5 tons per cubic yard). Per the workplan, the soil was to be excavated to a maximum depth of 8 feet bgs in the central portion of the Site (shown in yellow on Figure 3), and 5 feet in the surrounding excavation areas (show in red on Figure 3). The proposed lateral excavation limits assumed impacts to soil extend approximately half way to the nearest non-impacted sampling location. This report documents the implementation of this workplan.

2.4 REMOVAL ACTION GOALS AND OBJECTIVES

Removal action objectives (RAOs) have been established for the Site to allow for its intended use as a commercial/industrial property and are protective of human health. Groundwater beneath the Site continues to be impacted from offsite sources.

The RAOs for the Site are:

- Minimize human exposure to volatile organic compounds (VOCs) and petroleum hydrocarbons in Site soils from dust (particulate) inhalation, dermal contact, and soil ingestion, such that the risk to human health for commercial/industrial land use meets regulatory standards;
- Minimize the potential for migration of VOCs from soil and groundwater into indoor air of future commercial/industrial buildings; and
- Obtain a "No Further Action (NFA)" decision for the vadose zone soil at the Site from the LARWQCB, with a commercial/industrial land use deed restriction, after completion of the removal action and prior to any redevelopment of the Site.

URS conducted a review of available published screening levels for use as target cleanup goals (TCGs). After an analysis of the available published screening levels, the SFRWQCB ESLs for the protection of commercial/industrial workers from direct exposure to soils (Table K-2. Direct Exposure Soil Screening Levels, Commercial/Industrial Worker Exposure Scenario; December 2013) were selected as the appropriate TCGs for soil risk at this Site. Cleanup to the ESLs provides protection for direct exposure to soil during construction activities and commercial/industrial use of the Site. The use of these ESLs for TCGs was negotiated with the LARWQCB and approved as part of the Soil Excavation Workplan. The TCGs are summarized in the following table.

Chemical of Concern (COC)	Target Cleanup Goal (TCG) For Soil	Basis
Total Petroleum Hydrocarbons		
TPHg (C_6-C_{12})	4,000 mg/kg	Commercial/Industrial Worker SFRWQCB ESLs
TPHd (C_{13}-C_{22})	1,100 mg/kg	
TPHo (C_{23}-C_{44})	100,000 mg/kg	

Chemical of Concern (COC)	Target Cleanup Goal (TCG) For Soil	Basis
Volatile Organic Compounds		
Benzene	3,700 µg/kg	Commercial/Industrial Worker SFRWQCB ESLs
Ethylbenzene	24,000 µg/kg	

The listed COCs in the above table are the target compounds. However, if other VOCs are detected, the concentrations were compared to the corresponding ESLs for the protection of commercial/industrial workers.

In order to achieve the RAOs, the following tasks were proposed in the Soil Excavation Workplan:

- Remediate VOC- and petroleum hydrocarbon-impacted soils from 0-8 feet bgs in the central portion of the Site (around HA-17, HA-18, and HA-26) that exceed TCGs for the protection of commercial/industrial workers from direct exposure to soils;
- Remediate petroleum hydrocarbon-impacted soil from 0-5 feet bgs in the western, northeastern, and southern portions of the Site (around HA-24, HA-32, and HA-3, respectively) that exceed TCGs for the protection of commercial/industrial workers from direct exposure to soils;
- Mitigate the potential for migration of VOCs from soil and groundwater into indoor air through construction of passive vapor barriers beneath future buildings; and
- Following soil removals, manage residual impacted soils at the Site through development and implementation of a Soil Management Plan.

Groundwater is shallow and is impacted with VOCs and TPH, and will be addressed separately in conjunction with offsite groundwater impacts that are from an offsite source. A deed restriction will be added to keep the land use as commercial/industrial and to require engineering controls for future buildings and institutional controls for future soil management.

2.5 NATURE AND EXTENT OF CONTAMINATION

Based on the 2012 and 2014 vadose zone soil investigations, VOCs and petroleum hydrocarbons were identified in the shallow soils at concentrations that posed a potential human health risk to commercial/industrial workers. Two VOCs (benzene and ethylbenzene) were detected at concentrations above the SFRWQCB ESLs for the protection of commercial/industrial workers from direct exposure to soils in 21 and 8 samples, respectively. Most of these exceedences were in samples collected at 10 feet bgs, where the exposure pathway is incomplete for direct contact. Only three 5-foot samples had benzene concentrations above the commercial/industrial worker ESL of 3,700 µg/kg – HA-17 (4,100 µg/kg), HA-18 (7,700 µg/kg), and HA-26 (5,900 µg/kg). Based on these detections, excavation to a maximum depth of 8 feet bgs in the area of these three borings was proposed, as shown on Figure 3.

The highest concentrations of TPH were identified in the central and southern portions of the Site (Figure 3). Impacts in the northern and western parts of the Site were generally below regulatory screening levels. The maximum concentration of TPHg (5,100 mg/kg) was detected in a 10-foot sample at HA-18 located in the central portion of the Site; the maximum concentrations of TPHd and TPHo (35,000 and 78,000 mg/kg, respectively) were detected in the 2-foot sample from HA-3 located along the southern edge of the Site.

Based on the RAOs, excavation and offsite disposal of VOC- and petroleum hydrocarbon-impacted soil located in the central portion of the Site (HA-17, HA-18, and HA-26) in the upper 8 feet was proposed to allow for redevelopment of the Site with minimal health and safety concerns. Additionally, excavation and offsite disposal of TPHd-impacted soils in the vicinity of Borings HA-3, HA-24, and HA-32 in the southern, western, and northern portions of the Site, respectively, was proposed to a maximum depth of 5 feet bgs (Figure 3).

The field procedures and methods that will be used to implement the soil excavation activities at the Site are described in this section.

3.1 PERMITTING

Necessary permits and/or approvals required to implement the soil excavation activities were obtained prior to any field activities. A grading permit was obtained from the County of Los Angeles Department of Public Works, Building and Safety/Land Development Division for the excavation work. A copy of the grading permit is included in Appendix A.

South Coast Air Quality Management District (SCAQMD) Rule 1166, Volatile Organic Compound Emissions from Decontamination of Soil, sets forth the requirements to control the emission of VOCs generated from the excavation and handling of VOC-contaminated soil. VOC-contaminated soil is defined as having VOC concentrations of 50 parts per million (ppm) or greater as measured by a hexane-calibrated organic vapor analyzer (OVA). A Site Specific Rule 1166 Contaminated Soil Mitigation Plan ("Site Specific Plan") was approved by the SCAQMD for the excavation and handling of potential VOC-contaminated soil at the Site (Mitigation Plan No. 567206). A copy of the Site Specific Plan is included in Appendix A. Per the Site Specific Plan, the SCAQMD was notified of the VOC-contaminated soil and Rule 1166 monitoring was conducted as discussed in Section 3.7.3. Vapor monitoring for health and safety purposes was also conducted during the soil removal activities as discussed below in Section 3.7.2.

3.2 CONTRACTOR SCOPES OF WORK

URS, on behalf of SOPUS, managed the project and performed field oversight, dust monitoring, air monitoring for health and safety purposes, soil confirmation sampling, data evaluation, and reporting. Innovative Construction Solutions, Inc. (ICS), located in Santa Ana, California and a subcontractor to URS, performed soil excavation, loading, dust control and Rule 1166 monitoring. ICS is a licensed California General Engineering 'A' contractor with hazardous materials certification.

ICS subcontracted West Coast Sand & Gravel, Inc. to haul soil to the disposal facility and bring in clean fill, Smith-Emery Company to perform soil compaction testing, and Soil Safe of California, Inc. (Soil Safe) to thermally treat and recycle the non-hazardous soil waste at its facility in Adelanto, California.

URS subcontracted Eurofins Calscience, Inc. (Calscience) to analyze confirmation soil samples at its laboratory in Garden Grove, California. Calscience is accredited to perform the chemical analyses under the National Environmental Laboratory Accreditation Program (NELAP ID 03220CA).

A URS Field Manager was onsite for the duration of the remedial activities to monitor and document the soil removal activities.

3.3 SITE PREPARATION ACTIVITIES

Prior to implementation of the soil excavation activities, the following were conducted:

- Surveyed the excavation areas and marked the limits with flags and paint
- Installed low visibility windscreen on the previously installed fencing around the perimeter of the Site
- Notified Underground Service Alert (Dig Alert) at least two days prior to the start of field work to allow for member utility companies to mark underground lines that might conflict with the proposed removal actions, and
- Profiled the impacted soil to be removed using existing investigative data and obtained approval from the receiving facility, as discussed below in Section 3.4.2.

3.4 SUMMARY OF SOIL REMOVAL ACTIVITIES

Between September 9 and October 8, 2014, 7,255.69 tons (approximately 4,837 in-place cubic yards assuming 1.5 tons per cubic yard) of impacted soil were excavated from the Site and disposed offsite. The final limits of the four excavations (Areas 1 through 4) are shown on Figure 4. Details for excavation Areas 1 through 4 are shown on Figures 4A through 4D, respectively.

An excavator was used to excavate the soil. The soil was direct loaded into end dump trucks and immediately transported offsite to the disposal facility. As the soil was excavated, a limited quantity of clean overburden was segregated and temporarily stockpiled. Soil that was not stained and had low organic vapor readings (less than 50 parts per million [ppm]) was segregated. This soil was sampled and reused onsite as backfill, as discussed below in Section 3.4.1. Dust and vapor suppression procedures implemented during the excavation activities are discussed below in Section 3.5.

Groundwater monitoring wells currently onsite were protected in-place during the soil excavation activities. Existing shallow vapor probes/vapor wells within the excavation footprints were removed during the excavation activities.

For safety purposes, temporary barricades constructed of pylons and snow fencing were placed approximately 5 to 10 feet from the edge of each of the excavations while they remained open pending LARWQCB approval to backfill.

Once the soil had been excavated to the pre-established dimensions and any extraneous/loose soil had been removed, confirmation soil samples were collected from the sidewalls of the excavations. Based on the RAOs for this removal action, soil below 5 feet in Areas 1 through 3 and soil below 8 feet in Area 4 remained in place so bottom confirmation soil sampling was not conducted. If a chemical concentration in a confirmation sidewall sample exceeded the Site-specific cleanup goals listed above in Section 2.4, additional soil was removed in a lateral direction and additional sidewall confirmation soil samples were collected from the newly-exposed excavation surface. This process was repeated until confirmation sample results below the RAOs were obtained. The confirmation sampling program is discussed in Section 4.

3.4.1 Overburden Segregation and Sampling

Excavated soil was screened by the contractor with a photo-ionization detector (PID) in accordance with SCAQMD Rule 1166 (see Section 3.7.3 below). Overburden soils that were not stained and had PID readings less than 50 ppm were stockpiled and considered potentially suitable for re-use as backfill. Three small stockpiles of overburden soil, a total of approximately 100 cubic yards, were generated during the excavation activities. Three soil samples (one from each stockpile) were collected and analyzed for VOCs by U.S. Environmental Protection Agency (USEPA) Method 5035/8260B and TPH C_6-C_{44} by USEPA Method 8015B (M) to assess whether the stockpiled soils met the Site's cleanup goals and could be re-used as backfill. The samples were handled as described in Section 4.1 below for confirmation soil samples, and analyzed by Calscience. Copies of the laboratory reports are included in Appendix B.

Based on the stockpile sampling analytical results, which are summarized in Table 1, the overburden soil was deemed environmentally suitable for reuse onsite as backfill. However, two of the stockpiles (represented by samples SP1-091614 and SP2-091614) were deemed geotechnically unsuitable for reuse. Thus, only about 25 cubic yards of overburden soil (represented by sample SP3) were used as backfill, as discussed in Section 5.

3.4.2 Offsite Soil Disposal

The soil excavated from the Site was transported offsite for thermal treatment and recycling at the Soil Safe treatment facility located in Adelanto, California. The soil was profiled as non-hazardous waste using existing investigative data, and the profile was accepted by the disposal facility prior to transport. A copy of the facility's acceptance letter is included in Appendix C.

The soil was direct-loaded into the transport trucks using the excavator. A total of 7,255.69 tons of impacted soil were removed from the Site and transported to Soil Safe. A copy of the tonnage log and copies of the non-hazardous waste manifests and weight tickets for the removed soil are provided in Appendix C. As indicated in the tonnage log, three trucks loaded on September 23, 2014, arrived at Soil Safe on September 24, 2014 (no excavation occurred on September 24, 2014 so Rule 1166 monitoring was not conducted that day).

3.5 CONTROL MEASURES

3.5.1 Dust Suppression

Dust suppression was performed and control measures were implemented at the Site during all soil handling activities, including soil excavation, load-out, and backfilling, to reduce the potential for fugitive dust and migration of contamination in compliance with requirements contained in SCAQMD Rule 403. Dust suppression was performed by lightly spraying or misting the active work areas with water. This included spraying the working face of the soil excavation, the soil in the excavator bucket during excavation and loading activities, and the onsite traffic routes.

Additional dust control measures included the following:

- The Site perimeter was secured with fencing fitted with low permeability windscreen.
- Temporary overburden soil stockpiles were covered with plastic sheeting to control dust. The stockpiles remained covered until reuse.
- Efforts were made to minimize the soil drop height from the excavator bucket into the transport trucks.
- After the soil was loaded into the transport trucks, the soil was covered to prevent soil from spilling out of the truck during transport to the disposal facility.
- While on the property, all vehicles maintained slow speeds (i.e., less than 5 miles per hour) for safety purposes and for dust control measures.
- Track-out of particulates onto the adjacent public paved roadways was controlled by placing shaker plates at the Site exit.
- Street sweeping of the adjacent public streets was implemented to reduce the potential for fugitive dust and migration of contamination.

Dust monitoring was conducted as described below in Section 3.7.1 in accordance with the site-specific HSP and SCAQMD Rule 403.

3.5.2 Odor and Vapor Control

In addition to controlling fugitive dust, the measures listed above assisted in controlling vapors and odors emanating from the TPH- and VOC-impacted excavated soil and working face. Further measures to control odor and vapor included the following:

- ODEX™, an odor mitigating agent, was added to the dust control water spray during the soil excavation and loading activities.
- During the excavation of Area 4, foam suppressant was utilized twice as an alternative method to control vapors and odors; however, based on the size of the excavation area and requirements to stay at least 3 feet from the top of the excavation walls, it was difficult to get the foam at the appropriate locations (along the sidewalls, working face, and excavator bucket).

Vapor monitoring was conducted as described below in Sections 3.7.2 and 3.7.3 in accordance with the site-specific HSP and SCAQMD Rule 1166.

3.6 HEALTH AND SAFETY PLAN

Prior to beginning fieldwork, URS prepared a site-specific health and safety plan (HSP) pursuant to Title 29 Code of Federal Regulations, Section 1910.120. The HSP was also prepared according to California Division of Occupational Safety and Health (Cal/OSHA) requirements. URS field

personnel reviewed the HSP prior to commencing field activities, and a copy of the HSP was kept onsite during excavation activities at all times. Prior to initiation of field activities each day, a Site safety briefing was conducted to identify potential physical and chemical hazards and outline measures to be taken in the event of an emergency.

3.7 AIR MONITORING

3.7.1 Dust Monitoring

Airborne dust monitoring was conducted during the excavation, loading, and backfilling activities between September 9 and October 9, 2014, to verify and document the effectiveness of dust suppression measures in compliance with SCAQMD Rule 403 for fugitive dust emissions. Based on the total volume of soil excavated, notification or filing of a Fugitive Dust Emission Control Plan was not required.

Dust monitoring was conducted during soil handling activities using portable, hand-held, continuous real-time particulate dust monitors to verify and document dust suppression efforts. Air monitoring for dust was performed during the soil excavation, loading, and backfilling activities at the perimeter of the Site utilizing an upwind/downwind sampling approach to ensure compliance with the SCAQMD Rule 403 for fugitive dust control, with one upwind, one downwind, and one sensitive receptor location (the nearest sensitive receptors are the residences located adjacent to the north). The locations of the dust monitors are depicted on figures included in Appendix D. The real-time and time weighted average (TWA) particulate readings were checked and recorded by onsite personnel approximately every 15 minutes.

The SCAQMD Rule 403 action level for the difference in dust readings between upwind and downwind locations is 50 micrograms per cubic meter ($\mu g/m^3$), based on dust particles measuring 10 micrometers or less (PM10). This action level (50 $\mu g/m^3$) was selected as the action level for dust monitoring activities at the perimeter of the property (difference between upwind and downwind readings).

The dust monitoring logs recording the upwind and downwind perimeter readings, as well as the excavation area and OBZ readings, are included in Appendix D. The particulate readings are presented in mg/m^3. As noted in the logs, the difference between the upwind and downwind readings exceeded the Community Action Level of 50 $\mu g/m^3$ (0.05 mg/m^3) for dust several times, predominantly on the first day of excavation activities (September 9, 2014). The initial placement of the downwind monitor in close proximity to the exiting transport trucks is believed to be the cause of most of the elevated readings. Subsequently, additional dust control was conducted within the onsite traffic areas and the downwind monitor was located in an area more representative of downwind Site conditions.

3.7.2 Health and Safety Monitoring

During the soil excavation activities, the breathing zone in the work area was monitored for organic vapors, typically every 15 minutes, using a calibrated PID, in accordance with the HSP. Copies of the VOC monitoring logs are included in Appendix E. Based on the PID readings of greater than 10 ppm in the workers' breathing zone, an upgrade to Level C PPE (half-face respirator) was necessary on September 23, 29, and 30, and October 2, 3, and 8, 2014.

3.7.3 Rule 1166 Monitoring

During the soil excavation activities, VOC monitoring of the soil was conducted in accordance with the Site Specific Rule 1166 Contaminated Soil Mitigation Plan (see Appendix A). The initial notification to the SCAQMD as required by the Rule 1166 permit was made on September 9, 2014. A copy of the notification (No. 374127) is included in Appendix F. In accordance with SCAQMD requirements, a PID, calibrated to hexane according to manufacturer's specifications, was used to monitor and record VOC emissions from the excavated soils during excavation. The soils were monitored in the excavator bucket, approximately 3 inches off the top of the soil surface. The PID calibration and measurements were recorded on designated Rule 1166 Soil Monitoring Record forms, copies of which are included in Appendix F.

SCAQMD was notified within 24 hours of detecting soil with PID concentration greater than 50 ppm on September 10, 2014. SCAQMD was notified within 1 hour of detecting soil with PID concentration greater than 1,000 ppm on September 11, 2014. Copies of the notifications (Nos. 374365 and 374496) are included in Appendix F.

3.7.4 Odor Complaints

During the excavation activities, complaints from neighbors were received. The initial compliant was directed to SOPUS and occurred on September 18, 2014. A tenant in the downwind apartments east of S. Perry Street indicated that she had issues with odor for the last 4 months. Following receipt of the complaint, a subsequent assessment indicated that the odor was apparently coming from a storm drain manhole near the corner of S. Perry and Carson Streets. The SCAQMD was notified of this complaint and further assessment of the storm drain odor is ongoing.

Additional complaints were received by SCAQMD during the excavation of Area 4 and SCAQMD staff visited the site multiple times. URS filed a public records request for complaints filed under the Site Specific Plan on October 3, 2014, and received two complaint reports from the SCAQMD. Copies of the complaint reports are included as Appendix G.

Confirmation soil sampling was conducted after the soil excavations were completed to the proposed limits to verify that the target cleanup goals for the COCs presented in Section 2.4 were achieved. The sampling and analysis were conducted in accordance with the applicable quality control procedures described in the Soil Excavation Workplan (URS, 2014b).

The soil sampling procedures, analytical program, and results are discussed in the following sections.

4.1 CONFIRMATION SOIL SAMPLING PROCEDURES

The confirmation soil sampling locations for the remedial excavations are depicted on Figures 4A through 4D for Areas 1 through 4, respectively. For the 5-foot deep excavations, the sidewall samples were collected at approximately 2.5 feet bgs. For the 8-foot excavation, the sidewall samples were collected at approximately 6 feet bgs. Per the approved Soil Excavation Workplan, bottom confirmation soil samples were not collected as residual mass is still present in deeper soil and shallow groundwater.

For the 5-foot deep Areas 1, 2, and 3, a ramp was constructed to provide ingress and egress from the excavations and confirmation soil samples were collected directly from the sidewalls into laboratory-supplied sample containers. For the 8-foot deep Area 4, the confirmation soil samples were generally collected using the excavator bucket, then the soil was transferred into the sample containers from the bucket[1]. For both sampling methods, there was no need for the decontamination of sampling equipment or the collection of equipment blanks. Soil for TPH analysis was contained in 4-ounce glass jars, while the soil samples for VOC analyses were collected in Encore samples in accordance with USEPA Method 5035.

The soil samples were labeled with the following information: identification (ID) number, project number, Site name, date and time of collection, requested analysis, and the sampler's initials. The confirmation samples were designated with the letters "CS" with the respective excavation area, followed with the sample number and sample depth, e.g., CS1-01-2.5. Blind duplicate samples, which were analyzed at a rate of at least 10 percent of the primary samples, were identified using the designator "DUP" (e.g., DUP-1). Where additional excavation and confirmation sampling were necessary due to the presence of elevated COCs, the step-out confirmation samples were identified with a letter suffix (e.g., CS4-09A-6.0).

4.2 CONFIRMATION SOIL SAMPLE ANALYSIS

The confirmation soil samples were submitted to Calscience for analysis. The laboratory job number is included with each sample in the confirmation sampling summary table for ease in cross-referencing the laboratory reports, which are presented in Appendix H. The samples were placed in coolers chilled with ice pending delivery to the laboratory. Chain-of-custody documentation was

[1] Confirmation sample CS4-09F-6.0 was collected using hand-auger equipment to assess the lateral extent of over-excavation that would be necessary in order to coordinate scheduling of transport trucks.

maintained for the soil samples and was delivered with the samples to the laboratory. Copies of the chain-of custody records are included in the laboratory reports in Appendix H.

The confirmation soil samples were analyzed for VOCs by USEPA Method 8260B/5035 and TPH (C_6-C_{44}) by USEPA Method 8015B (M).

4.3 QUALITY ASSURANCE/QUALITY CONTROL

4.3.1 Quality Control Samples

Quality assurance/quality control (QA/QC) samples were collected as part of the overall QA/QC program. These samples include laboratory quality control (QC) samples such as laboratory reagent blanks and matrix spike samples and field QC samples such as field duplicates.

Field duplicate samples were collected and analyzed to evaluate sampling and analytical precision. Field duplicates were collected as sub-samples of the original sample material and analyzed in the same manner as the primary samples. Per the approved Soil Excavation Workplan (URS, 2014b), duplicate soil samples were collected and analyzed at a rate of at least 10 percent of the total number of primary final confirmation samples.

4.3.2 Data Validation

URS performed a limited data validation, comparable to a Tier II data validation, on the confirmation soil sampling analytical data. The data for the field QC samples (field duplicates) were reviewed as part of the data validation, along with laboratory quality control results. A Data Validation Memorandum for the laboratory reports reviewed is presented in Appendix I.

The limited data validation used the same criteria contained in the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review (USEPA, 2008); however, the review did not include checking the raw data, calibrations, and calculations. Instead, limited data validation utilizes the data summary and QA/QC summary provided in the laboratory standard report. Data from the analyses were evaluated in the following areas based on criteria for quality control samples:

- Data completeness
- Holding times and preservation
- Method blanks
- System monitoring compounds (surrogates)
- Laboratory control samples
- Matrix spike/matrix spike duplicates
- Field duplicates, and
- Compound identification and quantitation.

The following is a summary of the limited data validation for soil samples associated with confirmation soil sampling:

- Due to matrix interferences, the results for TPH C_6-C_{44} (total) for five samples were qualified as estimated ("J/UJ").
- Due to field duplicate imprecision, the results for a number of USEPA Method 8260B analytes for two field duplicate pairs were qualified as estimated ("J").

The soil data qualifiers are included with the confirmation analytical results in Table 2. Overall, the soil data met the data quality objectives as described in the Data Validation Memorandum provided in Appendix I.

4.4 CONFIRMATION SOIL SAMPLING ANALYTICAL RESULTS

The analytical results for the confirmation soil sampling are summarized in Table 2. The confirmation soil sampling locations for the excavation areas are shown on Figures 4A through 4D with the TPH and benzene results. Sample results exceeding the TCGs are highlighted in Table 2 and on Figure 4D. The confirmation soil samples that were subsequently excavated are gray shaded in Table 2. Copies of the laboratory analytical reports and chain-of custody records for the confirmation soil samples are included as Appendix H.

For primary and duplicate samples, the highest concentration for the pair was used to represent the confirmation sample location.

As discussed in the Soil Excavation Workplan (URS, 2014b), the excavations were considered complete if the confirmation analytical results did not exceed the TCGs for soil presented in Section 2.4. If the detected COC concentrations in the confirmation soil samples exceeded the TCGs based on chemical analysis, further excavation and confirmation sampling were conducted until the RAOs were met.

4.4.1 Excavation Area 1

TPH-impacted soil was excavated from Area 1 to a total depth of 5 feet bgs. The final limits of the excavation are shown on Figure 4A. Analytical results for the eight sidewall samples collected were below the TCGs (Table 2). The maximum detected concentrations of TPHg, TPHd, TPHo, and benzene were 67, 289, and 488 mg/kg and 1,000 µg/kg, respectively.

The confirmation soil sampling results were submitted to the LARWQCB for review, and the LARWQCB provided verbal approval to backfill. The excavation was subsequently backfilled as discussed in Section 5.

4.4.2 Excavation Area 2

TPH-impacted soil was excavated from Area 2 to a total depth of 5 feet bgs and lawfully disposed of offsite. The final limits of the excavation are shown on Figure 4B. Analytical results for the eight

sidewall samples collected were below the TCGs (Table 2). The maximum detected concentrations of TPHg and benzene were 6.3 mg/kg and 61 µg/kg, respectively. Concentrations of TPHd and TPHo were not detected above the reporting limits.

The confirmation soil sampling results were submitted to the LARWQCB for review, and the LARWQCB provided verbal approval to backfill. The excavation was subsequently backfilled as discussed in Section 5.

4.4.3 Excavation Area 3

TPH-impacted soil was excavated from Area 3 to a total depth of 5 feet. The final limits of the excavation are shown on Figure 4C. Analytical results for the four sidewall samples collected were below the TCGs (Table 2). The maximum detected concentrations of TPHg, TPHd, TPHo, and benzene were 64, 124, and 618 mg/kg and 58 µg/kg, respectively.

The confirmation soil sampling results were submitted to the LARWQCB for review, and the LARWQCB provided verbal approval to backfill. The excavation was subsequently backfilled as discussed in Section 5.

4.4.4 Excavation Area 4

Soil impacted with benzene and ethylbenzene was excavated from Area 4 to a total depth of 8 feet bgs. The final limits of the excavation are shown on Figure 4D. Analytical results for three of the 11 initial sidewall samples collected exceeded the TCGs (Table 2). TPHg was detected in sample CS4-07-6.0 at a concentration of 7,190 mg/kg, and benzene was detected in samples CS4-08-6.0 and CS4-09-6.0 at concentrations of 5,000 and 5,100 µg/kg, respectively. Several rounds of subsequent excavation were conducted in 5-foot lateral intervals, and additional confirmation samples were collected from the newly exposed sidewalls. Concentrations of COCs, namely TPHg and benzene, in the final confirmation samples, CS4-07D-6.0, CS4-08B-6.0, and CS4-09F-6.0, were below the TCGs (Table 2). The maximum detected concentrations of TPHg, TPHd, and benzene in the final confirmation samples were 2,370 and 41 mg/kg and 2,800 µg/kg, respectively. Concentrations of TPHo were not detected above the reporting limits in any of the Area 4 confirmation samples.

The confirmation soil sampling results were submitted to the LARWQCB for review, and the LARWQCB provided verbal approval to backfill. The excavation was subsequently backfilled as discussed in Section 5.

During the soil removal activities, URS requested approval from the LARWQCB to backfill the excavation areas in advance of formal LARWQCB approval of this completion report. The excavation areas were backfilled with imported clean fill or with an approximate 50:50 mix of crushed concrete and imported fill and a small amount of clean overburden soil.

The crushed concrete was generated during the demolition of the facility and had been stockpiled onsite (Figure 3). Prior to use as backfill, six samples of the crushed concrete were collected and analyzed for TPHg, TPHd, and TPHo by USEPA Method 8015B (M), Title 22 metals by USEPA Method 6010B/7471A, organochlorine pesticides (OCPs) by USEPA Method 8081A, PAHs by USEPA Method 8270C Selected Ion Monitoring (SIM), and asbestos by Polarized Light Microscopy (PLM). The Calscience laboratory reports are included in Appendix J, and the analytical results are summarized in Table 3. Based on the sampling results, the crushed concrete was deemed suitable for reuse onsite as backfill, which was approved by the LARWQCB in a letter dated September 16, 2014.

The imported fill was Irwindale Fill Sand supplied by Hanson Aggregates produced at their Irwindale California Plant SMARA No. 91-19-0025. Per the facility, the sand is produced from virgin aggregate materials and does not contain claimed or recycled materials. A representative sample of the sand was collected by others (for another import project) and analyzed for petroleum hydrocarbons, VOCs, OCPs, and metals. Based on the sampling results, the fill was deemed suitable for use as backfill at the Site.

The backfilling activities occurred between September 18 and October 9, 2014. The crushed concrete and imported sand were mixed with a loader, then the backfill was placed in lifts of approximately 12 inches to maintain compaction requirements. The loader and a sheepsfoot roller were used to compact the fill. The material was moistened as it was placed in the excavations. In-situ density tests conducted by Smith-Emery Company indicated a minimum relative compaction of 90 percent was achieved relative to the maximum dry density obtained from ASTM D1557.

This Soil Excavation Report describes the removal activities conducted to address shallow vadose zone impacted soils at the Carson Air Harbor property. The soil removal activities included the excavation and offsite disposal of TPH-impacted soil to 5 feet bgs and VOC-impacted soil to approximately 8 feet bgs.

Site preparation activities began on September 8, 2014, and soil excavation, loading, transport, offsite disposal were conducted between September 9 and October 8, 2014, in accordance with procedures described in the LARWQCB-approved Soil Excavation Workplan. A total of 7,255.69 tons (approximately 4,837 in-place cubic yards assuming 1.5 tons per cubic yard) of soil was excavated from the Site and was transported to the Soil Safe treatment facility in Adelanto, California, for thermal treatment and recycling.

Based on confirmation soil sampling for each of the excavations, the cleanup criteria set out in the workplan have been met. URS has also prepared a Soil Management Plan for the Site to mitigate potential future exposure to residual petroleum hydrocarbons and odor generation during invasive activities onsite, particularly redevelopment. This plan is included in Appendix K and will be included as part of the sales agreement for this property.

SOPUS is in the process of adding a deed restriction to the property limiting future use to commercial/industrial use only. SOPUS is also requiring that engineered controls be applied to any building or structure that is constructed on the Site that has indoor air in order to prevent vapor intrusion from the subsurface (i.e., a vapor barrier).

Based on removal of soil above the cleanup criteria and additional controls placed on the property to limit potential exposure to remaining impacted soil and groundwater, URS, on behalf of SOPUS, is requesting that the RWQCB issue a no further action for vadose zone soils at this Site.

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TABLE 1
OVERBURDEN STOCKPILE SAMPLING ANALYTICAL RESULTS
CARSON AIR HARBOR
Carson, California
(Page 1 of 1)

Sample ID		Target Cleanup Goal*	SP1-091614	SP2-091614	SP3
Sample Date			9/16/2014	9/16/2014	9/24/2014
Sample Delivery Group	Unit		14-09-1261	14-09-1261	14-09-1926
Total Petroleum Hydrocarbons (TPH)					
TPH in the Gasoline Range (C_6-C_{12})	mg/kg	**4,000**	ND	ND	**500**
TPH in the Diesel Range (C_{13}-C_{22})	mg/kg	**1,100**	**24**	ND	**29.4**
TPH in the Motor Oil Range (C_{23}-C_{44})	mg/kg	**100,000**	**113**	**303**	**231**
TPH Total (C_6-C_{44})	mg/kg	--	**140**	**320**	**760 J**
Volatile Organic Compounds (VOCs)					
Benzene	µg/kg	**3,700**	**1.9**	**6.3**	**3.6**
n-Butylbenzene	µg/kg	--	< 1.1	< 0.90	**6.4**
sec-Butylbenzene	µg/kg	--	< 1.1	< 0.90	**2.9**
Ethylbenzene	µg/kg	**24,000**	< 1.1	**1.3**	**2.5**
Isopropylbenzene	µg/kg	--	< 1.1	< 0.90	**1.4**
p-Isopropyltoluene	µg/kg	--	< 1.1	< 0.90	**3.3**
n-Propylbenzene	µg/kg	--	< 2.1	< 1.8	**1.9**
Toluene	µg/kg	**4,900,000**	**1.6**	**6.3**	**3.4**
1,2,4-Trimethylbenzene	µg/kg	--	< 2.1	< 1.8	**11**
1,3,5-Trimethylbenzene	µg/kg	--	< 2.1	< 1.8	**25**
Xylenes, Total	µg/kg	**2,600,000**	< 1.1	< 0.90	**13**
o-Xylene	µg/kg	--	< 1.1	< 0.90	**5.6**
p/m-Xylene	µg/kg	--	< 2.1	< 1.8	**7.6**
All Other VOC Compounds	µg/kg	--	ND	ND	ND

Notes:

* Screening levels are the San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels (ESLs) for the protection of commercial/industrial workers (Table K-2. Direct Exposure Soil Screening Levels, Commercial/Industrial Worker Exposure Scenario; December 2013).

-- No screening level established

Volatile Organic Compounds by U.S. Environmental Protection Agency (USEPA) Method 8260B/5035

TPH - Total Petroleum Hydrocarbons

TPH (C6-C44) by USEPA Method 8015B (M)

µg/kg - micrograms per kilogram

mg/kg - milligrams per kilogram

ND - Not detected above the laboratory reporting limit

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

TABLE 2
CONFIRMATION SOIL SAMPLING ANALYTICAL RESULTS
CARSON AIR HARBOR
Carson, California
(Page 1 of 5)

Excavation ID		Target Cleanup Goals*	Excavation Area 1									Excavation Area 2		
Sample ID			CS1-01-2.5	CS1-02-2.5	CS1-03-2.5	CS1-04-2.5	CS1-05-2.5	CS1-06-2.5	DUP-1 (CS1-06-2.5)	CS1-07-2.5	CS1-08-2.5	CS2-01-2.5	CS2-02-2.5	CS2-03-2.5
Sample Depth (ft bgs)			2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Sample Date			9/11/2014	9/11/2014	9/11/2014	9/11/2014	9/11/2014	9/12/2014	9/12/2014	9/12/2014	9/12/2014	9/15/2014	9/15/2014	9/15/2014
Sample Delivery Group	Unit		14-09-0932	14-09-0932	14-09-0932	14-09-0932	14-09-0932	14-09-1065	14-09-1065	14-09-1065	14-09-1065	14-09-1164	14-09-1164	14-09-1164
Total Petroleum Hydrocarbons (TPH)														
TPH in the Gasoline Range (C_6-C_{12})	mg/kg	4,000	5.2	ND	ND	67	ND	ND	5.7	58	ND	6.3	ND	ND
TPH in the Diesel Range (C_{13}-C_{22})	mg/kg	1,100	ND	ND	ND	289	ND	ND	ND	207	15	ND	ND	ND
TPH in the Motor Oil Range (C_{23}-C_{44})	mg/kg	100,000	ND	ND	ND	366	ND	7.3	ND	488	77	ND	ND	ND
TPH Total (C_6-C_{44})	mg/kg	--	12	< 5.0	< 5.0	720	7.0	18	15	750	93	12	< 5.0	< 5.0
Volatile Organic Compounds (VOCs)														
Acetone	µg/kg	590,000,000	120	78	< 51	< 51	< 4,800	< 5,100	< 5,000	130	58	52	< 46	< 52
Benzene	µg/kg	3,700	44	36	4.9	95	1,000	890	910	200	5.1	61	< 0.93	< 1.0
2-Butanone	µg/kg	250,000,000	27	21	< 20	< 21	< 1,900	< 2,000	< 2,000	45	< 18	< 20	< 19	< 21
tert-Butyl Alcohol (TBA)	µg/kg	--	< 20	< 20	< 20	< 21	< 1,900	< 2,000	< 2,000	< 20	< 18	< 20	< 19	< 21
n-Butylbenzene	µg/kg	--	12	< 0.98	< 1.0	< 1.0	100	160	140	22	1.9	< 1.0	< 0.93	< 1.0
sec-Butylbenzene	µg/kg	--	5.6	1.1	< 1.0	< 1.0	< 96	< 100	< 100	11	< 0.92	3.5	< 0.93	< 1.0
Di-isopropyl Ether (DIPE)	µg/kg	--	3.1	1.5	< 1.0	5.5	< 96	< 100	< 100	5.1	< 0.92	3.5	< 0.93	< 1.0
Ethylbenzene	µg/kg	24,000	19	8.7	< 1.0	3.3	1,100	1,300	1,200	460	10	75	< 0.93	< 1.0
Isopropylbenzene	µg/kg	--	18	1.5	< 1.0	1.4	140	230	210	42	1.9	17	< 0.93	< 1.0
p-Isopropyltoluene	µg/kg	--	6.3	< 0.98	< 1.0	1.2	< 96	180	160	22	1.5	5.9	< 0.93	< 1.0
Naphthalene	µg/kg	15,000	< 9.9	< 9.8	< 10	< 10	< 960	< 1,000	< 1,000	21	< 9.2	< 10	< 9.3	< 10
n-Propylbenzene	µg/kg	--	29	< 2.0	< 2.0	< 2.1	250	410	360	61	2.9	21	< 1.9	< 2.1
Toluene	µg/kg	4,900,000	8.5	40	5.2	20	360	150	150	120	1.8	6.5	< 0.93	< 1.0
1,2,4-Trimethylbenzene	µg/kg	--	99	8.5	< 2.0	36	1,700	2,700	2,300	34	17	4.4	< 1.9	< 2.1
1,3,5-Trimethylbenzene	µg/kg	--	12	< 2.0	< 2.0	< 2.1	280	210	< 200	39	6.3	11	< 1.9	< 2.1
Xylenes, Total	µg/kg	2,600,000	27	33	< 1.0	35	1,300	940	830	180	12	28	< 0.93	< 1.0
o-Xylene	µg/kg	--	9.8	6.5	< 1.0	4.0	< 96	< 100	< 100	49	2.7	< 1.0	< 0.93	< 1.0
p/m-Xylene	µg/kg	--	17	26	< 2.0	31	1,300	940	830	130	8.8	28	< 1.9	< 2.1
All Other VOC Compounds	µg/kg	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

* Target cleanup goals (TGCs) are the San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels (ESLs) for the protection of commercial/industrial workers (Table K-2. Direct Exposure Soil Screening Levels, Commercial/Industrial Worker Exposure Scenario; December 2013).

-- No screening level established

Volatile Organic Compounds by U.S. Environmental Protection Agency (USEPA) Method 8260B/5035

TPH - Total Petroleum Hydrocarbons

TPH (C_6-C_{44}) by USEPA Method 8015B (M)

µg/kg - micrograms per kilogram

mg/kg - milligrams per kilogram

ND - Not detected above the laboratory reporting limit

Yellow shading indicates that concentration exceeds the TGC.

Soil represented by the sample was subsequently excavated.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

TABLE 2
CONFIRMATION SOIL SAMPLING ANALYTICAL RESULTS
CARSON AIR HARBOR
Carson, California
(Page 2 of 5)

Excavation ID		Target Cleanup Goals*	Excavation Area 2						Excavation Area 3			
Sample ID			CS2-04-2.5	CS2-05-2.5	CS2-06-2.5	DUP-2 (CS2-06-2.5)	CS2-07-2.5	CS2-08-2.5	CS3-01-2.5	CS3-02-2.5	CS3-03-2.5	CS3-04-2.5
Sample Depth (ft bgs)			2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Sample Date			9/15/2014	9/15/2014	9/16/2014	9/16/2014	9/16/2014	9/16/2014	9/10/2014	9/10/2014	9/10/2014	9/10/2014
Sample Delivery Group	Unit		14-09-1164	14-09-1164	14-09-1262	14-09-1262	14-09-1262	14-09-1262	14-09-0751	14-09-0751	14-09-0751	14-09-0751
Total Petroleum Hydrocarbons (TPH)												
TPH in the Gasoline Range (C_6-C_{12})	mg/kg	4,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	64
TPH in the Diesel Range (C_{13}-C_{22})	mg/kg	1,100	ND	ND	ND	ND	ND	ND	ND	ND	ND	124
TPH in the Motor Oil Range (C_{23}-C_{44})	mg/kg	100,000	ND	ND	ND	ND	ND	ND	75	ND	ND	618
TPH Total (C_6-C_{44})	mg/kg	--	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	83 J	6.2 J	< 5.0 UJ	800 J
Volatile Organic Compounds (VOCs)												
Acetone	µg/kg	590,000,000	< 45	< 51	< 48	< 52	< 48	< 50	< 52	< 48	< 58	64
Benzene	µg/kg	3,700	< 0.90	< 1.0	2.4	6.5	3.6	11	4.0	2.7	4.0	58
2-Butanone	µg/kg	250,000,000	< 18	< 21	< 19	< 21	< 19	< 20	< 21	< 19	< 23	< 21
tert-Butyl Alcohol (TBA)	µg/kg	--	< 18	< 21	< 19	< 21	49	< 20	< 21	< 19	< 23	< 21
n-Butylbenzene	µg/kg	--	< 0.90	< 1.0	< 0.97	< 1.0	17	< 1.0	< 1.0	<0.96	< 1.2	2.6
sec-Butylbenzene	µg/kg	--	< 0.90	< 1.0	< 0.97	< 1.0	5.9	< 1.0	< 1.0	<0.96	< 1.2	3.8
Di-isopropyl Ether (DIPE)	µg/kg	--	< 0.90	< 1.0	< 0.97	< 1.0	< 0.95	< 1.0	< 1.0	<0.96	< 1.2	7.4
Ethylbenzene	µg/kg	24,000	0.96	< 1.0	< 0.97	1.6	1.7	2.0	< 1.0	<0.96	< 1.2	6.8
Isopropylbenzene	µg/kg	--	1.3	< 1.0	< 0.97	< 1.0	1.6	< 1.0	< 1.0	<0.96	< 1.2	10
p-Isopropyltoluene	µg/kg	--	1.2	< 1.0	< 0.97	< 1.0	17	< 1.0	< 1.0	<0.96	< 1.2	1.9
Naphthalene	µg/kg	15,000	< 9.0	< 10	< 9.7	< 10	< 9.5	< 10	< 10	< 9.6	< 12	< 10
n-Propylbenzene	µg/kg	--	< 1.8	< 2.1	< 1.9	< 2.1	6.1	< 2.0	< 2.1	< 1.9	< 2.3	7.5
Toluene	µg/kg	4,900,000	< 0.90	< 1.0	2.9	7.5	4.9	11	2.0	0.98	< 1.2	1.9
1,2,4-Trimethylbenzene	µg/kg	--	< 1.8	< 2.1	< 1.9	< 2.1	120	< 2.0	< 2.1	< 1.9	< 2.3	14
1,3,5-Trimethylbenzene	µg/kg	--	3.2	< 2.1	< 1.9	< 2.1	7.2	< 2.0	< 2.1	<1.9	< 2.3	3.8
Xylenes, Total	µg/kg	2,600,000	< 0.90	< 1.0	< 0.97	2.3	5.8	3.8	< 1.0	<0.96	< 1.2	11
o-Xylene	µg/kg	--	< 0.90	< 1.0	< 0.97	< 1.0	1.4	1.0	< 1.0	<0.96	< 1.2	2.3
p/m-Xylene	µg/kg	--	< 1.8	< 2.1	< 1.9	2.3	4.5	2.8	< 2.1	<1.9	< 2.3	8.4
All Other VOC Compounds	µg/kg	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

TABLE 2
CONFIRMATION SOIL SAMPLING ANALYTICAL RESULTS
CARSON AIR HARBOR
Carson, California
(Page 3 of 5)

Excavation ID		Target Cleanup Goals*	Excavation Area 4										
Sample ID			CS4-01-6.0	CS4-02-6.0	CS4-03-6.0	CS4-04-6.0	CS4-05-6.0	CS4-06-6.0	CS4-07-6.0	CS4-07A-6.0	CS4-07B-6.0	DUP-3 (CS4-07B-6.0)	CS4-07C-6.0
Sample Depth (ft bgs)			6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Sample Date			9/17/2014	9/17/2014	9/19/2014	9/19/2014	9/19/2014	9/25/2014	9/25/2014	9/29/2014	9/30/2014	9/30/2014	9/30/2014
Sample Delivery Group	Unit		14-09-1346	14-09-1346	14-09-1602	14-09-1602	14-09-1602	14-09-2036	14-09-2036	14-09-2268	14-09-2401	14-09-2401	14-09-2401
Total Petroleum Hydrocarbons (TPH)													
TPH in the Gasoline Range (C_6-C_{12})	mg/kg	4,000	942	77	445	193	ND	97	7,190	1,251	93	217	3,230
TPH in the Diesel Range (C_{13}-C_{22})	mg/kg	1,100	41	ND	7.4	ND	ND	ND	ND	7.0	ND	ND	ND
TPH in the Motor Oil Range (C_{23}-C_{44})	mg/kg	100,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TPH Total (C_6-C_{44})	mg/kg	--	1,000	85	450	200	7.6	100	7,200	1,300	98	270	3,300
Volatile Organic Compounds (VOCs)													
Acetone	µg/kg	590,000,000	< 4,900	< 4,900	< 4,700	< 4,800	< 4,700	< 4,600	< 24,000	< 4,600	< 5,000	< 4,700	< 9,800
Benzene	µg/kg	3,700	1,800	610	2,000	2,800	420	450	3,400	3,100	2,400	2,100	8,200
2-Butanone	µg/kg	250,000,000	< 1,900	< 1,900	< 1,900	< 1,900	< 1,900	< 1,900	< 9,700	< 1,800	< 2,000	< 1,900	< 3,900
tert-Butyl Alcohol (TBA)	µg/kg	--	< 1,900	< 1,900	< 1,900	< 1,900	< 1,900	< 1,900	< 9,700	< 1,800	< 2,000	< 1,900	< 3,900
n-Butylbenzene	µg/kg	--	1,500	330	1,300	1,100	110	110	4,400	1,900	1,000	810	3,800
sec-Butylbenzene	µg/kg	--	520	110	540	460	< 94	100	1,800	690	520	400	1,500
Di-isopropyl Ether (DIPE)	µg/kg	--	< 97	< 97	96	110	< 94	< 93	< 490	< 92	< 99	< 93	< 200
Ethylbenzene	µg/kg	24,000	5,600	1,300	5,200	4,800	630	1,200	18,000	7,900	6,200	4,900	17,000
Isopropylbenzene	µg/kg	--	1,200	260	1,200	1,000	130	280	4,100	1,700	1,400	1,100	3,600
p-Isopropyltoluene	µg/kg	--	1,100	260	1,200	1,000	97	210	3,800	1,500	1,100	840	3,300
Naphthalene	µg/kg	15,000	2,200	< 970	1,600	1,400	< 940	< 930	6,000	2,100	1,000	< 930	4,400
n-Propylbenzene	µg/kg	--	2,200	450	2,000	1,700	190	380	6,800	2,900	2,200	1,700	6,100
Toluene	µg/kg	4,900,000	570	180	640	620	160	95	3,100	1,100	480	350	3,100
1,2,4-Trimethylbenzene	µg/kg	--	12,000	2,800	6,300	6,400	1,300	1,100	42,000	10,000	3,800	2,800	29,000
1,3,5-Trimethylbenzene	µg/kg	--	3,400	790	1,900	1,700	280	210	9,100	3,000	1,400	1,000	7,300
Xylenes, Total	µg/kg	2,600,000	5,900	1,500	3,600	3,600	910	610	34,000	7,700	2,300	1,700	21,000
o-Xylene	µg/kg	--	420	110	560	440	96	< 93	3,400	960	400	320	2,700
p/m-Xylene	µg/kg	--	5,500	1,400	3,000	3,200	810	610	30,000	6,700	1,900	1,400	18,000
All Other VOC Compounds	µg/kg	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

TABLE 2
CONFIRMATION SOIL SAMPLING ANALYTICAL RESULTS
CARSON AIR HARBOR
Carson, California
(Page 4 of 5)

Excavation ID		Target Cleanup Goals*	Excavation Area 4									
Sample ID			CS4-07D-6.0	CS4-08-6.0	CS4-08A-6.0	CS4-08B-6.0	CS4-09-6.0	CS4-09A-6.0	DUP-4 (CS4-09A-6.0)	CS4-09B-6.0	DUP-5 (CS4-09B-6.0)	CS4-09C-6.0
Sample Depth (ft bgs)			6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Sample Date			10/1/2014	9/26/2014	9/30/2014	10/1/2014	9/26/2014	9/30/2014	9/30/2014	10/1/2014	10/1/2014	10/2/2014
Sample Delivery Group	Unit		14-10-0103	14-09-2172	14-09-2401	14-10-0103	14-09-2172	14-09-2401	14-09-2401	14-10-0103	14-10-0103	14-10-0209
Total Petroleum Hydrocarbons (TPH)												
TPH in the Gasoline Range (C_6-C_{12})	mg/kg	4,000	398	643	483	245	3,040	884	1,000	1,677	1,639	1,406
TPH in the Diesel Range (C_{13}-C_{22})	mg/kg	1,100	ND	ND	ND	ND	ND	21	ND	ND	ND	ND
TPH in the Motor Oil Range (C_{23}-C_{44})	mg/kg	100,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TPH Total (C_6-C_{44})	mg/kg	--	400	660	500	280	3,000	910	1,000	1,700	1,700	1,400
Volatile Organic Compounds (VOCs)												
Acetone	µg/kg	590,000,000	< 4,600	< 9,200	< 9,600	< 4,900	< 22,000	< 9,600	< 5,000	< 26,000	< 4,700	< 9,400
Benzene	µg/kg	3,700	1,700	5,000	3,500	1,000	5,100	5,900	2,800	5,900 J	1,500 J	4,400
2-Butanone	µg/kg	250,000,000	< 1,900	< 3,700	< 3,800	< 1,900	< 8,800	< 3,800	< 2,000	< 10,000	< 1,900	< 3,800
tert-Butyl Alcohol (TBA)	µg/kg	--	< 1,900	< 3,700	< 3,800	< 1,900	< 8,800	< 3,800	< 2,000	< 10,000	< 1,900	< 3,800
n-Butylbenzene	µg/kg	--	760	2,400	3,200	400	6,500	3,200 J	800 J	5,800	2,000	2,500
sec-Butylbenzene	µg/kg	--	350	1,100	1,400	190	2,600	1,500 J	420 J	2,300 J	760 J	1,100
Di-isopropyl Ether (DIPE)	µg/kg	--	< 93	< 180	< 190	< 97	< 440	< 190	< 100	< 520	< 94	< 190
Ethylbenzene	µg/kg	24,000	4,100	11,000	13,000	2,200	24,000	15,000 J	4,800 J	22,000	7,800	12,000
Isopropylbenzene	µg/kg	--	880	2,300	3,000	480	5,400	3,300 J	960 J	4,700	1,700	2,500
p-Isopropyltoluene	µg/kg	--	750	2,300	2,900	400	5,800	3,100 J	800 J	5,000	1,800	2,300
Naphthalene	µg/kg	15,000	< 930	2,100	3,200	< 970	7,500	4,500 J	1,500 J	6,800	3,000	3,300
n-Propylbenzene	µg/kg	--	1,500	3,900	5,100	790	9,000	5,600 J	1,600 J	7,800	2,800	4,200
Toluene	µg/kg	4,900,000	640	1,500	930	150	2,700	1,100	390	3,300	1,100	1,600
1,2,4-Trimethylbenzene	µg/kg	--	7,600	17,000	22,000	2,700	53,000	2,300 J	330 J	51,000	18,000	20,000
1,3,5-Trimethylbenzene	µg/kg	--	1,700	4,300	5,400	680	16,000	4,000 J	970 J	14,000	5,200	5,900
Xylenes, Total	µg/kg	2,600,000	5,100	11,000	10,000	1,200	39,000	7,200 J	2,000 J	39,000	14,000	15,000
o-Xylene	µg/kg	--	580	1,200	1,300	200	5,100	520 J	160 J	4,700	1,700	1,900
p/m-Xylene	µg/kg	--	4,600	9,300	9,100	1,000	34,000	6,700 J	1,900 J	34,000	12,000	13,000
All Other VOC Compounds	µg/kg	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

TABLE 2
CONFIRMATION SOIL SAMPLING ANALYTICAL RESULTS
CARSON AIR HARBOR
Carson, California
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Excavation ID		Target Cleanup Goals*	Excavation Area 4			
Sample ID			CS4-09E-6.0	CS4-09F-6.0	CS4-10-6.0	CS4-11-6.0
Sample Depth (ft bgs)			6.0	6.0	6.0	6.0
Sample Date			10/3/2014	10/6/2014	9/26/2014	9/26/2014
Sample Delivery Group	Unit		14-10-0330	14-10-0437	14-09-2172	14-09-2172
Total Petroleum Hydrocarbons (TPH)						
TPH in the Gasoline Range (C_6-C_{12})	mg/kg	**4,000**	**1,301**	**2,370**	**1,727**	**1,189**
TPH in the Diesel Range (C_{13}-C_{22})	mg/kg	**1,100**	ND	ND	ND	ND
TPH in the Motor Oil Range (C_{23}-C_{44})	mg/kg	**100,000**	ND	ND	ND	ND
TPH Total (C_6-C_{44})	mg/kg	--	**1,300**	**2,400**	**1,700**	**1,200**
Volatile Organic Compounds (VOCs)						
Acetone	µg/kg	**590,000,000**	< 10,000	< 10,000	< 5,200	< 9,500
Benzene	µg/kg	**3,700**	**4,500**	**2,000**	**610**	**2,700**
2-Butanone	µg/kg	**250,000,000**	< 4,000	< 4,000	< 2,100	< 3,800
tert-Butyl Alcohol (TBA)	µg/kg	--	< 4,000	< 4,000	< 2,100	< 3,800
n-Butylbenzene	µg/kg	--	**2,900**	**1,100**	**1,300**	**3,100**
sec-Butylbenzene	µg/kg	--	**1,100**	**570**	**550**	**1,200**
Di-isopropyl Ether (DIPE)	µg/kg	--	< 200	< 200	< 100	< 190
Ethylbenzene	µg/kg	**24,000**	**12,000**	**5,300**	**3,800**	**13,000**
Isopropylbenzene	µg/kg	--	**2,600**	**1,200**	**1,100**	**2,800**
p-Isopropyltoluene	µg/kg	--	**2,500**	**1,100**	**1,200**	**2,500**
Naphthalene	µg/kg	**15,000**	**4,700**	**2,200**	**1,600**	**3,000**
n-Propylbenzene	µg/kg	--	**4,400**	**1,900**	**1,900**	**4,800**
Toluene	µg/kg	**4,900,000**	**1,800**	**420**	**380**	**1,000**
1,2,4-Trimethylbenzene	µg/kg	--	**24,000**	**1,400**	**8,300**	**18,000**
1,3,5-Trimethylbenzene	µg/kg	--	**5,900**	**1,400**	**2,100**	**6,200**
Xylenes, Total	µg/kg	**2,600,000**	**17,000**	**2,800**	**4,400**	**7,800**
o-Xylene	µg/kg	--	**1,900**	**440**	**770**	**830**
p/m-Xylene	µg/kg	--	**15,000**	**2,300**	**3,700**	**6,900**
All Other VOC Compounds	µg/kg	--	ND	ND	ND	ND

TABLE 3
CRUSHED CONCRETE SAMPLING ANALYTICAL RESULTS
CARSON AIR HARBOR
Carson, California
(Page 1 of 1)

Sample ID		Screening Levels*	CGP-1	CGP-2	CGP-3	CGP-4	CGP-5	CGP-6
Sample Date			8/27/2014	8/27/2014	8/27/2014	8/27/2014	8/27/2014	8/27/2014
Total Petroleum Hydrocarbons								
TPH as Gasoline	mg/kg	**4,000**	< 0.50	< 0.48	< 0.48	< 0.51	< 0.49	< 0.50
TPH as Diesel	mg/kg	**1,100**	**130 HD**	**120 HD**	**510 HD**	**160 HD**	**140 HD**	**330 HD**
TPH as Motor Oil	mg/kg	**100,000**	**320 HD**	**300 HD**	**1,200 HD**	**410 HD**	**370 HD**	**730 HD**
Polycyclic Aromatic Hydrocarbons								
Chrysene	mg/kg	**13**	< 0.020	< 0.020	**0.020**	**0.021**	< 0.020	< 0.020
Fluoranthene	mg/kg	**22,000**	< 0.020	< 0.020	< 0.020	**0.022**	< 0.020	< 0.020
Naphthalene	mg/kg	**15**	< 0.020	< 0.020	**0.059**	< 0.020	< 0.020	< 0.020
Pyrene	mg/kg	**33,000**	< 0.020	< 0.020	< 0.020	**0.022**	< 0.020	< 0.020
All Other Compounds	mg/kg	**--**	ND	ND	ND	ND	ND	ND
Organochlorine Pesticides								
4,4'-DDD	µg/kg	**10,000**	< 5.0	< 5.0	< 5.0	< 5.0	**22**	< 5.0
4,4'-DDE	µg/kg	**7,000**	**34**	**12**	**7.1**	**25**	**66**	**27**
4,4'-DDT	µg/kg	**7,000**	< 5.0	< 5.0	< 5.0	< 5.0	**12**	< 5.0
Dieldrin	µg/kg	**130**	**7.4**	**5.3**	< 5.0	< 5.0	**5.2**	< 5.0
All Other Compounds	µg/kg	**--**	ND	ND	ND	ND	ND	ND
Metals								
Antimony	mg/kg	**410**	< 0.750	< 0.758	< 0.739	< 0.765	< 0.781	< 0.728
Arsenic	mg/kg	**1.6****	**4.76**	**5.04**	**4.11**	**4.61**	**4.17**	**5.74**
Barium	mg/kg	**190,000**	**101**	**107**	**100**	**105**	**109**	**93.5**
Beryllium	mg/kg	**2,000**	**0.286**	**0.286**	**0.263**	**0.296**	**0.324**	**0.257**
Cadmium	mg/kg	**1,000**	< 0.500	< 0.505	< 0.493	< 0.510	< 0.521	< 0.485
Chromium (total)	mg/kg	**--**	**15.4**	**15.2**	**16.2**	**15.3**	**15.8**	**17.8**
Cobalt	mg/kg	**300**	**6.33**	**5.78**	**5.52**	**6.36**	**7.07**	**5.24**
Copper	mg/kg	**41,000**	**22.6**	**21.2**	**18.1**	**20.5**	**21.1**	**18.5**
Lead	mg/kg	**320**	**9.95**	**6.47**	**6.55**	**8.79**	**11.0**	**7.06**
Mercury	mg/kg	**88**	< 0.0833	< 0.0820	< 0.0862	< 0.0820	< 0.0862	< 0.0877
Molybdenum	mg/kg	**5,100**	**1.34**	**0.583**	**0.469**	**0.798**	**1.56**	**0.681**
Nickel	mg/kg	**19,000**	**13.9**	**14.0**	**13.3**	**13.9**	**13.7**	**12.2**
Selenium	mg/kg	**5,100**	< 0.750	< 0.758	< 0.739	< 0.765	< 0.781	< 0.728
Silver	mg/kg	**5,100**	< 0.250	< 0.253	< 0.246	< 0.255	< 0.260	< 0.243
Thallium	mg/kg	**10**	< 0.750	< 0.758	< 0.739	< 0.765	< 0.781	< 0.728
Vanadium	mg/kg	**5,100**	**29.8**	**35.6**	**32.0**	**33.9**	**34.2**	**30.2**
Zinc	mg/kg	**310,000**	**70.2**	**59.4**	**44.4**	**75.9**	**88.8**	**58.5**
Asbestos								
Asbestos	%	**--**	ND	ND	ND	ND	ND	ND

Notes:

* The screening levels for the crushed concrete comprise the target cleanup goals (TCGs) for the site, which are the San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels (ESLs) for the protection of commercial/industrial workers (Table K-2. Direct Exposure Soil Screening Levels, Commercial/Industrial Worker Exposure Scenario; December 2013).

** The screening level for arsenic is greater than naturally-occurring background concentrations, which is approximately 12 mg/kg in the Los Angele Basin (Department of Toxic Substances Control [DTSC], 2007).

-- No screening level established

TPH - Total Petroleum Hydrocarbons

TPH as Gasoline by USEPA Method 5035/8015B (M)

TPH as Diesel by USEPA Method 8015B

TPH as Motor Oil by USEPA Method 8015B (M)

Organochlorine Pesticides (OCPs) by USEPA Method 8081A

Polycyclic Aromatic Hydrocarbons (PAHs) by USEPA Method 8270C Selected Ion Monitoring (SIM)

Metals - Title 22 metals by U.S. Environmental Protection Agency (USEPA) Method 6010B/7471A

Asbestos by Polarized Light Microscopy (PLM)

mg/kg - milligrams per kilogram

µg/kg - micrograms per kilogram

ND - Not detected above the laboratory reporting limit

HD - The chromatographic pattern was inconsistent with the profile of the reference fuel standard.

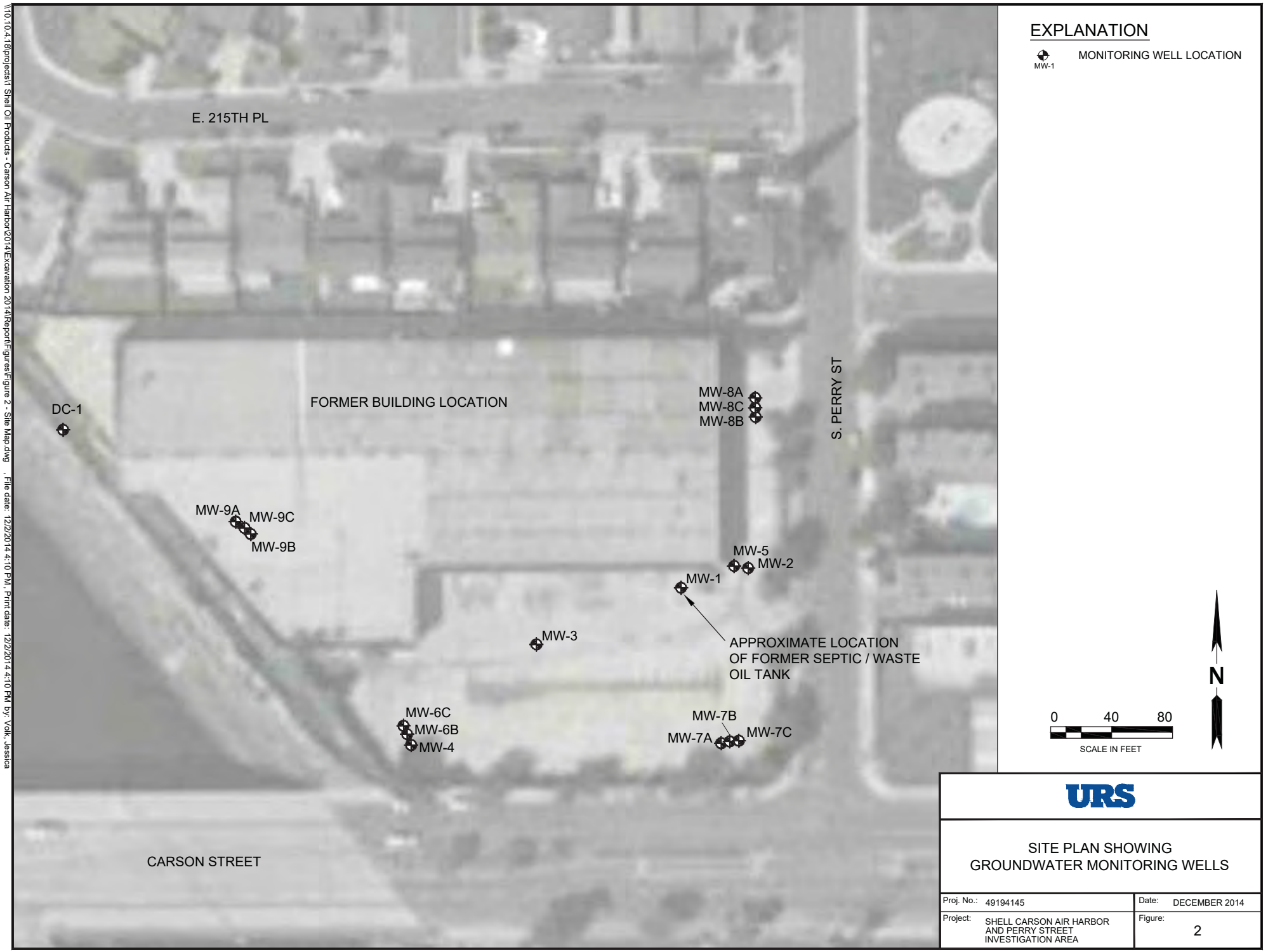
Source: Thomas Bros. Maps, Los Angeles Street Guide, 1998.

URS

Site Vicinity Map

Proj. No.: 29868838	Date: JUNE 2011
Project: CARSON AIR HARBOR 21611 PERRY STREET CARSON, CA	Figure: 1

S:\Gabriel Negrete\Chevron Air Harbor\Figure 01 - Site Vicinity Map.dwg , File date: 6/29/2011 5:17 PM, Print date: 6/30/2011 11:06 AM by: Gabriel Negrete



URS

SITE PLAN SHOWING
GROUNDWATER MONITORING WELLS

Proj. No.: 49194145	Date: DECEMBER 2014
Project: SHELL CARSON AIR HARBOR AND PERRY STREET INVESTIGATION AREA	Figure: 2

EXPLANATION

- DC-1 — MONITORING WELL LOCATION (AECOM, 2011)
- APPROXIMATE SOIL BORING LOCATION FROM 2012 SHALLOW SOIL INVESTIGATION
- FORMER GRAVEL STOCKPILE
- SITE BOUNDARY
- ONE OR MORE OF THE SOIL CONCENTRATIONS 0-5 FT BGS EXCEEDS SFRWQCB ESL
- ONE OR MORE OF THE SOIL CONCENTRATIONS 9-10 FT BGS EXCEEDS SFRWQCB ESL
- APPROXIMATE EXTENT OF PROPOSED EXCAVATION AREA TO 5 FT BGS
- APPROXIMATE EXTENT OF PROPOSED EXCAVATION AREA TO 8 FT BGS

TPHg	TOTAL PETROLEUM HYDROCARBON AS GASOLINE
TPHd	TOTAL PETROLEUM HYDROCARBON AS DIESEL
TPHo	TOTAL PETROLEUM HYDROCARBON AS OIL
BENZ	BENZENE
FT	FEET
<5.0	NOT DETECTED ABOVE THE LABORATORY REPORTING LIMIT INDICATED

NOTES:
ALL TOTAL PETROLEUM HYDROCARBON RESULTS ARE IN MILLIGRAMS PER KILOGRAM (mg/kg).

BENZENE RESULTS IN MICROGRAMS PER KILOGRAM (µg/kg).

BENZENE CONCENTRATIONS EXCEEDING MAY 2013 SAN FRANCISCO BAY REGIONAL WATER QUALITY CONTROL BOARD (SFRWQCB) ENVIRONMENTAL SCREENING LEVEL (ESL) of 3,700 µg/kg TEXT BOXES HIGHLIGHTED IN **YELLOW**.

TPHg AND TPHd CONCENTRATIONS EXCEEDING SFRWQCB ESLs OF 4,000 mg/kg AND 1,100 mg/kg, RESPECTIVELY TEXT BOXES HIGHLIGHTED IN **GREEN**.

TPHo CONCENTRATIONS EXCEEDING SFRWQCB ESL OF 100,000 mg/kg TEXT BOXES HIGHLIGHTED IN **BLUE**.

N

0 30 60

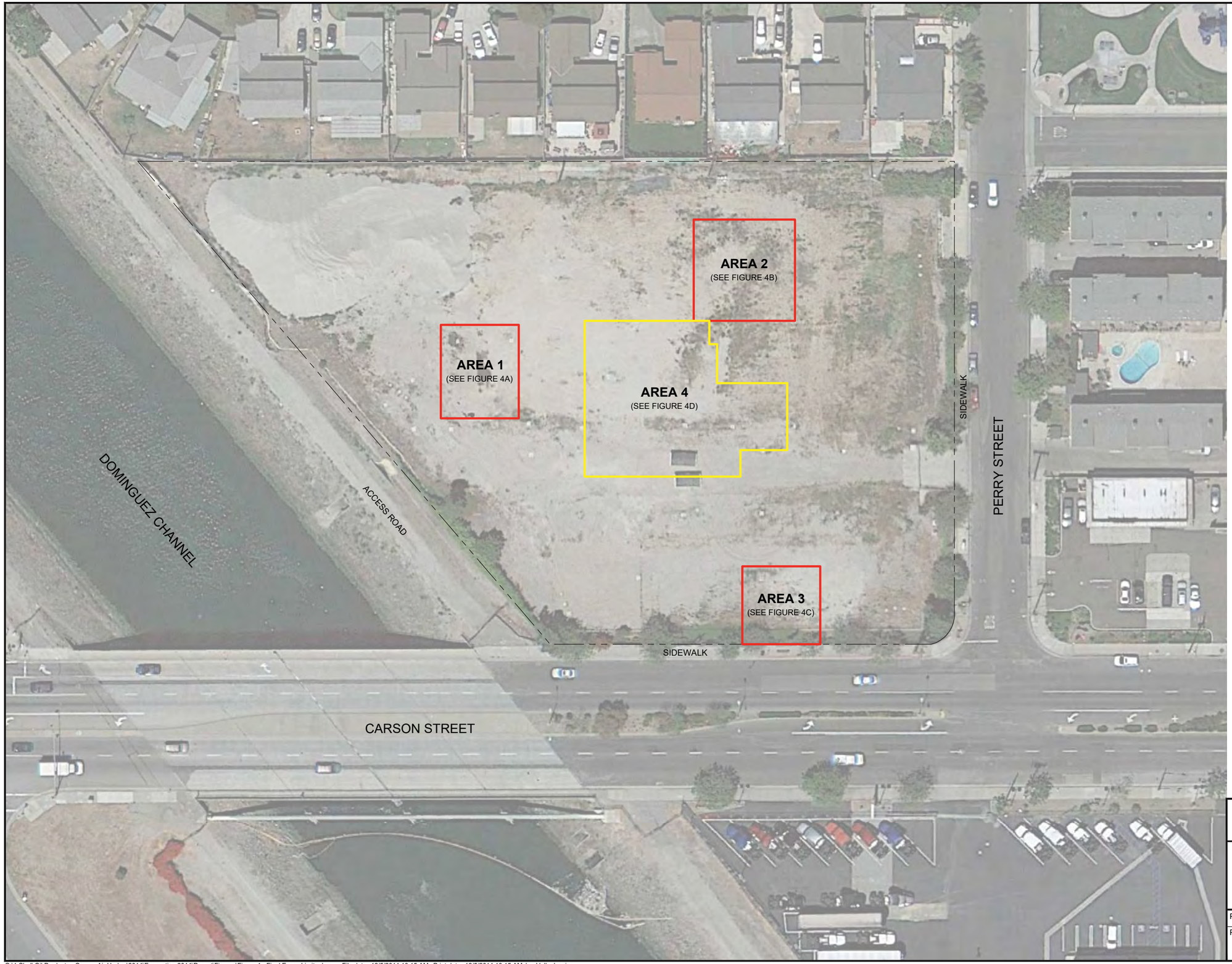
SCALE IN FEET

URS

SITE PLAN WITH PREVIOUS SOIL BORING LOCATIONS AND ANALYTICAL RESULTS

Proj. No.:	49194145	Date:	OCTOBER 2014
Project:	SHELL CARSON AIR HARBOR	Figure:	3

G:\1 Shell Oil Products - Carson Air Harbor\2014\Excavation 2014\Report\Figures\Figure 3 - SBLoc AnalyResIts.dwg , File date: 12/5/2014 10:12 AM , Print date: 12/5/2014 10:12 AM by: Volk, Jessica



EXPLANATION

- APPROXIMATE EXTENT OF EXCAVATION AREA TO 5 FT BGS
- APPROXIMATE EXTENT OF EXCAVATION AREA TO 8 FT BGS

N

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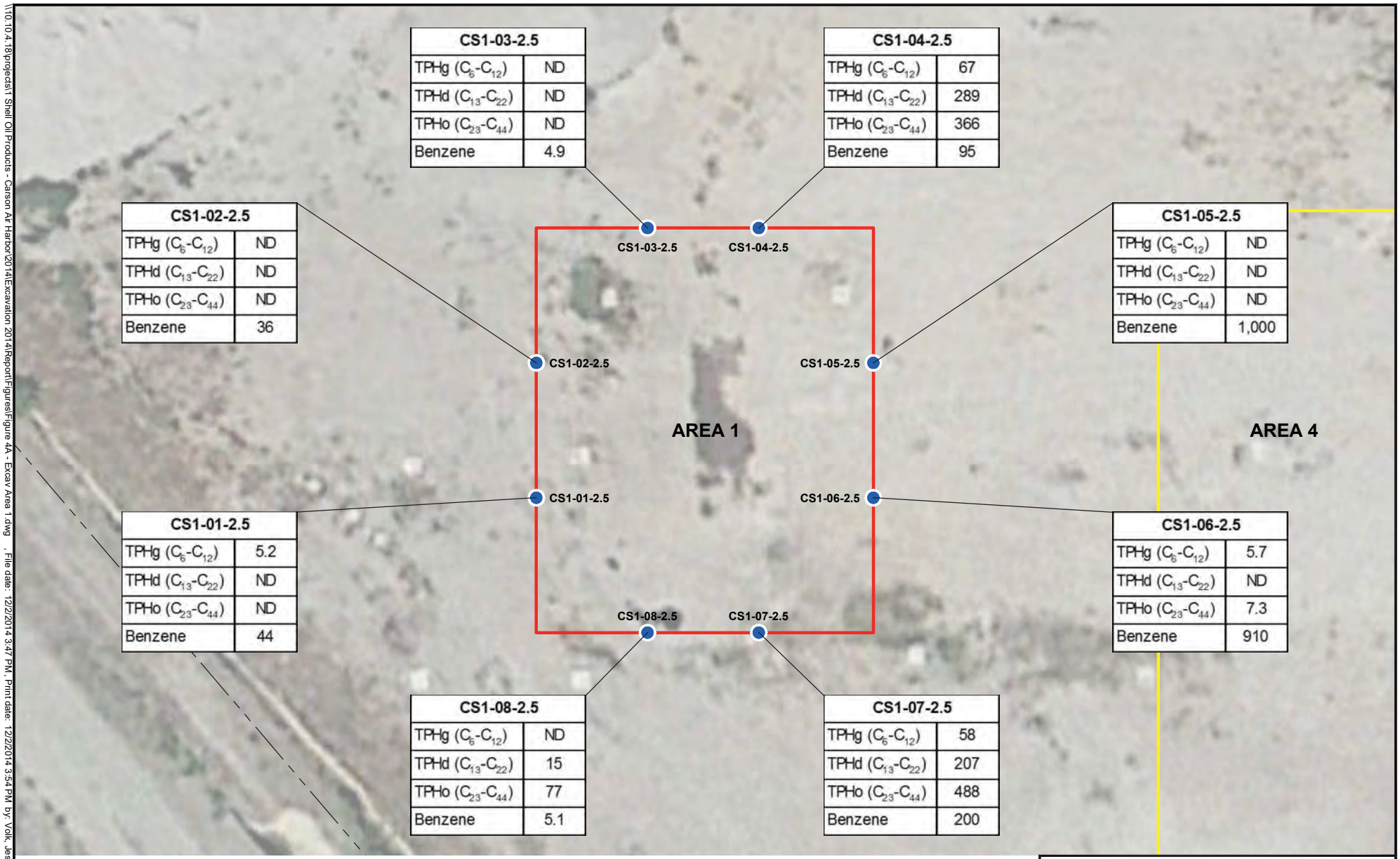
SCALE IN FEET

URS

SITE PLAN
SHOWING FINAL EXCAVATION LIMITS

Proj. No.:	49194145	Date:	OCTOBER 2014
Project:	SHELL CARSON AIR HARBOR	Figure:	4

G:\1 Shell Oil Products - Carson Air Harbor\2014\Excavation 2014\Report\Figures\Figure 4 - Final Excav Limits.dwg , File date: 12/5/2014 10:15 AM , Print date: 12/5/2014 10:15 AM by: Volk, Jessica



EXPLANATION

- SIDEWALL CONFIRMATION SAMPLE LOCATION
- APPROXIMATE EXTENT OF EXCAVATION AREA TO 5 FT BGS
- APPROXIMATE EXTENT OF EXCAVATION AREA TO 8 FT BGS
- SITE BOUNDARY
- TPHg TOTAL PETROLEUM HYDROCARBON AS GASOLINE
- TPHd TOTAL PETROLEUM HYDROCARBON AS DIESEL
- TPHo TOTAL PETROLEUM HYDROCARBON AS OIL
- ND NOT DETECTED

NOTES:
ALL TOTAL PETROLEUM HYDROCARBON RESULTS ARE IN MILLIGRAMS PER KILOGRAM (mg/kg).

BENZENE RESULTS IN MICROGRAMS PER KILOGRAM (µg/kg).

0 10 20
SCALE IN FEET

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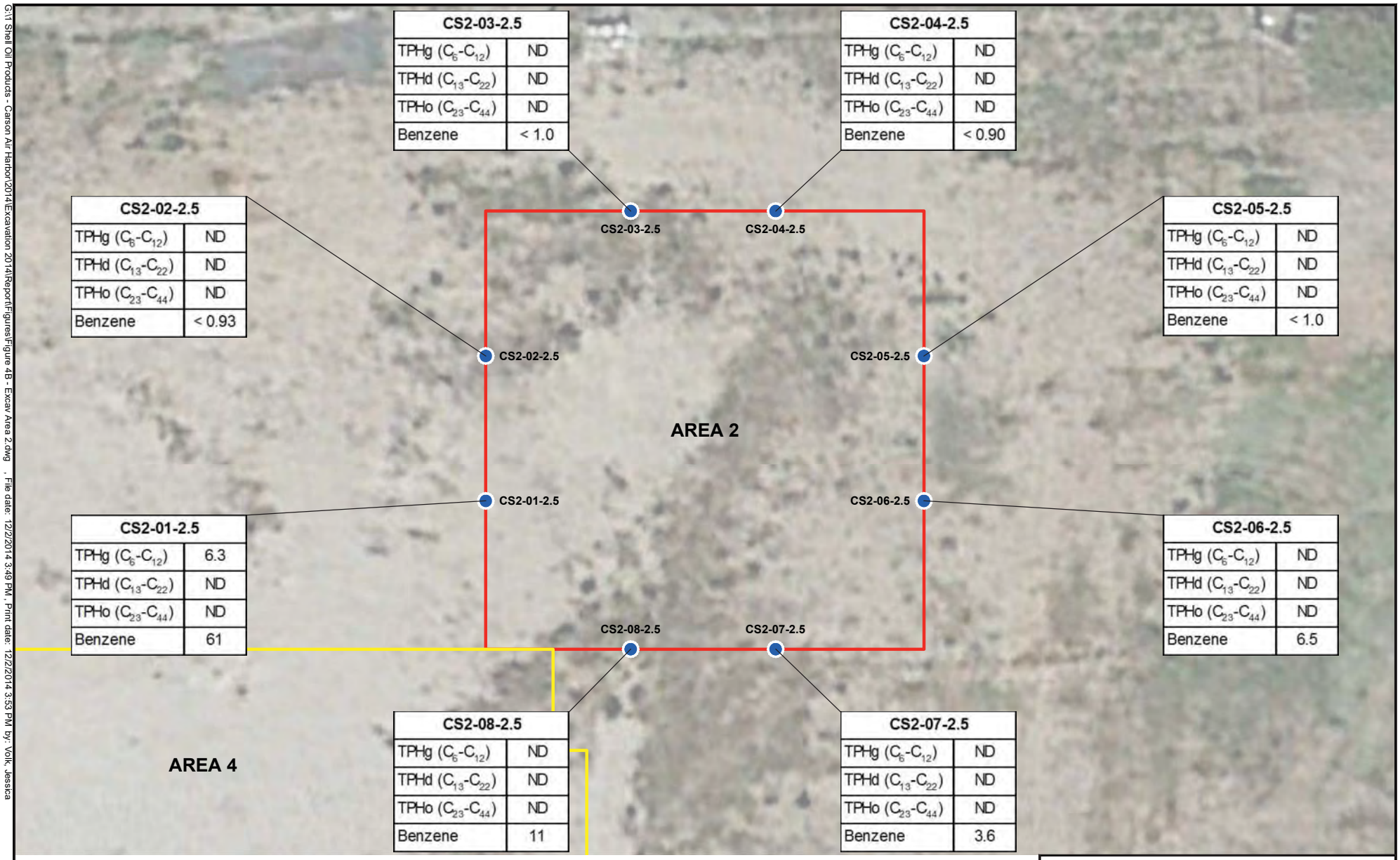
URS

EXCAVATION AREA 1 WITH CONFIRMATION SAMPLING RESULTS

Proj. No: 49194145	Date: OCTOBER 2014
Project: SHELL CARSON AIR HARBOR	Figure: 4A



EXPLANATION

- SIDEWALL CONFIRMATION SAMPLE LOCATION
- APPROXIMATE EXTENT OF EXCAVATION AREA TO 5 FT BGS
- APPROXIMATE EXTENT OF EXCAVATION AREA TO 8 FT BGS
- TPHg TOTAL PETROLEUM HYDROCARBON AS GASOLINE
- TPHd TOTAL PETROLEUM HYDROCARBON AS DIESEL
- TPHo TOTAL PETROLEUM HYDROCARBON AS OIL
- ND NOT DETECTED

NOTES:
ALL TOTAL PETROLEUM HYDROCARBON RESULTS ARE IN MILLIGRAMS PER KILOGRAM (mg/kg).

BENZENE RESULTS IN MICROGRAMS PER KILOGRAM (µg/kg).

0 10 20
SCALE IN FEET

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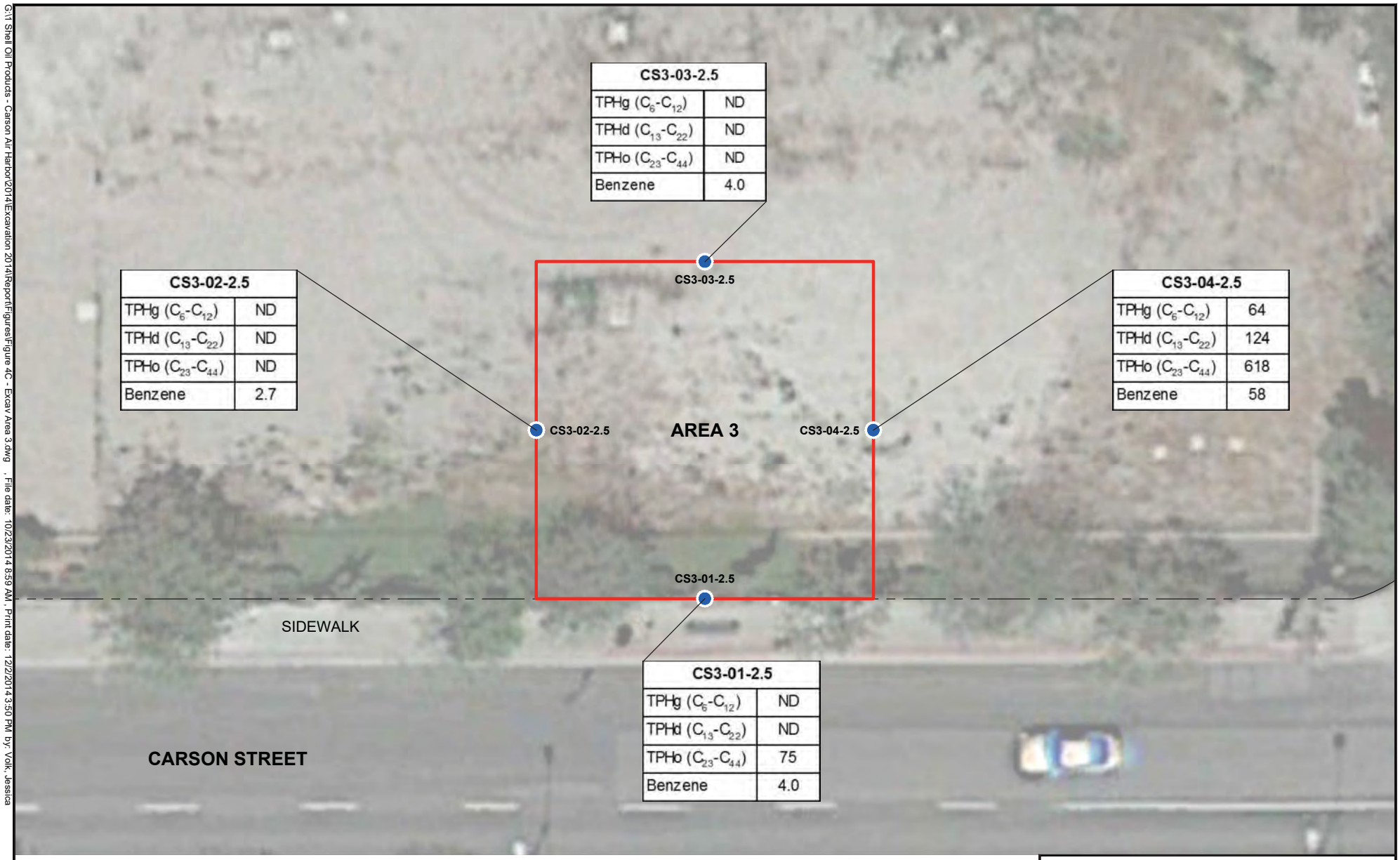
URS

EXCAVATION AREA 2
WITH CONFIRMATION SAMPLING RESULTS

Proj. No: 49194145	Date: OCTOBER 2014
Project: SHELL CARSON AIR HARBOR	Figure: 4B



EXPLANATION

- SIDEWALL CONFIRMATION SAMPLE LOCATION
- APPROXIMATE EXTENT OF EXCAVATION AREA TO 5 FT BGS
- SITE BOUNDARY
- TPHg TOTAL PETROLEUM HYDROCARBON AS GASOLINE
- TPHd TOTAL PETROLEUM HYDROCARBON AS DIESEL
- TPHo TOTAL PETROLEUM HYDROCARBON AS OIL
- ND NOT DETECTED

NOTES:
ALL TOTAL PETROLEUM HYDROCARBON RESULTS ARE IN MILLIGRAMS PER KILOGRAM (mg/kg).

BENZENE RESULTS IN MICROGRAMS PER KILOGRAM (µg/kg).

0 10 20
SCALE IN FEET

N

URS

EXCAVATION AREA 3
WITH CONFIRMATION SAMPLING RESULTS

Proj. No: 49194145	Date: OCTOBER 2014
Project: SHELL CARSON AIR HARBOR	Figure: 4C

AREA 2

AREA 1

AREA 4

PERRY STREET

CS4-05-6.0	
TPHg (C_6-C_{12})	ND
TPHd (C_{13}-C_{22})	ND
TPHo (C_{23}-C_{44})	ND
Benzene	420

CS4-06-6.0	
TPHg (C_6-C_{12})	97
TPHd (C_{13}-C_{22})	ND
TPHo (C_{23}-C_{44})	ND
Benzene	450

CS4-07-6.0	
TPHg (C_6-C_{12})	7,190
TPHd (C_{13}-C_{22})	ND
TPHo (C_{23}-C_{44})	ND
Benzene	3,400

CS4-07B-6.0	
TPHg (C_6-C_{12})	217
TPHd (C_{13}-C_{22})	ND
TPHo (C_{23}-C_{44})	ND
Benzene	2,400

CS4-07A-6.0	
TPHg (C_6-C_{12})	1,251
TPHd (C_{13}-C_{22})	7.0
TPHo (C_{23}-C_{44})	ND
Benzene	3,100

CS4-07C-6.0	
TPHg (C_6-C_{12})	3,230
TPHd (C_{13}-C_{22})	ND
TPHo (C_{23}-C_{44})	ND
Benzene	8,200

CS4-07D-6.0	
TPHg (C_6-C_{12})	398
TPHd (C_{13}-C_{22})	ND
TPHo (C_{23}-C_{44})	ND
Benzene	1,700

CS4-08B-6.0	
TPHg (C_6-C_{12})	245
TPHd (C_{13}-C_{22})	ND
TPHo (C_{23}-C_{44})	ND
Benzene	1,000

CS4-08A-6.0	
TPHg (C_6-C_{12})	483
TPHd (C_{13}-C_{22})	ND
TPHo (C_{23}-C_{44})	ND
Benzene	3,500

CS4-08-6.0	
TPHg (C_6-C_{12})	643
TPHd (C_{13}-C_{22})	ND
TPHo (C_{23}-C_{44})	ND
Benzene	5,000

CS4-09F-6.0	
TPHg (C_6-C_{12})	2,370
TPHd (C_{13}-C_{22})	ND
TPHo (C_{23}-C_{44})	ND
Benzene	2,000

CS4-09E-6.0	
TPHg (C_6-C_{12})	1,301
TPHd (C_{13}-C_{22})	ND
TPHo (C_{23}-C_{44})	ND
Benzene	4,500

CS4-02-6.0	
TPHg (C_6-C_{12})	77
TPHd (C_{13}-C_{22})	ND
TPHo (C_{23}-C_{44})	ND
Benzene	610

CS4-01-6.0	
TPHg (C_6-C_{12})	942
TPHd (C_{13}-C_{22})	41
TPHo (C_{23}-C_{44})	ND
Benzene	1,800

CS4-03-6.0	
TPHg (C_6-C_{12})	445
TPHd (C_{13}-C_{22})	7.4
TPHo (C_{23}-C_{44})	ND
Benzene	2,000

CS4-04-6.0	
TPHg (C_6-C_{12})	193
TPHd (C_{13}-C_{22})	ND
TPHo (C_{23}-C_{44})	ND
Benzene	2,800

CS4-11-6.0	
TPHg (C_6-C_{12})	1,189
TPHd (C_{13}-C_{22})	ND
TPHo (C_{23}-C_{44})	ND
Benzene	2,700

CS4-10-6.0	
TPHg (C_6-C_{12})	1,727
TPHd (C_{13}-C_{22})	ND
TPHo (C_{23}-C_{44})	ND
Benzene	610

CS4-09-6.0	
TPHg (C_6-C_{12})	3,040
TPHd (C_{13}-C_{22})	ND
TPHo (C_{23}-C_{44})	ND
Benzene	5,100

CS4-09A-6.0	
TPHg (C_6-C_{12})	1,000
TPHd (C_{13}-C_{22})	21
TPHo (C_{23}-C_{44})	ND
Benzene	5,900

CS4-09B-6.0	
TPHg (C_6-C_{12})	1,677
TPHd (C_{13}-C_{22})	ND
TPHo (C_{23}-C_{44})	ND
Benzene	5900J

CS4-09C-6.0	
TPHg (C_6-C_{12})	1,406
TPHd (C_{13}-C_{22})	ND
TPHo (C_{23}-C_{44})	ND
Benzene	4,400

CS4-01-6.0, CS4-02-6.0, CS4-03-6.0, CS4-04-6.0, CS4-05-6.0, CS4-06-6.0, CS4-07-6.0, CS4-07A-6.0, CS4-07B-6.0, CS4-07C-6.0, CS4-07D-6.0, CS4-08-6.0, CS4-08A-6.0, CS4-08B-6.0, CS4-09-6.0, CS4-09A-6.0, CS4-09B-6.0, CS4-09C-6.0, CS4-09E-6.0, CS4-09F-6.0, CS4-10-6.0, CS4-11-6.0

EXPLANATION

- SIDEWALL CONFIRMATION SAMPLE LOCATION
- APPROXIMATE EXTENT OF EXCAVATION AREA TO 5 FT BGS
- APPROXIMATE EXTENT OF EXCAVATION AREA TO 8 FT BGS
- SITE BOUNDARY

TPHg	TOTAL PETROLEUM HYDROCARBON AS GASOLINE
TPHd	TOTAL PETROLEUM HYDROCARBON AS DIESEL
TPHo	TOTAL PETROLEUM HYDROCARBON AS OIL
ND	NOT DETECTED
J	DETECTED CONCENTRATION IS ESTIMATED

NOTES:
ALL TOTAL PETROLEUM HYDROCARBON RESULTS ARE IN MILLIGRAMS PER KILOGRAM (mg/kg).

BENZENE RESULTS IN MICROGRAMS PER KILOGRAM (µg/kg).

BENZENE CONCENTRATIONS EXCEEDING MAY 2013 SAN FRANCISCO BAY REGIONAL WATER QUALITY CONTROL BOARD (SFRWQCB) ENVIRONMENTAL SCREENING LEVEL (ESL) of 3,700 µg/kg TEXT BOXES HIGHLIGHTED IN YELLOW.

TPHg AND TPHd CONCENTRATIONS EXCEEDING SFRWQCB ESLs OF 4,000 mg/kg AND 1,100 mg/kg, RESPECTIVELY TEXT BOXES HIGHLIGHTED IN GREEN.

N

0 10 20

SCALE IN FEET

URS

EXCAVATION AREA 4 WITH CONFIRMATION SAMPLING RESULTS

Proj. No.:	49194145	Date:	OCTOBER 2014
Project:	SHELL CARSON AIR HARBOR	Figure:	4D

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
BUILDING AND SAFETY / LAND DEVELOPMENT

CITY OF CARSON
701 CARSON
CARSON CA 90745
PHONE: (310) 952-1766 EXT:

1205

GRADING PERMIT
GR 1205 1406110005

LEGAL ID:
TR: 4054 LOT(S): 15

ASSESSOR INFORMATION NUMBER:
7327-010-015

TENANT:

OWNER: TEL. NO:
SHELL OIL PRODUCTS U.S. (310) 376-0649-
20945 S. WILMINGTON
CARSON, CA

APPLICANT: TEL. NO:
GLEN DAVIS (714) 448-3063-

CONTRACTOR: TEL. NO:
INNOVATICE CONSTRUCTION SOLUTIONS (714) 893-6366-
4011 W CHANDLER AVE LIC. NO
SANTA ANA, CA 92704 764815 C21

ARCHITECT OR ENGINEER: TEL. NO:
LIC. NO:

SURETY BOND: $ 7,300.00 BOND NO: HOACSU0582263

SURETY COMPANY:

DATE FILED: 08/19/14 REC'D BY:

CASH DEPOSIT: DATE FILED:

REC'D BY :

OTHER LEGAL IDS:

STATE HIWAY: USE ZONE: MAP NO:
NO

CUBIC YARDS HANDLED : 4300

SUPERVISED GRADING : NO

FEES PAID

FEE DESCRIPTION:	QUANTITY: UOM:	AMOUNT:
08 PLAN CHECK - B&S	4300.00 CU	2,282.00
2A GRADING PERMIT	4300.00 CU	1,932.00
2G PERMIT ISSUANCE FEE		42 90
	TOTAL FEES	4,256.90

REPORT ID: DPR262 ROUTE TO: BS1205

BUILDING ADDRESS:
21611 PERRY ST S
CRSN CA 907451613
NEAREST CROSS STREET:
THOMAS PAGE: 764 GRID: F6 LOCALITY: CARSON

******* THIS IS A LIMITED TIME PERMIT *******

ISSUED ON: PROCESSED BY:
08/19/14 BB

EXP. EXTENDED TO: EXTENDED BY:

FINAL DATE FINAL BY: CODE:
12/11/14

DESCRIPTION OF WORK
REMEDIAL EXCAVATION-EXCAVATION AND OFFSITE DISPOSAL OF TPH IMPACTED SOIL (NON-HAZ); BACKFILL & COMPACT TO GRADE WITH CLEAN IMPORTED FILL.

SPECIAL CONDITIONS:

APPROVALS	DATE	INSPECTOR SIGNATURE
INITIAL GRADE PREP.		
COMPACTION REPORT REC'D		
SUP. ENGNR'S CERT REC'D		
ROUGH GRADING APPROVAL		
PLANTING AND IRRIGATION		
SUP. ENG'S FINAL CERT		
SURETY BOND RELEASED		

GEOLOGIC AND SOILS REPORTS FILED

TYPE	PREPARED BY	DATE	RECEIVED	APPROVED

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

PLAN ISSUE DATE: **AUGUST 14, 2014**

COMPANY I.D. #: **178116**

MITIGATION PLAN NO: **567206**

COMPANY: **CARSON AIR HARBOR,**
EQUILON ENTERPRISES LLC, DBA SHELL OIL PRODUCTS US
20945 S. WILMINGTON AVENUE, CARSON, CA 90810.

SITE: **21611 SOUTH PERRY STREET**
CARSON, CA 90745

ATTN: JOSEPH LENTINI PRINCIPAL PROGRAM MANAGER

PHONE: **(213)241-6281** **FAX** **(310) 376-1469**

SITE SPECIFIC
RULE 1166 CONTAMINATED SOIL MITIGATION PLAN

Reference is made to your Application **(A/N 567206)** for the excavation and handling of VOC-contaminated soil **at 21611 SOUTH PERRY STREET, CARSON, CA 90745.** In accordance with Rule 1166 (c), this plan is required prior to commencing excavation of any underground storage tank or transfer piping which has previously been used to store or transfer volatile organic compounds (VOC) and during the excavation, handling, or storage of VOC-contaminated soils.
The rights and privileges granted through the issuance of this plan are restricted exclusively to the plan holder to whom it was issued, and are non-transferable, even with the written or expressed consent of the plan holder listed above. No other excavation plan issued by the SCAQMD can be used at this site.

This plan has been approved under the provisions of Rule 1166 of the Rules and Regulations of the SCAQMD and is subject to the following conditions.

RULE 1166 CONDITIONS:

SECTION I – GENERAL REQUIREMENTS

1. THIS EXCAVATION PLAN SHALL EXPIRE **AUGUST 13, 2015.**

2. A SIGNED COPY OF THIS PLAN SHALL BE PRESENT AT THE EXCAVATION SITE AT ALL TIMES AND SHALL BE MADE AVAILABLE TO SCAQMD PERSONNEL UPON REQUEST.

3. THIS PLAN IS NOT VALID FOR THE EXCAVATION OF VOC CONTAMINATED SOILS AT LANDFILLS OR SITES USED FOR DISPOSAL OF REFUSE OR OTHER TYPES OF WASTE.

4. THIS PLAN SHALL NOT BE USED IN CONJUNCTION WITH ANY ON SITE TREATMENT PROCESS, WITHOUT ADDITIONAL EVALUATION BY THE SCAQMD. THIS PLAN DOES NOT ALLOW THE TREATMENT OF VOC-CONTAMINATED SOIL BY THERMAL, CHEMICAL, OR MECHANICAL PROCESSES. ANY OF THE ABOVE TREATMENT PROCESSES REQUIRES A PERMIT TO OPERATE FROM THE SCAQMD.

5. THE TOTAL QUANTITY OF VOC CONTAMINATED SOIL EXCAVATED UNDER THIS PLAN SHALL NOT EXCEED 15,000 CUBIC YARDS. AT NO TIME SHALL THE TOTAL QUANTITY OF VOC CONTAMINATED SOIL STOCKPILED AT THIS SITE EXCEED 1,000 CUBIC YARDS.

6. THE SCAQMD SHALL BE IMMEDIATELY NOTIFIED OF ANY COMPLAINTS RECEIVED AS A RESULT OF ACTIVITIES CONDUCTED UNDER THIS PLAN. SUCH NOTIFICATION SHALL INCLUDE THE NATURE OF THE COMPLAINT, NUMBER OF COMPLAINANTS, COMPLAINANT NAME, ADDRESS, PHONE NUMBER, ETC., AND THE ACTION TAKEN BY THE PLAN HOLDER TO MITIGATE THE SOURCE OF THE COMPLAINT.

7. DURING EACH STEP OF THE PROCESS UP TO AND INCLUDING THE REMOVAL AND DISPOSAL PROCESS, ALL PRECAUTIONS AND MEASURES SHALL BE TAKEN TO MINIMIZE THE RELEASE OF VOC, ODOR AND DUST. THIS INCLUDES BUT IS NOT LIMITED TO:

   A) THE USE OF ADDITIONAL PLASTIC SHEETING OR SUPPRESSANTS ON EXPOSED SOIL SURFACES & WORK AREAS,
   B) MAINTAINING PAVED PUBLIC STREETS FREE OF SOIL DEPOSITS, AND
   C) OPERATING SUCH THAT VOC SOIL SHALL NOT BE SPREAD ON-SITE OR OFF-SITE; AND NOT PERFORMING ANY UNNECESSARY MOVEMENT OR AGITATION OF SOIL, INCLUDING THE RESHAPING OR RELOCATION OF STOCKPILES, THAT MAY CAUSE THE UNCONTROLLED EVAPORATION OF VOCs INTO THE ATMOSPHERE.

8. FOR THE PURPOSES OF RULE 1166 AND THIS PLAN, SOIL MEASURED PURSUANT TO RULE 1166 AS VOC CONTAMINATED SOIL, IS CONSIDERED AS VOC CONTAMINATED SOIL FROM THE TIME OF MEASUREMENT ONWARD, UNTIL THE SOIL IS TREATED PURSUANT TO AN APPROVED SCAQMD TREATMENT PROCESS.

SECTION II – PRIOR TO EXCAVATION

9.

A) AT LEAST 24 HOURS PRIOR TO COMMENCING EXCAVATION OR GRADING OF SOIL AT THE SITE, THE EXECUTIVE OFFICER OR DESIGNEE SHALL BE NOTIFIED OF THE EXCAVATION BY FAX USING A FORM APPROVED BY THE EXECUTIVE OFFICER WHICH IS FULLY COMPLETED AND INCLUDING, THE NAME OF THE COMPANY PERFORMING THE EXCAVATION, AND THE APPLICATION NUMBER LISTED ON THIS MITIGATION PLAN. THE NOTIFICATION SHALL BE MADE BY FAXING THE NOTIFICATION FORM AT (909) 396-3342. FAX NOTIFICATIONS WILL RECEIVE A REFERENCE NUMBER BY RETURN FAX OR CAN BE OBTAINED REFERENCING THE FAX NOTIFICATION BY PHONE TUESDAY THROUGH FRIDAY DURING BUSINESS HOURS AT 909 396-2326. THE REFERENCE NUMBER SHALL BE RETAINED AS PROOF OF COMPLIANCE WITH THIS REQUIREMENT.

REFERENCE NO: 567206 **NOTIFICATION DATE:** 8/27/14

B) AT LEAST 24 HOURS PRIOR TO COMMENCING EXCAVATION OR GRADING OF SOIL AT THE SITE, ALL SENSITIVE RECEPTORS WITHIN 1,000 FEET FROM THE SITE SHALL BE NOTIFIED OF THE EXCAVATION BY LETTER USING A FORMAT APPROVED BY THE EXECUTIVE OFFICER WHICH INCLUDES THE NAME, ADDRESS AND PHONE NUMBER OF THE COMPANY PERFORMING THE EXCAVATION, THE DURATION OF THE EXCAVATION AND THE SCAQMD COMPLAINT HOTLINE NUMBER (909) 288-7664.

10. COMPLETE VERIFICATION INFORMATION IN CONDITION NO. 28 AND OBTAIN REQUIRED SIGNATURES, PRIOR TO COMMENCING EXCAVATION.

11. AN ORGANIC VAPOR ANALYZER (OVA) SHALL BE ON SITE AT ALL TIMES. THE OVA SHALL BE MAINTAINED IN GOOD WORKING ORDER AT ALL TIMES. AND SHALL BE CALIBRATED BY THE MANUFACTURER AT LEAST ONCE EVERY THREE MONTHS. THE CALIBRATION OF THE OVA SHALL BE VERIFIED USING CERTIFIED CALIBRATION GAS AT THE BEGINNING OF EACH WORKING DAY WITH THE PROCEDURES SPECIFIED BY THE MANUFACTURER. IF A CALIBRATION GAS OTHER THAN HEXANE IS USED, EACH MEASURED READING SHALL BE CORRELATED TO AND EXPRESSED AS HEXANE, USING EQUIVALENCY FACTORS PROVIDED BY THE MANUFACTURER. IN THE EVENT THAT INCONSISTENT OR ERRATIC READINGS ARE EXPERIENCED, OR THE OVA BECOMES OTHERWISE INOPERABLE, ALL EXCAVATION ACTIVITIES WILL CEASE UNTIL THE OVA IS REPAIRED OR REPLACED.

SECTION III – MONITORING

12. ALL MONITORING SHALL BE CONDUCTED AT A DISTANCE NO MORE THAN 3 INCHES ABOVE THE SOIL SURFACE USING AN OVA DESCRIBED IN CONDITION NO. 11 ABOVE. MONITORING SHALL BE INITIALLY CONDUCTED AT A MINIMUM FREQUENCY OF ONE READING EVERY FIFTEEN MINUTES IN THE AREAS WHERE VOC CONTAMINATION IS EXPECTED AS PER THE ATTACHED MAP WITH THE PLAN. UPON DETECTION OF VOC CONTAMINATION, MONITORING SHALL BE CONDUCTED AT A MINIMUM OF ONE READING FOR EVERY FIVE CUBIC YARDS EXCAVATED FOR ANY AREA ON THE SITE. ALL READINGS SHALL BE TAKEN NO LATER THEN THREE (3) MINUTES AFTER EACH LOAD OF SOIL IS EXCAVATED.

13. ALL MONITORING SHALL BE CONDUCTED BY TRAINED PERSONNEL WHO ARE PROFICIENT IN THE USE OF THE HYDROCARBON MONITOR SELECTED FOR USE AT THIS SITE.

14. WRITTEN RECORDS OF OVA MONITORING AND CALIBRATIONS REQUIRED ABOVE SHALL BE KEPT IN A FORMAT APPROVED BY THE SCAQMD. THE APPROVED FORMAT IS INCLUDED ON PAGE 11 OF THIS PLAN. THE CERTIFICATION ON ALL RECORDS SHALL BE SIGNED AND DATED ON THE DAY THE MEASUREMENTS ARE OBSERVED.

15. UPON DETECTION OF VOC CONTAMINATED SOIL (READINGS 50 PPM OR GREATER), THE EXECUTIVE OFFICER OR DESIGNEE SHALL BE NOTIFIED WITHIN 24 HOURS OF THE FIRST DETECTION OF VOC CONTAMINATION. THE NOTIFICATION SHALL BE MADE BY FAXING THE NOTIFICATION FORM TO (909) 396-3342 OR CALLING (909) 396-2326. A REFERENCE NUMBER WILL BE FAXED BACK OR WILL BE ISSUED WHEN THE PHONE NOTIFICATION IS RECEIVED. ALL PHONE NOTIFICATIONS SHALL BE FOLLOWED BY MAILING THE NOTIFICATION FORM TO THE DISTRICT POSTMARKED WITHIN 48 HOURS. THE REFERENCE NUMBER WILL BE RETAINED AS PROOF OF COMPLIANCE WITH THIS REQUIREMENT.

REFERENCE NO:---374127--- NOTIFICATION DATE:---09/10/2014---

SECTION IV –HANDLING & STORAGE

16. ALL VOC-CONTAMINATED SOIL BELOW 1000 PPM SHALL BE STOCKPILED, COVERED WITH PLASTIC SHEETING AND STORED SEPARATELY FROM NON-VOC-CONTAMINATED SOIL, OR IMMEDIATELY TRANSPORTED TO A TREATMENT FACILITY. CONTAMINATED SOIL ONCE EXCAVATED AND STOCKPILED WILL BE CONSIDERED CONTAMINATED AT ALL TIMES AND CANNOT BE BACKFILLED UNLESS TREATED TO LESS THAN 50 PPM LEVELS WITH PRIOR SCAQMD APPROVAL AND SCAQMD PERMITTED EQUIPMENT.

17. A VOC CONTAMINATED STOCKPILE SHALL NOT CONTAIN MORE THAN 250 CUBIC YARDS OF SOIL.

18. IF THE OVA MEASUREMENT SPECIFIED IN CONDITION NO. 11 IS GREATER THAN 50 PPMV, BUT LESS THAN 1000 PPM,

    A) THE AFFECTED WORK AREA AND LOAD OF SOIL SHALL BE SPRAYED WITH WATER AND/OR APPROVED VAPOR SUPPRESSANT.

B) CONTAMINATED SOIL IN STOCKPILES SHALL BE COVERED WITH PLASTIC SHEETING WHICH OVERLAP A MINIMUM OF TWENTY FOUR INCHES AND ARE SECURED SO THAT NO PORTION OF THE CONTAMINATED SOIL IS EXPOSED TO THE ATMOSPHERE. IN THE COURSE OF HANDLING THE STOCKPILE, ONLY THE WORKING FACE OF THE STOCKPILE MAY BE UNCOVERED.

19. IF THE SOIL OVA MEASUREMENT EQUALS OR IS GREATER THAN 1000 PPMV, NOTIFY THE DISTRICT IMMEDIATELY OR WITHIN ONE HOUR OF DETECTION, AND,

374496 09/11/2014

A) THE AFFECTED SOIL AND WORKING AREA SHALL BE IMMEDIATELY SPRAYED WITH WATER OR AN APPROVED VAPOR SUPPRESSANT, AND EITHER:

i) THE CONTAMINATED SOIL EXCAVATED SHALL BE IMMEDIATELY PLACED IN SCAQMD APPROVED SEALED CONTAINERS EQUIPPED WITH VAPOR TIGHT LIDS, OR,

ii) THE SOIL SHALL BE DIRECTLY LOADED IN TRUCKS, SPRAYED WITH ADDITIONAL WATER OR APPROVED VAPOR SUPPRESSANTS, COVERED, AND TRANSPORTED IMMEDIATELY OFF SITE TO AN APPROVED TREATMENT FACILITY, OR,

B) HANDLED BY ALTERNATIVE STORAGE METHODS WITH PRIOR WRITTEN APPROVAL FROM THE SCAQMD.

20. DURING EXCAVATION, THE EXPOSED VOC CONTAMINATED SOIL SHALL BE RESTRICTED TO THE IMMEDIATE WORKING AREA OF THE STOCKPILE ONLY. ALL OTHER PORTIONS OF THE STOCKPILE SHALL BE COVERED WITH PLASTIC SHEETING, WITH SEAMS WHICH OVERLAP A MINIMUM OF TWENTY-FOUR (24) INCHES AND ARE SECURED WITH DUCT TAPE. ALL EXPOSED VOC-CONTAMINATED SOIL SURFACES (WORK FACE) SHALL BE KEPT MOIST WITH WATER OR OTHER APPROVED SUPPRESSANTS AT ALL TIMES, AND SHALL BE RE-COVERED DURING PERIODS OF INACTIVITY LONGER THAN ONE (1) HOUR. AT THE END OF EACH WORKING DAY, ALL STOCKPILES SHALL BE COMPLETELY COVERED AND SECURELY ANCHORED TO PREVENT ANY EXPOSURE OF SOIL TO THE ATMOSPHERE.

21. ONCE COVERED WITH PLASTIC SHEETING, STOCKPILES SHALL REMAIN COVERED AND UNDISTURBED UNTIL REMOVED FROM THE SITE.

22. DAILY INSPECTIONS SHALL BE CONDUCTED OF ALL COVERED VOC-CONTAMINATED STOCKPILES TO ENSURE THE INTEGRITY OF THE PLASTIC COVER. SUCH INSPECTIONS SHALL INCLUDE A VISUAL INSPECTION OF ALL SEAMS AND PLASTIC COVER SURFACES. ANY HOLES, TEARS OR ANY OTHER POTENTIAL SOURCES OF FUGITIVE VOC EMISSIONS SHALL BE REPAIRED IMMEDIATELY. DAILY RECORDS SHALL BE MAINTAINED TO ENSURE COMPLIANCE WITH THIS CONDITION.

SECTION V –SOIL REMOVAL AND DISPOSAL

23. ALL VOC-CONTAMINATED SOIL SHALL BE REMOVED FROM THE SITE WITHIN THIRTY (30) DAYS OF ITS EXCAVATION.

24. ALL VOC-CONTAMINATED SOIL REMOVED FROM THE SITE SHALL COMPLY WITH THE FOLLOWING:

    A) BE TRANSPORTED TO AN APPROVED TREATMENT/DISPOSAL FACILITY. IT SHALL BE THE RESPONSIBILITY OF THE PLAN HOLDER TO ENSURE THAT THE RECEIVING TREATMENT/DISPOSAL FACILITY HAS RECEIVED APPROVAL FROM THE APPROPRIATE ENVIRONMENTAL OVERSIGHT AGENCIES TO HANDLE AND TREAT VOC CONTAMINATED SOILS.

    B) WHEN LOADING IS COMPLETED AND DURING TRANSPORTATION, NO EXCAVATED MATERIAL SHALL EXTEND ABOVE THE SIDES OR REAR OF THE TRUCK OR TRAILER.

    C) PRIOR TO COVERING/TARPING, LOADED CONTAMINATED SOIL SHALL BE TREATED BY SPRAYING WITH WATER OR DUST SUPPRESSANTS.

    D) THE TRUCK OR TRAILER SHALL BE COMPLETELY COVERED/TARPED PRIOR TO LEAVING THE SITE TO PREVENT PARTICULATE EMISSIONS TO THE ATMOSPHERE.

    E) THE EXTERIOR OF THE TRUCKS (INCLUDING THE TIRES) SHALL BE CLEANED OFF PRIOR TO THE TRUCKS LEAVING THE EXCAVATION SITE.

SECTION VI – RECORDS AND REPORTING

25. A WRITTEN REPORT SHALL BE GENERATED WHICH INCLUDES:

    A) THE FACILITY SELECTED TO TREAT THE VOC-CONTAMINATED SOIL, QUANTITY OF SOIL REMOVED FROM SITE, STATUS OF EXCAVATION PIT, AND ANY VOC CONTAMINATED SOIL REMAINING ON SITE.

    B) A BRIEF SUMMARY INDICATING IF ADDITIONAL CLEAN UP EFFORTS ARE NECESSARY, THE ADDITIONAL QUANTITY OF VOC CONTAMINATED SOILS TO BE EXCAVATED AND THE PROJECTED SCHEDULE OF THE EXCAVATION.

26. RECORDS OF TREATMENT/DISPOSAL SHALL BE MAINTAINED FOR ALL VOC-CONTAMINATED SOIL REMOVED FROM THIS SITE. SUCH RECORDS SHALL BE CLEARLY LABELED **"SCAQMD RULE 1166-VOC CONTAMINATED SOIL"** AND SHALL INCLUDE THE IDENTIFICATION AND THE LOCATION OF, 1) THE GENERATOR, 2) TRANSPORTER AND 3) RECEIVING FACILITY. IN ADDITION, SUCH RECORDS SHALL BE SIGNED AND DATED BY EACH OF THE ABOVE PARTIES

INDICATING RECEIPT OR RELINQUISHMENT OF THE VOC-CONTAMINATED SOIL AT THE TIME CUSTODY IS TRANSFERRED.

27. WITHIN FORTY (40) DAYS OF INITIAL DETECTION OF VOC-CONTAMINATION, THE WRITTEN RECORDS UNDER CONDITION NO. 22 AND WITHIN THIRTY (30) DAYS OF EXCAVATION PROJECT COMPLETION RECORDS UNDER CONDITION NOS. 14, 22, AND 25 SHALL BE SUBMITTED TO THE SCAQMD AT THE FOLLOWING ADDRESS.

SOUTH COAST AIR QUALITY MGMT DISTRICT
ENGINEERING & COMPLIANCE DIVISION.
RULE 1166 TOXICS AND WASTE MANAGEMENT SECTION
21865 COPLEY DR.
DIAMOND BAR, CA. 91765-4182

SECTION VII – SPECIAL CONDITIONS

A. IN THE EVENT OF THREE OR MORE COMPLAINTS IN ONE DAY BY SEPARATE INDIVIDUALS, OR BY BUSINESSES OR SCHOOLS ON BEHALF OF THREE OR MORE INDIVIDUALS, WHICH COMPLAINTS ARE VERIFIED BY SCAQMD INSPECTORS AS ORIGINATING FROM THE PROJECT SITE, THE OPERATOR SHALL SUSPEND EXCAVATION ACTIVITIES AND SUBMIT TO THE SCAQMD FOR APPROVAL FURTHER MITIGATION MEASURES DESIGNED TO REDUCE EMISSIONS CAUSING THE COMPLAINTS. EXCAVATION ACTIVITIES SHALL NOT RESUME UNTIL THE MITIGATION MEASURES ARE APPROVED BY THE SCAQMD IN WRITING AS AN ADDENDUM TO THIS PLAN.

B. TOTAL NUMBER OF ROUND TRIP TRUCK MILES DRIVEN PER DAY FROM THE DISPOSAL SITES IN THE SCAQMD BASIN SHALL NOT BE MORE THAN 8,600.

- APPLICANT SHALL RETAIN THE COPIES OF THE MANIFESTS GENERATED AT THE EXCAVATION SITE TO SHOW THE LOCATIONS WHERE THE EXCAVATED MATERIAL WAS TAKEN TO.

- WHILE CALCULATING THE MILES DRIVEN IN SCAQMD JURISDICTION, GUIDANCE TABLE SHOWN BELOW SHALL BE USED.

- 80% OF THE TRUCKING MILES DRIVEN TO DISPOSE EXCAVATED MATERIAL ON ANY DAY SHALL BE FROM TRUCK WITH ENGINE MODEL YEAR 2010 OR HIGHER. APPLICANT SHALL KEEP RECORDS OF THE ENGINE MODEL YEARS OF THE TRUCKS USED FOR HAULING SOIL OFFSITE ON DAILY BASIS.

SITE NAME	ROUND TRIP DISTANCE IN SCAQMD BASIN	MAXIMUM NO. OF ROUND TRIPS PER DAY IF GOING TO ONLY ONE SITE (MENTIONED IN COLUMN ON THE LEFT)	
CLEAN HARBORS, MCKITTRICK, CA	100	86	TOTAL DISTANCE TRAVELLED IN SCAQMD BASIN NEEDS TO BE LESS THAN 8,600 MILES ON ANY GIVEN DAY.
CHIQUITA CANYON LANDFILL, CASTAIC, CA	100	86	
US ECOLOGY, BEATTY, NV	160	54	
LA PAZ COUNTY LANDFILL, PARKER, AZ	360	24	
WASTE MANAGEMENT/TRS 1211 WEST GLADSTONE STREET AZUSA, CA 91702	68	126	
CHEMICAL WASTE MANAGEMENT 35251 OLD SKYLINE ROAD KETTLEMEN CITY, CA 93239	96	90	
SOIL SAFE, INC. 12328 HIBISCUS AVENUE ADELANTO, CA 92301	160	54	
SOUTH YUMA COUNTY LANDFILL 19536 S AVE #1E, YUMA, AZ	104 (via I-5 & I-8)	83	

C. ALL METAL CONTAMINATED EXCAVATED MATERIAL STOCKPILED SHALL BE KEPT SUFFICIENTLY DAMP TO PREVENT THE POSSIBLE RELEASE OF FUGITIVE EMISSIONS AND SHALL BE COVERED WITH APPROVED HEAVY-DUTY PLASTIC SHEETING (VISQUEEN) AND ALSO COVERED AT THE END OF EACH WORKING DAY. PLASTIC SHEETING MUST BE SECURED.

D. ALL MATERIALS THAT ARE LISTED AS HAZARDOUS BY A FEDERAL OR STATE AGENCY SHALL BE CONSIDERED "HAZARDOUS MATERIALS" FOR THE PURPOSE OF THIS PERMIT.

E. ALL HAZARDOUS EXCAVATED MATERIAL SHALL BE TRANSPORTED IN SUCH A MANNER AS TO PREVENT ANY EMISSIONS OF HAZARDOUS MATERIALS.

F. ALL HAZARDOUS MATERIALS SHALL BE TRANSPORTED IN CONTAINERS CLEARLY MANIFESTED AS TO THE TYPE OF MATERIAL CONTAINED AND WHAT PROCEDURES SHOULD BE FOLLOWED IN CASE OF ACCIDENTAL SPILLS.

G. EXCAVATED LIQUID HAZARDOUS MATERIALS WITH THE POTENTIAL TO CAUSE AIR EMISSIONS SHALL BE ENCAPSULATED OR ENCLOSED IN CONTAINERS WITH SEALED LIDS BEFORE LOADING INTO THE TRANSPORT VEHICLES.

28. THIS PLAN IS NOT VALID UNTIL ALL PARTIES HAVE REVIEWED AND SIGNED THE VERIFICATION STATEMENT BELOW.

Site Name: Carson Air Harbor		Type of Business:
Address: 21611 S. Perry St.	City: Carson	Zip: 90745
Responsible Party (Owner/Operator): Equilon Enterprises dba SOPUS		Phone:
Address: 20945 S. Wilmington Ave.	City: Carson	Zip: 90810

I CERTIFY THAT I HAVE REVIEWED AND UNDERSTAND THE CONDITIONS CONTAINED WITHIN THIS PLAN. IN SIGNING BELOW, I ACKNOWLEDGE THAT UNDER THE PROVISIONS OF RULE 1166, I CAN BE HELD RESPONSIBLE FOR THE REQUIREMENTS SET FORTH IN THIS PLAN.

Responsible Party: Joe Lentini	Responsible Party Signature	Date Signed: 9/9/14
General Contractor: Scott Anderson	General Contractor Signature	Date Signed: 9/9/14
Excavation Contractor: Scott Anderson	Excavation Contractor Signature	Date Signed: 9/5/14
Environmental Consultant: Robert Ponce (URS)	Environmental Consultant Signature	Date Signed: 09/08/14

DEFINITIONS

Excavation	Is the process of digging out and removing materials including any material necessary to that process such as the digging out and removal of asphalt or concrete necessary to expose, dig out and remove known VOC contaminated soil.
Organic Vapor Analyzer (OVA)	For the purposes of this plan, an OVA is an hydrocarbon monitor utilizing flame ionization, photo ionization or other analytical methods complying with 40 CFR PART 60 APPENDIX A, EPA METHOD 21 SECTION 3, "DETERMINATION OF VOLATILE ORGANIC COMPOUND LEAKS, MONITORING INSTRUMENT SPECIFICATIONS. The monitor shall be capable of being calibrated using hexane at a range of 0 parts per million by volume (PPMV) to 50 PPMV, and at a detection range of at least 30 PPMV to 1100 PPMV

Soil Safe
of California, Inc.

August 20th 2014

John Farmer
Innovative Construction Solutions
4011 W Chandler Ave
Santa Ana, Ca 92704

Re: **Acceptance of Non-hazardous soil "Shell Carson CAH"**

Soil safe has reviewed and approved your soil profile "SHELL CARSON CAH", approval number 43254. We will print the manifests and ship them to you today.
Soil Safes operating hours are 8:00 am to 5:00 pm Monday through Friday. Please call 24 hours before shipment date to be placed on the schedule. If you need Soil Safe to modify our operating hours to accept soil, please make arrangements at least 24 hours in advance.

If you have any questions or concerns please call.

Thank you,

Joe Provansal
Soil Safe of California
760-246-8001

Soil Safe of California, Inc.

12328 Hibiscus Ave Adelanto, CA 92301
(760)246-8001

Job Summary Report

From: 1/1/2014 To: 12/31/2014

Date	Log #	Truck Company	Site Name	Net
A4-3254				
			9/9/2014	
9/9/2014	1	WEST COAST	SHELL OIL PRODUCTS CAH	22.32
9/9/2014	2	WEST COAST	SHELL OIL PRODUCTS CAH	19.39
9/9/2014	3	WEST COAST	SHELL OIL PRODUCTS CAH	19.83
9/9/2014	4	WEST COAST	SHELL OIL PRODUCTS CAH	21.25
9/9/2014	6	WEST COAST	SHELL OIL PRODUCTS CAH	20.95
9/9/2014	5	WEST COAST	SHELL OIL PRODUCTS CAH	21.18
		Total tons for Date = 9/9/2014 (6 trucks)		124.92
			9/10/2014	
9/10/2014	10	WEST COAST	SHELL OIL PRODUCTS CAH	24.76
9/10/2014	7	WEST COAST	SHELL OIL PRODUCTS CAH	21.65
9/10/2014	8	WEST COAST	SHELL OIL PRODUCTS CAH	24.90
9/10/2014	14	WEST COAST	SHELL OIL PRODUCTS CAH	24.11
9/10/2014	12	WEST COAST	SHELL OIL PRODUCTS CAH	22.25
9/10/2014	11	WEST COAST	SHELL OIL PRODUCTS CAH	22.73
9/10/2014	13	WEST COAST	SHELL OIL PRODUCTS CAH	23.69
9/10/2014	15	WEST COAST	SHELL OIL PRODUCTS CAH	21.59
9/10/2014	16	WEST COAST	SHELL OIL PRODUCTS CAH	25.45
9/10/2014	17	WEST COAST	SHELL OIL PRODUCTS CAH	23.48
9/10/2014	19	WEST COAST	SHELL OIL PRODUCTS CAH	20.73
9/10/2014	18	WEST COAST	SHELL OIL PRODUCTS CAH	20.23
9/10/2014	21	WEST COAST	SHELL OIL PRODUCTS CAH	22.38
9/10/2014	20	WEST COAST	SHELL OIL PRODUCTS CAH	20.32
9/10/2014	23	WEST COAST	SHELL OIL PRODUCTS CAH	22.63
9/10/2014	22	WEST COAST	SHELL OIL PRODUCTS CAH	20.14
9/10/2014	24	WEST COAST	SHELL OIL PRODUCTS CAH	21.47
9/10/2014	26	WEST COAST	SHELL OIL PRODUCTS CAH	22.70
9/10/2014	25	WEST COAST	SHELL OIL PRODUCTS CAH	21.57
9/10/2014	27	WEST COAST	SHELL OIL PRODUCTS CAH	20.96
		Total tons for Date = 9/10/2014 (20 trucks)		447.74
			9/11/2014	
9/11/2014	28	WEST COAST	SHELL OIL PRODUCTS CAH	25.20
9/11/2014	9	WEST COAST	SHELL OIL PRODUCTS CAH	23.27
9/11/2014	30	WEST COAST	SHELL OIL PRODUCTS CAH	21.63
9/11/2014	31	WEST COAST	SHELL OIL PRODUCTS CAH	22.88
9/11/2014	29	WEST COAST	SHELL OIL PRODUCTS CAH	22.39
9/11/2014	35	WEST COAST	SHELL OIL PRODUCTS CAH	24.64
9/11/2014	33	WEST COAST	SHELL OIL PRODUCTS CAH	24.37
9/11/2014	34	WEST COAST	SHELL OIL PRODUCTS CAH	24.99
9/11/2014	37	WEST COAST	SHELL OIL PRODUCTS CAH	23.02
9/11/2014	32	WEST COAST	SHELL OIL PRODUCTS CAH	24.17

Date	Log #	Truck Company	Site Name	Net
9/11/2014	36	WEST COAST	SHELL OIL PRODUCTS CAH	22.96
9/11/2014	39	WEST COAST	SHELL OIL PRODUCTS CAH	23.11
9/11/2014	40	WEST COAST	SHELL OIL PRODUCTS CAH	20.75
9/11/2014	41	WEST COAST	SHELL OIL PRODUCTS CAH	21.74
9/11/2014	42	WEST COAST	SHELL OIL PRODUCTS CAH	24.15
9/11/2014	38	WEST COAST	SHELL OIL PRODUCTS CAH	23.60
			Total tons for Date = 9/11/2014 (16 trucks)	372.87
			9/12/2014	
9/12/2014	43	WEST COAST	SHELL OIL PRODUCTS CAH	23.72
9/12/2014	45	WEST COAST	SHELL OIL PRODUCTS CAH	23.67
9/12/2014	46	WEST COAST	SHELL OIL PRODUCTS CAH	22.98
9/12/2014	44	WEST COAST	SHELL OIL PRODUCTS CAH	23.32
9/12/2014	49	WEST COAST	SHELL OIL PRODUCTS CAH	24.32
9/12/2014	48	WEST COAST	SHELL OIL PRODUCTS CAH	23.39
9/12/2014	47	WEST COAST	SHELL OIL PRODUCTS CAH	26.67
9/12/2014	50	WEST COAST	SHELL OIL PRODUCTS CAH	22.60
9/12/2014	51	WEST COAST	SHELL OIL PRODUCTS CAH	23.28
9/12/2014	52	WEST COAST	SHELL OIL PRODUCTS CAH	23.64
9/12/2014	53	WEST COAST	SHELL OIL PRODUCTS CAH	22.98
9/12/2014	54	WEST COAST	SHELL OIL PRODUCTS CAH	23.38
9/12/2014	56	WEST COAST	SHELL OIL PRODUCTS CAH	23.48
9/12/2014	55	WEST COAST	SHELL OIL PRODUCTS CAH	20.81
9/12/2014	57	WEST COAST	SHELL OIL PRODUCTS CAH	23.37
9/12/2014	59	WEST COAST	SHELL OIL PRODUCTS CAH	22.71
9/12/2014	58	WEST COAST	SHELL OIL PRODUCTS CAH	23.27
9/12/2014	60	WEST COAST	SHELL OIL PRODUCTS CAH	22.78
9/12/2014	61	WEST COAST	SHELL OIL PRODUCTS CAH	23.44
			Total tons for Date = 9/12/2014 (19 trucks)	443.81
			9/15/2014	
9/15/2014	62	WEST COAST	SHELL OIL PRODUCTS CAH	22.41
9/15/2014	63	WEST COAST	SHELL OIL PRODUCTS CAH	24.99
9/15/2014	66	WEST COAST	SHELL OIL PRODUCTS CAH	25.35
9/15/2014	68	WEST COAST	SHELL OIL PRODUCTS CAH	26.77
9/15/2014	64	WEST COAST	SHELL OIL PRODUCTS CAH	24.80
9/15/2014	69	WEST COAST	SHELL OIL PRODUCTS CAH	25.96
9/15/2014	67	WEST COAST	SHELL OIL PRODUCTS CAH	27.19
9/15/2014	65	WEST COAST	SHELL OIL PRODUCTS CAH	24.45
9/15/2014	71	WEST COAST	SHELL OIL PRODUCTS CAH	23.52
9/15/2014	70	WEST COAST	SHELL OIL PRODUCTS CAH	25.31
9/15/2014	72	WEST COAST	SHELL OIL PRODUCTS CAH	24.88
9/15/2014	73	WEST COAST	SHELL OIL PRODUCTS CAH	21.61
9/15/2014	74	WEST COAST	SHELL OIL PRODUCTS CAH	25.55
9/15/2014	75	WEST COAST	SHELL OIL PRODUCTS CAH	24.67
9/15/2014	76	WEST COAST	SHELL OIL PRODUCTS CAH	23.24
9/15/2014	77	WEST COAST	SHELL OIL PRODUCTS CAH	24.94
9/15/2014	80	WEST COAST	SHELL OIL PRODUCTS CAH	25.07
9/15/2014	81	WEST COAST	SHELL OIL PRODUCTS CAH	25.78
9/15/2014	82	WEST COAST	SHELL OIL PRODUCTS CAH	24.46
			Total tons for Date = 9/15/2014 (19 trucks)	470.95

Date	Log #	Truck Company	Site Name	Net
			9/16/2014	
9/16/2014	79	WEST COAST	SHELL OIL PRODUCTS CAH	25.69
9/16/2014	78	WEST COAST	SHELL OIL PRODUCTS CAH	26.66
9/16/2014	83	WEST COAST	SHELL OIL PRODUCTS CAH	20.74
9/16/2014	85	WEST COAST	SHELL OIL PRODUCTS CAH	23.88
9/16/2014	86	WEST COAST	SHELL OIL PRODUCTS CAH	24.08
9/16/2014	84	WEST COAST	SHELL OIL PRODUCTS CAH	22.15
9/16/2014	87	WEST COAST	SHELL OIL PRODUCTS CAH	24.80
9/16/2014	90	WEST COAST	SHELL OIL PRODUCTS CAH	22.86
9/16/2014	89	WEST COAST	SHELL OIL PRODUCTS CAH	24.12
9/16/2014	88	WEST COAST	SHELL OIL PRODUCTS CAH	23.16
9/16/2014	92	WEST COAST	SHELL OIL PRODUCTS CAH	22.79
9/16/2014	91	WEST COAST	SHELL OIL PRODUCTS CAH	24.23
9/16/2014	93	WEST COAST	SHELL OIL PRODUCTS CAH	23.61
9/16/2014	95	WEST COAST	SHELL OIL PRODUCTS CAH	23.59
9/16/2014	94	WEST COAST	SHELL OIL PRODUCTS CAH	24.08
9/16/2014	98	WEST COAST	SHELL OIL PRODUCTS CAH	26.78
9/16/2014	97	WEST COAST	SHELL OIL PRODUCTS CAH	26.22
9/16/2014	96	WEST COAST	SHELL OIL PRODUCTS CAH	24.31
9/16/2014	99	WEST COAST	SHELL OIL PRODUCTS CAH	25.01
9/16/2014	100	WEST COAST	SHELL OIL PRODUCTS CAH	25.79
9/16/2014	101	WEST COAST	SHELL OIL PRODUCTS CAH	24.06
9/16/2014	102	WEST COAST	SHELL OIL PRODUCTS CAH	23.26
			Total tons for Date = 9/16/2014 (22 trucks)	531.87
			9/17/2014	
9/17/2014	105	WEST COAST	SHELL OIL PRODUCTS CAH	23.11
9/17/2014	103	WEST COAST	SHELL OIL PRODUCTS CAH	25.10
9/17/2014	108	WEST COAST	SHELL OIL PRODUCTS CAH	23.96
9/17/2014	110	WEST CAOST	SHELL OIL PRODUCTS CAH	25.51
9/17/2014	109	WEST COAST	SHELL OIL PRODUCTS CAH	24.21
9/17/2014	112	WEST COAST	SHELL OIL PRODUCTS CAH	24.63
9/17/2014	107	WEST COAST	SHELL OIL PRODUCTS CAH	24.79
9/17/2014	111	WEST COAST	SHELL OIL PRODUCTS CAH	25.82
9/17/2014	104	WEST COAST	SHELL OIL PRODUCTS CAH	26.01
9/17/2014	106	WEST COAST	SHELL OIL PRODUCTS CAH	26.38
9/17/2014	115	WEST COAST	SHELL OIL PRODUCTS CAH	27.29
9/17/2014	117	WEST COAST	SHELL OIL PRODUCTS CAH	26.40
9/17/2014	118	WEST COAST	SHELL OIL PRODUCTS CAH	25.93
9/17/2014	119	WEST COAST	SHELL OIL PRODUCTS CAH	26.93
9/17/2014	120	WEST COAST	SHELL OIL PRODUCTS CAH	22.87
9/17/2014	116	WEST COAST	SHELL OIL PRODUCTS CAH	26.18
9/17/2014	114	WEST COAST	SHELL OIL PRODUCTS CAH	27.22
9/17/2014	113	WEST COAST	SHELL OIL PRODUCTS CAH	26.74
9/17/2014	122	WEST COAST	SHELL OIL PRODUCTS CAH	25.98
9/17/2014	121	WEST COAST	SHELL OIL PRODUCTS CAH	26.10
			Total tons for Date = 9/17/2014 (20 trucks)	511.16
			9/18/2014	
9/18/2014	123	WEST COAST	SHELL OIL PRODUCTS CAH	27.49
9/18/2014	125	WEST COAST	SHELL OIL PRODUCTS CAH	24.56

Date	Log #	Truck Company	Site Name	Net
9/18/2014	128	WEST COAST	SHELL OIL PRODUCTS CAH	26.62
9/18/2014	124	WEST COAST	SHELL OIL PRODUCTS CAH	24.37
9/18/2014	127	WEST COAST	SHELL OIL PRODUCTS CAH	21.71
9/18/2014	130	WEST COAST	SHELL OIL PRODUCTS CAH	25.06
9/18/2014	126	WEST COAST	SHELL OIL PRODUCTS CAH	23.79
9/18/2014	129	WEST COAST	SHELL OIL PRODUCTS CAH	24.80
9/18/2014	131	WEST COAST	SHELL OIL PRODUCTS CAH	26.98
9/18/2014	132	WEST COAST	SHELL OIL PRODUCTS CAH	22.93
9/18/2014	133	WEST COAST	SHELL OIL PRODUCTS CAH	25.10
9/18/2014	135	WEST COAST	SHELL OIL PRODUCTS CAH	26.28
9/18/2014	137	WEST COAST	SHELL OIL PRODUCTS CAH	25.58
9/18/2014	136	WEST COAST	SHELL OIL PRODUCTS CAH	24.03
9/18/2014	139	WEST COAST	SHELL OIL PRODUCTS CAH	25.43
9/18/2014	138	WEST COAST	SHELL OIL PRODUCTS CAH	24.90
9/18/2014	141	WEST COAST	SHELL OIL PRODUCTS CAH	23.56
9/18/2014	134	WEST COAST	SHELL OIL PRODUCTS CAH	23.27
9/18/2014	140	WEST COAST	SHELL OIL PRODUCTS CAH	24.26
9/18/2014	142	WEST COAST	SHELL OIL PRODUCTS CAH	24.03
			Total tons for Date = 9/18/2014 (20 trucks)	494.75
			9/19/2014	
9/19/2014	145	WEST COAST	SHELL OIL PRODUCTS CAH	24.36
9/19/2014	143	WEST COAST	SHELL OIL PRODUCTS CAH	25.00
9/19/2014	144	WEST COAST	SHELL OIL PRODUCTS CAH	25.46
9/19/2014	146	WEST COAST	SHELL OIL PRODUCTS CAH	24.26
9/19/2014	148	WEST COAST	SHELL OIL PRODUCTS CAH	25.75
9/19/2014	147	WEST COAST	SHELL OIL PRODUCTS CAH	23.79
9/19/2014	149	WEST COAST	SHELL OIL PRODUCTS CAH	25.95
9/19/2014	150	WEST COAST	SHELL OIL PRODUCTS CAH	20.95
9/19/2014	151	WEST COAST	SHELL OIL PRODUCTS CAH	23.54
9/19/2014	152	WEST COAST	SHELL OIL PRODUCTS CAH	22.91
9/19/2014	153	WEST COAST	SHELL OIL PRODUCTS CAH	25.43
9/19/2014	154	WEST COAST	SHELL OIL PRODUCTS CAH	24.33
9/19/2014	155	WEST COAST	SHELL OIL PRODUCTS CAH	23.78
9/19/2014	156	WEST COAST	SHELL OIL PRODUCTS CAH	23.20
9/19/2014	157	WEST COAST	SHELL OIL PRODUCTS CAH	25.68
9/19/2014	158	WEST COAST	SHELL OIL PRODUCTS CAH	27.63
9/19/2014	159	WEST COAST	SHELL OIL PRODUCTS CAH	25.46
9/19/2014	164	WEST COAST	SHELL OIL PRODUCTS CAH	25.42
9/19/2014	160	WEST COAST	SHELL OIL PRODUCTS CAH	26.37
9/19/2014	162	WEST COAST	SHELL OIL PRODUCTS CAH	25.79
9/19/2014	163	WEST COAST	SHELL OIL PRODUCTS CAH	25.52
9/19/2014	161	WEST COAST	SHELL OIL PRODUCTS CAH	24.86
9/19/2014	165	WEST COAST	SHELL OIL PRODUCTS CAH	24.55
9/19/2014	166	WEST COAST	SHELL OIL PRODUCTS CAH	24.79
9/19/2014	167	WEST COAST	SHELL OIL PRODUCTS CAH	23.88
9/19/2014	168	WEST COAST	SHELL OIL PRODUCTS CAH	23.83
9/19/2014	169	WEST COAST	SHELL OIL PRODUCTS CAH	21.80
9/19/2014	170	WEST COAST	SHELL OIL PRODUCTS CAH	26.40
			Total tons for Date = 9/19/2014 (28 trucks)	690.69

Date	Log #	Truck Company	Site Name	Net
			9/22/2014	
9/22/2014	172	WEST COAST	SHELL OIL PRODUCTS CAH	23.62
9/22/2014	175	WEST COAST	SHELL OIL PRODUCTS CAH	24.41
9/22/2014	171	WEST COAST	SHELL OIL PRODUCTS CAH	25.79
9/22/2014	173	WEST COAST	SHELL OIL PRODUCTS CAH	25.63
9/22/2014	177	WEST COAST	SHELL OIL PRODUCTS CAH	25.64
9/22/2014	180	WEST COAST	SHELL OIL PRODUCTS CAH	24.37
9/22/2014	174	WEST COAST	SHELL OIL PRODUCTS CAH	23.39
9/22/2014	176	WEST COAST	SHELL OIL PRODUCTS CAH	26.76
9/22/2014	178	WEST COAST	SHELL OIL PRODUCTS CAH	27.17
9/22/2014	179	WEST COAST	SHELL OIL PRODUCTS CAH	24.66
9/22/2014	182	WEST COAST	SHELL OIL PRODUCTS CAH	24.43
9/22/2014	181	WEST COAST	SHELL OIL PRODUCTS CAH	24.77
9/22/2014	185	WEST COAST	SHELL OIL PRODUCTS CAH	27.93
9/22/2014	188	WEST COAST	SHELL OIL PRODUCTS CAH	23.66
9/22/2014	183	WEST COAST	SHELL OIL PRODUCTS CAH	23.83
9/22/2014	184	WEST COAST	SHELL OIL PRODUCTS CAH	22.14
9/22/2014	186	WEST COAST	SHELL OIL PRODUCTS CAH	22.89
9/22/2014	189	WEST COAST	SHELL OIL PRODUCTS CAH	21.95
9/22/2014	187	WEST COAST	SHELL OIL PRODUCTS CAH	24.53
9/22/2014	190	WEST COAST	SHELL OIL PRODUCTS CAH	25.66
9/22/2014	192	WEST COAST	SHELL OIL PRODUCTS CAH	24.31
9/22/2014	191	WEST COAST	SHELL OIL PRODUCTS CAH	24.91
9/22/2014	193	WEST COAST	SHELL OIL PRODUCTS CAH	23.72
9/22/2014	194	WEST COAST	SHELL OIL PRODUCTS CAH	25.29
			Total tons for Date = 9/22/2014 (24 trucks)	591.46
			9/23/2014	
9/23/2014	196	WEST COAST	SHELL OIL PRODUCTS CAH	23.34
9/23/2014	199	WEST COAST	SHELL OIL PRODUCTS CAH	25.79
9/23/2014	198	WEST COAST	SHELL OIL PRODUCTS CAH	25.74
9/23/2014	195	WEST COAST	SHELL OIL PRODUCTS CAH	24.64
9/23/2014	197	WEST COAST	SHELL OIL PRODUCTS CAH	26.92
9/23/2014	200	WEST COAST	SHELL OIL PRODUCTS CAH	26.10
9/23/2014	202	WEST COAST	SHELL OIL PRODUCTS CAH	25.04
9/23/2014	203	WEST COAST	SHELL OIL PRODUCTS CAH	24.09
9/23/2014	201	WEST COAST	SHELL OIL PRODUCTS CAH	24.97
9/23/2014	205	WEST COAST	SHELL OIL PRODUCTS CAH	24.96
9/23/2014	204	WEST COAST	SHELL OIL PRODUCTS CAH	26.24
9/23/2014	206	WEST COAST	SHELL OIL PRODUCTS CAH	22.49
9/23/2014	208	WEST COAST	SHELL OIL PRODUCTS CAH	23.11
9/23/2014	209	WEST COAST	SHELL OIL PRODUCTS CAH	24.92
9/23/2014	207	WEST COAST	SHELL OIL PRODUCTS CAH	22.53
9/23/2014	211	WEST COAST	SHELL OIL PRODUCTS CAH	23.82
9/23/2014	213	WEST COAST	SHELL OIL PRODUCTS CAH	24.90
			Total tons for Date = 9/23/2014 (17 trucks)	419.60
			9/24/2014	
9/24/2014	212	WEST COAST	SHELL OIL PRODUCTS CAH	25.36
9/24/2014	214	WEST COAST	SHELL OIL PRODUCTS CAH	25.62
9/24/2014	210	WEST COAST	SHELL OIL PRODUCTS CAH	25.40

Date	Log #	Truck Company	Site Name	Net
			Total tons for Date = 9/24/2014 (3 trucks)	76.38
			9/25/2014	
9/25/2014	215	WEST COAST	SHELL OIL PRODUCTS CAH	26.79
9/25/2014	216	WEST COAST	SHELL OIL PRODUCTS CAH	25.59
9/25/2014	217	WEST COAST	SHELL OIL PRODUCTS CAH	27.83
9/25/2014	219	WEST COAST	SHELL OIL PRODUCTS CAH	26.19
9/25/2014	218	WEST COAST	SHELL OIL PRODUCTS CAH	28.00
9/25/2014	220	WEST COAST	SHELL OIL PRODUCTS CAH	25.47
9/25/2014	221	WEST COAST	SHELL OIL PRODUCTS CAH	25.12
9/25/2014	222	WEST COAST	SHELL OIL PRODUCTS CAH	25.51
9/25/2014	223	WEST COAST	SHELL OIL PRODUCTS CAH	23.60
9/25/2014	224	WEST COAST	SHELL OIL PRODUCTS CAH	24.38
9/25/2014	226	WEST COAST	SHELL OIL PRODUCTS CAH	24.96
9/25/2014	227	WEST COAST	SHELL OIL PRODUCTS CAH	24.30
9/25/2014	225	WEST COAST	SHELL OIL PRODUCTS CAH	23.71
9/25/2014	228	WEST COAST	SHELL OIL PRODUCTS CAH	23.96
9/25/2014	229	WEST COAST	SHELL OIL PRODUCTS CAH	23.62
9/25/2014	230	WEST COAST	SHELL OIL PRODUCTS CAH	23.80
9/25/2014	231	WEST COAST	SHELL OIL PRODUCTS CAH	23.70
			Total tons for Date = 9/25/2014 (17 trucks)	426.53
			9/26/2014	
9/26/2014	235	WEST COAST	SHELL OIL PRODUCTS CAH	27.64
9/26/2014	232	WEST COAST	SHELL OIL PRODUCTS CAH	25.50
9/26/2014	234	WEST COAST	SHELL OIL PRODUCTS CAH	24.07
9/26/2014	233	WEST COAST	SHELL OIL PRODUCTS CAH	24.90
9/26/2014	238	WEST COAST	SHELL OIL PRODUCTS CAH	22.99
9/26/2014	237	WEST COAST	SHELL OIL PRODUCTS CAH	24.95
9/26/2014	236	WEST COAST	SHELL OIL PRODUCTS CAH	24.79
9/26/2014	239	WEST COAST	SHELL OIL PRODUCTS CAH	23.73
9/26/2014	240	WEST COAST	SHELL OIL PRODUCTS CAH	24.50
9/26/2014	241	WEST COAST	SHELL OIL PRODUCTS CAH	24.21
9/26/2014	242	WEST COAST	SHELL OIL PRODUCTS CAH	23.68
9/26/2014	243	WEST COAST	SHELL OIL PRODUCTS CAH	24.28
9/26/2014	244	WEST COAST	SHELL OIL PRODUCTS CAH	22.77
9/26/2014	245	WEST COAST	SHELL OIL PRODUCTS CAH	21.84
9/26/2014	246	WEST COAST	SHELL OIL PRODUCTS CAH	20.62
9/26/2014	248	WEST COAST	SHELL OIL PRODUCTS CAH	22.80
9/26/2014	247	WEST COAST	SHELL OIL PRODUCTS CAH	25.53
9/26/2014	249	WEST COAST	SHELL OIL PRODUCTS CAH	21.71
9/26/2014	250	WEST COAST	SHELL OIL PRODUCTS CAH	22.09
9/26/2014	251	WEST COAST	SHELL OIL PRODUCTS CAH	22.99
9/26/2014	252	WEST COAST	SHELL OIL PRODUCTS CAH	21.28
9/26/2014	255	WEST COAST	SHELL OIL PRODUCTS CAH	15.81
9/26/2014	254	WEST COAST	SHELL OIL PRODUCTS CAH	23.23
9/26/2014	253	WEST COAST	SHELL OIL PRODUCTS CAH	24.97
			Total tons for Date = 9/26/2014 (24 trucks)	560.88
			9/29/2014	
9/29/2014	256	WEST COAST	SHELL OIL PRODUCTS CAH	23.88

Date	Log #	Truck Company	Site Name	Net
9/29/2014	258	WEST COAST	SHELL OIL PRODUCTS CAH	24.60
9/29/2014	257	WEST COAST	SHELL OIL PRODUCTS CAH	24.85
9/29/2014	259	WEST COAST	SHELL OIL PRODUCTS CAH	23.42
9/29/2014	260	WEST COAST	SHELL OIL PRODUCTS CAH	23.94
9/29/2014	261	WEST COAST	SHELL OIL PRODUCTS CAH	25.33
		Total tons for Date = 9/29/2014 (6 trucks)		146.02
			9/30/2014	
9/30/2014	262	WEST COAST	SHELL OIL PRODUCTS CAH	24.46
9/30/2014	263	WEST COAST	SHELL OIL PRODUCTS CAH	23.17
9/30/2014	264	WEST COAST	SHELL OIL PRODUCTS CAH	23.70
9/30/2014	265	WEST COAST	SHELL OIL PRODUCTS CAH	25.08
9/30/2014	266	WEST COAST	SHELL OIL PRODUCTS CAH	24.15
9/30/2014	267	WEST COAST	SHELL OIL PRODUCTS CAH	24.42
9/30/2014	268	WEST COAST	SHELL OIL PRODUCTS CAH	23.50
9/30/2014	269	WEST COAST	SHELL OIL PRODUCTS CAH	21.64
9/30/2014	270	WEST COAST	SHELL OIL PRODUCTS CAH	22.72
9/30/2014	271	WEST COAST	SHELL OIL PRODUCTS CAH	23.93
9/30/2014	272	WEST COAST	SHELL OIL PRODUCTS CAH	22.56
9/30/2014	273	WEST COAST	SHELL OIL PRODUCTS CAH	22.89
		Total tons for Date = 9/30/2014 (12 trucks)		282.22
			10/1/2014	
10/1/2014	274	WEST COAST	SHELL OIL PRODUCTS CAH	23.91
10/1/2014	275	WEST COAST	SHELL OIL PRODUCTS CAH	25.25
10/1/2014	276	WEST COAST	SHELL OIL PRODUCTS CAH	23.69
10/1/2014	279	WEST COAST	SHELL OIL PRODUCTS CAH	24.62
10/1/2014	277	WEST COAST	SHELL OIL PRODUCTS CAH	23.82
10/1/2014	278	WEST COAST	SHELL OIL PRODUCTS CAH	22.66
10/1/2014	280	WEST COAST	SHELL OIL PRODUCTS CAH	25.63
10/1/2014	282	WEST COAST	SHELL OIL PRODUCTS CAH	23.86
		Total tons for Date = 10/1/2014 (8 trucks)		193.44
			10/2/2014	
10/2/2014	281	WEST COAST	SHELL OIL PRODUCTS CAH	23.13
10/2/2014	283	WEST COAST	SHELL OIL PRODUCTS CAH	26.91
10/2/2014	284	WEST COAST	SHELL OIL PRODUCTS CAH	19.50
10/2/2014	285	WEST COAST	SHELL OIL PRODUCTS CAH	26.07
10/2/2014	286	WEST COAST	SHELL OIL PRODUCTS CAH	23.98
10/2/2014	287	WEST COAST	SHELL OIL PRODUCTS CAH	24.32
		Total tons for Date = 10/2/2014 (6 trucks)		143.91
			10/3/2014	
10/3/2014	288	WEST COAST	SHELL OIL PRODUCTS CAH	22.69
10/3/2014	289	WEST COAST	SHELL OIL PRODUCTS CAH	21.85
10/3/2014	290	WEST COAST	SHELL OIL PRODUCTS CAH	23.93
10/3/2014	291	WEST COAST	SHELL OIL PRODUCTS CAH	25.87
10/3/2014	292	WEST COAST	SHELL OIL PRODUCTS CAH	20.84
10/3/2014	293	WEST COAST	SHELL OIL PRODUCTS CAH	25.93
10/3/2014	294	WEST COAST	SHELL OIL PRODUCTS CAH	24.89
10/3/2014	295	WEST COAST	SHELL OIL PRODUCTS CAH	22.69
10/3/2014	296	WEST COAST	SHELL OIL PRODUCTS CAH	23.99

Date	Log #	Truck Company	Site Name	Net
			Total tons for Date = 10/3/2014 (9 trucks)	212.68
			10/8/2014	
10/8/2014	297	WEST COAST	SHELL OIL PRODUCTS CAH	25.15
10/8/2014	298	WEST COAST	SHELL OIL PRODUCTS CAH	24.15
10/8/2014	299	WEST COAST	SHELL OIL PRODUCTS CAH	23.76
10/8/2014	301	WEST COAST	SHELL OIL PRODUCTS CAH	24.75
10/8/2014	300	WEST COAST	SHELL OIL PRODUCTS CAH	16.00
			Total tons for Date = 10/8/2014 (5 trucks)	113.81
			Total tons for Approval Number' = A4-3254 (301 trucks)	7255.69
Grand Total				7255.69

APPENDIX F

LARWQCB APPROVAL LETTER FOR CRUSHED CONCRETE REUSE

September 16, 2014

Mr. Joseph Lentini
Environmental Services
Shell Oil Products US
20945 S. Wilmington Ave.
Carson, CA 90810

SUBJECT: APPROVAL OF REUSE OF CRUSHED CONCRETE

SITE: FORMER CARSON AIR HARBOR SITE
21611 PERRY STREET, CARSON, CALIFORNIA (SCP NO. 0490C)

Dear Mr. Lentini:

The subject Site was occupied by several industrial/commercial tenants since the early 1960s, including Plan Hold Corporation; Picket Industries; Air Harbor Machine Company, Inc.; Focus Engineering Services; Aire RV and Sports Den; and Carson Trailer, Inc. The last tenant vacated the property in December 2009 and building demolition occurred in May 2011. All structures, walls, footings, foundations, and known subsurface features have been removed and the Site is currently vacant. The Site is owned by Shell Oil Products US (SOPUS). Environmental assessment at the Site has been performed under the oversight of the Regional Board Site Cleanup Program. Contaminants of concern include petroleum hydrocarbons sourced from a former septic system that was converted to a waste oil tank and from petroleum pipelines within Carson Street and Perry Avenue adjacent to the Site. On April 21, 2014, the Regional Board approved a soil excavation work plan for the Site. The approval was contingent upon a commercial/industrial land use deed covenant being recorded for the property prior to the issuance of any No Further Action (NFA) determination being made by the Regional Board.

The decommissioning of facilities at the Site generated approximately 2,700 cubic yards of crushed concrete that has been stockpiled on-Site. Shell Oil intends to use the crushed concrete, mixed with clean import fill, as backfill in the areas that will undergo remedial excavation and as temporary road material during excavation activities. According to data submitted by URS Corporation on behalf of SOPUS (see attached Table 1), maximum detections of total petroleum hydrocarbons as diesel (TPH-D) and as oil (TPH-O) were detected on crushed concrete samples at 510 mg/kg TPH-D and 1,200 mg/kg TPH-O. Screening levels for excavation approved by the Regional Board in our April 21, 2014, correspondence were above these values at 1,100 mg/kg TPH-D and 100,000 mg/kg TPH-O. Polycyclic aromatic hydrocarbons (PAHs) and organochlorine pesticides were also detected, but were at least one order of magnitude below Environmental Screening Levels published by the San Francisco Bay Regional Water Quality Control Board.

Regional Board staff has reviewed the information provided and determined that the proposed reuse of crushed concrete waste at the Site is not likely to impact surface or ground water resources, with

assurance from URS Corporation and Shell Oil Products US that best management practices will be followed during construction activities. Waste discharge requirements for the proposed reuse of crushed concrete waste are therefore not required.

If you have any questions, please contact Greg Bishop, Engineering Geologist, at the Regional Board, at (213) 576-6727, or email to greg.bishop@waterboards.ca.gov.

Sincerely,

Samuel Unger

Samuel Unger, P.E.
Executive Officer

Attachment: Table 1, Summary of Detected Analytes in Crushed Concrete

Cc: Joe Liles, URS Corporation

TABLE 1
SUMMARY OF DETECTED ANALYTES IN CRUSHED CONCRETE
CARSON AIR HARBOR
Carson, California
(Page 1 of 1)

Sample ID		Screening Levels*	CGP-1	CGP-2	CGP-3	CGP-4	CGP-5	CGP-6
Sample Date			8/27/2014	8/27/2014	8/27/2014	8/27/2014	8/27/2014	8/27/2014
Total Petroleum Hydrocarbons								
TPH as Gasoline	mg/kg	**4,000**	< 0.50	< 0.48	< 0.48	< 0.51	< 0.49	< 0.50
TPH as Diesel	mg/kg	**1,100**	**130 HD**	**120 HD**	**510 HD**	**160 HD**	**140 HD**	**330 HD**
TPH as Motor Oil	mg/kg	**100,000**	**320 HD**	**300 HD**	**1,200 HD**	**410 HD**	**370 HD**	**730 HD**
Polycyclic Aromatic Hydrocarbons								
Chrysene	mg/kg	**13**	< 0.020	< 0.020	**0.020**	**0.021**	< 0.020	< 0.020
Fluoranthene	mg/kg	**22,000**	< 0.020	< 0.020	< 0.020	**0.022**	< 0.020	< 0.020
Naphthalene	mg/kg	**15**	< 0.020	< 0.020	**0.059**	< 0.020	< 0.020	< 0.020
Pyrene	mg/kg	**33,000**	< 0.020	< 0.020	< 0.020	**0.022**	< 0.020	< 0.020
All Other Compounds	mg/kg	**--**	ND	ND	ND	ND	ND	ND
Organochlorine Pesticides								
4,4'-DDD	µg/kg	**10,000**	< 5.0	< 5.0	< 5.0	< 5.0	**22**	< 5.0
4,4'-DDE	µg/kg	**7,000**	**34**	**12**	**7.1**	**25**	**66**	**27**
4,4'-DDT	µg/kg	**7,000**	< 5.0	< 5.0	< 5.0	< 5.0	**12**	< 5.0
Dieldrin	µg/kg	**130**	**7.4**	**5.3**	< 5.0	< 5.0	**5.2**	< 5.0
All Other Compounds	µg/kg	**--**	ND	ND	ND	ND	ND	ND

Notes:

The concrete samples were also analyzed for Title 22 metals by U.S. Environmental Protection Agency (USEPA) Method 6010B/7471A. The detected concentrations were low and below residential screening levels (or background for arsenic).

* Screening levels are the San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels (ESLs) for the protection of commercial/industrial workers (Table K-2. Direct Exposure Soil Screening Levels, Commercial/Industrial Worker Exposure Scenario; December 2013)

TPH - Total Petroleum Hydrocarbons

TPH as Gasoline by USEPA Method 5035/8015B (M)

TPH as Diesel by USEPA Method 8015B

TPH as Motor Oil by USEPA Method 8015B (M)

Organochlorine Pesticides (OCPs) by USEPA Method 8081A

Polycyclic Aromatic Hydrocarbons (PAHs) by USEPA Method 8270C Selected Ion Monitoring (SIM)

mg/kg - milligrams per kilogram

µg/kg - micrograms per kilogram

ND - Not detected above the laboratory reporting limit

HD - The chromatographic pattern was inconsistent with the profile of the reference fuel standard.

APPENDIX G

LARWQCB NO FURTHER ACTION LETTER FOR SOIL

December 14, 2015

Mr. Joseph Lentini
Shell Oil Products US
Environmental Services
20945 S. Wilmington Avenue
Carson, CA 90810

SUBJECT: NO FURTHER ACTION FOR SOIL

CASE/SITE: FORMER CARSON AIR HARBOR, 21611 PERRY STREET, CARSON (SCP CASE NO. 0490C)

Dear Mr. Lentini:

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) is the state agency with primary responsibility for the protection of groundwater and surface water quality within major portions of Los Angeles and Ventura counties. To accomplish this, the Regional Board oversees the investigation and cleanup of discharges of waste that may affect the quality of waters of the state as authorized by the Porter-Cologne Water Quality Control Act (California Water Code [CWC], Division 7).

Document Review

Regional Board staff has reviewed the site investigation reports, prepared by your environmental consultant, and other relevant information regarding the Carson Air Harbor site. Recent documents include:

1. *Vadose Zone Supplemental Soil Investigation Report*, Carson Air Harbor, Carson, California, dated February 19, 2014, prepared by URS Corporation;
2. *Soil Excavation Workplan*, Carson Air Harbor, 21611 South Perry Street, Carson, California, dated April 15, 2014, prepared by URS Corporation; and
3. *Soil Excavation Report*, Carson Air Harbor, 21611 South Perry Street, Carson, California, dated December 15, 2014, prepared by URS Corporation

Remedial excavation activities at the Site have resulted in the removal of the wastes in soil above established cleanup goals to assure protection of human health. Groundwater beneath the site remains impacted with petroleum hydrocarbons. Groundwater matters have been merged into Regional Board Case No. 0490B.

Site History

Prior to development for industrial/commercial use in the early 1960s, the former Carson Air Harbor (CAH) property was farm land. The last tenant vacated the property in December 2009 and building demolition occurred in May 2011.

A septic tank was previously present at the Site adjacent to the southern boundary of the warehouse building. This tank was used by a former owner and/or operator during the 1960s-1970s as an underground storage tank (UST) for waste oil. The converted septic tank/UST was removed in May 1990. Following its removal, soil samples were collected from the excavation pit with petroleum hydrocarbons and chlorinated volatile organic compounds (VOCs) detected.

In early 2002, the tenant complained of "sewer like" odors in a portion of the building. This prompted additional assessment of environmental conditions at the Site. Elevated methane and benzene were detected in soil vapor near the former septic tank and UST; however, no significant methane or VOC concentrations were impacting adjacent residences to the north. In January 2003, a limited vapor collection and treatment system was installed to mitigate the potential for vapor intrusion of methane and VOCs to the area immediately beneath the building.

In 2014, shallow soil impacts were excavated at the site to cleanup goals intended to protect commercial/industrial workers from direct exposure to soil. A deed restriction has been filed to ensure that additional controls, such as a vapor barrier, will be placed on the property to limit potential exposure to remaining impacted soil and groundwater.

Covenant and Environmental Restriction

Soil has been excavated to San Francisco Bay Regional Water Quality Control Board (SFRWQCB) Environmental Screening Levels (ESLs) for the protection of commercial/industrial workers from direct exposure to soil. As part of this commercial/industrial soil closure, a Covenant and Environmental Restriction has been executed for the property to limit use of the site to commercial and industrial land use applications to protect human health and the environment. The Covenant and Environmental Restriction will remain active for the site until it is demonstrated to the satisfaction of this Regional Board that any residual wastes at the site do not pose a risk to human health or water quality, based on other uses of the site.

Notice of Opportunity to Comment

A Notice of Opportunity to Comment on the proposed no further action was provided to you and others on September 25, 2015, inviting comments. No responses were received by the Regional Board within the comment period ending October 26, 2015.

No Further Action Determination

Based upon information provided to the Regional Board, and with the provision that the information was accurate and representative of site conditions, the Regional Board requires no further action (NFA) be taken at the site regarding soil impacts at the site, at this time. However, the site owner/operator

must notify the Regional Board immediately if additional waste in soil and/or groundwater is encountered at the site.

Groundwater beneath the site remains impacted. Groundwater matters have been merged into Regional Board Case No. 0490B.

Cost Recovery Billing and Invoices

Please note that Regional Board staff oversight charges for work associated with this NFA letter and case review and evaluation package will be billed on the invoices for 3rd and 4th quarters of 2015, in the same manner as previously billed.

The jurisdiction requirements of other agencies, such as the United States Environmental Protection Agency, are not affected by the Regional Board's issuance of a NFA letter at the Site. Such agencies may choose to make their own determination concerning this site.

We would like to take this opportunity to thank you for your full cooperation with the Regional Board during the course of the site assessment. Should you have any questions regarding this matter, please contact Mr. Greg Bishop at (213) 576-6727 or via e-mail at greg.bishop@waterboards.ca.gov.

Sincerely,

Samuel Unger

Samuel Unger, P.E.
Executive Officer

Cc: Mr. John Englehardt, Resource Environmental LLC
Mr. Jason Weeks, Water Replenishment District of Southern California

APPENDIX H
REGULATORY DATABASE REPORT

ENVIRONMENTAL RISK INFORMATION SERVICES

DATABASE REPORT

Project Property:	*21611 South Perry Street* *21611 South Perry Street* *Carson CA 90745*
Project No:	
Report Type:	*Database Report*
Order No:	*20322800357*
Requested by:	*Weis Environmental, LLC*
Date Completed:	*December 29, 2020*

Environmental Risk Information Services
A division of Glacier Media Inc.
1.866.517.5204 | info@erisinfo.com | erisinfo.com

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Executive Summary

Property Information:

Project Property:		*21611 South Perry Street* *21611 South Perry Street Carson CA 90745*
Project No:		
Coordinates:		
	Latitude:	*33.8323128*
	Longitude:	*-118.25357989*
	UTM Northing:	*3,744,269.98*
	UTM Easting:	*384,004.09*
	UTM Zone:	*11S*
Elevation:		*17 FT*

Order Information:

Order No:	*20322800357*
Date Requested:	*December 28, 2020*
Requested by:	*Weis Environmental, LLC*
Report Type:	*Database Report*

Historicals/Products:

ERIS Xplorer	*ERIS Xplorer*
Excel Add-On	*Excel Add-On*

Executive Summary: Report Summary

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
Standard Environmental Records								
Federal								
FRP	Y	0.25	0	0	0	-	-	0
NPL	Y	1	0	**1**	0	0	0	**1**
PROPOSED NPL	Y	1	0	0	0	0	0	0
DELETED NPL	Y	0.5	0	0	0	0	-	0
SEMS	Y	0.5	0	**1**	0	0	-	**1**
SEMS ARCHIVE	Y	0.5	0	0	0	0	-	0
ODI	Y	0.5	0	0	0	0	-	0
IODI	Y	0.5	0	0	0	0	-	0
CERCLIS	Y	0.5	0	0	0	0	-	0
CERCLIS NFRAP	Y	0.5	0	0	0	0	-	0
CERCLIS LIENS	Y	PO	0	-	-	-	-	0
RCRA CORRACTS	Y	1	0	0	0	0	**3**	**3**
RCRA TSD	Y	0.5	0	0	**2**	**2**	-	**4**
RCRA LQG	Y	0.25	0	**1**	**1**	-	-	**2**
RCRA SQG	Y	0.25	**2**	**1**	**2**	-	-	**5**
RCRA CESQG	Y	0.25	0	0	0	-	-	0
RCRA NON GEN	Y	0.25	0	**7**	**14**	-	-	**21**
FED ENG	Y	0.5	0	0	0	0	-	0
FED INST	Y	0.5	0	0	0	0	-	0
ERNS 1982 TO 1986	Y	PO	0	-	-	-	-	0
ERNS 1987 TO 1989	Y	PO	0	-	-	-	-	0
ERNS	Y	PO	0	-	-	-	-	0
FED BROWNFIELDS	Y	0.5	0	0	0	**1**	-	**1**
FEMA UST	Y	0.25	0	0	0	-	-	0
REFN	Y	0.25	0	0	0	-	-	0
BULK TERMINAL	Y	0.25	0	0	0	-	-	0
SEMS LIEN	Y	PO	0	-	-	-	-	0

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
SUPERFUND ROD	Y	1	0	**1**	0	0	0	**1**
State								
RESPONSE	Y	1	0	0	0	0	0	0
ENVIROSTOR	Y	1	0	**2**	0	**1**	**17**	**20**
DELISTED ENVS	Y	1	0	0	0	0	0	0
SWF/LF	Y	0.5	0	0	0	**2**	-	**2**
HWP	Y	1	0	0	0	0	**3**	**3**
SWAT	Y	0.5	0	0	0	0	-	0
LDS	Y	0.5	0	0	0	**1**	-	**1**
LUST	Y	0.5	0	**1**	**1**	0	-	**2**
DELISTED LST	Y	0.5	0	0	0	0	-	0
SWRCB SWF	Y	0.5	0	0	0	0	-	0
UST	Y	0.25	0	0	**1**	-	-	**1**
UST CLOSURE	Y	0.5	0	0	0	0	-	0
HHSS	Y	0.25	0	0	**2**	-	-	**2**
AST	Y	0.25	0	0	0	-	-	0
TANK OIL GAS	Y	0.25	0	0	0	-	-	0
DELISTED TNK	Y	0.25	0	0	**1**	-	-	**1**
CERS TANK	Y	0.25	0	0	**1**	-	-	**1**
LUR	Y	0.5	0	**1**	0	0	-	**1**
HLUR	Y	0.5	0	0	0	0	-	0
DEED	Y	0.5	**1**	0	0	0	-	**1**
VCP	Y	0.5	0	**2**	0	0	-	**2**
CLEANUP SITES	Y	0.5	**1**	**11**	**4**	**8**	-	**24**
DELISTED COUNTY	Y	0.25	0	0	0	-	-	0
DELISTED CTNK	Y	0.25	0	0	0	-	-	0
HIST TANK	Y	0.25	0	0	**2**	-	-	**2**
Tribal								
INDIAN LUST	Y	0.5	0	0	0	0	-	0
INDIAN UST	Y	0.25	0	0	0	-	-	0
DELISTED ILST	Y	0.5	0	0	0	0	-	0
DELISTED IUST	Y	0.25	0	0	0	-	-	0
County								
LA SML	Y	0.5	0	0	0	**1**	-	**1**

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
LA SWF	Y	0.5	0	0	0	**2**	-	**2**
LA COUNTY CUPA	Y	0.25	**1**	**4**	**6**	-	-	**11**
LA HMS	Y	0.25	**1**	**11**	**6**	-	-	**18**
UST SANTAFESP	Y	0.25	0	0	0	-	-	0
UST LONGB	Y	0.25	0	0	0	-	-	0
BURBANK CUPA	Y	0.25	0	0	0	-	-	0
UST ELSEGUNDO	Y	0.25	0	0	0	-	-	0
UST SANTA MONICA	Y	0.25	0	0	0	-	-	0
SANTAMON AST	Y	0.25	0	0	0	-	-	0
SANTAMON CUPA	Y	0.25	0	0	0	-	-	0
UST TORRANCE	Y	0.25	0	0	0	-	-	0
UST VERNON	Y	0.25	0	0	0	-	-	0
VERNON CUPA	Y	0.25	0	0	0	-	-	0
UST LA CITY	Y	0.25	0	0	0	-	-	0
AST LA CITY	Y	0.25	0	0	0	-	-	0
LA CITY HAZMAT	Y	0.125	0	0	-	-	-	0

Additional Environmental Records

Federal

PFAS NPL	Y	0.5	0	0	0	0	-	0
FINDS/FRS	Y	PO	**3**	-	-	-	-	**3**
TRIS	Y	PO	0	-	-	-	-	0
PFAS TRI	Y	0.5	0	0	0	0	-	0
PFAS WATER	Y	0.5	0	0	0	0	-	0
HMIRS	Y	0.125	0	0	-	-	-	0
NCDL	Y	0.125	0	0	-	-	-	0
TSCA	Y	0.125	0	0	-	-	-	0
HIST TSCA	Y	0.125	0	0	-	-	-	0
FTTS ADMIN	Y	PO	0	-	-	-	-	0
FTTS INSP	Y	PO	0	-	-	-	-	0
PRP	Y	PO	0	-	-	-	-	0
SCRD DRYCLEANER	Y	0.5	0	0	0	0	-	0
ICIS	Y	PO	0	-	-	-	-	0
FED DRYCLEANERS	Y	0.25	0	0	0	-	-	0
DELISTED FED DRY	Y	0.25	0	0	0	-	-	0
FUDS	Y	1	0	0	0	0	0	0

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
PIPELINE INCIDENT	Y	PO	0	-	-	-	-	0
MLTS	Y	PO	0	-	-	-	-	0
HIST MLTS	Y	PO	0	-	-	-	-	0
MINES	Y	0.25	0	0	0	-	-	0
ALT FUELS	Y	0.25	0	0	0	-	-	0
SSTS	Y	0.25	0	0	0	-	-	0
PCB	Y	0.5	0	0	0	0	-	0
State								
DRYCLEANERS	Y	0.25	0	0	**2**	-	-	**2**
DELISTED DRYCLEANERS	Y	0.25	0	0	0	-	-	0
DRYC GRANT	Y	0.25	0	0	**1**	-	-	**1**
PFAS	Y	0.5	0	0	0	0	-	0
PFAS GW	Y	0.5	0	0	0	0	-	0
HWSS CLEANUP	Y	0.5	0	0	0	0	-	0
DTSC HWF	Y	0.5	0	0	0	0	-	0
INSP COMP ENF	Y	1	0	0	0	0	0	0
SCH	Y	1	0	0	0	0	0	0
CHMIRS	Y	PO	0	-	-	-	-	0
HAZNET	Y	PO	**7**	**1**	-	-	-	**8**
HIST CHMIRS	Y	PO	0	-	-	-	-	0
HIST MANIFEST	Y	PO	**2**	-	-	-	-	**2**
HIST CORTESE	Y	0.5	0	0	0	0	-	0
CDO/CAO	Y	0.5	0	0	0	0	-	0
CERS HAZ	Y	0.125	0	**1**	-	-	-	**1**
DELISTED HAZ	Y	0.5	0	0	0	0	-	0
GEOTRACKER	Y	0.125	0	0	-	-	-	0
WASTE DISCHG	Y	0.25	0	0	0	-	-	0
EMISSIONS	Y	0.25	0	0	**2**	-	-	**2**
CDL	Y	0.125	0	0	-	-	-	0
Tribal	***No Tribal additional environmental record sources available for this State.***							
County								
SANTAMON HAZ	Y	0.125	0	0	-	-	-	0
SANTAMON HW	Y	0.125	0	0	-	-	-	0

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
Total:			18	46	48	18	23	153

**** PO – Property Only***
**** 'Property and adjoining properties' database search radii are set at 0.25 miles.***

Executive Summary: Site Report Summary - Project Property

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number
1	RCRA SQG	AIR HARBOR MACHINE CO INC	21611 PERRY ST CARSON CA 90745 ***EPA Handler ID:*** *CAD008504185*	E	0.00 / 0.00	0	44
1	FINDS/FRS	AIR HARBOR MACHINE CO INC	21611 PERRY ST CARSON CA 90745	E	0.00 / 0.00	0	45
1	FINDS/FRS	SHELL OIL CO	21611 SOUTH PERRY STREET CARSON CA 90745-1613	E	0.00 / 0.00	0	45
1	CLEANUP SITES	CARSON AIR HARBOR	21611 PERRY ST CARSON CA ***Site Facility Type | Status:*** *CLEANUP PROGRAM SITE | COMPLETED - CASE CLOSED*	E	0.00 / 0.00	0	46
1	LA HMS		21611 S PERRY ST CARSON CA 90746	E	0.00 / 0.00	0	59
1	HAZNET	SHELL OIL CO	21611 S PERRY ST CARSON CA 904750000	E	0.00 / 0.00	0	60
1	HAZNET	BEACH BOATS INC	21611 PERRY ST CARSON CA 907450000	E	0.00 / 0.00	0	63
1	HAZNET	CARSON TRAILERS	21611 PERRY ST CARSON CA 907450000	E	0.00 / 0.00	0	63
1	HAZNET	1X AIR HARBOR MACHINE	21611 PERRY ST. CARSON CA 907450000	E	0.00 / 0.00	0	63
1	HAZNET	CARSON AIR HARBOR LIMITED	21611 PERRY ST CARSON CA 907450000	E	0.00 / 0.00	0	64
1	HAZNET	AIR HARBOR MACHINE CO INC	21611 PERRY ST CARSON CA 907450000	E	0.00 / 0.00	0	65
1	HAZNET	TRITON DIAGNOSTICS INC	21611 S PERRY ST CARSON CA 90745	E	0.00 / 0.00	0	65
1	HIST MANIFEST		21611 PERRY ST. CARSON CA 907450000	E	0.00 / 0.00	0	66

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number
1	HIST MANIFEST		21611 PERRY ST CARSON CA 907450000	E	0.00 / 0.00	0	67
1	DEED	CARSON AIR HARBOR	21611 PERRY ST CARSON CA	E	0.00 / 0.00	0	70
1	FINDS/FRS	CARSON AIR HARBOR	21611 PERRY ST CARSON CA 90745	E	0.00 / 0.00	0	70
1	LA COUNTY CUPA	AIR HARBOR MACHINE CO INC	21611 PERRY ST CARSON CA 90745	E	0.00 / 0.00	0	71
1	RCRA SQG	SHELL OIL CO	21611 S PERRY ST CARSON CA 90475 ***EPA Handler ID:*** *CAR000150862*	E	0.00 / 0.00	0	71

Executive Summary: Site Report Summary - Surrounding Properties

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number
2	LA HMS		21610 S PERRY ST #8 CARSON CA 90745	E	0.01 / 40.27	1	72
3	VCP	PERRY STREET	21502-21526 PERRY STREET CARSON CA 90745 ***Estor/EPA ID	Cleanup Status:*** 19460004 | NO FURTHER ACTION AS OF 10/17/2003	SE	0.01 / 59.20	1	73
3	ENVIROSTOR	PERRY STREET	21502-21526 PERRY STREET CARSON CA 90745 ***Estor/EPA ID	Cleanup Status:*** 19460004 | NO FURTHER ACTION AS OF 10/17/2003	SE	0.01 / 59.20	1	74
4	LA HMS		1152 E CARSON ST CARSON CA 90745	SE	0.02 / 80.29	0	75
4	HAZNET	PROWELL FAMILY TRUST	1152 E CARSON ST CARSON CA 90745	SE	0.02 / 80.29	0	75
5	CLEANUP SITES	BP PIPELINE - DOMINGUEZ CHANNEL @ CARSON	CARSON STREET CARSON CA 90745 ***Site Facility Type	Status:*** CLEANUP PROGRAM SITE | COMPLETED - CASE CLOSED	W	0.02 / 120.56	-1	75
6	RCRA NON GEN	CAROLY LEE	1136 E 215TH ST CARSON CA 90745 ***EPA Handler ID:*** CAC002986238	NNW	0.02 / 121.65	0	83
7	RCRA SQG	VINCES AUTOMOTIVE SPECIALITIES	1209 E CARSON ST CARSON CA 90745 ***EPA Handler ID:*** CAR000221572	ESE	0.02 / 123.52	2	84
7	CLEANUP SITES	FORMER TEXACO SERVICE STATION	1209 E. CARSON STREET CARSON CA 90746 ***Site Facility Type	Status:*** CLEANUP PROGRAM SITE | COMPLETED - CASE CLOSED	ESE	0.02 / 123.52	2	85
7	LUST	TEXACO SERVICE STATION (FORMER)	1209 CARSON ST. E. CARSON CA 90801 ***Global ID	Status	Status Date:*** T0603722212 | COMPLETED - CASE CLOSED | 3/9/2015	ESE	0.02 / 123.52	2	87
7	LA HMS		1209 E CARSON ST CARSON CA 90745	ESE	0.02 / 123.52	2	100
7	CERS HAZ	RICKS LUBE & TUNE & BRAKES	1209 E CARSON ST CARSON CA 90745	ESE	0.02 / 123.52	2	100

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number
7	RCRA NON GEN	RICK NICKEL INC DBA RICKS LUBE & TUNE & BRAKES	1209 E CARSON ST CARSON CA 90745 ***EPA Handler ID:*** CAL000374011	ESE	0.02 / 123.52	2	104
7	RCRA NON GEN	TEXACO DOWNSTREAM #211316	1209 E CARSON ST CARSON CA 90745-1630 ***EPA Handler ID:*** CAL000254205	ESE	0.02 / 123.52	2	105
7	LA COUNTY CUPA	RICKS LUBE & TUNE & BRAKES	1209 E CARSON ST CARSON CA 90745	ESE	0.02 / 123.52	2	106
8	NPL	MONTROSE CHEMICAL CORP.	20201 S NORMANDIE AVE TORRANCE CA 90502 ***EPA ID:*** CAD008242711	W	0.03 / 157.08	-1	106
9	SEMS	MONTROSE CHEMICAL CORP.	20201 S NORMANDIE AVE TORRANCE CA 90502 ***EPA ID:*** CAD008242711	SSW	0.04 / 206.20	-1	107
9	SUPERFUND ROD	MONTROSE CHEMICAL CORP.	20201 S NORMANDIE AVE TORRANCE CA 90502	SSW	0.04 / 206.20	-1	132
10	LA HMS		1141 E CARSON ST CARSON CA 90745	WSW	0.04 / 208.68	-1	133
11	LA HMS		21506 S PERRY ST CARSON CA 90745	NE	0.04 / 221.83	-1	133
11	LA COUNTY CUPA	TOP VEGTABLE FARMS	21506 PERRY ST CARSON CA 90745	NE	0.04 / 221.83	-1	134
12	CLEANUP SITES	SHELL PIPELINE	21500 PERRY ST CARSON CA 90745 ***Site Facility Type | Status:*** CLEANUP PROGRAM SITE | OPEN - SITE ASSESSMENT	NE	0.05 / 238.36	-1	134
13	RCRA NON GEN	JANE ALIMURUNG	21508 ALVAR PL CARSON CA 90745 ***EPA Handler ID:*** CAC003052160	N	0.05 / 240.30	0	162
14	LA COUNTY CUPA	DISCOUNT VANS	1135 E CARSON ST CARSON CA 90745	WSW	0.05 / 244.39	1	163
15	CLEANUP SITES	SHELL PIPELINE LEAK - COLONY HOLDINGS	1211 CARSON AVE. CARSON CA 90810	E	0.05 / 280.43	1	163

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number
			***Site Facility Type	Status:*** CLEANUP PROGRAM SITE | COMPLETED - CASE CLOSED			
16	CLEANUP SITES	COURTLAND PROWELL	"1216 CARSON STREET, EAST" CARSON CA 90810	SE	0.06 / 303.72	2	167
			***Site Facility Type	Status:*** CLEANUP PROGRAM SITE | COMPLETED - CASE CLOSED			
17	LA HMS		1220 E CARSON ST CARSON CA 90745	ESE	0.06 / 310.23	2	170
18	LA HMS		1226 E CARSON ST CARSON CA 90745	ESE	0.06 / 334.08	3	171
19	CLEANUP SITES	NICHOLSON INVESTMENT GROUP	"1202 CARSON STREET, EAST" CARSON CA 90810	SE	0.06 / 335.39	2	171
			***Site Facility Type	Status:*** CLEANUP PROGRAM SITE | COMPLETED - CASE CLOSED			
19	LA HMS		1202 E CARSON ST CARSON CA 90745	SE	0.06 / 335.39	2	173
19	RCRA NON GEN	INLAND KENWORTH INC US	1202 E CARSON ST CARSON CA 90745	SE	0.06 / 335.39	2	173
			EPA Handler ID: CAL000382039				
19	RCRA LQG	FORMER ACTIVE RV	1202 E CARSON ST CARSON CA 90745	SE	0.06 / 335.39	2	174
			EPA Handler ID: CAR000223115				
20	CLEANUP SITES	CHEVRON PIPELINE - DOMINGUEZ CHANNEL @ CARSON	CARSON STREET CARSON CA 90745	SSE	0.07 / 360.34	1	176
			***Site Facility Type	Status:*** CLEANUP PROGRAM SITE | COMPLETED - CASE CLOSED			
21	CLEANUP SITES	CRIMSON PIPELINE - DOMINGUEZ CHANNEL @ CARSON	CARSON STREET CARSON CA 90745	SSE	0.07 / 364.60	1	179
			***Site Facility Type	Status:*** CLEANUP PROGRAM SITE | COMPLETED - CASE CLOSED			
22	CLEANUP SITES	TESORO PIPELINE - DOMINGUEZ CHANNEL @ CARSON	CARSON STREET CARSON CA 90745	S	0.08 / 434.82	0	183
			***Site Facility Type	Status:*** CLEANUP PROGRAM SITE | COMPLETED - CASE CLOSED			
23	LA COUNTY CUPA	J & M PERALTA FARMS	21420 PERRY ST CARSON CA 90745	NNE	0.09 / 460.33	-1	190
24	VCP	SEA CREST PARCEL (A. K.A. PERRY STREET INVESTIGATION AREA)	INTERSECTION OF ALVAR STREET AND WINGATE STREET, BORDERED TO THE EAST BY PERRY STREET CARSON CA 90745	N	0.09 / 461.01	0	190

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number
			***Estor/EPA ID	Cleanup Status:*** 60000140 | CERTIFIED O&M - LAND USE RESTRICTIONS ONLY AS OF 5/14/2012			
24	LUR	SEA CREST PARCEL (A. K.A. PERRY STREET INVESTIGATION AREA)	INTERSECTION OF ALVAR STREET AND WINGATE STREET, BORDERED TO THE EAST BY PERRY STREET CARSON CA 90745 ***Estor/EPA ID	Cleanup Status:*** 60000140 | CERTIFIED O&M - LAND USE RESTRICTIONS ONLY AS OF 5/14/2012	N	0.09 / 461.01	0	192
24	ENVIROSTOR	SEA CREST PARCEL (A. K.A. PERRY STREET INVESTIGATION AREA)	INTERSECTION OF ALVAR STREET AND WINGATE STREET, BORDERED TO THE EAST BY PERRY STREET CARSON CA 90745 ***Estor/EPA ID	Cleanup Status:*** 60000140 | CERTIFIED O&M - LAND USE RESTRICTIONS ONLY AS OF 5/14/2012	N	0.09 / 461.01	0	195
25	CLEANUP SITES	DOMINGUEZ CHANNEL @ CARSON STREET (RELLC)	N/A CARSON STREET CARSON CA 90745 ***Site Facility Type	Status:*** CLEANUP PROGRAM SITE | OPEN - SITE ASSESSMENT	SSE	0.10 / 523.20	-1	197
26	CLEANUP SITES	DOMINGUEZ CHANNEL @ CARSON STREET (LADPW)	DOMINGUEZ CHANNEL CARSON CA 90745 ***Site Facility Type	Status:*** CLEANUP PROGRAM SITE | COMPLETED - CASE CLOSED	SSE	0.11 / 571.91	-1	282
27	LA HMS		1249 E CARSON ST CARSON CA 907451630	ESE	0.11 / 587.60	4	287
28	LA HMS		1101 E CARSON ST CARSON CA 90745	WSW	0.11 / 595.84	5	288
29	LA HMS		21402 S PERRY ST CARSON CA 907451609	NNE	0.12 / 633.37	-1	288
30	RCRA NON GEN	RICHARD CORPUZ	21408 S TROYTON LANE CARSON CA 90745-1617 ***EPA Handler ID:*** CAC003023437	NW	0.12 / 651.82	12	289
30	RCRA NON GEN	RICHARD CORPUZ	21408 S TROYTON LN CARSON CA 90745-1617 ***EPA Handler ID:*** CAC003057301	NW	0.12 / 651.82	12	290
31	CLEANUP SITES	SHELL PIPELINE 0367 - DOMINGUEZ CHANNEL @ CARSON	CARSON STREET CARSON CA 90745 ***Site Facility Type	Status:*** CLEANUP PROGRAM SITE | COMPLETED - CASE CLOSED	SSE	0.13 / 686.07	0	291
32	RCRA SQG	DOMINGUEZ CHANNEL SOUTH OF CARSON ST	405 FWY AND E CARSON ST 330 FT E OF INTERSECTION CARSON CA 90745 ***EPA Handler ID:*** CAR000221580	WSW	0.14 / 750.27	3	295

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number
33	DELISTED TNK	TOSCO/UNOCAL #31088	1025 E CARSON ST CARSON CA 90745	WNW	0.14 / 751.82	5	296
34	RCRA NON GEN	MICHAEL LEGASPI	1228 E 218TH ST CARSON CA 90745 ***EPA Handler ID:*** CAC002971858	SE	0.14 / 753.46	5	297
35	CLEANUP SITES	76 SERVICE STATION	1025 E. CARSON STREET CARSON CA 90746 ***Site Facility Type	Status:*** CLEANUP PROGRAM SITE | COMPLETED - CASE CLOSED	W	0.15 / 785.39	4	298
35	LUST	TOSCO - 76 STATION #6082	1025 CARSON ST E CARSON CA 90745 ***Global ID | Status | Status Date:*** T0603702871 | OPEN - REMEDIATION | 10/20/2006	W	0.15 / 785.39	4	300
35	LA HMS		1025 E CARSON ST CARSON CA 907453415	W	0.15 / 785.39	4	354
35	HHSS	UNION OIL SERVICE STATION 6082	1025 EAST CARSON CARSON CA 90745	W	0.15 / 785.39	4	356
35	HHSS	SERVICE STATION 6082	1025 E CARSON CARSON CA 93745	W	0.15 / 785.39	4	356
35	UST	CARSON UNION 76	1025 E CARSON ST CARSON CA 90745 ***Facility ID:*** LACoFA0006700	W	0.15 / 785.39	4	356
35	EMISSIONS	CARSON UNION 76, KAMBIZ KATIRAI	1025 E CARSON CARSON CA 90745	W	0.15 / 785.39	4	356
35	CERS TANK	CARSON UNION 76	1025 E CARSON ST CARSON CA 90745 ***Site ID:*** 103403	W	0.15 / 785.39	4	357
35	HIST TANK	UNION OIL SERVICE STATION 6082	1025 EAST CARSON CARSON CA	W	0.15 / 785.39	4	365
35	HIST TANK	SERVICE STATION 6082	1025 E CARSON CARSON CA	W	0.15 / 785.39	4	365
35	RCRA NON GEN	FORMER UNOCAL 351816	1025 E CARSON ST CARSON CA 90745-3415 ***EPA Handler ID:*** CAL000408019	W	0.15 / 785.39	4	365

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35	LA COUNTY CUPA	CARSON UNION 76	1025 E CARSON ST CARSON CA 90745	W	0.15 / 785.39	4	366
36	LA COUNTY CUPA	REPUBLIC MACHINERY CO INC	1000 E CARSON DR CARSON CA 90745	WSW	0.16 / 834.05	3	366
37	LA COUNTY CUPA	VILLAGE RV	21910 RECREATION RD CARSON CA 90745	S	0.16 / 839.13	3	367
38	RCRA NON GEN	TERESITA PUREZA	21534 WEISER AVE CARSON CA 90745 ***EPA Handler ID:*** CAC002985252	ENE	0.16 / 840.41	5	367
39	LA HMS		1010 E CARSON ST CARSON CA 90745	WSW	0.16 / 849.49	3	368
40	RCRA NON GEN	BENJAMIN CASTELLANOS	21317 S TROYTON LN CARSON CA 90745-1601 ***EPA Handler ID:*** CAC003033484	NW	0.16 / 860.28	16	368
41	RCRA SQG	J CS CLEANERS	1331 E CARSON ST CARSON CA 90745 ***EPA Handler ID:*** CAD981625429	E	0.17 / 901.99	5	369
41	DRYCLEANERS	JC CLEANERS	1331 E CARSON ST CARSON CA 907451631	E	0.17 / 901.99	5	370
41	DRYCLEANERS	J C CLEANERS	1331 E CARSON ST CARSON CA 907450000	E	0.17 / 901.99	5	370
41	EMISSIONS	J.C. CLEANERS, JUANITA CLARK D	1331 E. CARSON CARSON CA 90745	E	0.17 / 901.99	5	371
41	DRYC GRANT	JC's Cleaners	1331 E Carson St Carson CA 90745-1631	E	0.17 / 901.99	5	372
41	LA COUNTY CUPA	JC'S CLEANERS	1331 E CARSON ST CARSON CA 90745	E	0.17 / 901.99	5	372
42	LA HMS		21830 RECREATION RD CARSON CA 907452381	SSE	0.17 / 910.35	4	372
42	LA COUNTY CUPA	GO KART WORLD	21830 RECREATION RD CARSON CA 90745	SSE	0.17 / 910.35	4	372

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43	RCRA NON GEN	BURKLAND VINCE	1324 E 216TH ST CARSON CA 90745 ***EPA Handler ID:*** CAC003078664	E	0.17 / 918.40	5	372
44	RCRA TSD	OPRAH YELP	21901 ACARUS AVE CARSON CA 90745 ***EPA Handler ID:*** CAC003006981	SE	0.18 / 929.14	6	373
44	RCRA NON GEN	OPRAH YELP	21901 ACARUS AVE CARSON CA 90745 ***EPA Handler ID:*** CAC003006981	SE	0.18 / 929.14	6	375
45	LA HMS		1000 E CARSON ST CARSON CA 90745	WSW	0.18 / 936.15	0	376
45	RCRA NON GEN	MOUNTUNE LLC	1000 E CARSON STREET CARSON CA 90745 ***EPA Handler ID:*** CAC002981901	WSW	0.18 / 936.15	0	376
45	RCRA TSD	MOUNTUNE LLC	1000 E CARSON STREET CARSON CA 90745 ***EPA Handler ID:*** CAC003008213	WSW	0.18 / 936.15	0	377
45	RCRA NON GEN	MOUNTUNE LLC	1000 E CARSON STREET CARSON CA 90745 ***EPA Handler ID:*** CAC003008213	WSW	0.18 / 936.15	0	378
45	RCRA NON GEN	MOUNTUNE LLC	1000 E CARSON STREET CARSON CA 90745 ***EPA Handler ID:*** CAL000452496	WSW	0.18 / 936.15	0	379
46	CLEANUP SITES	SHELL PIPELINE CORRIDOR - W/O DOMINGUEZ CHANNEL @ CARSON	CARSON STREET CARSON CA 90745 ***Site Facility Type	Status:*** CLEANUP PROGRAM SITE | COMPLETED - CASE CLOSED	WSW	0.18 / 966.45	1	380
47	LA HMS		1347 E CARSON ST CARSON CA 90745	E	0.20 / 1,051.98	5	383
48	RCRA NON GEN	ROY BROWN	1316 E 215TH PL CARSON CA 90745-1622 ***EPA Handler ID:*** CAC003066057	ENE	0.20 / 1,052.76	5	383
49	LA HMS		939 E CARSON ST CARSON CA 907453413	W	0.20 / 1,066.28	0	384
49	LA COUNTY CUPA	JACK IN THE BOX #3525	939 E CARSON ST CARSON CA 90745	W	0.20 / 1,066.28	0	384

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49	RCRA LQG	SHELL PIPELINE COMPANY LP - CARSON VAULT SIT	939 EAST CARSON STREET CARSON CA 90745 ***EPA Handler ID:*** CAP000185280	W	0.20 / 1,066.28	0	385
50	RCRA NON GEN	CARRILLO, MARIA	21826 FOLEY AVENUE CARSON CA 90745 ***EPA Handler ID:*** CAC002995487	SW	0.21 / 1,084.14	1	387
51	RCRA NON GEN	HELEN MITCHELL	21917 ACARUS AVE CARSON CA 90745-2311 ***EPA Handler ID:*** CAC003041253	SE	0.21 / 1,104.04	5	388
52	RCRA NON GEN	THERESA AGUAYO	21315 WEISER AVE CARSON CA 90745 ***EPA Handler ID:*** CAC003083637	NE	0.22 / 1,147.76	5	389
53	RCRA NON GEN	ESTER DEGUZMAN	1050 EAST 219 THE STREET CARSON CA 90745 ***EPA Handler ID:*** CAC002967399	SSW	0.22 / 1,155.19	1	390
54	CLEANUP SITES	ACTA SOUTH - PARCEL SE-334	E. CARSON ST. CARSON CA 90810 ***Site Facility Type | Status:*** CLEANUP PROGRAM SITE | COMPLETED - CASE CLOSED	W	0.24 / 1,271.79	1	391
55	LA SML	VERA LANE	21801 VERA ST CARSON CA 90745	ESE	0.27 / 1,442.50	5	393
56	SWF/LF	Blocker Dump	21600 Bonita St Carson CA 99999	W	0.28 / 1,471.63	2	393
57	LA SWF	Shell Oil CO.	21200 Vera Street, Carson, CA Carson CA ***Status:*** Closed	NE	0.37 / 1,944.67	6	393
58	LDS	Gardena Valley No. 6	213th Street (21001 Chico Street) Carson CA 90745	NW	0.37 / 1,956.17	5	394
59	FED BROWNFIELDS	Carson City Hall Renovation	701 to 801 E Carson St Carson CA 90745	W	0.38 / 2,029.26	4	396
60	ENVIROSTOR	CARSON CITY HALL RENOVATION	701 TO 801 E CARSON ST. CARSON CA 90745 ***Estor/EPA ID | Cleanup Status:*** 60002140 | INACTIVE - NEEDS EVALUATION AS OF 12/14/2015	W	0.40 / 2,109.34	4	397
61	RCRA TSD	TONI ONTIVEROS	21315 LOSTINE AVENUE CARSON CA 90745-1715	ENE	0.42 / 2,233.24	6	399

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number
			EPA Handler ID: CAC003010707				
62	RCRA TSD	ELIZABETH CORDOVA	1525 EAST 218TH STREET CARSON CA 90745	ESE	0.46 / 2,438.14	6	400
			EPA Handler ID: CAC003016476				
63	SWF/LF	Gardena Valley #6 (Ford Center)	21007 Chico St Carson CA 90745	NNW	0.47 / 2,478.62	4	401
			Act Opl Status | Activity: Closed | Solid Waste Disposal Site				
63	LA SWF	Gardena Valley #6 (Ford Center)	21007 Chico Street, Carson, CA 90745 Carson CA ***Status:*** Closed	NNW	0.47 / 2,478.62	4	402
64	CLEANUP SITES	ETHYL CORP.	1201 E. LOMITA BLVD CARSON CA 90745	NW	0.47 / 2,481.80	-1	402
			Site Facility Type | Status: CLEANUP PROGRAM SITE | COMPLETED - CASE CLOSED				
64	CLEANUP SITES	SOMERSET DISTRIBUTORS	20499 S. REEVES AVE CARSON CA 90810	NW	0.47 / 2,481.80	-1	404
			Site Facility Type | Status: CLEANUP PROGRAM SITE | COMPLETED - CASE CLOSED				
64	CLEANUP SITES	CITY OF CARSON - L & M FRANKLIN INV.	2035 E. 223RD ST CARSON CA 90745	NW	0.47 / 2,481.80	-1	406
			Site Facility Type | Status: CLEANUP PROGRAM SITE | OPEN - INACTIVE				
64	CLEANUP SITES	MONSATO CARSON PLANT	2100 E. 223RD ST CARSON CA 90810	NW	0.47 / 2,481.80	-1	407
			Site Facility Type | Status: CLEANUP PROGRAM SITE | OPEN - INACTIVE				
64	CLEANUP SITES	K AND T LOGISTIC CENTER	2417 E. CARSON AVE CARSON CA 90810	NW	0.47 / 2,481.80	-1	409
			Site Facility Type | Status: CLEANUP PROGRAM SITE | COMPLETED - CASE CLOSED				
64	CLEANUP SITES	CITY OF CARSON - PEPSI BOTTLING GROUP	19700 S. FIGUROA ST CARSON CA 90745	NW	0.47 / 2,481.80	-1	410
			Site Facility Type | Status: CLEANUP PROGRAM SITE | OPEN - INACTIVE				
64	CLEANUP SITES	VICTORIA INDUSTRIAL PARK	331-401 W. VICTORIA ST CARSON CA 90220	NW	0.47 / 2,481.80	-1	411
			Site Facility Type | Status: CLEANUP PROGRAM SITE | COMPLETED - CASE CLOSED				
64	CLEANUP SITES	DOMINGUEZ HILLS / CALLENDER PROPERTY	17809 PALM CRT CARSON CA 90746	NW	0.47 / 2,481.80	-1	413
			Site Facility Type | Status: CLEANUP PROGRAM SITE | COMPLETED - CASE CLOSED				
65	ENVIROSTOR	GARDENA VALLEY LANDFILL NO. 6	CHICO AND DOMINGUEZ STREET CARSON CA 90746	NNW	0.56 / 2,968.66	0	415
			Estor/EPA ID | Cleanup Status: 19490105 | INACTIVE - NEEDS EVALUATION AS OF 8/3/2020				

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number
66	ENVIROSTOR	GOLDEN WEST CIRCUITS, INC. - CARSON	1139 E. DOMINGUEZ STREET #A CARSON CA 90746	N	0.64 / 3,374.63	0	420
			***Estor/EPA ID	Cleanup Status:*** 71002805 | REFER: OTHER AGENCY AS OF			
67	ENVIROSTOR	OLD QUAKER PAINT CO	21243 SOUTH AVALON BOULEVARD CARSON CA 90745	WNW	0.65 / 3,435.69	0	420
			***Estor/EPA ID	Cleanup Status:*** 19280371 | REFER: EPA AS OF 8/24/2007			
68	ENVIROSTOR	ALPERT & ALPERT IRON & METAL	21930 S. WILMINGTON AVE. CARSON CA 90810	ESE	0.76 / 4,024.36	8	421
			***Estor/EPA ID	Cleanup Status:*** 19990052 | REFER: 1248 LOCAL AGENCY AS OF 1/15/2004			
69	ENVIROSTOR	DEL AMO ELEMENTARY SCHOOL	21228 WATER STREET CARSON CA 90745	ENE	0.77 / 4,059.24	8	422
			***Estor/EPA ID	Cleanup Status:*** 60000406 | NO FURTHER ACTION AS OF 9/11/2008			
70	RCRA CORRACTS	HUCK INTERNATIONAL INC	900 EAST WATSON CENTER ROAD CARSON CA 90745-0000 ***EPA Handler ID:*** CAD044429884	SSW	0.86 / 4,554.59	17	423
71	ENVIROSTOR	CLEAN STEEL INC.	2061 E. 220TH STREET CARSON CA 90810	ESE	0.86 / 4,565.63	8	452
			***Estor/EPA ID	Cleanup Status:*** 70000130 | REFER: 1248 LOCAL AGENCY AS OF 9/7/2005			
72	ENVIROSTOR	RAINBOW TANK CLEANERS	21119 WILMINGTON AVENUE LONG BEACH CA 90810	ENE	0.90 / 4,763.54	9	452
			***Estor/EPA ID	Cleanup Status:*** 71002321 | REFER: OTHER AGENCY AS OF			
73	ENVIROSTOR	HUCK INTERNATIONAL INC	900 E WATSON CENTER RD CARSON CA 907450000	SSW	0.90 / 4,766.40	18	453
			***Estor/EPA ID	Cleanup Status:*** CAD044429884 |			
73	ENVIROSTOR	HUCK INTERNATIONAL INC DBA ALCOA FASTENING SYSTEMS	900 E WATSON CENTER RD CARSON CA 907450000	SSW	0.90 / 4,766.40	18	454
			***Estor/EPA ID	Cleanup Status:*** 80001388 | NO FURTHER ACTION AS OF 4/7/2011			
73	HWP	HUCK INTERNATIONAL INC	900 E WATSON CENTER RD CARSON CA 907450000	SSW	0.90 / 4,766.40	18	457
			Estor/EPA ID: CAD044429884				
74	ENVIROSTOR	HUCK INTERNATIONAL, INC..	900 WATSON CENTER ROAD CARSON CA 90745	SSW	0.91 / 4,800.08	18	458
			***Estor/EPA ID	Cleanup Status:*** 71003679 | REFER: OTHER AGENCY AS OF			
74	ENVIROSTOR	HUCK INTERNATIONAL, INC..	900 WATSON CENTER ROAD CARSON CA 90745	SSW	0.91 / 4,800.08	18	459
			***Estor/EPA ID	Cleanup Status:*** 71003680 | REFER: OTHER AGENCY AS OF			
75	RCRA CORRACTS	CHEMICAL RAINBOW TANK LINES	21119 WILMINGTON AVE LONG BEACH CA 90810	ENE	0.94 / 4,971.79	10	459

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number
			EPA Handler ID: CAD009774118				
75	ENVIROSTOR	RAINBOW INC	21119 WILMINGTON AVE LONG BEACH CA 908100000	ENE	0.94 / 4,971.79	10	475
			***Estor/EPA ID	Cleanup Status:*** CAD009774118 |			
75	ENVIROSTOR	RAINBOW LLC	21119 WILMINGTON AVE CARSON CA 908100000	ENE	0.94 / 4,971.79	10	476
			***Estor/EPA ID	Cleanup Status:*** 80001649 | ACTIVE AS OF 1/1/2008			
75	HWP	RAINBOW INC	21119 WILMINGTON AVE LONG BEACH CA 908100000	ENE	0.94 / 4,971.79	10	494
			Estor/EPA ID: CAD009774118				
76	RCRA CORRACTS	NIKLOR CHEMICAL CO., INC.	2060 E 220TH STREET LONG BEACH CA 90810	ESE	0.96 / 5,069.41	8	495
			EPA Handler ID: CAD008392052				
76	ENVIROSTOR	NIKLOR CHEMICAL CO INC	2060 E 220TH ST LONG BEACH CA 908100000	ESE	0.96 / 5,069.41	8	498
			***Estor/EPA ID	Cleanup Status:*** CAD008392052 |			
76	ENVIROSTOR	NIKLOR CHEMICAL CO INC	2060 E 220TH ST LONG BEACH CA 908100000	ESE	0.96 / 5,069.41	8	499
			***Estor/EPA ID	Cleanup Status:*** 80001581 | NO ACTION REQUIRED AS OF 6/19/2013			
76	ENVIROSTOR	NIKLOR CHEMICAL COMPANY INC.	2060 E. 220TH ST. CARSON CA 90810	ESE	0.96 / 5,069.41	8	500
			***Estor/EPA ID	Cleanup Status:*** 19281226 | REFER: 1248 LOCAL AGENCY AS OF 5/27/2004			
76	HWP	NIKLOR CHEMICAL CO INC	2060 E 220TH ST LONG BEACH CA 908100000	ESE	0.96 / 5,069.41	8	500
			Estor/EPA ID: CAD008392052				
77	ENVIROSTOR	PIONEER VIDEO MFG., INC.	1041 E. 230TH STREET CARSON CA 90745	S	0.96 / 5,089.87	17	501
			***Estor/EPA ID	Cleanup Status:*** 71002654 | REFER: OTHER AGENCY AS OF			

Executive Summary: Summary by Data Source

Standard

Federal

NPL - National Priority List

A search of the NPL database, dated Sep 22, 2020 has found that there are 1 NPL site(s) within approximately 1.00 miles of the project property.

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
MONTROSE CHEMICAL CORP.	20201 S NORMANDIE AVE TORRANCE CA 90502 ***EPA ID**: CAD008242711*	W	0.03 / 157.08	8

SEMS - SEMS List 8R Active Site Inventory

A search of the SEMS database, dated Oct 28, 2020 has found that there are 1 SEMS site(s) within approximately 0.50 miles of the project property.

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
MONTROSE CHEMICAL CORP.	20201 S NORMANDIE AVE TORRANCE CA 90502 ***EPA ID**: CAD008242711*	SSW	0.04 / 206.20	9

RCRA CORRACTS - RCRA CORRACTS-Corrective Action

A search of the RCRA CORRACTS database, dated Oct 19, 2020 has found that there are 3 RCRA CORRACTS site(s) within approximately 1.00 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
HUCK INTERNATIONAL INC	900 EAST WATSON CENTER ROAD CARSON CA 90745-0000 ***EPA Handler ID**: CAD044429884*	SSW	0.86 / 4,554.59	70
CHEMICAL RAINBOW TANK LINES	21119 WILMINGTON AVE LONG BEACH CA 90810 ***EPA Handler ID**: CAD009774118*	ENE	0.94 / 4,971.79	75
NIKLOR CHEMICAL CO., INC.	2060 E 220TH STREET LONG BEACH CA 90810 ***EPA Handler ID**: CAD008392052*	ESE	0.96 / 5,069.41	76

RCRA TSD - RCRA non-CORRACTS TSD Facilities

A search of the RCRA TSD database, dated Oct 19, 2020 has found that there are 4 RCRA TSD site(s) within approximately 0.50 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
OPRAH YELP	21901 ACARUS AVE CARSON CA 90745 ***EPA Handler ID**: CAC003006981*	SE	0.18 / 929.14	44
TONI ONTIVEROS	21315 LOSTINE AVENUE CARSON CA 90745-1715 ***EPA Handler ID**: CAC003010707*	ENE	0.42 / 2,233.24	61
ELIZABETH CORDOVA	1525 EAST 218TH STREET CARSON CA 90745 ***EPA Handler ID**: CAC003016476*	ESE	0.46 / 2,438.14	62

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
MOUNTUNE LLC	1000 E CARSON STREET CARSON CA 90745 ***EPA Handler ID**: CAC003008213*	WSW	0.18 / 936.15	45

RCRA LQG - RCRA Generator List

A search of the RCRA LQG database, dated Oct 19, 2020 has found that there are 2 RCRA LQG site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
FORMER ACTIVE RV	1202 E CARSON ST CARSON CA 90745 ***EPA Handler ID**: CAR000223115*	SE	0.06 / 335.39	19
SHELL PIPELINE COMPANY LP - CARSON VAULT SIT	939 EAST CARSON STREET CARSON CA 90745 ***EPA Handler ID**: CAP000185280*	W	0.20 / 1,066.28	49

RCRA SQG - RCRA Small Quantity Generators List

A search of the RCRA SQG database, dated Oct 19, 2020 has found that there are 5 RCRA SQG site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
AIR HARBOR MACHINE CO INC	21611 PERRY ST CARSON CA 90745 ***EPA Handler ID**: CAD008504185*	E	0.00 / 0.00	1
SHELL OIL CO	21611 S PERRY ST CARSON CA 90475 ***EPA Handler ID**: CAR000150862*	E	0.00 / 0.00	1
VINCES AUTOMOTIVE SPECIALITIES	1209 E CARSON ST CARSON CA 90745 ***EPA Handler ID**: CAR000221572*	ESE	0.02 / 123.52	7

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
DOMINGUEZ CHANNEL SOUTH OF CARSON ST	405 FWY AND E CARSON ST 330 FT E OF INTERSECTION CARSON CA 90745 ***EPA Handler ID**: CAR000221580*	WSW	0.14 / 750.27	32
J CS CLEANERS	1331 E CARSON ST CARSON CA 90745 ***EPA Handler ID**: CAD981625429*	E	0.17 / 901.99	41

RCRA NON GEN - RCRA Non-Generators

A search of the RCRA NON GEN database, dated Oct 19, 2020 has found that there are 21 RCRA NON GEN site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
CAROLY LEE	1136 E 215TH ST CARSON CA 90745 ***EPA Handler ID**: CAC002986238*	NNW	0.02 / 121.65	6
RICK NICKEL INC DBA RICKS LUBE & TUNE & BRAKES	1209 E CARSON ST CARSON CA 90745 ***EPA Handler ID**: CAL000374011*	ESE	0.02 / 123.52	7
TEXACO DOWNSTREAM #211316	1209 E CARSON ST CARSON CA 90745-1630 ***EPA Handler ID**: CAL000254205*	ESE	0.02 / 123.52	7
JANE ALIMURUNG	21508 ALVAR PL CARSON CA 90745 ***EPA Handler ID**: CAC003052160*	N	0.05 / 240.30	13
INLAND KENWORTH INC US	1202 E CARSON ST CARSON CA 90745 ***EPA Handler ID**: CAL000382039*	SE	0.06 / 335.39	19
RICHARD CORPUZ	21408 S TROYTON LN CARSON CA 90745-1617 ***EPA Handler ID**: CAC003057301*	NW	0.12 / 651.82	30
RICHARD CORPUZ	21408 S TROYTON LANE CARSON CA 90745-1617 ***EPA Handler ID**: CAC003023437*	NW	0.12 / 651.82	30
MICHAEL LEGASPI	1228 E 218TH ST CARSON CA 90745 ***EPA Handler ID**: CAC002971858*	SE	0.14 / 753.46	34
FORMER UNOCAL 351816	1025 E CARSON ST CARSON CA 90745-3415 ***EPA Handler ID**: CAL000408019*	W	0.15 / 785.39	35
TERESITA PUREZA	21534 WEISER AVE CARSON CA 90745	ENE	0.16 / 840.41	38

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
	***EPA Handler ID**: CAC002985252*			
BENJAMIN CASTELLANOS	21317 S TROYTON LN CARSON CA 90745-1601	NW	0.16 / 860.28	40
	***EPA Handler ID**: CAC003033484*			
BURKLAND VINCE	1324 E 216TH ST CARSON CA 90745	E	0.17 / 918.40	43
	***EPA Handler ID**: CAC003078664*			
OPRAH YELP	21901 ACARUS AVE CARSON CA 90745	SE	0.18 / 929.14	44
	***EPA Handler ID**: CAC003006981*			
ROY BROWN	1316 E 215TH PL CARSON CA 90745-1622	ENE	0.20 / 1,052.76	48
	***EPA Handler ID**: CAC003066057*			
CARRILLO, MARIA	21826 FOLEY AVENUE CARSON CA 90745	SW	0.21 / 1,084.14	50
	***EPA Handler ID**: CAC002995487*			
HELEN MITCHELL	21917 ACARUS AVE CARSON CA 90745-2311	SE	0.21 / 1,104.04	51
	***EPA Handler ID**: CAC003041253*			
THERESA AGUAYO	21315 WEISER AVE CARSON CA 90745	NE	0.22 / 1,147.76	52
	***EPA Handler ID**: CAC003083637*			
ESTER DEGUZMAN	1050 EAST 219 THE STREET CARSON CA 90745	SSW	0.22 / 1,155.19	53
	***EPA Handler ID**: CAC002967399*			

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
MOUNTUNE LLC	1000 E CARSON STREET CARSON CA 90745	WSW	0.18 / 936.15	45
	***EPA Handler ID**: CAC002981901*			
MOUNTUNE LLC	1000 E CARSON STREET CARSON CA 90745	WSW	0.18 / 936.15	45
	***EPA Handler ID**: CAC003008213*			
MOUNTUNE LLC	1000 E CARSON STREET CARSON CA 90745	WSW	0.18 / 936.15	45
	***EPA Handler ID**: CAL000452496*			

FED BROWNFIELDS - The Assessment, Cleanup and Redevelopment Exchange System (ACRES) Brownfield Database

A search of the FED BROWNFIELDS database, dated Sep 3, 2019 has found that there are 1 FED BROWNFIELDS site(s) within approximately 0.50 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
Carson City Hall Renovation	701 to 801 E Carson St Carson CA 90745	W	0.38 / 2,029.26	59

SUPERFUND ROD - Superfund Decision Documents

A search of the SUPERFUND ROD database, dated Sep 22, 2020 has found that there are 1 SUPERFUND ROD site(s) within approximately 1.00 miles of the project property.

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
MONTROSE CHEMICAL CORP.	20201 S NORMANDIE AVE TORRANCE CA 90502	SSW	0.04 / 206.20	9

State

ENVIROSTOR - EnviroStor Database

A search of the ENVIROSTOR database, dated Oct 5, 2020 has found that there are 20 ENVIROSTOR site(s) within approximately 1.00 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
PERRY STREET	21502-21526 PERRY STREET CARSON CA 90745	SE	0.01 / 59.20	3
	***Estor/EPA ID	Cleanup Status**: 19460004	NO FURTHER ACTION AS OF 10/17/2003*		
SEA CREST PARCEL (A.K.A. PERRY STREET INVESTIGATION AREA)	INTERSECTION OF ALVAR STREET AND WINGATE STREET, BORDERED TO THE EAST BY PERRY STREET CARSON CA 90745	N	0.09 / 461.01	24
	***Estor/EPA ID	Cleanup Status**: 60000140	CERTIFIED O&M - LAND USE RESTRICTIONS ONLY AS OF 5/14/2012*		
CARSON CITY HALL RENOVATION	701 TO 801 E CARSON ST. CARSON CA 90745	W	0.40 / 2,109.34	60
	***Estor/EPA ID	Cleanup Status**: 60002140	INACTIVE - NEEDS EVALUATION AS OF 12/14/2015*		
GARDENA VALLEY LANDFILL NO. 6	CHICO AND DOMINGUEZ STREET CARSON CA 90746	NNW	0.56 / 2,968.66	65
	***Estor/EPA ID	Cleanup Status**: 19490105	INACTIVE - NEEDS EVALUATION AS OF 8/3/2020*		
GOLDEN WEST CIRCUITS, INC. - CARSON	1139 E. DOMINGUEZ STREET #A CARSON CA 90746	N	0.64 / 3,374.63	66
	***Estor/EPA ID	Cleanup Status**: 71002805	REFER: OTHER AGENCY AS OF*		
OLD QUAKER PAINT CO	21243 SOUTH AVALON BOULEVARD CARSON CA 90745	WNW	0.65 / 3,435.69	67
	***Estor/EPA ID	Cleanup Status**: 19280371	REFER: EPA AS OF 8/24/2007*		
ALPERT & ALPERT IRON & METAL	21930 S. WILMINGTON AVE. CARSON CA 90810	ESE	0.76 / 4,024.36	68
	***Estor/EPA ID	Cleanup Status**: 19990052	REFER: 1248 LOCAL AGENCY AS OF 1/15/2004*		

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
DEL AMO ELEMENTARY SCHOOL	21228 WATER STREET CARSON CA 90745	ENE	0.77 / 4,059.24	69
	***Estor/EPA ID | Cleanup Status**: 60000406 | NO FURTHER ACTION AS OF 9/11/2008*			
CLEAN STEEL INC.	2061 E. 220TH STREET CARSON CA 90810	ESE	0.86 / 4,565.63	71
	***Estor/EPA ID | Cleanup Status**: 70000130 | REFER: 1248 LOCAL AGENCY AS OF 9/7/2005*			
RAINBOW TANK CLEANERS	21119 WILMINGTON AVENUE LONG BEACH CA 90810	ENE	0.90 / 4,763.54	72
	***Estor/EPA ID | Cleanup Status**: 71002321 | REFER: OTHER AGENCY AS OF*			
HUCK INTERNATIONAL INC DBA ALCOA FASTENING SYSTEMS	900 E WATSON CENTER RD CARSON CA 907450000	SSW	0.90 / 4,766.40	73
	***Estor/EPA ID | Cleanup Status**: 80001388 | NO FURTHER ACTION AS OF 4/7/2011*			
HUCK INTERNATIONAL INC	900 E WATSON CENTER RD CARSON CA 907450000	SSW	0.90 / 4,766.40	73
	***Estor/EPA ID | Cleanup Status**: CAD044429884 |*			
HUCK INTERNATIONAL, INC..	900 WATSON CENTER ROAD CARSON CA 90745	SSW	0.91 / 4,800.08	74
	***Estor/EPA ID | Cleanup Status**: 71003680 | REFER: OTHER AGENCY AS OF*			
HUCK INTERNATIONAL, INC..	900 WATSON CENTER ROAD CARSON CA 90745	SSW	0.91 / 4,800.08	74
	***Estor/EPA ID | Cleanup Status**: 71003679 | REFER: OTHER AGENCY AS OF*			
RAINBOW LLC	21119 WILMINGTON AVE CARSON CA 908100000	ENE	0.94 / 4,971.79	75
	***Estor/EPA ID | Cleanup Status**: 80001649 | ACTIVE AS OF 1/1/2008*			
RAINBOW INC	21119 WILMINGTON AVE LONG BEACH CA 908100000	ENE	0.94 / 4,971.79	75
	***Estor/EPA ID | Cleanup Status**: CAD009774118 |*			
NIKLOR CHEMICAL COMPANY INC.	2060 E. 220TH ST. CARSON CA 90810	ESE	0.96 / 5,069.41	76
	***Estor/EPA ID | Cleanup Status**: 19281226 | REFER: 1248 LOCAL AGENCY AS OF 5/27/2004*			
NIKLOR CHEMICAL CO INC	2060 E 220TH ST LONG BEACH CA 908100000	ESE	0.96 / 5,069.41	76
	***Estor/EPA ID | Cleanup Status**: 80001581 | NO ACTION REQUIRED AS OF 6/19/2013*			
NIKLOR CHEMICAL CO INC	2060 E 220TH ST LONG BEACH CA 908100000	ESE	0.96 / 5,069.41	76
	***Estor/EPA ID | Cleanup Status**: CAD008392052 |*			
PIONEER VIDEO MFG., INC.	1041 E. 230TH STREET CARSON CA 90745	S	0.96 / 5,089.87	77
	***Estor/EPA ID | Cleanup Status**: 71002654 | REFER: OTHER AGENCY AS OF*			

SWF/LF - Solid Waste Information System (SWIS)

A search of the SWF/LF database, dated Oct 15, 2020 has found that there are 2 SWF/LF site(s) within approximately 0.50 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
Blocker Dump	21600 Bonita St Carson CA 99999	W	0.28 / 1,471.63	56
Gardena Valley #6 (Ford Center)	21007 Chico St Carson CA 90745	NNW	0.47 / 2,478.62	63
	***Act Opl Status** | **Activity**: Closed | Solid Waste Disposal Site*			

HWP - EnviroStor Hazardous Waste Facilities

A search of the HWP database, dated Oct 5, 2020 has found that there are 3 HWP site(s) within approximately 1.00 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
HUCK INTERNATIONAL INC	900 E WATSON CENTER RD CARSON CA 907450000	SSW	0.90 / 4,766.40	73
	***Estor/EPA ID**: CAD044429884*			
RAINBOW INC	21119 WILMINGTON AVE LONG BEACH CA 908100000	ENE	0.94 / 4,971.79	75
	***Estor/EPA ID**: CAD009774118*			
NIKLOR CHEMICAL CO INC	2060 E 220TH ST LONG BEACH CA 908100000	ESE	0.96 / 5,069.41	76
	***Estor/EPA ID**: CAD008392052*			

LDS - Land Disposal Sites

A search of the LDS database, dated Nov 16, 2020 has found that there are 1 LDS site(s) within approximately 0.50 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
Gardena Valley No. 6	213th Street (21001 Chico Street) Carson CA 90745	NW	0.37 / 1,956.17	58

LUST - Leaking Underground Fuel Tank Reports

A search of the LUST database, dated Nov 16, 2020 has found that there are 2 LUST site(s) within approximately 0.50 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
TEXACO SERVICE STATION (FORMER)	1209 CARSON ST. E. CARSON CA 90801	ESE	0.02 / 123.52	7
	***Global ID** | **Status** | **Status Date**: T0603722212 | COMPLETED - CASE CLOSED | 3/9/2015*			

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
TOSCO - 76 STATION #6082	1025 CARSON ST E CARSON CA 90745	W	0.15 / 785.39	35
	***Global ID** | **Status** | **Status Date**: T0603702871 | OPEN - REMEDIATION | 10/20/2006*			

UST - Permitted Underground Storage Tank (UST) in GeoTracker

A search of the UST database, dated Nov 16, 2020 has found that there are 1 UST site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
CARSON UNION 76	1025 E CARSON ST CARSON CA 90745	W	0.15 / 785.39	35
	***Facility ID**: LACoFA0006700*			

HHSS - Historical Hazardous Substance Storage Information Database

A search of the HHSS database, dated Aug 27, 2015 has found that there are 2 HHSS site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
SERVICE STATION 6082	1025 E CARSON CARSON CA 93745	W	0.15 / 785.39	35
UNION OIL SERVICE STATION 6082	1025 EAST CARSON CARSON CA 90745	W	0.15 / 785.39	35

DELISTED TNK - Delisted Storage Tanks

A search of the DELISTED TNK database, dated Dec 9, 2020 has found that there are 1 DELISTED TNK site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
TOSCO/UNOCAL #31088	1025 E CARSON ST CARSON CA 90745	WNW	0.14 / 751.82	33

CERS TANK - California Environmental Reporting System (CERS) Tanks

A search of the CERS TANK database, dated Oct 26, 2020 has found that there are 1 CERS TANK site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
CARSON UNION 76	1025 E CARSON ST CARSON CA 90745	W	0.15 / 785.39	35
	***Site ID**: 103403*			

LUR - Site Mitigation and Brownfields Reuse Program Facility Sites with Land Use Restrictions

A search of the LUR database, dated Oct 5, 2020 has found that there are 1 LUR site(s) within approximately 0.50 miles of the project

property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
SEA CREST PARCEL (A.K.A. PERRY STREET INVESTIGATION AREA)	INTERSECTION OF ALVAR STREET AND WINGATE STREET, BORDERED TO THE EAST BY PERRY STREET CARSON CA 90745	N	0.09 / 461.01	24
	***Estor/EPA ID	Cleanup Status**: 60000140	CERTIFIED O&M - LAND USE RESTRICTIONS ONLY AS OF 5/14/2012*			

DEED - Deed Restrictions and Land Use Restrictions

A search of the DEED database, dated Nov 16, 2020 has found that there are 1 DEED site(s) within approximately 0.50 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
CARSON AIR HARBOR	21611 PERRY ST CARSON CA	E	0.00 / 0.00	1

VCP - Voluntary Cleanup Program

A search of the VCP database, dated Oct 5, 2020 has found that there are 2 VCP site(s) within approximately 0.50 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
PERRY STREET	21502-21526 PERRY STREET CARSON CA 90745	SE	0.01 / 59.20	3
	***Estor/EPA ID	Cleanup Status**: 19460004	NO FURTHER ACTION AS OF 10/17/2003*			
SEA CREST PARCEL (A.K.A. PERRY STREET INVESTIGATION AREA)	INTERSECTION OF ALVAR STREET AND WINGATE STREET, BORDERED TO THE EAST BY PERRY STREET CARSON CA 90745	N	0.09 / 461.01	24
	***Estor/EPA ID	Cleanup Status**: 60000140	CERTIFIED O&M - LAND USE RESTRICTIONS ONLY AS OF 5/14/2012*			

CLEANUP SITES - GeoTracker Cleanup Program Sites

A search of the CLEANUP SITES database, dated Nov 16, 2020 has found that there are 24 CLEANUP SITES site(s) within approximately 0.50 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
CARSON AIR HARBOR	21611 PERRY ST CARSON CA	E	0.00 / 0.00	1
	***Site Facility Type	Status**: CLEANUP PROGRAM SITE	COMPLETED - CASE CLOSED*			
FORMER TEXACO SERVICE STATION	1209 E. CARSON STREET CARSON CA 90746	ESE	0.02 / 123.52	7
	***Site Facility Type	Status**: CLEANUP PROGRAM SITE	COMPLETED - CASE CLOSED*			
SHELL PIPELINE LEAK - COLONY HOLDINGS	1211 CARSON AVE. CARSON CA 90810	E	0.05 / 280.43	15
	***Site Facility Type	Status**: CLEANUP PROGRAM SITE	COMPLETED - CASE CLOSED*			

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
COURTLAND PROWELL	"1216 CARSON STREET, EAST" CARSON CA 90810	SE	0.06 / 303.72	16
	Site Facility Type* | *Status: *CLEANUP PROGRAM SITE* | *COMPLETED - CASE CLOSED*			
NICHOLSON INVESTMENT GROUP	"1202 CARSON STREET, EAST" CARSON CA 90810	SE	0.06 / 335.39	19
	Site Facility Type* | *Status: *CLEANUP PROGRAM SITE* | *COMPLETED - CASE CLOSED*			
CHEVRON PIPELINE - DOMINGUEZ CHANNEL @ CARSON	CARSON STREET CARSON CA 90745	SSE	0.07 / 360.34	20
	Site Facility Type* | *Status: *CLEANUP PROGRAM SITE* | *COMPLETED - CASE CLOSED*			
CRIMSON PIPELINE - DOMINGUEZ CHANNEL @ CARSON	CARSON STREET CARSON CA 90745	SSE	0.07 / 364.60	21
	Site Facility Type* | *Status: *CLEANUP PROGRAM SITE* | *COMPLETED - CASE CLOSED*			
TESORO PIPELINE - DOMINGUEZ CHANNEL @ CARSON	CARSON STREET CARSON CA 90745	S	0.08 / 434.82	22
	Site Facility Type* | *Status: *CLEANUP PROGRAM SITE* | *COMPLETED - CASE CLOSED*			
76 SERVICE STATION	1025 E. CARSON STREET CARSON CA 90746	W	0.15 / 785.39	35
	Site Facility Type* | *Status: *CLEANUP PROGRAM SITE* | *COMPLETED - CASE CLOSED*			
SHELL PIPELINE CORRIDOR - W/O DOMINGUEZ CHANNEL @ CARSON	CARSON STREET CARSON CA 90745	WSW	0.18 / 966.45	46
	Site Facility Type* | *Status: *CLEANUP PROGRAM SITE* | *COMPLETED - CASE CLOSED*			
ACTA SOUTH - PARCEL SE-334	E. CARSON ST. CARSON CA 90810	W	0.24 / 1,271.79	54
	Site Facility Type* | *Status: *CLEANUP PROGRAM SITE* | *COMPLETED - CASE CLOSED*			

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
BP PIPELINE - DOMINGUEZ CHANNEL @ CARSON	CARSON STREET CARSON CA 90745	W	0.02 / 120.56	5
	Site Facility Type* | *Status: *CLEANUP PROGRAM SITE* | *COMPLETED - CASE CLOSED*			
SHELL PIPELINE	21500 PERRY ST CARSON CA 90745	NE	0.05 / 238.36	12
	Site Facility Type* | *Status: *CLEANUP PROGRAM SITE* | *OPEN - SITE ASSESSMENT*			
DOMINGUEZ CHANNEL @ CARSON STREET (RELLC)	N/A CARSON STREET CARSON CA 90745	SSE	0.10 / 523.20	25
	Site Facility Type* | *Status: *CLEANUP PROGRAM SITE* | *OPEN - SITE ASSESSMENT*			
DOMINGUEZ CHANNEL @ CARSON STREET (LADPW)	DOMINGUEZ CHANNEL CARSON CA 90745	SSE	0.11 / 571.91	26

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
	Site Facility Type* | *Status: *CLEANUP PROGRAM SITE* | *COMPLETED - CASE CLOSED*			
SHELL PIPELINE 0367 - DOMINGUEZ CHANNEL @ CARSON	CARSON STREET CARSON CA 90745	SSE	0.13 / 686.07	31
	Site Facility Type* | *Status: *CLEANUP PROGRAM SITE* | *COMPLETED - CASE CLOSED*			
DOMINGUEZ HILLS / CALLENDER PROPERTY	17809 PALM CRT CARSON CA 90746	NW	0.47 / 2,481.80	64
	Site Facility Type* | *Status: *CLEANUP PROGRAM SITE* | *COMPLETED - CASE CLOSED*			
VICTORIA INDUSTRIAL PARK	331-401 W. VICTORIA ST CARSON CA 90220	NW	0.47 / 2,481.80	64
	Site Facility Type* | *Status: *CLEANUP PROGRAM SITE* | *COMPLETED - CASE CLOSED*			
CITY OF CARSON - PEPSI BOTTLING GROUP	19700 S. FIGUROA ST CARSON CA 90745	NW	0.47 / 2,481.80	64
	Site Facility Type* | *Status: *CLEANUP PROGRAM SITE* | *OPEN - INACTIVE*			
K AND T LOGISTIC CENTER	2417 E. CARSON AVE CARSON CA 90810	NW	0.47 / 2,481.80	64
	Site Facility Type* | *Status: *CLEANUP PROGRAM SITE* | *COMPLETED - CASE CLOSED*			
MONSATO CARSON PLANT	2100 E. 223RD ST CARSON CA 90810	NW	0.47 / 2,481.80	64
	Site Facility Type* | *Status: *CLEANUP PROGRAM SITE* | *OPEN - INACTIVE*			
CITY OF CARSON - L & M FRANKLIN INV.	2035 E. 223RD ST CARSON CA 90745	NW	0.47 / 2,481.80	64
	Site Facility Type* | *Status: *CLEANUP PROGRAM SITE* | *OPEN - INACTIVE*			
SOMERSET DISTRIBUTORS	20499 S. REEVES AVE CARSON CA 90810	NW	0.47 / 2,481.80	64
	Site Facility Type* | *Status: *CLEANUP PROGRAM SITE* | *COMPLETED - CASE CLOSED*			
ETHYL CORP.	1201 E. LOMITA BLVD CARSON CA 90745	NW	0.47 / 2,481.80	64
	Site Facility Type* | *Status: *CLEANUP PROGRAM SITE* | *COMPLETED - CASE CLOSED*			

HIST TANK - Historical Hazardous Substance Storage Container Information - Facility Summary

A search of the HIST TANK database, dated May 27, 1988 has found that there are 2 HIST TANK site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
UNION OIL SERVICE STATION 6082	1025 EAST CARSON CARSON CA	W	0.15 / 785.39	35
SERVICE STATION 6082	1025 E CARSON CARSON CA	W	0.15 / 785.39	35

County

LA SML - Los Angeles County - Site Mitigation List

A search of the LA SML database, dated Jul 20, 2020 has found that there are 1 LA SML site(s) within approximately 0.50 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
VERA LANE	21801 VERA ST CARSON CA 90745	ESE	0.27 / 1,442.50	55

LA SWF - Los Angeles County - Solid Waste Sites

A search of the LA SWF database, dated Sep 2, 2020 has found that there are 2 LA SWF site(s) within approximately 0.50 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
Shell Oil CO.	21200 Vera Street, Carson, CA Carson CA ***Status**: Closed*	NE	0.37 / 1,944.67	57
Gardena Valley #6 (Ford Center)	21007 Chico Street, Carson, CA 90745 Carson CA ***Status**: Closed*	NNW	0.47 / 2,478.62	63

LA COUNTY CUPA - Los Angeles County - CUPA Program Records

A search of the LA COUNTY CUPA database, dated Mar 25, 2020 has found that there are 11 LA COUNTY CUPA site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
AIR HARBOR MACHINE CO INC	21611 PERRY ST CARSON CA 90745	E	0.00 / 0.00	1
RICKS LUBE & TUNE & BRAKES	1209 E CARSON ST CARSON CA 90745	ESE	0.02 / 123.52	7
DISCOUNT VANS	1135 E CARSON ST CARSON CA 90745	WSW	0.05 / 244.39	14
CARSON UNION 76	1025 E CARSON ST CARSON CA 90745	W	0.15 / 785.39	35
REPUBLIC MACHINERY CO INC	1000 E CARSON DR CARSON CA 90745	WSW	0.16 / 834.05	36

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
VILLAGE RV	21910 RECREATION RD CARSON CA 90745	S	0.16 / 839.13	37
JC'S CLEANERS	1331 E CARSON ST CARSON CA 90745	E	0.17 / 901.99	41
GO KART WORLD	21830 RECREATION RD CARSON CA 90745	SSE	0.17 / 910.35	42
JACK IN THE BOX #3525	939 E CARSON ST CARSON CA 90745	W	0.20 / 1,066.28	49

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
TOP VEGTABLE FARMS	21506 PERRY ST CARSON CA 90745	NE	0.04 / 221.83	11
J & M PERALTA FARMS	21420 PERRY ST CARSON CA 90745	NNE	0.09 / 460.33	23

LA HMS - Los Angeles County - HMS List

A search of the LA HMS database, dated Nov 5, 2020 has found that there are 18 LA HMS site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
	21611 S PERRY ST CARSON CA 90746	E	0.00 / 0.00	1
	21610 S PERRY ST #8 CARSON CA 90745	E	0.01 / 40.27	2
	1152 E CARSON ST CARSON CA 90745	SE	0.02 / 80.29	4
	1209 E CARSON ST CARSON CA 90745	ESE	0.02 / 123.52	7
	1220 E CARSON ST CARSON CA 90745	ESE	0.06 / 310.23	17

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
	1226 E CARSON ST CARSON CA 90745	ESE	0.06 / 334.08	18
	1202 E CARSON ST CARSON CA 90745	SE	0.06 / 335.39	19
	1249 E CARSON ST CARSON CA 907451630	ESE	0.11 / 587.60	27
	1101 E CARSON ST CARSON CA 90745	WSW	0.11 / 595.84	28
	1025 E CARSON ST CARSON CA 907453415	W	0.15 / 785.39	35
	1010 E CARSON ST CARSON CA 90745	WSW	0.16 / 849.49	39
	21830 RECREATION RD CARSON CA 907452381	SSE	0.17 / 910.35	42
	1347 E CARSON ST CARSON CA 90745	E	0.20 / 1,051.98	47
	939 E CARSON ST CARSON CA 907453413	W	0.20 / 1,066.28	49

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key
	1141 E CARSON ST CARSON CA 90745	WSW	0.04 / 208.68	10
	21506 S PERRY ST CARSON CA 90745	NE	0.04 / 221.83	11
	21402 S PERRY ST CARSON CA 907451609	NNE	0.12 / 633.37	29
	1000 E CARSON ST CARSON CA 90745	WSW	0.18 / 936.15	45

Lower Elevation	Address	Direction	Distance (mi/ft)	Map Key

Non Standard

Federal

FINDS/FRS - Facility Registry Service/Facility Index

A search of the FINDS/FRS database, dated Jun 15, 2020 has found that there are 3 FINDS/FRS site(s) within approximately 0.02 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
CARSON AIR HARBOR	21611 PERRY ST CARSON CA 90745	E	0.00 / 0.00	1
SHELL OIL CO	21611 SOUTH PERRY STREET CARSON CA 90745-1613	E	0.00 / 0.00	1
AIR HARBOR MACHINE CO INC	21611 PERRY ST CARSON CA 90745	E	0.00 / 0.00	1

State

DRYCLEANERS - Dry Cleaning Facilities

A search of the DRYCLEANERS database, dated Nov 10, 2020 has found that there are 2 DRYCLEANERS site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
JC CLEANERS	1331 E CARSON ST CARSON CA 907451631	E	0.17 / 901.99	41
J C CLEANERS	1331 E CARSON ST CARSON CA 907450000	E	0.17 / 901.99	41

DRYC GRANT - Non-Toxic Dry Cleaning Incentive Program

A search of the DRYC GRANT database, dated Feb 28, 2018 has found that there are 1 DRYC GRANT site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
JC's Cleaners	1331 E Carson St Carson CA 90745-1631	E	0.17 / 901.99	41

HAZNET - Hazardous Waste Manifest Data

A search of the HAZNET database, dated Oct 24, 2016 has found that there are 8 HAZNET site(s) within approximately 0.02 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
TRITON DIAGNOSTICS INC	21611 S PERRY ST CARSON CA 90745	E	0.00 / 0.00	1
CARSON TRAILERS	21611 PERRY ST CARSON CA 907450000	E	0.00 / 0.00	1
BEACH BOATS INC	21611 PERRY ST CARSON CA 907450000	E	0.00 / 0.00	1
SHELL OIL CO	21611 S PERRY ST CARSON CA 904750000	E	0.00 / 0.00	1
1X AIR HARBOR MACHINE	21611 PERRY ST. CARSON CA 907450000	E	0.00 / 0.00	1
CARSON AIR HARBOR LIMITED	21611 PERRY ST CARSON CA 907450000	E	0.00 / 0.00	1
AIR HARBOR MACHINE CO INC	21611 PERRY ST CARSON CA 907450000	E	0.00 / 0.00	1
PROWELL FAMILY TRUST	1152 E CARSON ST CARSON CA 90745	SE	0.02 / 80.29	4

HIST MANIFEST - Historical Hazardous Waste Manifest Data

A search of the HIST MANIFEST database, dated Dec 31, 1992 has found that there are 2 HIST MANIFEST site(s) within approximately 0.02 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
	21611 PERRY ST. CARSON CA 907450000	E	0.00 / 0.00	1
	21611 PERRY ST CARSON CA 907450000	E	0.00 / 0.00	1

CERS HAZ - California Environmental Reporting System (CERS) Hazardous Waste Sites

A search of the CERS HAZ database, dated Oct 26, 2020 has found that there are 1 CERS HAZ site(s) within approximately 0.12 miles

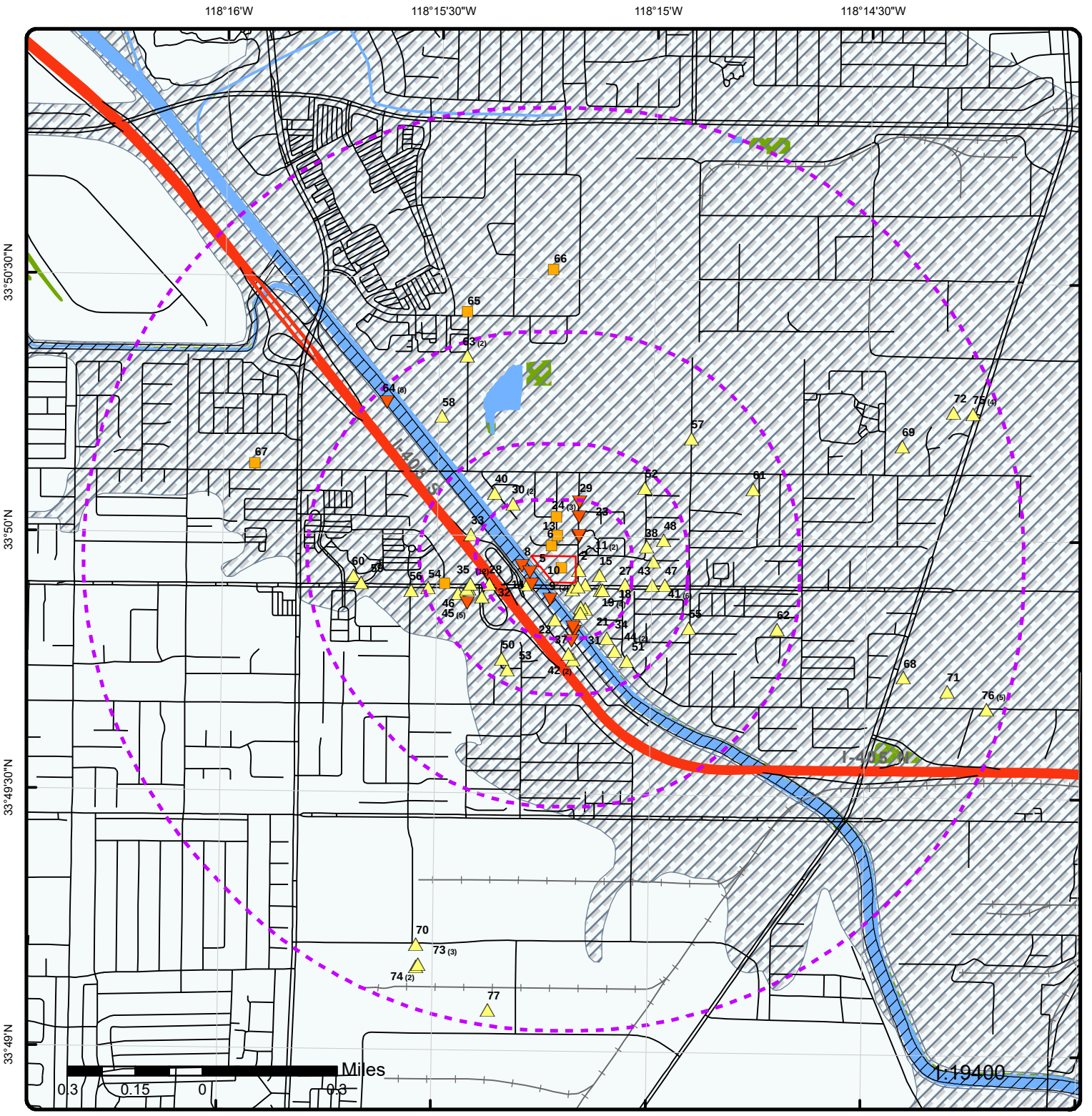
of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
RICKS LUBE & TUNE & BRAKES	1209 E CARSON ST CARSON CA 90745	ESE	0.02 / 123.52	7

EMISSIONS - Toxic Pollutant Emissions Facilities

A search of the EMISSIONS database, dated Dec 31, 2018 has found that there are 2 EMISSIONS site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
CARSON UNION 76, KAMBIZ KATIRAI	1025 E CARSON CARSON CA 90745	W	0.15 / 785.39	35
J.C. CLEANERS, JUANITA CLARK D	1331 E. CARSON CARSON CA 90745	E	0.17 / 901.99	41



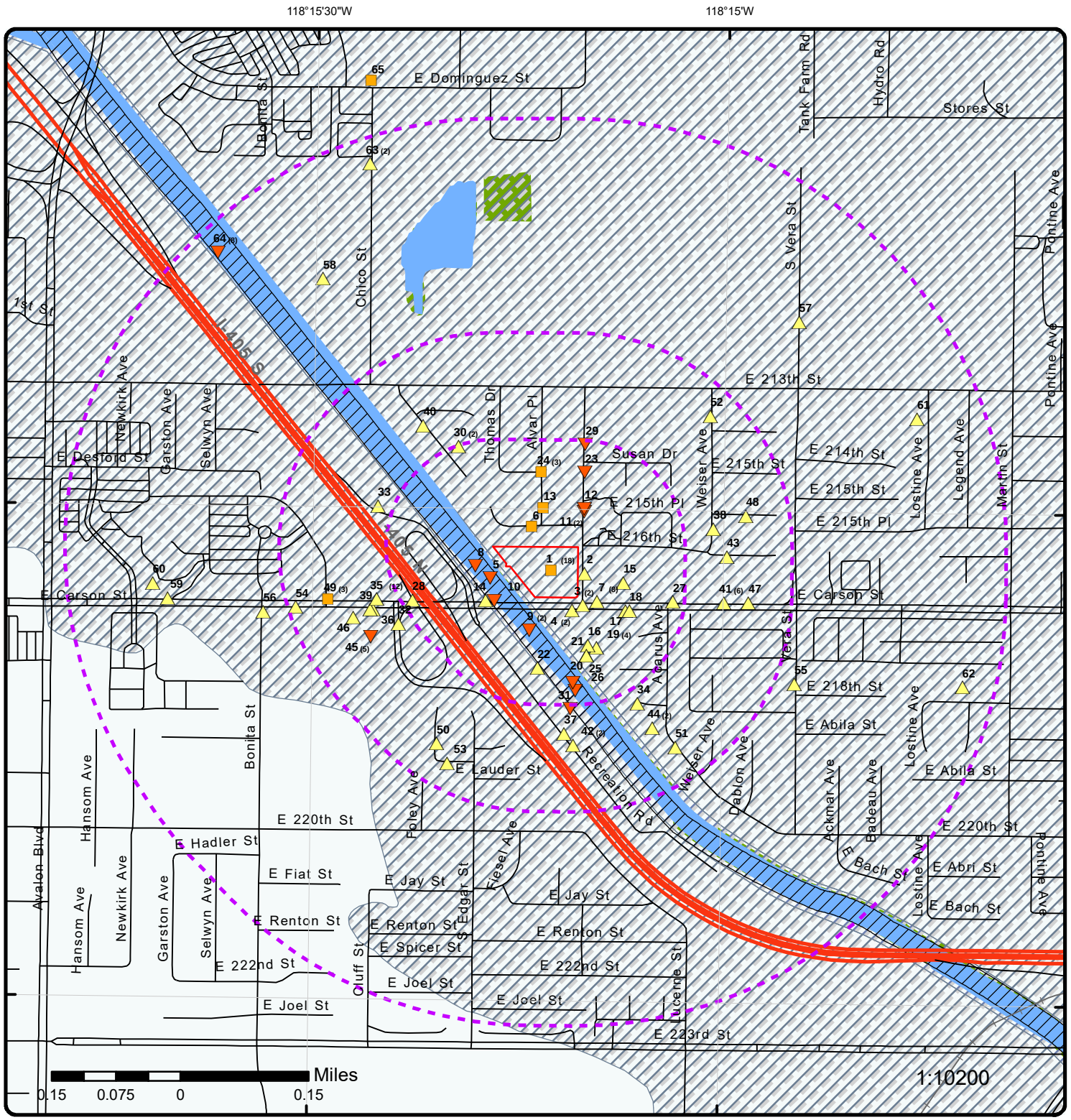
Map : 1.0 Mile Radius

Order Number: 20322800357

Address: 21611 South Perry Street, Carson, CA

ENVIRONMENTAL RISK INFORMATION SERVICES

- Project Property
- Buffer Outline
- Eris Sites with Higher Elevation
- Eris Sites with Same Elevation
- Eris Sites with Lower Elevation
- Eris Sites with Unknown Elevation
- County Boundary
- Rails
- Major Highways
- Major Highways Ramps
- Major Roads
- Major Roads Ramps
- Secondary Roads
- Secondary Roads Ramps
- Local Roads and Ramps
- State Boundary
- National Priority List Sites
- National Wetland
- Indian Reserve Land
- Historic Fill
- 100 Year Flood Zone
- 500 Year Flood Zone
- FWS Special Designation Areas
- State Brownfield Sites
- State Brownfield Areas
- State Superfund Areas:Dept. of Defense
- State Superfund Areas:NPL
- WQARF Areas
- Federal Lands: Dept. of Defense (owned/administered areas)



Map : 0.5 Mile Radius

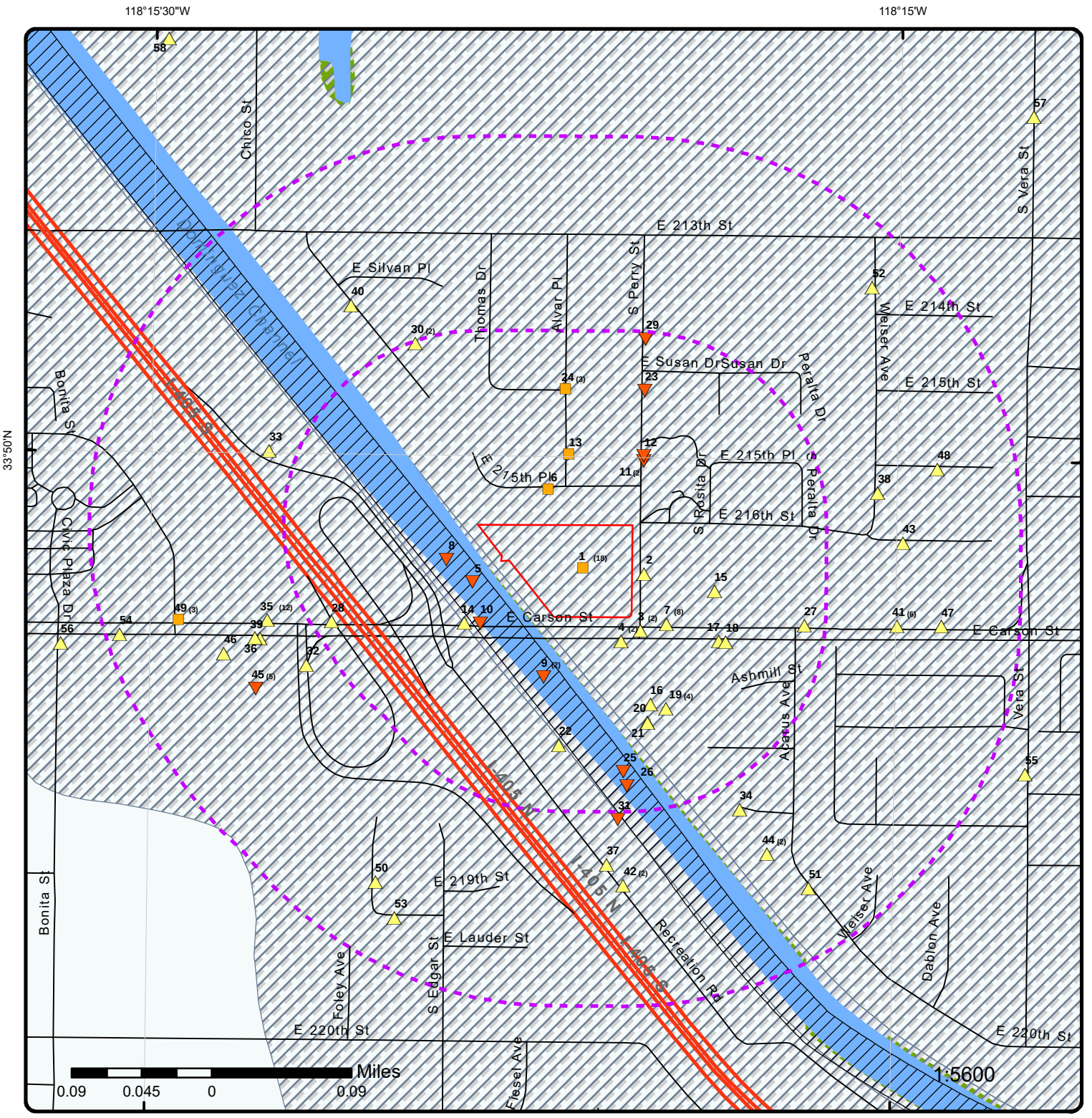
Order Number: 20322800357

Address: 21611 South Perry Street, Carson, CA

ENVIRONMENTAL RISK INFORMATION SERVICES

- Project Property
- Buffer Outline
- Eris Sites with Higher Elevation
- Eris Sites with Same Elevation
- Eris Sites with Lower Elevation
- Eris Sites with Unknown Elevation
- County Boundary
- Rails
- Major Highways
- Major Highways Ramps
- Major Roads
- Major Roads Ramps
- Secondary Roads
- Secondary Roads Ramps
- Local Roads and Ramps
- State Boundary
- National Priority List Sites
- National Wetland
- Indian Reserve Land
- Historic Fill
- 100 Year Flood Zone
- 500 Year Flood Zone
- FWS Special Designation Areas
- State Brownfield Sites
- State Brownfield Areas
- State Superfund Areas:Dept. of Defense
- State Superfund Areas:NPL
- WQARF Areas
- Federal Lands: Dept. of Defense (owned/administered areas)

Source: © 2016 ESRI



Map : 0.25 Mile Radius

Order Number: 20322800357

Address: 21611 South Perry Street, Carson, CA

ENVIRONMENTAL RISK INFORMATION SERVICES

- Project Property
- Buffer Outline
- Eris Sites with Higher Elevation
- Eris Sites with Same Elevation
- Eris Sites with Lower Elevation
- Eris Sites with Unknown Elevation
- County Boundary
- Rails
- Major Highways
- Major Highways Ramps
- Major Roads
- Major Roads Ramps
- Secondary Roads
- Secondary Roads Ramps
- Local Roads and Ramps
- State Boundary
- National Priority List Sites
- National Wetland
- Indian Reserve Land
- Historic Fill
- 100 Year Flood Zone
- 500 Year Flood Zone
- FWS Special Designation Areas
- State Brownfield Sites
- State Brownfield Areas
- State Superfund Areas:Dept. of Defense
- State Superfund Areas:NPL
- WQARF Areas
- Federal Lands: Dept. of Defense (owned/administered areas)

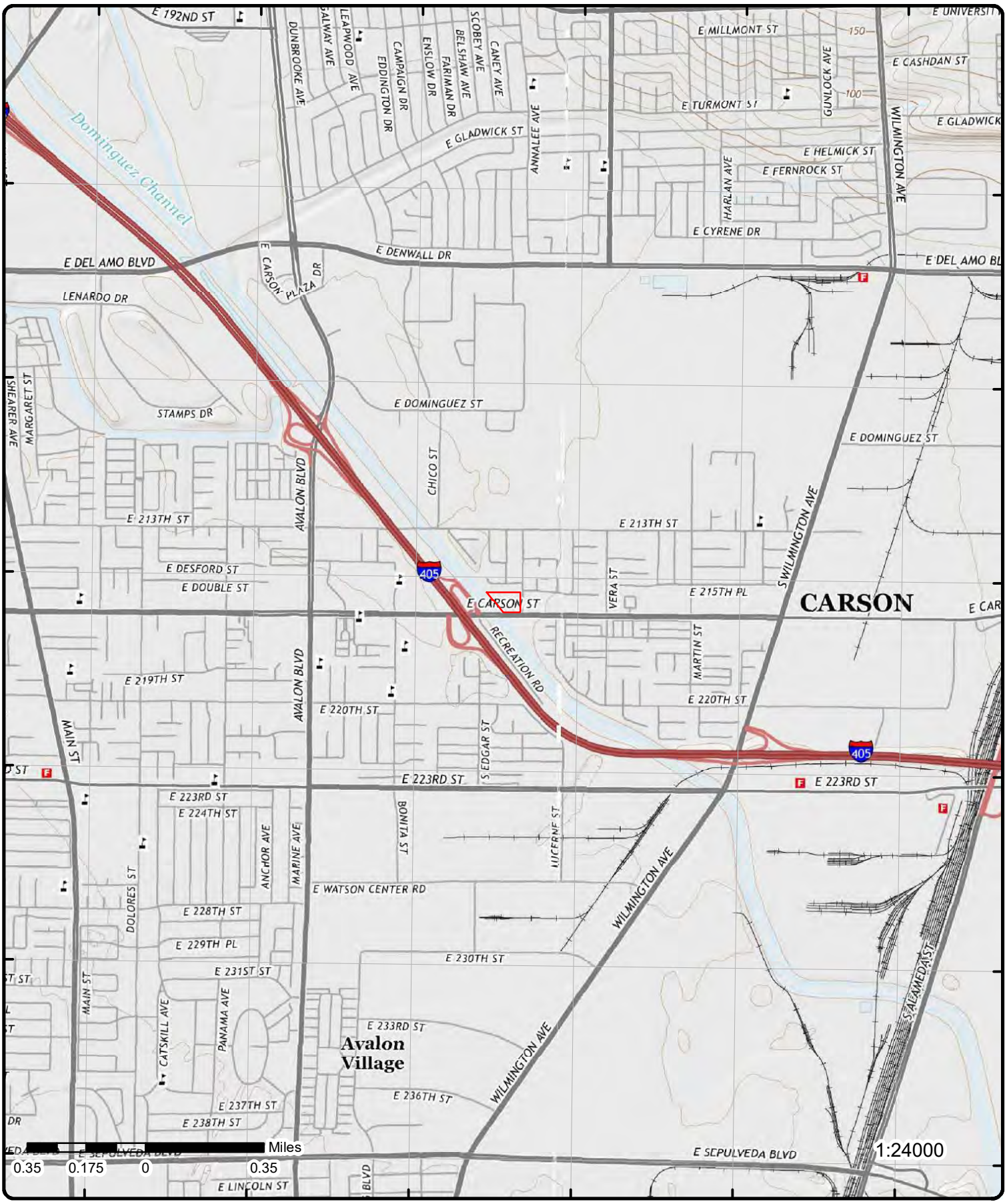
Aerial **Year: 2015**

Address: 21611 South Perry Street, Carson, CA

Source: ESRI World Imagery

Order Number: 20322800357

ERIS ENVIRONMENTAL RISK INFORMATION SERVICES



Topographic Map

Year: 2015

Address: 21611 South Perry Street, CA

Quadrangle(s): Long Beach,CA; Torrance,CA

Source: USGS Topographic Map

Order Number: 20322800357

ERIS ENVIRONMENTAL RISK INFORMATION SERVICES

Detail Report

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
1	1 of 18	E	0.00 / 0.00	17.48 / 0	AIR HARBOR MACHINE CO INC 21611 PERRY ST CARSON CA 90745	RCRA SQG

EPA Handler ID: CAD008504185
Gen Status Universe: Small Quantity Generator
Contact Name:
Contact Address: US
Contact Phone No and Ext:
Contact Email:
Contact Country: US
County Name: LOS ANGELES
EPA Region: 09
Land Type:
Receive Date: 19960901

Violation/Evaluation Summary

Note: NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No
Furnace Exemption: No
Underground Injection Activity: No
Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 19960901
Handler Name: AIR HARBOR MACHINE CO INC
Federal Waste Generator Code: 2
Generator Code Description: Small Quantity Generator
Source Type: Implementer

Owner/Operator Details

Owner/Operator Ind: Current Owner
Type: Private
Name: NOT REQUIRED
Date Became Current:
Street No:
Street 1: NOT REQUIRED
Street 2:
City: NOT REQUIRED

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Date Ended Current:		**State:**	ME
Phone:	415-555-1212	**Country:**	
Source Type:	Implementer	**Zip Code:**	99999
Owner/Operator Ind:	Current Operator	**Street No:**	
Type:	Private	**Street 1:**	NOT REQUIRED
Name:	NOT REQUIRED	**Street 2:**	
Date Became Current:		**City:**	NOT REQUIRED
Date Ended Current:		**State:**	ME
Phone:	415-555-1212	**Country:**	
Source Type:	Implementer	**Zip Code:**	99999

1	2 of 18	E	0.00 / 0.00	17.48 / 0	**AIR HARBOR MACHINE CO INC** **21611 PERRY ST** **CARSON CA 90745**	FINDS/FRS

Registry ID:	110002634588
FIPS Code:	06037
HUC Code:	18070104
Site Type Name:	STATIONARY
Location Description:	
Supplemental Location:	
Create Date:	01-MAR-00
Update Date:	29-DEC-14
Interest Types:	SQG
SIC Codes:	
SIC Code Descriptions:	
NAICS Codes:	
NAICS Code Descriptions:	
Conveyor:	FRS-GEOCODE
Federal Facility Code:	
Federal Agency Name:	
Tribal Land Code:	
Tribal Land Name:	
Congressional Dist No:	37
Census Block Code:	060375433061003
EPA Region Code:	09
County Name:	LOS ANGELES
US/Mexico Border Ind:	
Latitude:	33.83226
Longitude:	-118.25279
Reference Point:	CENTER OF A FACILITY OR STATION
Coord Collection Method:	ADDRESS MATCHING-HOUSE NUMBER
Accuracy Value:	30
Datum:	NAD83
Source:	
Facility Detail Rprt URL:	https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110002634588
Program Acronyms:	

RCRAINFO:CAD008504185

1	3 of 18	E	0.00 / 0.00	17.48 / 0	**SHELL OIL CO** **21611 SOUTH PERRY STREET** **CARSON CA 90745-1613**	FINDS/FRS

Registry ID:	110017216751
FIPS Code:	06037
HUC Code:	18070104
Site Type Name:	STATIONARY
Location Description:	
Supplemental Location:	
Create Date:	11-MAR-04
Update Date:	26-JAN-12
Interest Types:	SQG, STATE MASTER, TRANSPORTER
SIC Codes:	

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

SIC Code Descriptions:
NAICS Codes:
NAICS Code Descriptions:
Conveyor: FRS-GEOCODE
Federal Facility Code:
Federal Agency Name:
Tribal Land Code:
Tribal Land Name:
Congressional Dist No: 37
Census Block Code: 060375433061003
EPA Region Code: 09
County Name: LOS ANGELES
US/Mexico Border Ind:
Latitude: 33.83226
Longitude: -118.25279
Reference Point: CENTER OF A FACILITY OR STATION
Coord Collection Method: ADDRESS MATCHING-HOUSE NUMBER
Accuracy Value: 30
Datum: NAD83
Source:
Facility Detail Rprt URL: https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110017216751
Program Acronyms:

HWTS-DATAMART:CAR000150862, RCRAINFO:CAR000150862

1	*4 of 18*	*E*	*0.00 / 0.00*	*17.48 / 0*	***CARSON AIR HARBOR*** ***21611 PERRY ST*** ***CARSON CA***	***CLEANUP SITES***

Global ID: SL204EC2405
Status: COMPLETED - CASE CLOSED
Status Date: 10/23/2015
Longitude: -118.253252506256
Site Facility Type: CLEANUP PROGRAM SITE
County: LOS ANGELES
Latitude: 33.8320395091596
Data Source: Cleanup Program Sites from GeoTracker Search; Cleanup Sites from GeoTracker Cleanup Sites Data Download

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail(as Nov 16 2020)

RB Case No: 0490C
Local Case No:
Begin Date: 1/1/2001
Stop Method:
Lead Agency: LOS ANGELES RWQCB (REGION 4)
Local Agency:
Potential COC:
Potential Media of Concern:
How Discovered:
How Discovered Description:
Stop Description:
Calwater Watershed Name: Dominguez Channel (411.01)
DWR GW Subbasin Name: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Disadvantaged Community:
CUF Case: NO
Case Worker:
File Location: Regional Board
Site History:

Site had several industrial facilities. On-site sources included a former septic system that had been converted into a waste oil tank. The site has been delineated and demonstrated to have some chlorinated solvent impacts but also petroleum impacts. The chlorinated solvent impacts are believed to be sourced from the former septic/waste-oil system. The petroleum impacts are believed to be associated with a release from pipelines in Perry Street and Carson Street adjacent to the site. On-site excavation was performed in 2015 to remove soil impacts above agreed cleanup levels. This case is closed for soil only. Groundwater issues remain. Shell has requested to merge SCP Nos. 0490A, 0490B, and 0490C (see letter dated 9/2/2015). All groundwater oversight will be completed under GeoTracker No. SLT43288286, SCP No. 0490B.

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Activity(as Nov 16 2020)

Action Type: ENFORCEMENT

Date : 2015-12-14 00:00:00
Action: Closure/No Further Action Letter

Action Type: ENFORCEMENT
Date : 2015-09-30 00:00:00
Action: Letter - Notice

Action Type: ENFORCEMENT
Date : 2015-09-25 00:00:00
Action: Notification - Preclosure

Action Type: RESPONSE
Date : 2015-09-02 00:00:00
Action: Correspondence

Action Type: ENFORCEMENT
Date : 2015-09-02 00:00:00
Action: Arbitration/Dispute Resolution

Action Type: RESPONSE
Date : 2015-08-05 00:00:00
Action: Other Report / Document

Action Type: ENFORCEMENT
Date : 2015-07-08 00:00:00
Action: Deed Restriction / Land Use Restriction / Covenant

Action Type: ENFORCEMENT
Date : 2015-05-29 00:00:00
Action: Staff Letter

Action Type: RESPONSE
Date : 2014-12-15 00:00:00
Action: Remedial Action Complete

Action Type: ENFORCEMENT
Date : 2014-09-16 00:00:00
Action: Technical Correspondence / Assistance / Other

Action Type: RESPONSE
Date : 2014-04-25 00:00:00
Action: Removal Action Work Plan - Regulator Responded

Action Type: ENFORCEMENT
Date : 2014-04-21 00:00:00
Action: Staff Letter

Action Type: ENFORCEMENT
Date : 2014-04-18 00:00:00
Action: Staff Letter

Action Type: RESPONSE
Date : 2014-03-31 00:00:00
Action: Site Assessment Report

Action Type: ENFORCEMENT
Date : 2014-01-23 00:00:00
Action: Staff Letter

Action Type: ENFORCEMENT
Date : 2013-11-15 00:00:00
Action: Staff Letter

Action Type: ENFORCEMENT
Date : 2013-06-28 00:00:00
Action: Staff Letter

Action Type: ENFORCEMENT
Date : 2013-05-20 00:00:00

Action: Staff Letter

Action Type: ENFORCEMENT
Date : 2012-10-10 00:00:00
Action: Staff Letter

Action Type: ENFORCEMENT
Date : 2012-08-03 00:00:00
Action: Technical Correspondence / Assistance / Other

Action Type: ENFORCEMENT
Date : 2012-06-20 00:00:00
Action: 13267 Requirement

Action Type: RESPONSE
Date : 2012-04-11 00:00:00
Action: Site Assessment Report

Action Type: ENFORCEMENT
Date : 2011-07-14 00:00:00
Action: Technical Correspondence / Assistance / Other

Action Type: RESPONSE
Date : 2011-06-08 00:00:00
Action: Site Investigation Workplan

Action Type: ENFORCEMENT
Date : 2011-04-26 00:00:00
Action: 13267 Requirement

Action Type: ENFORCEMENT
Date : 2010-07-21 00:00:00
Action: Site Visit / Inspection / Sampling

Action Type: ENFORCEMENT
Date : 2010-07-08 00:00:00
Action: Technical Correspondence / Assistance / Other

Action Type: RESPONSE
Date : 2004-07-07 00:00:00
Action: Risk Assessment Report

Action Type: Other
Date : 1965-01-02 00:00:00
Action: Leak Reported

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History(as Nov 16 2020)

Status: Completed - Case Closed
Status Date: 2015-10-23 00:00:00

Status: Open - Remediation
Status Date: 2014-09-18 00:00:00

Status: Open - Site Assessment
Status Date: 2001-03-01 00:00:00

Status: Open - Case Begin Date
Status Date: 2001-01-01 00:00:00

Cleanup Program Sites from GeoTracker Search - Regulatory Profile (as of Oct 06, 2020)

Project Status:
CUF Claim:
CUF Priority Assign:
CUF Amount Paid:
Facility Type:
WDR Place Type:
WDR File:
WDR Order:
File Location: REGIONAL BOARD
Composting Method:

User Defined Beneficial Use:
Designated Beneficial Use: MUN, AGR, IND, PROC
Designated Beneficl Use Desc: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, Industrial Process Supply
Project Oversight Agencies:
Report Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=SL204EC2405
Cleanup Status Detail: COMPLETED - CASE CLOSED AS OF 10/23/2015
Cleanup History Link: https://geotracker.waterboards.ca.gov/profile_report_include?global_id=SL204EC2405&tabname=regulatoryhistory
Potential COC: PETROLEUM/FUELS/OILS, VOLATILE ORGANIC COMPOUNDS
Potential Media of Concern: NONE SPECIFIED
GW Monitoring Freq:
DWR GW Sub Basin: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Calwater Watershed Name: Dominguez Channel (411.01)
Post Closure Site Management:
Future Land Use:
Cleanup Oversight Agencies: LOS ANGELES RWQCB (REGION 4) (LEAD) - CASE #: 0490C
Site History:

Site had several industrial facilities. On-site sources included a former septic system that had been converted into a waste oil tank. The site has been delineated and demonstrated to have some chlorinated solvent impacts but also petroleum impacts. The chlorinated solvent impacts are believed to be sourced from the former septic/waste-oil system. The petroleum impacts are believed to be associated with a release from pipelines in Perry Street and Carson Street adjacent to the site. On-site excavation was performed in 2015 to remove soil impacts above agreed cleanup levels.

This case is closed for soil only. Groundwater issues remain. Shell has requested to merge SCP Nos. 0490A, 0490B, and 0490C (see letter dated 9/2/2015). All groundwater oversight will be completed under GeoTracker No. SLT43288286, SCP No. 0490B.

Sites from GeoTracker Search - Regulatory Activities (as of Oct 06, 2020)

Action Type: Other Regulatory Actions
Action Date: 12/14/2015
Received Issue Date: 12/14/2015
Action: Closure/No Further Action Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6270105&temptable=ENFORCEMENT
Title Description Comments:

No Further Action for Soil

Action Type: Notices
Action Date: 9/30/2015
Received Issue Date: 9/30/2015
Action: Letter - Notice
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6262703&temptable=ENFORCEMENT
Title Description Comments:

Approval of Request to Merge Three Groundwater Cases

Action Type: Notices
Action Date: 9/25/2015
Received Issue Date: 9/25/2015
Action: Notification - Preclosure
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6261716&temptable=ENFORCEMENT
Title Description Comments:

Notice of Opportunity to Comment - No Further Action (RELLC)

Action Type: Notices
Action Date: 9/25/2015
Received Issue Date: 9/25/2015
Action: Notification - Preclosure
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6261715&temptable=ENFORCEMENT
Title Description Comments:

Notice of Opportunity to Comment - No Further Action (Shell Oil Products US)

Action Type: Notices
Action Date: 9/25/2015
Received Issue Date: 9/25/2015
Action: Notification - Preclosure
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6261714&temptable=ENFORCEMENT
Title Description Comments:

Notice of Opportunity to Comment - No Further Action (WRD)

Action Type: Other Regulatory Actions
Action Date: 9/2/2015
Received Issue Date: 9/2/2015
Action: Arbitration/Dispute Resolution
Doc Link:
Title Description Comments:

Revision to Current Case Tracking Numbers

Action Type: Response Requested - Other
Action Date: 9/2/2015
Received Issue Date: 9/2/2015
Action: Correspondence
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SL204EC2405&doc_id=5858097
Title Description Comments:

Revision to Current Case Tracking Numbers (request to merge cases re: groundwater)

Action Type: Response Requested - Other
Action Date: 8/5/2015
Received Issue Date: 8/5/2015
Action: Other Report / Document
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SL204EC2405&doc_id=5858100
Title Description Comments:

Deed Restriction Filing Receipt

Action Type: Other Regulatory Actions
Action Date: 7/8/2015
Received Issue Date: 7/8/2015
Action: Deed Restriction / Land Use Restriction / Covenant
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6254597&temptable=ENFORCEMENT
Title Description Comments:

Covenant and Environmental Restriction on Property

Action Type: Other Regulatory Actions
Action Date: 5/29/2015
Received Issue Date: 5/29/2015
Action: Staff Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6246800&temptable=ENFORCEMENT
Title Description Comments:

Approval of Soil Management Plan

Action Type: Response Requested - Reports
Action Date: 12/15/2014
Received Issue Date:
Action: Remedial Action Complete
Doc Link:

Title Description Comments:

Removal Action Completion Report (Excavation)

Action Type: Other Regulatory Actions
Action Date: 9/16/2014
Received Issue Date: 9/16/2014
Action: Technical Correspondence / Assistance / Other
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6220923&temptable=ENFORCEMENT
Title Description Comments:

Approval of Reuse of Crushed Concrete

Action Type: Response Requested - Workplans
Action Date: *4/25/2014
Received Issue Date: 4/16/2014
Action: Removal Action Work Plan - Regulator Responded
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SL204EC2405&doc_id=5754301
Title Description Comments:

Soil RAP

Action Type: Other Regulatory Actions
Action Date: 4/21/2014
Received Issue Date: 4/21/2014
Action: Staff Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6200551&temptable=ENFORCEMENT
Title Description Comments:

Approval of Soil Excavation Work Plan

Action Type: Other Regulatory Actions
Action Date: 4/18/2014
Received Issue Date: 4/18/2014
Action: Staff Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6200550&temptable=ENFORCEMENT
Title Description Comments:

Approval of Time Extension Request for Work Plan Submittal

Action Type: Response Requested - Reports
Action Date: 3/31/2014
Received Issue Date: 2/19/2014
Action: Site Assessment Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SL204EC2405&doc_id=5795394
Title Description Comments:

Report on Vadose Zone Supplemental Soil Investigation

Action Type: Other Regulatory Actions
Action Date: 1/23/2014
Received Issue Date: 1/23/2014
Action: Staff Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6189704&temptable=ENFORCEMENT
Title Description Comments:

Approval of Vadose Zone Supplemental Soil Investigation Work Plan

Action Type: Other Regulatory Actions
Action Date: 11/15/2013

Received Issue Date: 11/15/2013
Action: Staff Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6182789&temptable=ENFORCEMENT
Title Description Comments:

Approval of Time Extension Request for Work Plan Submittal

Action Type: Other Regulatory Actions
Action Date: 6/28/2013
Received Issue Date: 6/28/2013
Action: Staff Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6165255&temptable=ENFORCEMENT
Title Description Comments:

Approval of Time Extension Request for Workplan Submittal

Action Type: Other Regulatory Actions
Action Date: 5/20/2013
Received Issue Date: 5/20/2013
Action: Staff Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6159560&temptable=ENFORCEMENT
Title Description Comments:

Approval of Shallow Soil Excavation Work Plan Extension Request

Action Type: Other Regulatory Actions
Action Date: 10/10/2012
Received Issue Date: 10/10/2012
Action: Staff Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6139765&temptable=ENFORCEMENT
Title Description Comments:

Approval of Vadose Zone Soil Investigation Work Plan

Action Type: Other Regulatory Actions
Action Date: 8/3/2012
Received Issue Date: 8/3/2012
Action: Technical Correspondence / Assistance / Other
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6132668&temptable=ENFORCEMENT
Title Description Comments:

Cost Recovery Agreement

Action Type: Enforcement/Orders
Action Date: 6/20/2012
Received Issue Date: 6/20/2012
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6125727&temptable=ENFORCEMENT
Title Description Comments:

Satisfaction of 13267 Order Requirements (Dominguez Channel)

Action Type: Response Requested - Reports
Action Date: 4/11/2012
Received Issue Date:
Action: Site Assessment Report
Doc Link:
Title Description Comments:

Site Assessment Report - Soil Investigation

Action Type: Other Regulatory Actions
Action Date: 7/14/2011
Received Issue Date: 7/14/2011
Action: Technical Correspondence / Assistance / Other
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6092663&temptable=ENFORCEMENT
Title Description Comments:

2011-2012 Annual Estimation Letter

Action Type: Response Requested - Workplans
Action Date: 6/8/2011
Received Issue Date:
Action: Site Investigation Workplan
Doc Link:
Title Description Comments:

Action Type: Enforcement/Orders
Action Date: 4/26/2011
Received Issue Date: 4/26/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6085587&temptable=ENFORCEMENT
Title Description Comments:

Requirement for Technical Report

Action Type: Other Regulatory Actions
Action Date: 7/21/2010
Received Issue Date: 7/21/2010
Action: Site Visit / Inspection / Sampling
Doc Link:
Title Description Comments:

Site Visit Site was vacant based upon a "drive by" observation.

Action Type: Other Regulatory Actions
Action Date: 7/8/2010
Received Issue Date: 7/8/2010
Action: Technical Correspondence / Assistance / Other
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6056518&temptable=ENFORCEMENT
Title Description Comments:

Annual Estimation Letter 2010-2011

Action Type: Response Requested - Reports
Action Date: 7/7/2004
Received Issue Date: 7/7/2004
Action: Risk Assessment Report
Doc Link:
Title Description Comments:

Report of Findings

Action Type: Leak Action
Action Date: 1/2/1965
Received Issue Date:
Action: Leak Reported
Doc Link:
Title Description Comments:

Sites from GeoTracker Search - Deed Restrictions (as of Oct 06, 2020)

Date Recorded: 7/8/2015
Site Management Requirements: SEE LAND USE CONTROL DOCUMENT
Covenant Doc Link: https://geotracker.waterboards.ca.gov/regulators/deliverable_documents/9021360635/0490C%20-%20Covenant.pdf

Sites from GeoTracker Search - Documents (as of Oct 06, 2020)

Document Type: Site Documents
Document Date: 12/14/2015
Size :
Submitted:
Submitted By: GREG BISHOP (REGULATOR)
Title: NO FURTHER ACTION FOR SOIL
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6270105
Type: CLOSURE/NO FURTHER ACTION LETTER

Document Type: Site Documents
Document Date: 9/30/2015
Size :
Submitted:
Submitted By: GREG BISHOP (REGULATOR)
Title: APPROVAL OF REQUEST TO MERGE THREE GROUNDWATER CASES
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6262703
Type: LETTER - NOTICE

Document Type: Site Documents
Document Date: 9/25/2015
Size :
Submitted:
Submitted By: GREG BISHOP (REGULATOR)
Title: NOTICE OF OPPORTUNITY TO COMMENT - NO FURTHER ACTION (SHELL OIL PRODUCTS US)
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6261715
Type: NOTIFICATION - PRECLOSURE

Document Type: Site Documents
Document Date: 9/25/2015
Size :
Submitted:
Submitted By: GREG BISHOP (REGULATOR)
Title: NOTICE OF OPPORTUNITY TO COMMENT - NO FURTHER ACTION (WRD)
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6261714
Type: NOTIFICATION - PRECLOSURE

Document Type: Site Documents
Document Date: 9/25/2015
Size :
Submitted:
Submitted By: GREG BISHOP (REGULATOR)
Title: NOTICE OF OPPORTUNITY TO COMMENT - NO FURTHER ACTION (RELLC)
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6261716
Type: NOTIFICATION - PRECLOSURE

Document Type: Site Documents
Document Date: 9/2/2015
Size :
Submitted:
Submitted By: GREG BISHOP (REGULATOR)
Title: REVISION TO CURRENT CASE TRACKING NUMBERS (REQUEST TO MERGE CASES RE: GROUNDWATER)
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&document_id=5858097
Type: CORRESPONDENCE

Document Type: Site Documents
Document Date: 8/5/2015
Size :
Submitted:
Submitted By: GREG BISHOP (REGULATOR)
Title: DEED RESTRICTION FILING RECEIPT
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&document_id=5858100
Type: OTHER REPORT / DOCUMENT

Document Type: Monitoring Reports
Document Date: 7/31/2015*
Size : 7,451 KB
Submitted:
Submitted By: JESSICA CURRAN (CONTRACTOR)
Title: 2015 FIRST SEMI-ANNUAL GROUNDWATER MONITORING REPORT JANUARY THROUGH JUNE 2015
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1584329962/SL204EC2405.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY

Document Type: Site Documents **Submitted:**
Document Date: 7/8/2015 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: COVENANT AND ENVIRONMENTAL RESTRICTION ON PROPERTY
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6254597
Type: DEED RESTRICTION / LAND USE RESTRICTION / COVENANT

Document Type: Site Documents **Submitted:**
Document Date: 5/29/2015 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF SOIL MANAGEMENT PLAN
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6246800
Type: STAFF LETTER

Document Type: Monitoring Reports **Submitted:**
Document Date: 1/28/2015* **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 3,757 KB
Title: 2014 SECOND SEMI-ANNUAL GROUNDWATER MONITORING REPORT JULY THROUGH DECEMBER 2014
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3010488927/SL204EC2405.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY

Document Type: Site Documents **Submitted:**
Document Date: 12/15/2014* **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 65,753 KB
Title: SOIL EXCAVATION REPORT (PART 2)
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8797730922/SL204EC2405.PDF
Type: REQUEST FOR CLOSURE

Document Type: Site Documents **Submitted:**
Document Date: 12/15/2014* **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 71,003 KB
Title: SOIL EXCAVATION REPORT (PART 1)
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7664313614/SL204EC2405.PDF
Type: REQUEST FOR CLOSURE

Document Type: Site Documents **Submitted:**
Document Date: 9/16/2014 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF REUSE OF CRUSHED CONCRETE
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6220923
Type: TECHNICAL CORRESPONDENCE / ASSISTANCE / OTHER

Document Type: Monitoring Reports **Submitted:**
Document Date: 8/7/2014* **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 7,188 KB
Title: 2014 FIRST SEMI-ANNUAL GROUNDWATER MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8483109951/SL204EC2405.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY

Document Type: Site Documents **Submitted:**
Document Date: 4/21/2014 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF SOIL EXCAVATION WORK PLAN
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6200551
Type: STAFF LETTER

Document Type: Site Documents **Submitted:**
Document Date: 4/18/2014 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF TIME EXTENSION REQUEST FOR WORK PLAN SUBMITTAL
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6200550
Type: STAFF LETTER

Document Type: Site Documents **Submitted:**
Document Date: 4/16/2014 **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 1,335 KB
Title: SOIL EXCAVATION WORK PLAN
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2751560270/SL204EC2405.PDF
Type: REMOVAL ACTION WORK PLAN

Document Type: Site Documents
Document Date: 4/16/2014
Size :
Title: SOIL RAP - REGULATOR RESPONSE
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&document_id=5754301
Type: REMOVAL ACTION WORK PLAN
Submitted:
Submitted By: GREG BISHOP (REGULATOR)

Document Type: Site Documents
Document Date: 2/19/2014*
Size : 5,020 KB
Title: VADOSE ZONE SUPPLEMENTAL SOIL INVESTIGATION REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4206418871/SL204EC2405.PDF
Type: SITE INVESTIGATION
Submitted:
Submitted By: JESSICA CURRAN (CONTRACTOR)

Document Type: Site Documents
Document Date: 1/23/2014
Size :
Title: APPROVAL OF VADOSE ZONE SUPPLEMENTAL SOIL INVESTIGATION WORK PLAN
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6189704
Type: STAFF LETTER
Submitted:
Submitted By: GREG BISHOP (REGULATOR)

Document Type: Site Documents
Document Date: 1/16/2014*
Size : 1,037 KB
Title: VADOSE ZONE SUPPLEMENTAL SOIL INVESTIGATION WORK PLAN
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3316514492/SL204EC2405.PDF
Type: SITE INVESTIGATION WORKPLAN
Submitted:
Submitted By: JESSICA CURRAN (CONTRACTOR)

Document Type: Monitoring Reports
Document Date: 1/8/2014*
Size : 6,030 KB
Title: 2013 SECOND SEMI-ANNUAL GROUNDWATER MONITORING REPORT JULY THROUGH DECEMBER 2013
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8016071379/SL204EC2405.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY
Submitted:
Submitted By: JESSICA CURRAN (CONTRACTOR)

Document Type: Site Documents
Document Date: 11/15/2013
Size :
Title: APPROVAL OF TIME EXTENSION REQUEST FOR WORK PLAN SUBMITTAL
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6182789
Type: STAFF LETTER
Submitted:
Submitted By: GREG BISHOP (REGULATOR)

Document Type: Monitoring Reports
Document Date: 9/3/2013
Size : 6,861 KB
Title: 2013 FIRST SEMI-ANUAL GROUNDWATER MONITORING REPORT (JAN-JUNE 2013)
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7538166105/SL204EC2405.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY
Submitted:
Submitted By: JESSICA CURRAN (CONTRACTOR)

Document Type: Site Documents
Document Date: 6/28/2013
Size :
Title: APPROVAL OF TIME EXTENSION REQUEST FOR WORKPLAN SUBMITTAL
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6165255
Type: STAFF LETTER
Submitted:
Submitted By: GREG BISHOP (REGULATOR)

Document Type: Site Documents
Document Date: 5/20/2013
Size :
Title: APPROVAL OF SHALLOW SOIL EXCAVATION WORK PLAN EXTENSION REQUEST
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6159560
Type: STAFF LETTER
Submitted:
Submitted By: GREG BISHOP (REGULATOR)

Document Type: Site Documents
Document Date: 3/26/2013
Size : 9,052 KB
Title: VADOSE ZONE SOIL INVESIGATION REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8249668180/SL204EC2405.PDF
Submitted:
Submitted By: JESSICA CURRAN (CONTRACTOR)

Type: SITE INVESTIGATION

Document Type: Site Documents **Submitted:**
Document Date: 10/10/2012 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF VADOSE ZONE SOIL INVESTIGATION WORK PLAN
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6139765
Type: STAFF LETTER

Document Type: Site Documents **Submitted:**
Document Date: 10/4/2012 **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 850 KB
Title: VADOSE SOIL INVESTIGATION WORK PLAN
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9232212841/SL204EC2405.PDF
Type: SITE INVESTIGATION WORKPLAN

Document Type: Site Documents **Submitted:**
Document Date: 10/4/2012 **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 44 KB
Title: RELLC LTR TO RWQCB TRANSFER DOA CAH
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3986541032/SL204EC2405.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 8/3/2012 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: COST RECOVERY AGREEMENT
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6132668
Type: TECHNICAL CORRESPONDENCE / ASSISTANCE / OTHER

Document Type: Site Documents **Submitted:**
Document Date: 6/20/2012 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: SATISFACTION OF 13267 ORDER REQUIREMENTS (DOMINGUEZ CHANNEL)
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6125727
Type: 13267 REQUIREMENT

Document Type: Monitoring Reports **Submitted:**
Document Date: 7/30/2011 **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 3,398 KB
Title: 1ST SEMI-ANNUAL GROUNDWATER MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7173949480/SL204EC2405.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY

Document Type: Site Documents **Submitted:**
Document Date: 7/14/2011 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: 2011-2012 ANNUAL ESTIMATION LETTER
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6092663
Type: TECHNICAL CORRESPONDENCE / ASSISTANCE / OTHER

Document Type: Site Documents **Submitted:**
Document Date: 4/26/2011 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: REQUIREMENT FOR TECHNICAL REPORT
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6085587
Type: 13267 REQUIREMENT

Document Type: Site Documents **Submitted:**
Document Date: 7/8/2010 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: ANNUAL ESTIMATION LETTER 2010-2011
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6056518
Type: TECHNICAL CORRESPONDENCE / ASSISTANCE / OTHER

Sites from GeoTracker Search - Site Maps (as of Oct 06, 2020)

Title: HA-51 (HA-51) **Submitted By:** JESSICA CURRAN (CONTRACTOR)

Size : 60 KB **Submitted:** 2/19/2014*
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/7183321118/SL204EC2405.PDF

Title: HA-56 (HA-56) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 62 KB **Submitted:** 2/19/2014*
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/2344552218/SL204EC2405.PDF

Title: HA-45 (HA-45) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 57 KB **Submitted:** 2/19/2014*
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/8070077121/SL204EC2405.PDF

Title: HA-46 (HA-46) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 61 KB **Submitted:** 2/19/2014*
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/9004823207/SL204EC2405.PDF

Title: HA-50 (HA-50) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 59 KB **Submitted:** 2/19/2014*
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/7320122897/SL204EC2405.PDF

Title: HA-54 (HA-54) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 61 KB **Submitted:** 2/19/2014*
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/7735521435/SL204EC2405.PDF

Title: HA-55 (HA-55) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 60 KB **Submitted:** 2/19/2014*
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/5626580417/SL204EC2405.PDF

Title: HA-52 (HA-52) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 60 KB **Submitted:** 2/19/2014*
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/9699052929/SL204EC2405.PDF

Title: HA-47 (HA-47) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 57 KB **Submitted:** 2/19/2014*
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/6440357267/SL204EC2405.PDF

Title: HA-49 (HA-49) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 61 KB **Submitted:** 2/19/2014*
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/4292375087/SL204EC2405.PDF

Title: HA-53 (HA-53) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 57 KB **Submitted:** 2/19/2014*
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/1086480319/SL204EC2405.PDF

Title: HA-48 (HA-48) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 57 KB **Submitted:** 2/19/2014*
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/4213428556/SL204EC2405.PDF

Sites from GeoTracker Search - Cleanup Status History (as of Oct 06, 2020)

Status: Completed - Case Closed
Date : 10/23/2015

Status: Open - Remediation
Date : 9/18/2014

Status: Open - Site Assessment
Date : 3/1/2001

Status: Open - Case Begin Date
Date : 1/1/2001

Sites from GeoTracker Search - Related Cases (as of Oct 06, 2020)

Identifier: T10000003058 **Address:** N/A Carson Street
Status: OPEN - SITE ASSESSMENT **City:** CARSON
Association: Related Global ID
Description:

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Project Name: Dominguez Channel @ Carson Street (RELLC)
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000003058

Identifier: T10000003007 **Address:** Carson Street
Status: COMPLETED - CASE CLOSED **City:** CARSON
Association: Related Global ID
Description:
Project Name: Shell Pipeline 0367 - Dominguez Channel @ Carson
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000003007

Identifier: SLT4L4901823 **Address:** 1211 CARSON AVE.
Status: COMPLETED - CASE CLOSED **City:** CARSON
Association: Related Global ID
Description:
Project Name: SHELL PIPELINE LEAK - COLONY HOLDINGS
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=SLT4L4901823

Identifier: SLT43288286 **Address:** 21500 PERRY ST
Status: OPEN - SITE ASSESSMENT **City:** CARSON
Association: Related Global ID
Description:
Project Name: SHELL PIPELINE
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=SLT43288286

1	5 of 18	E	0.00 / 0.00	17.48 / 0	21611 S PERRY ST CARSON CA 90746	LA HMS

Site No: 005633
Area: 22

Detail Info

Permit No: 00003397X **Permit Status Code:** CLOS
Permit Cat Desc: Industrial Waste Permit **Permit Category:** I
Status Code: CLOS **File No:** I05839
Status Desc: Permit Closed **File Name:** PLAN HOLD CORP
Permit Status Desc: Permit Closed
Permit Type: 03
Permit Type Desc: Operating Industrial Waste Permit - Offsite (same as 04)

Detail Info

Permit No: **Permit Status Code:**
Permit Cat Desc: **Permit Category:**
Status Code: REM **File No:** 005839
Status Desc: Equipment Removed **File Name:** PLAN HOLD CORP
Permit Status Desc:
Permit Type:
Permit Type Desc:

Detail Info

Permit No: 000928150 **Permit Status Code:** PERM
Permit Cat Desc: Industrial Waste Permit **Permit Category:** I
Status Code: PERM **File No:** 065843
Status Desc: Equipment Permitted **File Name:** RECREATION RD LLC
Permit Status Desc: Equipment Permitted
Permit Type: S4
Permit Type Desc: Operating Industrial Waste Permit - Stormwater BMPs

Detail Info

Permit No: CGI015662 **Permit Status Code:** CLOS

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Permit Cat Desc:	Stormwater Permit	**Permit Category:**	S
Status Code:	CLOS	**File No:**	041442
Status Desc:	Permit Closed	**File Name:**	CARSON TRAILER
Permit Status Desc:	Permit Closed		
Permit Type:	S6		
Permit Type Desc:	Stormwater Certificate GIASP		

1	6 of 18	E	0.00 / 0.00	17.48 / 0	**SHELL OIL CO** **21611 S PERRY ST** **CARSON CA 904750000**	HAZNET

SIC Code:		**Mailing City:**	HOUSTON
NAICS Code:		**Mailing State:**	TX
EPA ID:	CAR000150862	**Mailing Zip:**	772522099
Create Date:		**Region Code:**	
Fac Act Ind:		**Owner Name:**	
Inact Date:		**Owner Addr 1:**	
County Code:	19	**Owner Addr 2:**	
County Name:	Los Angeles	**Owner City:**	
Mail Name:		**Owner State:**	
Mailing Addr 1:	PO BOX 2099	**Owner Zip:**	
Mailing Addr 2:		**Owner Phone:**	
Owner Fax:			

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Additional Contact Information	
--	--
Contact Name:	ADAM ESTES
Phone:	3172917007
--	--
--	--
Tanner Information	
--	--
Generator EPA ID:	CAR000150862
Generator County Code:	19
Generator County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County Code:	19
TSD County:	Los Angeles
State Waste Code:	122
State Waste Code Desc.:	Alkaline solution without metals pH >= 12.5
Method Code:	H01
Method Description:	Transfer station
Tons:	0.2085
Year:	2004
--	--
Generator EPA ID:	CAR000150862
Generator County Code:	19
Generator County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County Code:	19
TSD County:	Los Angeles
State Waste Code:	135
State Waste Code Desc.:	Unspecified aqueous solution
Method Code:	H039
Method Description:	OTHER RECOVERY OF RECLAMATION FOR REUSE INCLUDING ACID REGENERATION, ORGANICS RECOVERY ECT
Tons:	1.68
Year:	2011
--	--
Generator EPA ID:	CAR000150862
Generator County Code:	19
Generator County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County Code:	19
TSD County:	Los Angeles
State Waste Code:	141
State Waste Code Desc.:	Off-specification, aged or surplus inorganics

Method Code:	H141
Method Description:	STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)
Tons:	0.02084
Year:	2010
--	--
Generator EPA ID:	CAR000150862
Generator County Code:	19
Generator County:	Los Angeles
TSD EPA ID:	CAT000646117
TSD County Code:	16
TSD County:	Kings
State Waste Code:	151
State Waste Code Desc.:	Asbestos containing waste
Method Code:	H132
Method Description:	LANDFILL OR SURFACE IMPOUNDMENT THAT WILL BE CLOSED AS LANDFILL(TO INCLUDE ON-SITE TREATMENT AND/OR STABILIZATION)
Tons:	12
Year:	2010
--	--
Generator EPA ID:	CAR000150862
Generator County Code:	19
Generator County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County Code:	19
TSD County:	Los Angeles
State Waste Code:	151
State Waste Code Desc.:	Asbestos containing waste
Method Code:	H141
Method Description:	STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)
Tons:	2.85
Year:	2011
--	--
Generator EPA ID:	CAR000150862
Generator County Code:	19
Generator County:	Los Angeles
TSD EPA ID:	CAD044429835
TSD County Code:	19
TSD County:	Los Angeles
State Waste Code:	181
State Waste Code Desc.:	Other inorganic solid waste
Method Code:	H141
Method Description:	STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)
Tons:	0.03
Year:	2010
--	--
Generator EPA ID:	CAR000150862
Generator County Code:	19
Generator County:	Los Angeles
TSD EPA ID:	NVT330010000
TSD County Code:	99
TSD County:	Unknown
State Waste Code:	261
State Waste Code Desc.:	Polychlorinated biphenyls and material containing PCBs
Method Code:	H132
Method Description:	LANDFILL OR SURFACE IMPOUNDMENT THAT WILL BE CLOSED AS LANDFILL(TO INCLUDE ON-SITE TREATMENT AND/OR STABILIZATION)
Tons:	44.98695
Year:	2011
--	--
Generator EPA ID:	CAR000150862
Generator County Code:	19
Generator County:	Los Angeles
TSD EPA ID:	CAD050806850
TSD County Code:	19
TSD County:	Los Angeles
State Waste Code:	261

State Waste Code Desc.:	Polychlorinated biphenyls and material containing PCBs
Method Code:	H141
Method Description:	STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)
Tons:	1.3224
Year:	2010
--	--
Generator EPA ID:	CAR000150862
Generator County Code:	19
Generator County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County Code:	19
TSD County:	Los Angeles
State Waste Code:	331
State Waste Code Desc.:	Off-specification, aged or surplus organics
Method Code:	H141
Method Description:	STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)
Tons:	0.0058
Year:	2010
--	--
Generator EPA ID:	CAR000150862
Generator County Code:	19
Generator County:	Los Angeles
TSD EPA ID:	UTD981552177
TSD County Code:	99
TSD County:	Unknown
State Waste Code:	352
State Waste Code Desc.:	Other organic solids
Method Code:	H040
Method Description:	INCINERATION--THERMAL DESTRUCTION OTHER THAN USE AS A FUEL
Tons:	0.0325
Year:	2015
--	--
Generator EPA ID:	CAR000150862
Generator County Code:	19
Generator County:	Los Angeles
TSD EPA ID:	CAD008302903
TSD County Code:	19
TSD County:	Los Angeles
State Waste Code:	352
State Waste Code Desc.:	Other organic solids
Method Code:	H141
Method Description:	STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)
Tons:	0.05
Year:	2010
--	--
Generator EPA ID:	CAR000150862
Generator County Code:	19
Generator County:	Los Angeles
TSD EPA ID:	CAD044429835
TSD County Code:	19
TSD County:	Los Angeles
State Waste Code:	352
State Waste Code Desc.:	Other organic solids
Method Code:	H141
Method Description:	STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135)
Tons:	0.35
Year:	2010
--	--
Generator EPA ID:	CAR000150862
Generator County Code:	19
Generator County:	Los Angeles
TSD EPA ID:	UTD981552177
TSD County Code:	99
TSD County:	Unknown
State Waste Code:	352

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

State Waste Code Desc.:	Other organic solids
Method Code:	
Method Description:	
Tons:	0.2
Year:	2011
--	--

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
1	7 of 18	E	0.00 / 0.00	17.48 / 0	BEACH BOATS INC 21611 PERRY ST CARSON CA 907450000	HAZNET

SIC Code:		**Mailing City:**	CARSON
NAICS Code:		**Mailing State:**	CA
EPA ID:	CAL000045287	**Mailing Zip:**	907450000
Create Date:	4/2/1991	**Region Code:**	3
Fac Act Ind:	No	**Owner Name:**	BEACH BOATS INC
Inact Date:	6/30/1995	**Owner Addr 1:**	--
County Code:	19	**Owner Addr 2:**	
County Name:	Los Angeles	**Owner City:**	--
Mail Name:		**Owner State:**	99
Mailing Addr 1:	21611 PERRY ST	**Owner Zip:**	--
Mailing Addr 2:		**Owner Phone:**	0000000000
Owner Fax:			

Contact Information

--	--
Contact Name:	UNDELIVERABLE PER 95 FEES FORM
Street Address 1:	NW
Street Address 2:	
City:	--
State:	99
Zip:	--
Phone:	--
--	--

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
1	8 of 18	E	0.00 / 0.00	17.48 / 0	CARSON TRAILERS 21611 PERRY ST CARSON CA 907450000	HAZNET

SIC Code:		**Mailing City:**	CARSON
NAICS Code:		**Mailing State:**	CA
EPA ID:	CAC002576690	**Mailing Zip:**	907450000
Create Date:	4/19/2004	**Region Code:**	3
Fac Act Ind:	No	**Owner Name:**	CARSON TRAILERS INC
Inact Date:	12/28/2004	**Owner Addr 1:**	21611 PERRY ST
County Code:	19	**Owner Addr 2:**	
County Name:	Los Angeles	**Owner City:**	CARSON
Mail Name:		**Owner State:**	CA
Mailing Addr 1:	21611 PERRY ST	**Owner Zip:**	907450000
Mailing Addr 2:		**Owner Phone:**	3105130439
Owner Fax:			

Contact Information

--	--
Contact Name:	VICTOR GUERRERO
Street Address 1:	21611 PERRY ST
Street Address 2:	
City:	CARSON
State:	CA
Zip:	907450000
Phone:	3105130439
--	--

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
1	9 of 18	E	0.00 / 0.00	17.48 / 0	1X AIR HARBOR MACHINE 21611 PERRY ST. CARSON CA 907450000	HAZNET

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

SIC Code:		**Mailing City:**	CARSON
NAICS Code:		**Mailing State:**	CA
EPA ID:	CAX000123828	**Mailing Zip:**	907450000
Create Date:	11/2/1984	**Region Code:**	3
Fac Act Ind:	No	**Owner Name:**	--
Inact Date:	6/30/1998	**Owner Addr 1:**	--
County Code:	19	**Owner Addr 2:**	
County Name:	Los Angeles	**Owner City:**	--
Mail Name:		**Owner State:**	99
Mailing Addr 1:	--	**Owner Zip:**	--
Mailing Addr 2:		**Owner Phone:**	0000000000
Owner Fax:			

Contact Information

--	--
Contact Name:	RICK GABELLE
Street Address 1:	INACT PER 98VQ FINAL NOTICE
Street Address 2:	- BATCH 4/27
City:	--
State:	99
Zip:	--
Phone:	2137757275
--	--

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
1	10 of 18	E	0.00 / 0.00	17.48 / 0	**CARSON AIR HARBOR LIMITED** **21611 PERRY ST** **CARSON CA 907450000**	HAZNET

SIC Code:		**Mailing City:**	CARSON
NAICS Code:		**Mailing State:**	CA
EPA ID:	CAC002245377	**Mailing Zip:**	907450000
Create Date:	1/7/2000	**Region Code:**	3
Fac Act Ind:	No	**Owner Name:**	CARSON AIR HARBOR LIMITED
Inact Date:	10/25/2000	**Owner Addr 1:**	21611 PERRY ST
County Code:	19	**Owner Addr 2:**	
County Name:	Los Angeles	**Owner City:**	CARSON
Mail Name:		**Owner State:**	CA
Mailing Addr 1:	21611 PERRY ST	**Owner Zip:**	907450000
Mailing Addr 2:		**Owner Phone:**	8882307873
Owner Fax:			

Contact Information

--	--
Contact Name:	MICHAEL SLABY-AGENT
Street Address 1:	21611 PERRY ST
Street Address 2:	
City:	CARSON
State:	CA
Zip:	907450000
Phone:	8882307873
--	--
--	--

Tanner Information

--	--
Generator EPA ID:	CAC002245377
Generator County Code:	19
Generator County:	Los Angeles
TSD EPA ID:	CAD028403019
TSD County Code:	
TSD County:	
State Waste Code:	213
State Waste Code Desc.:	Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.)
Method Code:	H01
Method Description:	Transfer station
Tons:	1.75
Year:	2000
--	--

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Generator EPA ID:	CAC002245377
Generator County Code:	19
Generator County:	Los Angeles
TSD EPA ID:	CAD028403019
TSD County Code:	
TSD County:	
State Waste Code:	223
State Waste Code Desc.:	Unspecified oil-containing waste
Method Code:	T01
Method Description:	Treatment, tank
Tons:	0
Year:	2000
--	--

1	11 of 18	E	0.00 / 0.00	17.48 / 0	**AIR HARBOR MACHINE CO INC** **21611 PERRY ST** **CARSON CA 907450000**	HAZNET

SIC Code:		**Mailing City:**	CARSON
NAICS Code:		**Mailing State:**	CA
EPA ID:	CAD008504185	**Mailing Zip:**	907450000
Create Date:	4/10/1987	**Region Code:**	3
Fac Act Ind:	No	**Owner Name:**	--
Inact Date:	6/30/1995	**Owner Addr 1:**	--
County Code:	19	**Owner Addr 2:**	
County Name:	Los Angeles	**Owner City:**	--
Mail Name:		**Owner State:**	99
Mailing Addr 1:	21611 PERRY ST	**Owner Zip:**	--
Mailing Addr 2:		**Owner Phone:**	0000000000
Owner Fax:			

Contact Information

--	--
Contact Name:	UNDELIVERABLE PER 95 FEES FORM
Street Address 1:	NW
Street Address 2:	
City:	--
State:	99
Zip:	--
Phone:	--
--	--

1	12 of 18	E	0.00 / 0.00	17.48 / 0	**TRITON DIAGNOSTICS INC** **21611 S PERRY ST** **CARSON CA 90745**	HAZNET

SIC Code:		**Mailing City:**	HOUSTON
NAICS Code:		**Mailing State:**	TX
EPA ID:	CAC002658469	**Mailing Zip:**	770024916
Create Date:	10/5/2010	**Region Code:**	3
Fac Act Ind:	No	**Owner Name:**	TRITON DIAGNOSTICS INC
Inact Date:	4/4/2011	**Owner Addr 1:**	910 LOUISIANA ST FL 19
County Code:	19	**Owner Addr 2:**	
County Name:	Los Angeles	**Owner City:**	HOUSTON
Mail Name:		**Owner State:**	TX
Mailing Addr 1:	910 LOUISIANA ST FL 19	**Owner Zip:**	770024916
Mailing Addr 2:		**Owner Phone:**	7132415652
Owner Fax:			

Contact Information

--	--
Contact Name:	JERIE BALLARD
Street Address 1:	910 LOUISIANA ST FL 19
Street Address 2:	
City:	HOUSTON
State:	TX
Zip:	770024916

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
Phone:		7132415652				
--		--				

1	13 of 18	E	0.00 / 0.00	17.48 / 0	21611 PERRY ST. CARSON CA 907450000	HIST MANIFEST

Gen EPA ID: CAX000123828
Create Date: 11/02/1984 0:00
Inact Date: 6/30/1998 0:00:00
Facility Mail Street: --
Facility Mail City: CARSON
Facility Mail State: CA
Facility Mail Zip: 907450000
Contact Phone(s): 2137757275
File Year(s): 1984; 1985
Contact Name(s): RICK GABELLE

Tanner Information

Method Description:
Tons: 0
Year: 1985
Generator County Code: 19
Generator County: Los Angeles
Method Code:
Tsd County Code: 42
Tsd County: Santa Barbara
State Waste Code:
State Waste Code Desc:
Tsd Epa ID: CAD020748125

Tanner Information

Method Description:
Tons: 0
Year: 1985
Generator County Code: 19
Generator County: Los Angeles
Method Code:
Tsd County Code: 19
Tsd County: Los Angeles
State Waste Code:
State Waste Code Desc:
Tsd Epa ID: CAT080011059

Tanner Information

Method Description:
Tons: 13.34
Year: 1985
Generator County Code: 19
Generator County: Los Angeles
Method Code: D83
Tsd County Code: 42
Tsd County: Santa Barbara
State Waste Code: 223
State Waste Code Desc: Unspecified oil-containing waste
Tsd Epa ID: CAD020748125

Tanner Information

Method Description:
Tons: 0

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Year: 1984
Generator County Code: 19
Generator County: Los Angeles
Method Code:
Tsd County Code: 15
Tsd County: Kern
State Waste Code:
State Waste Code Desc:
Tsd Epa ID: CAT080010283

Tanner Information

Method Description:
Tons: 11.46
Year: 1984
Generator County Code: 19
Generator County: Los Angeles
Method Code: D81
Tsd County Code: 15
Tsd County: Kern
State Waste Code: 223
State Waste Code Desc: Unspecified oil-containing waste
Tsd Epa ID: CAT080010283

Tanner Information

Method Description:
Tons: 1.37
Year: 1985
Generator County Code: 19
Generator County: Los Angeles
Method Code: UNK
Tsd County Code: 19
Tsd County: Los Angeles
State Waste Code: 221
State Waste Code Desc: Waste oil and mixed oil
Tsd Epa ID: CAT080011059

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
1	14 of 18	E	0.00 / 0.00	17.48 / 0	21611 PERRY ST CARSON CA 907450000	HIST MANIFEST

Gen EPA ID: CAD008504185
Create Date: 04/10/1987 0:00
Inact Date: 6/30/1995 0:00:00
Facility Mail Street: 21611 PERRY ST
Facility Mail City: CARSON
Facility Mail State: CA
Facility Mail Zip: 907450000
Contact Phone(s): --
File Year(s): 1986; 1987; 1988; 1989; 1990
Contact Name(s): UNDELIVERABLE PER 95 FEES FORM

Tanner Information

Method Description:
Tons: 0
Year: 1990
Generator County Code: 19
Generator County: Los Angeles
Method Code:
Tsd County Code: 15
Tsd County: Kern
State Waste Code:
State Waste Code Desc:

Tsd Epa ID: CAD980675276

Tanner Information

Method Description:
Tons: 0
Year: 1989
Generator County Code: 19
Generator County: Los Angeles
Method Code:
Tsd County Code: 19
Tsd County: Los Angeles
State Waste Code:
State Waste Code Desc:
Tsd Epa ID: CAT080033681

Tanner Information

Method Description:
Tons: 16.68
Year: 1988
Generator County Code: 19
Generator County: Los Angeles
Method Code: 1
Tsd County Code: 19
Tsd County: Los Angeles
State Waste Code:
State Waste Code Desc:
Tsd Epa ID: CAT080033681

Tanner Information

Method Description:
Tons: 0
Year: 1990
Generator County Code: 19
Generator County: Los Angeles
Method Code:
Tsd County Code: 19
Tsd County: Los Angeles
State Waste Code:
State Waste Code Desc:
Tsd Epa ID: CAT080011059

Tanner Information

Method Description:
Tons: 18.76
Year: 1986
Generator County Code: 19
Generator County: Los Angeles
Method Code: 1
Tsd County Code: 0
Tsd County:
State Waste Code: 221
State Waste Code Desc: Waste oil and mixed oil
Tsd Epa ID:

Tanner Information

Method Description:
Tons: 0
Year: 1986

Generator County Code: 19
Generator County: Los Angeles
Method Code:
Tsd County Code: 0
Tsd County:
State Waste Code:
State Waste Code Desc:
Tsd Epa ID:

Tanner Information

Method Description:
Tons: 0
Year: 1988
Generator County Code: 19
Generator County: Los Angeles
Method Code:
Tsd County Code: 19
Tsd County: Los Angeles
State Waste Code:
State Waste Code Desc:
Tsd Epa ID: CAT080033681

Tanner Information

Method Description:
Tons: 2.08
Year: 1990
Generator County Code: 19
Generator County: Los Angeles
Method Code: D99
Tsd County Code: 19
Tsd County: Los Angeles
State Waste Code: 222
State Waste Code Desc: Oil/water separation sludge
Tsd Epa ID: CAT080011059

Tanner Information

Method Description:
Tons: 2.91
Year: 1989
Generator County Code: 19
Generator County: Los Angeles
Method Code: R01
Tsd County Code: 19
Tsd County: Los Angeles
State Waste Code: 221
State Waste Code Desc: Waste oil and mixed oil
Tsd Epa ID: CAT080033681

Tanner Information

Method Description:
Tons: 0
Year: 1987
Generator County Code: 19
Generator County: Los Angeles
Method Code:
Tsd County Code: 19
Tsd County: Los Angeles
State Waste Code:
State Waste Code Desc:
Tsd Epa ID: CAT080033681

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Tanner Information

Method Description:
Tons: 16.68
Year: 1987
Generator County Code: 19
Generator County: Los Angeles
Method Code: 1
Tsd County Code: 19
Tsd County: Los Angeles
State Waste Code:
State Waste Code Desc:
Tsd Epa ID: CAT080033681

Tanner Information

Method Description:
Tons: 48
Year: 1990
Generator County Code: 19
Generator County: Los Angeles
Method Code: D80
Tsd County Code: 15
Tsd County: Kern
State Waste Code: 611
State Waste Code Desc: Contaminated soil from site clean-up
Tsd Epa ID: CAD980675276

1	15 of 18	E	0.00 / 0.00	17.48 / 0	CARSON AIR HARBOR 21611 PERRY ST CARSON CA	DEED

Global ID: SL204EC2405
Site Type: Cleanup Program Site
Status: Completed - Case Closed
Status Date: 10/23/2015
County: Los Angeles
Latitude: 33.8320395091596
Longitude: -118.253252506256
Search URL: https://geotracker.waterboards.ca.gov/profile_report?global_id=SL204EC2405

Regulatory Activities GeoTracker Download (as of Nov 16, 2020)

Action Type: ENFORCEMENT
Action: Deed Restriction / Land Use Restriction / Covenant
Action Date: 7/8/2015

Regulatory Activities GeoTracker Web (as of Oct 06, 2020)

Action: Deed Restriction / Land Use Restriction / Covenant
Action Type: Other Regulatory Actions
Action Date: 7/8/2015
Received Issue Date: 7/8/2015
Doclink: http://geotracker.waterboards.ca.gov/view_documents?global_id=SL204EC2405&enforcement_id=6254597&temptable=ENFORCEMENT
Title Description Comment:

Covenant and Environmental Restriction on Property

1	16 of 18	E	0.00 / 0.00	17.48 / 0	CARSON AIR HARBOR 21611 PERRY ST	FINDS/FRS

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
					CARSON CA 90745	

Registry ID: 110066539534
FIPS Code:
HUC Code: 18070104
Site Type Name: STATIONARY
Location Description:
Supplemental Location:
Create Date: 14-OCT-15
Update Date:
Interest Types: STATE MASTER
SIC Codes:
SIC Code Descriptions:
NAICS Codes:
NAICS Code Descriptions:
Conveyor: FRS-GEOCODE
Federal Facility Code:
Federal Agency Name:
Tribal Land Code:
Tribal Land Name:
Congressional Dist No: 37
Census Block Code: 060375433061008
EPA Region Code: 09
County Name: LOS ANGELES
US/Mexico Border Ind:
Latitude: 33.83226
Longitude: -118.25298
Reference Point: CENTER OF A FACILITY OR STATION
Coord Collection Method: ADDRESS MATCHING-HOUSE NUMBER
Accuracy Value: 30
Datum: NAD83
Source:
Facility Detail Rprt URL: https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110066539534
Program Acronyms:

CA-ENVIROVIEW:229796

1	***17 of 18***	***E***	***0.00 / 0.00***	***17.48 / 0***	***AIR HARBOR MACHINE CO INC*** ***21611 PERRY ST*** ***CARSON CA 90745***	***LA COUNTY CUPA***

Facility ID: FA0020585
CERS ID: 0

Inactive Facility Details

PE: 3001

1	***18 of 18***	***E***	***0.00 / 0.00***	***17.48 / 0***	***SHELL OIL CO*** ***21611 S PERRY ST*** ***CARSON CA 90475***	***RCRA SQG***

EPA Handler ID: CAR000150862
Gen Status Universe: Small Quantity Generator
Contact Name: KYLE LANDRENEAU
Contact Address: 12700 NORTHBOROUGH DR, MFT 266, HOUSTON, TX, 77067, US
Contact Phone No and Ext: 281-874-2208
Contact Email:
Contact Country: US
County Name: LOS ANGELES
EPA Region: 09
Land Type: Private
Receive Date: 20040211

Violation/Evaluation Summary

Note: NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility:	No
Onsite Burner Exemption:	No
Furnace Exemption:	No
Underground Injection Activity:	No
Commercial TSD:	No
Used Oil Transporter:	No
Used Oil Transfer Facility:	No
Used Oil Processor:	No
Used Oil Refiner:	No
Used Oil Burner:	No
Used Oil Market Burner:	No
Used Oil Spec Marketer:	No

Hazardous Waste Handler Details

Sequence No:	1
Receive Date:	20040211
Handler Name:	SHELL OIL CO
Federal Waste Generator Code:	2
Generator Code Description:	Small Quantity Generator
Source Type:	Notification

Waste Code Details

Hazardous Waste Code:	D002
Waste Code Description:	CORROSIVE WASTE

Owner/Operator Details

Owner/Operator Ind:	Current Operator	***Street No:***	
Type:	Private	***Street 1:***	
Name:	SHELL OIL CO	***Street 2:***	
Date Became Current:	19980801	***City:***	
Date Ended Current:		***State:***	
Phone:		***Country:***	US
Source Type:	Notification	***Zip Code:***	
Owner/Operator Ind:	Current Owner	***Street No:***	
Type:	Private	***Street 1:***	
Name:	SHELL OIL CO	***Street 2:***	
Date Became Current:	19980801	***City:***	
Date Ended Current:		***State:***	
Phone:		***Country:***	US
Source Type:	Notification	***Zip Code:***	

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
2	*1 of 1*	*E*	*0.01 / 40.27*	*18.32 / 1*	***21610 S PERRY ST #8 CARSON CA 90745***	*LA HMS*

Site No: 024161
Area: 22

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Detail Info

Permit No:		***Permit Status Code:***	
Permit Cat Desc:		***Permit Category:***	
Status Code:	OPEN	***File No:***	033511
Status Desc:	File Opened, no permit exists	***File Name:***	A&R BASKETS OF JOY ETC
Permit Status Desc:			
Permit Type:			
Permit Type Desc:			

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
3	1 of 2	SE	0.01 / 59.20	18.45 / 1	PERRY STREET 21502-21526 PERRY STREET CARSON CA 90745	VCP

Estor/EPA ID:	19460004	***Permit Renewal Lead:***	
Site Code:	400989	***Project Manager:***	SAFOUH SAYED
Nat Priority List:	NO	***Supervisor:***	EMAD YEMUT
Acres:	0.5 ACRES	***Public Partici Spclst:***	
Special Program:	VOLUNTARY CLEANUP PROGRAM	***Census Tract:***	6037543306
Funding:	SITE PROPONENT	***County:***	LOS ANGELES
Assembly District:	64	***Latitude:***	33.8317194444444
Senate District:	35	***Longitude:***	-118.252802777778
School District:			

APN:	NONE SPECIFIED
Cleanup Status:	NO FURTHER ACTION AS OF 10/17/2003
Cleanup Oversight Agencies:	DTSC - SITE CLEANUP PROGRAM - LEAD AGENCY
Site Type:	VOLUNTARY CLEANUP
Office:	CLEANUP CYPRESS
Past Use that Caused Contam:	NONE
Potential Media Affected:	SOIL
Potential Contamin of Concern:	

BENZENE

Site History:

The site is an approximately one acre size property currently undeveloped. Residential housing borders the property on two sides with light industrial uses adjacent to the Site near the southwestern boundary of the property. During the spring of 1996, Shell Oil Products Company (Shell Oil Company Subsidiary) was informed by the Site Owner (who was preparing for development) that some soils along Perry Street near 215th Place in the City of Carson may contain petroleum hydrocarbons. The source of the materials is unknown but may be several underground pipelines, including pipelines owned by Unocal and Pacific Pipeline, who have active pipelines, and by proponent (whose pipelines have been out of service since the early 1970s). An ongoing investigation of the groundwater is currently under RWQCB review. The proposed end land use for this Site is a City Park.

Status:	NO FURTHER ACTION
Program Type:	VOLUNTARY CLEANUP
CalEnviroScreen Score:	91-95%
Summary Link:	http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=19460004

Completed Activities

Title:	Preliminary Endangerment Assessment Report
Title Link:	
Area Name:	
Area Link:	
Sub Area:	
Sub Area Link:	
Document Type:	Preliminary Endangerment Assessment Report
Date Completed:	10/17/2003
Comments:	PEA - PEA: DTSC oversaw the site investigation and reviewed the Preliminary Endangerment Assessment for the subject site. Based upon the analytical data and the evaluation of the health risk assessment, DTSC determined that Site is suitable for a park and other recreational uses.

Title:	VCP
Title Link:	http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=19460004&enforcement_id=5009771
Area Name:	
Area Link:	

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Sub Area:
Sub Area Link:
Document Type: Standard Voluntary Agreement
Date Completed: 11/30/2001
Comments:

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
3	2 of 2	SE	0.01 / 59.20	18.45 / 1	PERRY STREET 21502-21526 PERRY STREET CARSON CA 90745	ENVIROSTOR

Estor/EPA ID: 19460004
Site Code: 400989
Nat Priority List: NO
APN: NONE SPECIFIED
Census Tract: 6037543306
Site Type: VOLUNTARY CLEANUP
Address Description: 21502-21526 PERRY STREET
Office: CLEANUP CYPRESS
Special Program: VOLUNTARY CLEANUP PROGRAM
Funding: SITE PROPONENT
Assembly District: 64
Senate District: 35
Permit Renewal Lead:
Public Partici Spclst:
Project Manager: SAFOUH SAYED
County: LOS ANGELES
Latitude: 33.8317194444444
Longitude: -118.252802777778
Acres: 0.5 ACRES
Supervisor: EMAD YEMUT
Cleanup Status: NO FURTHER ACTION AS OF 10/17/2003
Cleanup Oversight Agencies: DTSC - SITE CLEANUP PROGRAM - LEAD AGENCY
School District:
Past Use that Caused Contam: NONE
Potential Media Affected: SOIL
Potential Contamin of Concern:

BENZENE

Site History:

The site is an approximately one acre size property currently undeveloped. Residential housing borders the property on two sides with light industrial uses adjacent to the Site near the southwestern boundary of the property. During the spring of 1996, Shell Oil Products Company (Shell Oil Company Subsidiary) was informed by the Site Owner (who was preparing for development) that some soils along Perry Street near 215th Place in the City of Carson may contain petroleum hydrocarbons. The source of the materials is unknown but may be several underground pipelines, including pipelines owned by Unocal and Pacific Pipeline, who have active pipelines, and by proponent (whose pipelines have been out of service since the early 1970s). An ongoing investigation of the groundwater is currently under RWQCB review. The proposed end land use for this Site is a City Park.

Status: NO FURTHER ACTION
A2 Program Type: VOLUNTARY CLEANUP
CalEnviroScreen Score: 91-95%
Summary Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=19460004

Completed Activities

Title: Preliminary Endangerment Assessment Report
Title Link:
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Preliminary Endangerment Assessment Report
Date Completed: 10/17/2003
Comments: PEA - PEA: DTSC oversaw the site investigation and reviewed the Preliminary Endangerment Assessment for the subject site. Based upon the analytical data and the evaluation of the health risk assessment, DTSC determined that Site is suitable for a park and other recreational uses.

Title: VCP
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=19460004&enforcement_id=5009771
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Standard Voluntary Agreement
Date Completed: 11/30/2001
Comments:

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
4	1 of 2	SE	0.02 / 80.29	17.69 / 0	1152 E CARSON ST CARSON CA 90745	LA HMS

Site No: 006093
Area: 22

Detail Info

Permit No:
Permit Cat Desc:
Status Code: OPEN
Status Desc: File Opened, no permit exists
Permit Status Desc:
Permit Type:
Permit Type Desc:
Permit Status Code:
Permit Category:
File No: I06308
File Name: MINI-MOTOR HOME SALES

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
4	2 of 2	SE	0.02 / 80.29	17.69 / 0	PROWELL FAMILY TRUST 1152 E CARSON ST CARSON CA 90745	HAZNET

SIC Code:
NAICS Code:
EPA ID: CAC002682980
Create Date: 1/4/2012
Fac Act Ind: No
Inact Date: 7/3/2012
County Code: 19
County Name: Los Angeles
Mail Name:
Mailing Addr 1: 1920 W 11TH ST
Mailing Addr 2:
Owner Fax:
Mailing City: UPLAND
Mailing State: CA
Mailing Zip: 91786
Region Code: 3
Owner Name: PROWELL FAMILY TRUST
Owner Addr 1: 1920 W 11TH ST
Owner Addr 2:
Owner City: UPLAND
Owner State: CA
Owner Zip: 91786
Owner Phone: 9099466729

Contact Information

-- --
Contact Name: JIM ALLMAN
Street Address 1: 1920 W 11TH ST
Street Address 2:
City: UPLAND
State: CA
Zip: 91786
Phone: 9099466729
-- --
-- --

Tanner Information

-- --
Generator EPA ID: CAC002682980
Generator County Code: 19
Generator County: Los Angeles
TSD EPA ID: CAD009007626
TSD County Code: 19
TSD County: Los Angeles
State Waste Code: 151
State Waste Code Desc.: Asbestos containing waste
Method Code: H132
Method Description: LANDFILL OR SURFACE IMPOUNDMENT THAT WILL BE CLOSED AS LANDFILL(TO INCLUDE ON-SITE TREATMENT AND/OR STABILIZATION)
Tons: 0.4
Year: 2012
-- --

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
5	1 of 1	W	0.02 / 120.56	16.69 / -1	BP PIPELINE - DOMINGUEZ CHANNEL @ CARSON CARSON STREET	CLEANUP SITES

CARSON CA 90745

Global ID:	T10000003010	***Site Facility Type:***	CLEANUP PROGRAM SITE
Status:	COMPLETED - CASE CLOSED	***County:***	LOS ANGELES
Status Date:	3/11/2016	***Latitude:***	33.8321509110525
Longitude:	-118.25468480587		
Data Source:	Cleanup Program Sites from GeoTracker Search; Cleanup Sites from GeoTracker Cleanup Sites Data Download		

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail(as Nov 16 2020)

RB Case No:	1263	***CUF Case:***	NO
Local Case No:		***Case Worker:***	PC
Begin Date:	4/26/2011	***File Location:***	
Stop Method:			
Lead Agency:	LOS ANGELES RWQCB (REGION 4)		
Local Agency:			
Potential COC:			
Potential Media of Concern:			
How Discovered:			
How Discovered Description:			
Stop Description:			
Calwater Watershed Name:	Dominguez Channel (411.01)		
DWR GW Subbasin Name:	Coastal Plain Of Los Angeles - West Coast (4-011.03)		
Disadvantaged Community:			
Site History:			

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Activity(as Nov 16 2020)

Action Type:	ENFORCEMENT
Date :	2016-02-03 00:00:00
Action:	File Review - Closure
Action Type:	RESPONSE
Date :	2012-05-01 00:00:00
Action:	Monitoring Report - Other
Action Type:	ENFORCEMENT
Date :	2012-02-16 00:00:00
Action:	13267 Requirement
Action Type:	RESPONSE
Date :	2011-10-20 00:00:00
Action:	Site Assessment Report
Action Type:	RESPONSE
Date :	2011-08-31 00:00:00
Action:	Preliminary Site Assessment Report
Action Type:	ENFORCEMENT
Date :	2011-08-31 00:00:00
Action:	13267 Requirement
Action Type:	ENFORCEMENT
Date :	2011-08-25 00:00:00
Action:	Preparation of Record for Appeal/Referral/Petition
Action Type:	RESPONSE
Date :	2011-07-20 00:00:00
Action:	Correspondence
Action Type:	ENFORCEMENT
Date :	2011-07-19 00:00:00
Action:	Technical Correspondence / Assistance / Other
Action Type:	ENFORCEMENT

Date : 2011-06-30 00:00:00
Action: 13267 Requirement

Action Type: RESPONSE
Date : 2011-06-08 00:00:00
Action: Site Investigation Workplan

Action Type: ENFORCEMENT
Date : 2011-05-23 00:00:00
Action: 13267 Requirement

Action Type: RESPONSE
Date : 2011-05-06 00:00:00
Action: Correspondence

Action Type: ENFORCEMENT
Date : 2011-04-26 00:00:00
Action: 13267 Requirement

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History(as Nov 16 2020)

Status: Completed - Case Closed
Status Date: 2016-03-11 00:00:00

Status: Open - Inactive
Status Date: 2016-03-01 00:00:00

Status: Open - Inactive
Status Date: 2016-02-04 00:00:00

Status: Open - Site Assessment
Status Date: 2016-02-04 00:00:00

Status: Open - Site Assessment
Status Date: 2011-05-03 00:00:00

Status: Open - Case Begin Date
Status Date: 2011-04-26 00:00:00

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Contacts(as Nov 16 2020)

Contact Type: Regional Board Caseworker
Contact Name: PAUL CHO
Phone No:
Organization Name: LOS ANGELES RWQCB (REGION 4)
Email: pcho@waterboards.ca.gov
Address: 320 W. 4TH ST., SUITE 200
City: LOS ANGELES

Cleanup Program Sites from GeoTracker Search - Regulatory Profile (as of Oct 06, 2020)

Project Status:
CUF Claim:
CUF Priority Assign:
CUF Amount Paid:
Facility Type:
User Defined Beneficial Use:
Designated Beneficial Use: MUN, AGR, IND, PROC
Designated Beneficl Use Desc: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, Industrial Process Supply
Project Oversight Agencies:
Report Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000003010
Cleanup Status Detail: COMPLETED - CASE CLOSED AS OF 3/11/2016
Cleanup History Link: https://geotracker.waterboards.ca.gov/profile_report_include?global_id=T10000003010&tabname=regulatoryhistory
Potential COC: NONE SPECIFIED
Potential Media of Concern: NONE SPECIFIED
GW Monitoring Freq:
DWR GW Sub Basin: Coastal Plain Of Los Angeles - West Coast (4-011.03)
WDR Place Type:
WDR File:
WDR Order:
File Location:
Composting Method:

Calwater Watershed Name: Dominguez Channel (411.01)
Post Closure Site Management:
Future Land Use:
Cleanup Oversight Agencies: LOS ANGELES RWQCB (REGION 4) (LEAD) - CASE #: 1263
CASEWORKER: PAUL CHO
Site History:

No site history available

Sites from GeoTracker Search - Regulatory Activities (as of Oct 06, 2020)

Action Type: Other Regulatory Actions
Action Date: 2/3/2016
Received Issue Date: 2/3/2016
Action: File Review - Closure
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003010&enforcement_id=6275378&temptable=ENFORCEMENT
Title Description Comments:

Merger of Cases into SCP Case No. 1264

Action Type: Response Requested - Reports
Action Date: 5/1/2012
Received Issue Date:
Action: Monitoring Report - Other
Doc Link:
Title Description Comments:

Groundwater Monitoring Report

Action Type: Enforcement/Orders
Action Date: 2/16/2012
Received Issue Date: 2/16/2012
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003010&enforcement_id=6113522&temptable=ENFORCEMENT
Title Description Comments:

Groundwater Monitoring Field Schedule

Action Type: Response Requested - Reports
Action Date: 10/20/2011
Received Issue Date: 10/20/2011
Action: Site Assessment Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003010&doc_id=5716346
Title Description Comments:

Well Installation Report

Action Type: Response Requested - Reports
Action Date: 8/31/2011
Received Issue Date: 8/31/2011
Action: Preliminary Site Assessment Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003010&doc_id=5720993
Title Description Comments:

Soil Investigation Data Package

Action Type: Enforcement/Orders
Action Date: 8/31/2011
Received Issue Date: 8/31/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?

global_id=T10000003010&enforcement_id=6097500&temptable=ENFORCEMENT

Title Description Comments:

Revised Deadlines for Technical Reporting

Action Type: Other Regulatory Actions
Action Date: 8/25/2011
Received Issue Date: 8/25/2011
Action: Preparation of Record for Appeal/Referral/Petition
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003010&enforcement_id=6097248&temptable=ENFORCEMENT
Title Description Comments:

Response to OCC Request for Information

Action Type: Response Requested - Other
Action Date: 7/20/2011
Received Issue Date: 7/20/2011
Action: Correspondence
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003010&doc_id=5717901
Title Description Comments:

Boring Locations Letter

Action Type: Other Regulatory Actions
Action Date: 7/19/2011
Received Issue Date: 7/19/2011
Action: Technical Correspondence / Assistance / Other
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003010&enforcement_id=6092682&temptable=ENFORCEMENT
Title Description Comments:

2011-2012 Annual Estimation Letter

Action Type: Enforcement/Orders
Action Date: 6/30/2011
Received Issue Date: 6/30/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003010&enforcement_id=6091044&temptable=ENFORCEMENT
Title Description Comments:

Approval of Investigation Work Plan

Action Type: Response Requested - Workplans
Action Date: 6/8/2011
Received Issue Date: 6/8/2011
Action: Site Investigation Workplan
Doc Link:
Title Description Comments:

Site Investigation Work Plan

Action Type: Response Requested - Workplans
Action Date: 6/8/2011
Received Issue Date: 6/8/2011
Action: Site Investigation Workplan
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003010&doc_id=5714880
Title Description Comments:

BP US Pipelines & Logistics Investigation Work Plan

Action Type: Enforcement/Orders
Action Date: 5/23/2011

Received Issue Date: 5/23/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003010&enforcement_id=6087666&temptable=ENFORCEMENT
Title Description Comments:

RESPONSE TO CORRESPONDENCE ABOUT A WORK PLAN REQUIRED UNDER CWC SECTION 13267 ORDER DATED APRIL 26, 2011

Action Type: Response Requested - Other
Action Date: 5/6/2011
Received Issue Date: 5/6/2011
Action: Correspondence
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003010&doc_id=5712777
Title Description Comments:

(Response to) Requirement for Technical Report

Action Type: Enforcement/Orders
Action Date: 4/26/2011
Received Issue Date: 4/26/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003010&enforcement_id=6085583&temptable=ENFORCEMENT
Title Description Comments:

Requirement for Technical Report

Sites from GeoTracker Search - Documents (as of Oct 06, 2020)

Document Type: Site Documents ***Submitted:***
Document Date: 2/3/2016 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: MERGER OF CASES INTO SCP CASE NO. 1264
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003010&enforcement_id=6275378
Type: FILE REVIEW - CLOSURE

Document Type: Site Documents ***Submitted:***
Document Date: 8/17/2012 ***Submitted By:*** AECOM (AUTH_RP)
Size : 137 KB
Title: BP WRITTEN COMMENTS DRAFT CLEANUP AND ABATEMENT ORDER NO. R4-2012-0103
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1506713807/T10000003010.PDF
Type: CORRESPONDENCE

Document Type: Monitoring Reports ***Submitted:***
Document Date: 5/1/2012 ***Submitted By:*** AECOM (AUTH_RP)
Size : 3,138 KB
Title: BP PIPELINES (NORTH AMERICA) INC.GROUNDWATER MONITORING REPORT DOMINGUEZ CHANNEL
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2957965910/T10000003010.PDF
Type: MONITORING REPORT - OTHER

Document Type: Site Documents ***Submitted:***
Document Date: 4/20/2012 ***Submitted By:*** AECOM (AUTH_RP)
Size : 21 KB
Title: REQUIREMENT FOR TECHNICAL REPORT - UPDATED TABLE
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8597531914/T10000003010.PDF
Type: OTHER REPORT / DOCUMENT

Document Type: Site Documents ***Submitted:***
Document Date: 4/10/2012 ***Submitted By:*** AECOM (AUTH_RP)
Size : 3 KB
Title: WATER LEVEL SUMMARY
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3438288390/T10000003010.PDF
Type: OTHER REPORT / DOCUMENT

Document Type: Site Documents ***Submitted:***
Document Date: 2/16/2012 ***Submitted By:*** GREG BISHOP (REGULATOR)

Size :
Title: GROUNDWATER MONITORING FIELD SCHEDULE
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003010&enforcement_id=6113522
Type: 13267 REQUIREMENT

Document Type: Site Documents ***Submitted:***
Document Date: 2/15/2012 ***Submitted By:*** AECOM (AUTH_RP)
Size : 696 KB
Title: REQUIREMENT FOR TECHNICAL REPORT, PURSUANT TO CALIFORNIA WATER CODE SECTION 13267
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4775883495/T10000003010.PDF
Type: OTHER REPORT / DOCUMENT

Document Type: Site Documents ***Submitted:***
Document Date: 12/19/2011 ***Submitted By:*** AECOM (AUTH_RP)
Size : 25 KB
Title: ARC RELLC RESPONSE LETTER
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3931746721/T10000003010.PDF
Type: CORRESPONDENCE

Document Type: Site Documents ***Submitted:***
Document Date: 10/20/2011 ***Submitted By:*** AECOM (AUTH_RP)
Size : 19,119 KB
Title: ARC DOMINGUEZ CHANNEL SUBSURFACE INVESTIGATION REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8502353727/T10000003010.PDF
Type: SITE INVESTIGATION

Document Type: Site Documents ***Submitted:***
Document Date: 8/31/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: REVISED DEADLINES FOR TECHNICAL REPORTING
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003010&enforcement_id=6097500
Type: 13267 REQUIREMENT

Document Type: Site Documents ***Submitted:***
Document Date: 8/31/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: SOIL INVESTIGATION DATA PACKAGE
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003010&document_id=5720993
Type: PRELIMINARY SITE ASSESSMENT REPORT

Document Type: Site Documents ***Submitted:***
Document Date: 8/25/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: RESPONSE TO OCC REQUEST FOR INFORMATION
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003010&enforcement_id=6097248
Type: PREPARATION OF RECORD FOR APPEAL/REFERRAL/PETITION

Document Type: Site Documents ***Submitted:***
Document Date: 7/20/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: BORING LOCATIONS LETTER
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003010&document_id=5717901
Type: CORRESPONDENCE

Document Type: Site Documents ***Submitted:***
Document Date: 7/19/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: 2011-2012 ANNUAL ESTIMATION LETTER
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003010&enforcement_id=6092682
Type: TECHNICAL CORRESPONDENCE / ASSISTANCE / OTHER

Document Type: Site Documents ***Submitted:***
Document Date: 6/30/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF INVESTIGATION WORK PLAN
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003010&enforcement_id=6091044
Type: 13267 REQUIREMENT

Document Type: Site Documents ***Submitted:***

Document Date: 6/8/2011 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: BP US PIPELINES & LOGISTICS INVESTIGATION WORK PLAN
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003010&document_id=5714880
Type: SITE INVESTIGATION WORKPLAN

Document Type: Site Documents **Submitted:**
Document Date: 5/23/2011 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: RESPONSE TO CORRESPONDENCE ABOUT A WORK PLAN REQUIRED UNDER CWC SECTION 13267 ORDER DATED APRIL 26, 2011
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003010&enforcement_id=6087666
Type: 13267 REQUIREMENT

Document Type: Site Documents **Submitted:**
Document Date: 5/6/2011 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: (RESPONSE TO) REQUIREMENT FOR TECHNICAL REPORT
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003010&document_id=5712777
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 4/26/2011 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: REQUIREMENT FOR TECHNICAL REPORT
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003010&enforcement_id=6085583
Type: 13267 REQUIREMENT

Sites from GeoTracker Search - Site Maps (as of Oct 06, 2020)

Title: DC-5 (DC-5) **Submitted By:** AECOM (AUTH_RP)
Size : 264 KB **Submitted:** 9/13/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/8799900829/T10000003010.PDF

Title: DC-4 (DC-4) **Submitted By:** AECOM (AUTH_RP)
Size : 266 KB **Submitted:** 9/13/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/1339625060/T10000003010.PDF

Title: DC-1 (DC-1) **Submitted By:** AECOM (AUTH_RP)
Size : 238 KB **Submitted:** 9/13/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/4075082361/T10000003010.PDF

Title: DC-3 (DC-3) **Submitted By:** AECOM (AUTH_RP)
Size : 275 KB **Submitted:** 9/13/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/1162754833/T10000003010.PDF

Sites from GeoTracker Search - Cleanup Status History (as of Oct 06, 2020)

Status: Completed - Case Closed
Date : 3/11/2016

Status: Open - Inactive
Date : 3/1/2016

Status: Open - Inactive
Date : 2/4/2016

Status: Open - Site Assessment
Date : 2/4/2016

Status: Open - Site Assessment
Date : 5/3/2011

Status: Open - Case Begin Date
Date : 4/26/2011

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Sites from GeoTracker Search - Related Cases (as of Oct 06, 2020)

Identifier: T10000003007
Status: COMPLETED - CASE CLOSED
Association: Related Global ID
Description:
Project Name: Shell Pipeline 0367 - Dominguez Channel @ Carson
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000003007
Address: Carson Street
City: CARSON

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6 | ***1 of 1*** | ***NNW*** | ***0.02 / 121.65*** | ***17.48 / 0*** | ***CAROLY LEE 1136 E 215TH ST CARSON CA 90745*** | ***RCRA NON GEN***

EPA Handler ID: CAC002986238
Gen Status Universe: No Report
Contact Name: CAROLY LEE
Contact Address: 1136 E 215TH ST, , CARSON, CA, 90745,
Contact Phone No and Ext: 310-735-5836
Contact Email: MANIFEST.SIRRIS@GMAIL.COM
Contact Country:
County Name: LOS ANGELES
EPA Region: 09
Land Type:
Receive Date: 20181024

Violation/Evaluation Summary

Note: NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No
Furnace Exemption: No
Underground Injection Activity: No
Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 20181024
Handler Name: CAROLY LEE
Source Type: Implementer
Federal Waste Generator Code: N
Generator Code Description: Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind: Current Owner
Type: Other
Name: CAROLY LEE
Date Became Current:
Street No:
Street 1: 1136 E 215TH ST
Street 2:
City: CARSON

Date Ended Current:		**State:**	CA
Phone:	310-735-5836	**Country:**	
Source Type:	Implementer	**Zip Code:**	90745
Owner/Operator Ind:	Current Operator	**Street No:**	
Type:	Other	**Street 1:**	1136 E 215TH ST
Name:	CAROLY LEE	**Street 2:**	
Date Became Current:		**City:**	CARSON
Date Ended Current:		**State:**	CA
Phone:	310-735-5836	**Country:**	
Source Type:	Implementer	**Zip Code:**	90745

7 **1 of 8** **ESE** **0.02 / 123.52** **19.19 / 2** **VINCES AUTOMOTIVE SPECIALITIES**
1209 E CARSON ST
CARSON CA 90745 **RCRA SQG**

EPA Handler ID:	CAR000221572
Gen Status Universe:	Small Quantity Generator
Contact Name:	GREG VOGELPOHL
Contact Address:	4700 LA HWY 22, STE 520, MANDEVILLE, LA, 70471, US
Contact Phone No and Ext:	985-792-1302
Contact Email:	JENG@RELLC.NET
Contact Country:	US
County Name:	LOS ANGELES
EPA Region:	09
Land Type:	Private
Receive Date:	20110913

Violation/Evaluation Summary

Note: NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility:	No
Onsite Burner Exemption:	No
Furnace Exemption:	No
Underground Injection Activity:	No
Commercial TSD:	No
Used Oil Transporter:	No
Used Oil Transfer Facility:	No
Used Oil Processor:	No
Used Oil Refiner:	No
Used Oil Burner:	No
Used Oil Market Burner:	No
Used Oil Spec Marketer:	No

Hazardous Waste Handler Details

Sequence No:	1
Receive Date:	20110913
Handler Name:	VINCES AUTOMOTIVE SPECIALITIES
Federal Waste Generator Code:	2
Generator Code Description:	Small Quantity Generator
Source Type:	Notification

Waste Code Details

Hazardous Waste Code: 135
Waste Code Description: Unspecified aqueous solution

Hazardous Waste Code: 611
Waste Code Description: Contaminated soil from site clean-ups

Hazardous Waste Code: D001
Waste Code Description: IGNITABLE WASTE

Hazardous Waste Code: D008
Waste Code Description: LEAD

Hazardous Waste Code: D018
Waste Code Description: BENZENE

Owner/Operator Details

Owner/Operator Ind:	Current Operator	**Street No:**	
Type:	Private	**Street 1:**	
Name:	RELLC	**Street 2:**	
Date Became Current:	20110622	**City:**	
Date Ended Current:		**State:**	
Phone:		**Country:**	US
Source Type:	Notification	**Zip Code:**	

Owner/Operator Ind:	Current Owner	**Street No:**	
Type:	Private	**Street 1:**	3410 STARLINE DR
Name:	VINCE ZANKICH	**Street 2:**	
Date Became Current:	19990816	**City:**	RANCHO PALOS VERDES
Date Ended Current:		**State:**	CA
Phone:	310-833-6319	**Country:**	US
Source Type:	Notification	**Zip Code:**	90275

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7 **2 of 8** **ESE** **0.02 / 123.52** **19.19 / 2**

FORMER TEXACO SERVICE STATION
1209 E. CARSON STREET
CARSON CA 90746

CLEANUP SITES

Global ID:	T10000003493	**Site Facility Type:**	CLEANUP PROGRAM SITE
Status:	COMPLETED - CASE CLOSED	**County:**	LOS ANGELES
Status Date:	2/8/2012	**Latitude:**	33.8319726679541
Longitude:	-118.252445161343		

Data Source: Cleanup Program Sites from GeoTracker Search; Cleanup Sites from GeoTracker Cleanup Sites Data Download

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail(as Nov 16 2020)

RB Case No:	1272	**CUF Case:**	NO
Local Case No:		**Case Worker:**	PC
Begin Date:	4/26/2011	**File Location:**	
Stop Method:			
Lead Agency:	LOS ANGELES RWQCB (REGION 4)		
Local Agency:			
Potential COC:			
Potential Media of Concern:			
How Discovered:			
How Discovered Description:			
Stop Description:			
Calwater Watershed Name:	Dominguez Channel (411.01)		
DWR GW Subbasin Name:	Coastal Plain Of Los Angeles - West Coast (4-011.03)		
Disadvantaged Community:			
Site History:			

Investigation of possible LNAPL impacts to the Dominguez Channel. This case remains active within the Regional Board UST program.

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Activity(as Nov 16 2020)

Action Type: ENFORCEMENT
Date : 2012-02-08 00:00:00
Action: Closure/No Further Action Letter

Action Type: Other
Date : 2011-04-26 00:00:00
Action: Leak Discovery

Action Type: ENFORCEMENT
Date : 2011-04-26 00:00:00
Action: 13267 Requirement

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History(as Nov 16 2020)

Status: Completed - Case Closed
Status Date: 2012-02-08 00:00:00

Status: Open - Case Begin Date
Status Date: 2011-04-26 00:00:00

Status: Open - Site Assessment
Status Date: 2011-04-26 00:00:00

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Contacts(as Nov 16 2020)

Contact Type: Regional Board Caseworker
Contact Name: PAUL CHO
Phone No:
Organization Name: LOS ANGELES RWQCB (REGION 4)
Email: pcho@waterboards.ca.gov
Address: 320 W. 4TH ST., SUITE 200
City: LOS ANGELES

Cleanup Program Sites from GeoTracker Search - Regulatory Profile (as of Oct 06, 2020)

Project Status:
CUF Claim:
CUF Priority Assign:
CUF Amount Paid:
Facility Type:
User Defined Beneficial Use:
Designated Beneficial Use: MUN, AGR, IND, PROC
Designated Beneficl Use Desc: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, Industrial Process Supply
Project Oversight Agencies:
Report Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000003493
Cleanup Status Detail: COMPLETED - CASE CLOSED AS OF 2/8/2012
Cleanup History Link: https://geotracker.waterboards.ca.gov/profile_report_include?global_id=T10000003493&tabname=regulatoryhistory
Potential COC: NONE SPECIFIED
Potential Media of Concern: NONE SPECIFIED
GW Monitoring Freq:
DWR GW Sub Basin: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Calwater Watershed Name: Dominguez Channel (411.01)
Post Closure Site Management:
Future Land Use:
Cleanup Oversight Agencies: LOS ANGELES RWQCB (REGION 4) (LEAD) - CASE #: 1272
CASEWORKER: PAUL CHO
WDR Place Type:
WDR File:
WDR Order:
File Location:
Composting Method:
Site History:

Investigation of possible LNAPL impacts to the Dominguez Channel. This case remains active within the Regional Board UST program.

Sites from GeoTracker Search - Regulatory Activities (as of Oct 06, 2020)

Action Type: Other Regulatory Actions
Action Date: 2/8/2012
Received Issue Date: 2/8/2012
Action: Closure/No Further Action Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003493&enforcement_id=6112959&temptable=ENFORCEMENT
Title Description Comments:

Satisfaction of 13267 Order Requirements and Return of Case to UST Program

Action Type: Enforcement/Orders
Action Date: 4/26/2011
Received Issue Date: 4/26/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003493&enforcement_id=6109078&temptable=ENFORCEMENT
Title Description Comments:

Requirement for Technical Report

Action Type: Leak Action
Action Date: 4/26/2011
Received Issue Date:
Action: Leak Discovery
Doc Link:
Title Description Comments:

Sites from GeoTracker Search - Documents (as of Oct 06, 2020)

Document Type: Site Documents
Document Date: 2/8/2012
Size :
Title: SATISFACTION OF 13267 ORDER REQUIREMENTS AND RETURN OF CASE TO UST PROGRAM
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003493&enforcement_id=6112959
Type: CLOSURE/NO FURTHER ACTION LETTER
Submitted:
Submitted By: GREG BISHOP (REGULATOR)

Document Type: Site Documents
Document Date: 4/26/2011
Size :
Title: REQUIREMENT FOR TECHNICAL REPORT
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003493&enforcement_id=6109078
Type: 13267 REQUIREMENT
Submitted:
Submitted By: GREG BISHOP (REGULATOR)

Sites from GeoTracker Search - Cleanup Status History (as of Oct 06, 2020)

Status: Completed - Case Closed
Date : 2/8/2012

Status: Open - Case Begin Date
Date : 4/26/2011

Status: Open - Site Assessment
Date : 4/26/2011

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
7	3 of 8	ESE	0.02 / 123.52	19.19 / 2	TEXACO SERVICE STATION (FORMER) 1209 CARSON ST. E. CARSON CA 90801	LUST

Global ID: T0603722212
Status: COMPLETED - CASE CLOSED
Status Date: 3/9/2015
Case Type: LUST CLEANUP SITE
County: LOS ANGELES
Latitude: 33.8319503875407
Longitude: -118.252512216568

Date Source: LUST Cleanup Sites from GeoTracker Search; LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download

LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail(as Nov 16 2020)

RB Case No: R-05994
Local Case No:
Begin Date: 3/1/1996
Lead Agency: LOS ANGELES RWQCB (REGION 4)
Local Agency: LOS ANGELES COUNTY
CUF Case: NO
Potential COC: Gasoline
How Discovered:
Stop Method:
Stop Description:
Case Worker: JW
File Location:
Potential Media of Concern: Aquifer used for drinking water supply
How Discovered Description:
Calwater Watershed Name: Dominguez Channel (411.01)
DWR GW Subbasin Name: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Disadvantaged Community:
Site History:

LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Activity(as Nov 16 2020)

Action Type: ENFORCEMENT
Date : 3/9/2015
Action: Closure/No Further Action Letter

Action Type: RESPONSE
Date : 3/4/2015
Action: Well Destruction Report

Action Type: ENFORCEMENT
Date : 9/9/2014
Action: Notification - Preclosure

Action Type: RESPONSE
Date : 7/15/2014
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 11/5/2012
Action: Request for Closure

Action Type: RESPONSE
Date : 4/26/2012
Action: Monitoring Report - Semi-Annually

Action Type: ENFORCEMENT
Date : 8/25/2011
Action: Preparation of Record for Appeal/Referral/Petition

Action Type: ENFORCEMENT
Date : 7/21/2011
Action: 13267 Requirement

Action Type: RESPONSE
Date : 7/15/2011
Action: Monitoring Report - Semi-Annually

Action Type: ENFORCEMENT
Date : 6/8/2011
Action: 13267 Requirement

Action Type: ENFORCEMENT
Date : 4/26/2011
Action: 13267 Requirement

Action Type: RESPONSE
Date : 1/15/2011

Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 7/15/2010
Action: Conceptual Site Model

Action Type: RESPONSE
Date : 7/15/2010
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 6/25/2010
Action: Request for Closure

Action Type: RESPONSE
Date : 1/15/2010
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 7/15/2009
Action: Monitoring Report - Quarterly

Action Type: ENFORCEMENT
Date : 6/15/2009
Action: Staff Letter

Action Type: RESPONSE
Date : 4/15/2009
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 1/15/2009
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 10/15/2008
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 7/15/2008
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 4/15/2008
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 1/15/2008
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 10/15/2007
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 7/15/2007
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 4/15/2007
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 1/15/2007
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 10/15/2006
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 7/15/2006
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 4/25/2006
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 1/15/2006
Action: Monitoring Report - Quarterly

Action Type: ENFORCEMENT
Date : 6/28/2002
Action: Staff Letter

Action Type: Other
Date : 3/1/1996
Action: Leak Reported

Action Type: Other
Date : 3/1/1996
Action: Leak Discovery

LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Contacts(as Nov 16 2020)

Contact Type: Regional Board Caseworker
Contact Name: JIMMIE WOO
City: LOS ANGELES
Organization Name: LOS ANGELES RWQCB (REGION 4)
Address: 320 WEST 4TH STREET, SUITE 200
Email: jwoo@waterboards.ca.gov
Phone No: 2135766600

Contact Type: Local Agency Caseworker
Contact Name: TIM SMITH
City: ALHAMBRA
Organization Name: LOS ANGELES COUNTY
Address: 900 S. FREMONT AVE.
Email: tsmith@dpw.lacounty.gov
Phone No:

LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History(as Nov 16 2020)

Status: Completed - Case Closed
Status Date: 3/9/2015

Status: Open - Eligible for Closure
Status Date: 6/12/2013

Status: Open - Case Begin Date
Status Date: 3/1/1996

Status: Open - Site Assessment
Status Date: 3/1/1996

LUST Sites from GeoTracker Search - Regulatory Profile (as of Oct 06, 2020)

Site Facility Name: TEXACO SERVICE STATION (FORMER)
Site Facility Type: LUST CLEANUP SITE
Cleanup Status: COMPLETED - CASE CLOSED
Project Status:
WDR Place Type:
WDR File:
WDR Order:
CUF Priority Assig:
CUF Amount Paid:
File Location:
Designated Beneficial Use: MUN, AGR, IND, PROC
Project Oversight Agencies:
Potential COC: GASOLINE
Facility Type:
Composting Method:
Address: 1209 CARSON ST. E.
City: CARSON
Zip: 90801
County: LOS ANGELES
CUF Claim:

Report Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T0603722212
Cleanup Status Detail: COMPLETED - CASE CLOSED AS OF 3/9/2015
Cleanup History Link: https://geotracker.waterboards.ca.gov/profile_report_include?global_id=T0603722212&tabname=regulatoryhistory
Potential Media of Concern: AQUIFER USED FOR DRINKING WATER SUPPLY
User Defined Beneficial Use:
DWR GW Sub Basin: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Calwater Watershed Name: Dominguez Channel (411.01)
Post Closure Site Management:
Future Land Use:
Cleanup Oversight Agencies: LOS ANGELES RWQCB (REGION 4) (LEAD) - CASE #: R-05994
CASEWORKER: JIMMIE WOO
LOS ANGELES COUNTY
CASEWORKER: TIM SMITH
Gndwater Monitoring Freque: # OF WELLS MONITORED - SEMI-ANNUALLY : 16
Designated Beneficial Use Desc: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, Industrial Process Supply
Site History:

No site history available

LUST Sites from GeoTracker Search - Cleanup Status History (as of Oct 06, 2020)

Status: Completed - Case Closed
Date : 3/9/2015

Status: Open - Eligible for Closure
Date : 6/12/2013

Status: Open - Site Assessment
Date : 3/1/1996

Status: Open - Case Begin Date
Date : 3/1/1996

LUST Sites from GeoTracker Search - Regulatory Activities (as of Oct 06, 2020)

Action Type: Other Regulatory Actions
Action Date: 3/9/2015
Received Issue Date: 3/9/2015
Action: Closure/No Further Action Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T0603722212&enforcement_id=6238087&temptable=ENFORCEMENT
Title Description Comments:

Closure

Action Type: Response Requested - Reports
Action Date: 3/4/2015
Received Issue Date: 3/4/2015
Action: Well Destruction Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T0603722212&doc_id=5832622
Title Description Comments:

Groundwater Well Destructin

Action Type: Notices
Action Date: 9/9/2014
Received Issue Date: 9/9/2014
Action: Notification - Preclosure
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T0603722212&enforcement_id=6221035&temptable=ENFORCEMENT
Title Description Comments:

Preclosure Letter

Action Type: Response Requested - Reports
Action Date: 7/15/2014
Received Issue Date: 7/8/2014
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

1st 2014 Semi-annual GWM Report

Action Type: Response Requested - Other
Action Date: 11/5/2012
Received Issue Date: 11/5/2012
Action: Request for Closure
Doc Link:
Title Description Comments:

Action Type: Response Requested - Reports
Action Date: 4/26/2012
Received Issue Date: 4/26/2012
Action: Monitoring Report - Semi-Annually
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T0603722212&doc_id=5735692
Title Description Comments:

2012 First Semi-Annual Groundwater Monitoring Report - January through June 2012

Action Type: Other Regulatory Actions
Action Date: 8/25/2011
Received Issue Date: 8/25/2011
Action: Preparation of Record for Appeal/Referral/Petition
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T0603722212&enforcement_id=6097249&temptable=ENFORCEMENT
Title Description Comments:

Response to OCC Request for Information

Action Type: Enforcement/Orders
Action Date: 7/21/2011
Received Issue Date: 7/21/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T0603722212&enforcement_id=6093327&temptable=ENFORCEMENT
Title Description Comments:

Workplan Approval

Action Type: Response Requested - Reports
Action Date: 7/15/2011
Received Issue Date: 7/18/2011
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

Action Type: Enforcement/Orders
Action Date: 6/8/2011
Received Issue Date: 6/8/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T0603722212&enforcement_id=6089040&temptable=ENFORCEMENT
Title Description Comments:

Extension

Action Type: Enforcement/Orders

Action Date: 4/26/2011
Received Issue Date: 4/26/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T0603722212&enforcement_id=6085252&temptable=ENFORCEMENT
Title Description Comments:

Dominguez Channel 13267 Order

Action Type: Response Requested - Reports
Action Date: 1/15/2011
Received Issue Date: 1/12/2011
Action: Monitoring Report - Semi-Annually
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T0603722212&doc_id=5703362
Title Description Comments:

Action Type: Response Requested - Reports
Action Date: 7/15/2010
Received Issue Date: 6/25/2010
Action: Monitoring Report - Semi-Annually
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T0603722212&doc_id=5670820
Title Description Comments:

Action Type: Response Requested - Other
Action Date: 7/15/2010
Received Issue Date: 6/25/2010
Action: Conceptual Site Model
Doc Link:
Title Description Comments:

Action Type: Response Requested - Other
Action Date: 6/25/2010
Received Issue Date: 6/25/2010
Action: Request for Closure
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T0603722212&doc_id=5670819
Title Description Comments:

Action Type: Response Requested - Reports
Action Date: 1/15/2010
Received Issue Date: 1/25/2010
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

Action Type: Response Requested - Reports
Action Date: 7/15/2009
Received Issue Date: 6/22/2009
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Action Type: Other Regulatory Actions
Action Date: 6/15/2009
Received Issue Date: 6/15/2009
Action: Staff Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T0603722212&enforcement_id=6022219&temptable=ENFORCEMENT
Title Description Comments:

Action Type: Response Requested - Reports
Action Date: 4/15/2009
Received Issue Date: 4/17/2009

Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

- REVIEWED

Action Type: Response Requested - Reports
Action Date: 1/15/2009
Received Issue Date: 1/16/2009
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

- REVIEWED

Action Type: Response Requested - Reports
Action Date: 10/15/2008
Received Issue Date: 10/24/2008
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

- REVIEWED

Action Type: Response Requested - Reports
Action Date: 7/15/2008
Received Issue Date: 7/3/2008
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

- REVIEWED

Action Type: Response Requested - Reports
Action Date: 4/15/2008
Received Issue Date: 4/28/2008
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly - REVIEWED

Action Type: Response Requested - Reports
Action Date: 1/15/2008
Received Issue Date: 1/31/2008
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly - REVIEWED

Action Type: Response Requested - Reports
Action Date: 10/15/2007
Received Issue Date: 11/6/2007
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly

Action Type: Response Requested - Reports
Action Date: 7/15/2007
Received Issue Date: 7/23/2007

Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly

Action Type: Response Requested - Reports
Action Date: 4/15/2007
Received Issue Date: 5/15/2007
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly

Action Type: Response Requested - Reports
Action Date: 1/15/2007
Received Issue Date: 1/16/2007
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly

Action Type: Response Requested - Reports
Action Date: 10/15/2006
Received Issue Date: 11/13/2006
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly

Action Type: Response Requested - Reports
Action Date: 7/15/2006
Received Issue Date: 8/7/2006
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly

Action Type: Response Requested - Reports
Action Date: 4/25/2006
Received Issue Date: 4/25/2006
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly

Action Type: Response Requested - Reports
Action Date: 1/15/2006
Received Issue Date: 1/30/2006
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly

Action Type: Other Regulatory Actions
Action Date: 6/28/2002
Received Issue Date: 6/28/2002

Action: Staff Letter
Doc Link:
Title Description Comments:

Action Type: Leak Action
Action Date: 3/1/1996
Received Issue Date:
Action: Leak Discovery
Doc Link:
Title Description Comments:

Action Type: Leak Action
Action Date: 3/1/1996
Received Issue Date:
Action: Leak Reported
Doc Link:
Title Description Comments:

LUST Sites from GeoTracker Search - Site Maps (as of Oct 06, 2020)

Title: GEO_MAP
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_map/4081122159/T0603722212.PDF
Size : 63 KB
Submitted By: LEIDOS (SAIC) (AUTH_RP)
Submitted: 8/24/2009*

Title: GEO_MAP
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_map/8431394279/T0603722212.pdf
Size : 128 KB
Submitted By: JASON LEE (RP)
Submitted: 12/23/2005*

LUST Sites from GeoTracker Search - Documents (as of Oct 06, 2020)

Document Type: Site Documents
Document Date: 3/9/2015
Type: CLOSURE/NO FURTHER ACTION LETTER
Title: CLOSURE
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0603722212&enforcement_id=6238087
Size :
Submitted By: ERRICK LLAMAS (REGULATOR)
Submitted:

Document Type: Site Documents
Document Date: 3/4/2015
Type: WELL DESTRUCTION REPORT
Title: GROUNDWATER WELL DESTRUCTIN
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0603722212&document_id=5832622
Size :
Submitted By: JIMMIE WOO (REGULATOR)
Submitted:

Document Type: Site Documents
Document Date: 9/9/2014
Type: NOTIFICATION - PRECLOSURE
Title: PRECLOSURE LETTER
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0603722212&enforcement_id=6221035
Size :
Submitted By: JIMMIE WOO (REGULATOR)
Submitted:

Document Type: Monitoring Reports
Document Date: 7/8/2014
Type: MONITORING REPORT - SEMI-ANNUALLY
Title: 2014 FIRST SEMIANNUAL GROUNDWATER MONITORING REPORT JANUARY THROUGH JUNE 2014
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5477387905/T0603722212.PDF
Size : 6,263 KB
Submitted By: JESSICA CURRAN (AUTH_RP)
Submitted:

Document Type: Site Documents
Document Date: 11/2/2012
Type: CLOSURE REPORT
Title: CASE CLOSURE REQUEST REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1446653246/T0603722212.PDF
Size : 9,432 KB
Submitted By: JESSICA CURRAN (AUTH_RP)
Submitted:

Document Type: Monitoring Reports | **Size :** 6,448 KB
Document Date: 10/8/2012 | **Submitted By:** JESSICA CURRAN (AUTH_RP)
Type: MONITORING REPORT - SEMI-ANNUALLY | **Submitted:**
Title: 2012 FIRST SEMI-ANNUAL GROUNDWATER MONITORING REPORT - JANUARY THROUGH JUNE 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8156541347/T0603722212.PDF

Document Type: Monitoring Reports | **Size :** 6,448 KB
Document Date: 4/26/2012 | **Submitted By:** GREG BISHOP (REGULATOR)
Type: MONITORING REPORT - SEMI-ANNUALLY | **Submitted:**
Title: 2012 FIRST SEMI-ANNUAL GROUNDWATER MONITORING REPORT - JANUARY THROUGH JUNE 2012 - 2012 FIRST SEMI-ANNUAL GROUNDWATER MONITORING REPORT - JANUARY THROUGH JUNE 2012
Title Link: http://geotracker.waterboards.ca.gov/regulators/deliverable_documents/4814381241/2012%2D04%20GMR%20Texaco%20%28Final%29%2Epdf

Document Type: Site Documents | **Size :**
Document Date: 8/25/2011 | **Submitted By:** GREG BISHOP (REGULATOR)
Type: PREPARATION OF RECORD FOR APPEAL/REFERRAL/PETITION | **Submitted:**
Title: RESPONSE TO OCC REQUEST FOR INFORMATION
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0603722212&enforcement_id=6097249

Document Type: Site Documents | **Size :**
Document Date: 7/21/2011 | **Submitted By:** JIMMIE WOO (REGULATOR)
Type: 13267 REQUIREMENT | **Submitted:**
Title: WORKPLAN APPROVAL
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0603722212&enforcement_id=6093327

Document Type: Monitoring Reports | **Size :** 10,321 KB
Document Date: 7/14/2011 | **Submitted By:** REBECCA ANDRESEN (AUTH_RP)
Type: MONITORING REPORT - QUARTERLY | **Submitted:**
Title: 1Q2Q11 QSR FIN 07112011
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4368070244/T0603722212.PDF

Document Type: Site Documents | **Size :** 3,070 KB
Document Date: 6/10/2011* | **Submitted By:** REBECCA ANDRESEN (AUTH_RP)
Type: SOIL AND WATER INVESTIGATION WORKPLAN | **Submitted:**
Title: SITE ASSESSMENT WORK PLAN (ORDER 13267)
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2527796447/T0603722212.PDF

Document Type: Site Documents | **Size :**
Document Date: 6/8/2011 | **Submitted By:** JIMMIE WOO (REGULATOR)
Type: 13267 REQUIREMENT | **Submitted:**
Title: EXTENSION
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0603722212&enforcement_id=6089040

Document Type: Site Documents | **Size :**
Document Date: 4/26/2011 | **Submitted By:** JIMMIE WOO (REGULATOR)
Type: 13267 REQUIREMENT | **Submitted:**
Title: DOMINGUEZ CHANNEL 13267 ORDER
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0603722212&enforcement_id=6085252

Document Type: Monitoring Reports | **Size :** 8,218 KB
Document Date: 1/10/2011* | **Submitted By:** REBECCA ANDRESEN (AUTH_RP)
Type: MONITORING REPORT - SEMI-ANNUALLY | **Submitted:**
Title: 211316 3Q4Q10 SAMR FIN 01102011.PDF
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9646809399/T0603722212.PDF

Document Type: Site Documents | **Size :** 59 KB
Document Date: 11/11/2010* | **Submitted By:** REBECCA ANDRESEN (AUTH_RP)
Type: CORRESPONDENCE | **Submitted:**
Title: CHANGE OF CONTACT NOTIFICATION LETTER
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9172028899/T0603722212.PDF

Document Type: Monitoring Reports | **Size :** 8,726 KB
Document Date: 6/21/2010* | **Submitted By:** REBECCA ANDRESEN (AUTH_RP)
Type: MONITORING REPORT - SEMI-ANNUALLY | **Submitted:**
Title: SEMI-ANNUAL GROUNDWATER MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1922013640/T0603722212.PDF

Document Type: Monitoring Reports **Size :** 4,272 KB
Document Date: 1/21/2010* **Submitted By:** LEIDOS (SAIC) (AUTH_RP)
Type: MONITORING REPORT - SEMI-ANNUALLY **Submitted:**
Title: 4Q09 GWM REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3551744759/T0603722212.PDF

Document Type: Site Documents **Size :** 458 KB
Document Date: 8/21/2009* **Submitted By:** LEIDOS (SAIC) (AUTH_RP)
Type: CORRESPONDENCE **Submitted:**
Title: CHANGE OF SAIC MANAGEMENT AND CONTACT INFORMATION
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1369559049/T0603722212.PDF

Document Type: Site Documents **Size :**
Document Date: 6/15/2009 **Submitted By:** (REGULATOR)
Type: STAFF LETTER **Submitted:**
Title: UNKNOWN
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0603722212&enforcement_id=6022219

Document Type: Monitoring Reports **Size :** 3,367 KB
Document Date: 6/15/2009 **Submitted By:** LEIDOS (SAIC) (AUTH_RP)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2Q09 GWM REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5217309117/T0603722212.PDF

Document Type: Monitoring Reports **Size :** 3,475 KB
Document Date: 4/15/2009 **Submitted By:** LEIDOS (SAIC) (AUTH_RP)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1Q09 GWM REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4020248889/T0603722212.PDF

Document Type: Monitoring Reports **Size :** 3,498 KB
Document Date: 1/16/2009 **Submitted By:** LEIDOS (SAIC) (AUTH_RP)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 4TH QUARTER 2008 GROUNDWATER MONITORING AND PROGRESS REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1328280389/T0603722212.PDF

Document Type: Monitoring Reports **Size :** 3,604 KB
Document Date: 10/15/2008 **Submitted By:** LEIDOS (SAIC) (AUTH_RP)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 3RD QUARTER 2008 GROUNDWATER MONITORING AND PROGRESS REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2643112659/T0603722212.PDF

Document Type: Monitoring Reports **Size :** 3,543 KB
Document Date: 6/27/2008 **Submitted By:** LEIDOS (SAIC) (AUTH_RP)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2ND QUARTER 2008 GROUNDWATER MONITORING AND PROGRESS REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9995106577/T0603722212.PDF

Document Type: Monitoring Reports **Size :** 3,530 KB
Document Date: 4/28/2008 **Submitted By:** LEIDOS (SAIC) (AUTH_RP)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1ST QUARTER 2008 GROUNDWATER MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4714129388/T0603722212.PDF

Document Type: Monitoring Reports **Size :** 3,158 KB
Document Date: 2/1/2008* **Submitted By:** LEIDOS (SAIC) (AUTH_RP)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 4TH QUARTER 2007 GROUNDWATER MONITORING AND PROGRESS REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1043716251/T0603722212.PDF

Document Type: Monitoring Reports **Size :** 3,230 KB
Document Date: 11/5/2007 **Submitted By:** JASON LEE (RP)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 3RD QUARTER 2007 GROUNDWATER MONITORING AND PROGRESS REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6255099236/T0603722212.PDF

Document Type: Monitoring Reports **Size :** 3,230 KB
Document Date: 11/5/2007 **Submitted By:** JASON LEE (RP)

Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 3RD QUARTER 2007 GROUNDWATER MONITORING AND PROGRESS REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7817067027/T0603722212.PDF

Document Type: Monitoring Reports **Size :** 3,387 KB
Document Date: 8/1/2007 **Submitted By:** JASON LEE (RP)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2ND QUARTER 2007 GROUNDWATER MONITORING AND PROGRESS REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4512571573/T0603722212.PDF

Document Type: Monitoring Reports **Size :** 3,655 KB
Document Date: 5/17/2007 **Submitted By:** JASON LEE (RP)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1ST QUARTER 2007 GROUNDWATER MONITORING AND PROGRESS REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2250019907/T0603722212.PDF

Document Type: Monitoring Reports **Size :** 2,888 KB
Document Date: 1/29/2007 **Submitted By:** JASON LEE (RP)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 4TH QUARTER 2006 GROUNDWATER MONITORING AND PROGRESS REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4135012567/T0603722212.PDF

Document Type: Monitoring Reports **Size :** 3,151 KB
Document Date: 11/13/2006 **Submitted By:** JASON LEE (RP)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 3RD QUARTER 2006 GROUNDWATER MONITORING AND PROGRESS REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5776411294/T0603722212.PDF

Document Type: Monitoring Reports **Size :** 2,875 KB
Document Date: 8/14/2006 **Submitted By:** JASON LEE (RP)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: SECOND QUARTER 2006 GROUNDWATER MONITORING AND PROGRESS REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5015017449/T0603722212.PDF

Document Type: Monitoring Reports **Size :** 2,900 KB
Document Date: 4/28/2006 **Submitted By:** JASON LEE (RP)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: FIRST QUARTER 2006 GROUNDWATER MONITORING AND PROGRESS REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9106170475/T0603722212.PDF

Document Type: Monitoring Reports **Size :** 2,532 KB
Document Date: 2/6/2006* **Submitted By:** JASON LEE (RP)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: FOURTH QUARTER 2005 GROUNDWATER MONITORING AND PRORGESS REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7284559488/T0603722212.PDF

Document Type: Monitoring Reports **Size :** 12,796 KB
Document Date: 2/6/2006* **Submitted By:** JASON LEE (RP)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: FOURTH QUARTER 2005 SITE CONCEPTUAL MODEL
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4845731973/T0603722212.PDF

Document Type: Monitoring Reports **Size :** 2,564 KB
Document Date: 12/23/2005* **Submitted By:** JASON LEE (RP)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: FIRST QUARTER 2005 GROUNDWATER MONITORING AND PROGRESS REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9279891788/T0603722212.PDF

Document Type: Monitoring Reports **Size :** 2,510 KB
Document Date: 11/9/2005* **Submitted By:** JASON LEE (RP)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: THIRD QUARTER 2005 GROUNDWATER MONITORING AND PROGRESS REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6018482804/T0603722212.PDF

Document Type: Monitoring Reports **Size :** 2,054 KB
Document Date: 9/22/2005* **Submitted By:** JASON LEE (RP)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2ND QUARTER 2005 GROUNDWATER MONITORING AND PROGRESS REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8660321891/T0603722212.PDF

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

LUST Sites from GeoTracker Search - Related Cases (as of Oct 06, 2020)

Identifier:	T10000003007	***Address:***	Carson Street
Project Name:	Shell Pipeline 0367 - Dominguez Channel @ Carson	***City:***	CARSON
Status:	COMPLETED - CASE CLOSED	***Association:***	Related Global ID
Description:			
Project Link:	https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000003007		

7	***4 of 8***	***ESE***	***0.02 / 123.52***	***19.19 / 2***	***1209 E CARSON ST CARSON CA 90745***	***LA HMS***

Site No:	005784
Area:	22

Detail Info

Permit No:	000010993	***Permit Status Code:***	CLOS
Permit Cat Desc:	Industrial Waste Permit	***Permit Category:***	I
Status Code:	CLOS	***File No:***	I05994
Status Desc:	Permit Closed	***File Name:***	VINCES AUTOMOTIVE SPECIAL
Permit Status Desc:	Permit Closed		
Permit Type:	01		
Permit Type Desc:	Operating Industrial Waste Permit - Local Sewer		

Detail Info

Permit No:		***Permit Status Code:***	
Permit Cat Desc:		***Permit Category:***	
Status Code:	OPEN	***File No:***	055158
Status Desc:	File Opened, no permit exists	***File Name:***	VINCE ZANKICH
Permit Status Desc:			
Permit Type:			
Permit Type Desc:			

Detail Info

Permit No:	000546323	***Permit Status Code:***	CLOS
Permit Cat Desc:	Industrial Waste Permit	***Permit Category:***	I
Status Code:	CLOS	***File No:***	050183
Status Desc:	Permit Closed	***File Name:***	AMERICAN LEISURE PRODUCTS INC
Permit Status Desc:	Permit Closed		
Permit Type:	01		
Permit Type Desc:	Operating Industrial Waste Permit - Local Sewer		

Detail Info

Permit No:		***Permit Status Code:***	
Permit Cat Desc:		***Permit Category:***	
Status Code:	OPEN	***File No:***	005994
Status Desc:	File Opened, no permit exists	***File Name:***	TEXACO OIL SS
Permit Status Desc:			
Permit Type:			
Permit Type Desc:			

7	***5 of 8***	***ESE***	***0.02 / 123.52***	***19.19 / 2***	***RICKS LUBE & TUNE & BRAKES 1209 E CARSON ST CARSON CA 90745***	***CERS HAZ***

Site ID: 61613
Latitude: 33.831982
Longitude: -118.252457
County: Los Angeles County

Regulated Programs

EI ID: 10296610 **EI Description:** Hazardous Waste Generator

EI ID: 10296610 **EI Description:** Chemical Storage Facilities

Violations

Violation Date: 10/23/2018 **Violation Source:** CERS
Violation Program: HW **Violation Division:** Los Angeles County Fire Department
Citation: 40 CFR 1 265.174 - U.S. Code of Federal Regulations, Title 40, Chapter 1, Section(s) 265.174
Violation Notes:

Returned to compliance on 10/26/2018. OBSERVATION: Observed accumulation of liquids and debris inside the plastic secondary containment pallets holding hazardous waste drums located near the Dumpster area. CORRECTIVE ACTION: Submit photos to the CUPA demonstrating that the plastic secondary containment pallets listed above have been properly cleaned.

Violation Description:

Failure to inspect hazardous waste storage areas at least weekly and look for leaking and deteriorating containers.

Violations

Violation Date: 10/23/2018 **Violation Source:** CERS
Violation Program: HMRRP **Violation Division:** Los Angeles County Fire Department
Citation: HSC 6.95 25508.2 - California Health and Safety Code, Chapter 6.95, Section(s) 25508.2
Violation Notes:

Returned to compliance on 01/16/2019. OBSERVATION: The business failed to electronically submit and certify that the business plan is complete, accurate, and in compliance with EPCRA on or before the annual due date. 2018 California Environmental Reporting System (CERS) submittal was missing/incomplete; Reviewed CERS submittals submitted on 1/6/18 and found the following to be updated; - Not using the most up-to-date form to complete facility's Consolidated Emergency Response / Contingency Plan (CER/CP); Old CER/CP form was used - please use attached Rev. 03/07/17 CER/CP form; - Missing the local unified program agency (UPA/CUPA) phone number (310-890-4317) on the CER/CP; - Missing the nearest medical facility / hospital name and phone on the CER/CP; - Missing required contents (storm and sewer drains and emergency shutoffs (e.g. water and electricity shutoffs) on facility's site map; - Incorrect selection of Federal Hazard Catefories on the Hazardous Materials and Wastes Inventory Matrix [Truncated]

Violation Description:

Failure to annually review and electronically certify that the business plan is complete and accurate on or before the annual due date.

Violations

Violation Date: 10/23/2018 **Violation Source:** CERS
Violation Program: HW **Violation Division:** Los Angeles County Fire Department
Citation: 40 CFR 1 265.173 - U.S. Code of Federal Regulations, Title 40, Chapter 1, Section(s) 265.173
Violation Notes:

Returned to compliance on 10/26/2018. OBSERVATION: Observed the following containers containing hazardous wastes to be open at the time of inspection: - 1 x 55-gallon drum containing crushed used oil filters located by the Dumpster area was observed partially covered with a medal lid; - 2 x 5-gallon pails containing hazardous waste used oils located inside the shop and underneath a filter crusher were observed to be open; CORRECTIVE ACTION: Submit photos to the CUPA demonstrating that the containers listed above have been properly closed.

Violation Description:

Failure to meet the following container management requirements:
(a) A container holding hazardous waste must always be closed during storage, except when it is necessary to add or remove waste.
(b) A container holding hazardous waste must not be opened, handled, or stored in a manner which may rupture the container or cause it to leak.

Violations

Violation Date: 07/29/2015
Violation Source: CERS
Violation Program: HW
Violation Division: Los Angeles County Fire Department
Citation: 40 CFR 1 265.31 - U.S. Code of Federal Regulations, Title 40, Chapter 1, Section(s) 265.31
Violation Notes:

Returned to compliance on 09/28/2015. OBSERVATION: Generator failed to maintain and operate the facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to the air, soil, or surface water which could threaten human health or the environment. Observed accumulation of oil debris on the used oil filters container and on the floor around the container stored at the exterior storage area. CORRECTIVE ACTION: Owner/Operator shall immediatly maintin the facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to the air, soil, or surface water which could threaten human health or the environment. The Owner/Operator shall develop procedures to operate the facility in such a manner to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste [Truncated]

Violation Description:

Failure to maintain and operate the facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to the air, soil, or surface water which could threaten human health or the environment..

Evaluations

Eval Date: 07/29/2015
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Los Angeles County Fire Department
Eval Program: HW
Eval Source: CERS
Eval Notes:

Richard Nickel - Owner, gave consent for the inspection. ; Note: data in [EVAL Notes] field for some records is truncated from the source.

Eval Date: 11/13/2018
Violations Found: No
Eval General Type: Other/Unknown
Eval Type: Other, not routine, done by local agency
Eval Division: Los Angeles County Fire Department
Eval Program: HMRRP
Eval Source: CERS
Eval Notes:

Eval Date: 10/23/2018
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Los Angeles County Fire Department
Eval Program: HW
Eval Source: CERS
Eval Notes:

Richard Nickel, owner; Note: data in [EVAL Notes] field for some records is truncated from the source.

Eval Date: 10/30/2018
Violations Found: No
Eval General Type: Other/Unknown
Eval Type: Other, not routine, done by local agency
Eval Division: Los Angeles County Fire Department
Eval Program: HW
Eval Source: CERS
Eval Notes:

Eval Date: 07/29/2015
Violations Found: No
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Los Angeles County Fire Department
Eval Program: HMRRP
Eval Source: CERS
Eval Notes:

Rick Nickel - Owner, gave consent for the inspection. No violations observed for the Hazmat inspection. ; Note: data in [EVAL Notes] field for some records is truncated from the source.

Eval Date: 01/15/2019
Violations Found: No
Eval General Type: Other/Unknown
Eval Type: Other, not routine, done by local agency
Eval Division: Los Angeles County Fire Department
Eval Program: HMRRP
Eval Source: CERS
Eval Notes:

Eval Date: 09/28/2015
Violations Found: No
Eval General Type: Other/Unknown
Eval Type: Other, not routine, done by local agency
Eval Division: Los Angeles County Fire Department
Eval Program: HW
Eval Source: CERS
Eval Notes:

Eval Date: 10/23/2018
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Los Angeles County Fire Department
Eval Program: HMRRP
Eval Source: CERS
Eval Notes:

Richard Nickel, owner; Note: data in [EVAL Notes] field for some records is truncated from the source.

Affiliations

Affil Type Desc: CUPA District
Entity Name: Los Angeles County Fire
Entity Title:
Address: 5825 Rickenbacker Road
City: Commerce
State: CA
Country:
Zip Code: 90040-3027
Phone: (323) 890-4000

Affil Type Desc: Operator
Entity Name: RICK NICKEL
Entity Title:
Address:
City:
State:
Country:
Zip Code:
Phone: (310) 549-6087

Affil Type Desc: Parent Corporation
Entity Name: RICKS LUBE & TUNE & BRAKES

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Entity Title:
Address:
City:
State:
Country:
Zip Code:
Phone:

Affil Type Desc: Legal Owner
Entity Name: RICHARD NICKEL
Entity Title:
Address: 2652 CABRILLO AVE
City: TORRANCE
State: CA
Country: United States
Zip Code: 90501
Phone: (310) 549-6087

Affil Type Desc: Environmental Contact
Entity Name: RICHARD NICKEL
Entity Title:
Address: 1209 E. CARSON STREET
City: CARSON
State: CA
Country:
Zip Code: 90745
Phone:

Affil Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title:
Address: 2652 CABRILLO AVE
City: TORRANCE
State: CA
Country:
Zip Code: 90501
Phone:

Coordinates

Env Int Type Code: HWG
Program ID: 10296610
Latitude: 33.831980
Longitude: -118.252460
Coord Name:
Ref Point Type Desc: Center of a facility or station.

7	6 of 8	ESE	0.02 / 123.52	19.19 / 2	RICK NICKEL INC DBA RICKS LUBE & TUNE & BRAKES 1209 E CARSON ST CARSON CA 90745	RCRA NON GEN

EPA Handler ID: CAL000374011
Gen Status Universe: No Report
Contact Name: RICHARD NICKEL
Contact Address: 1209 E CARSON STREET, , CARSON, CA, 90745,
Contact Phone No and Ext: 310-864-6720
Contact Email: RICK@RICKSLUBE.COM
Contact Country:
County Name: LOS ANGELES
EPA Region: 09
Land Type:
Receive Date: 20120425

Violation/Evaluation Summary

Note: NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Handler Summary

Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility:	No
Onsite Burner Exemption:	No
Furnace Exemption:	No
Underground Injection Activity:	No
Commercial TSD:	No
Used Oil Transporter:	No
Used Oil Transfer Facility:	No
Used Oil Processor:	No
Used Oil Refiner:	No
Used Oil Burner:	No
Used Oil Market Burner:	No
Used Oil Spec Marketer:	No

Hazardous Waste Handler Details

Sequence No:	1
Receive Date:	20120425
Handler Name:	RICK NICKEL INC DBA RICKS LUBE & TUNE & BRAKES
Source Type:	Implementer
Federal Waste Generator Code:	N
Generator Code Description:	Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind:	Current Owner	***Street No:***	
Type:	Other	***Street 1:***	1209 E CARSON STREET
Name:	RICHARD NICKEL	***Street 2:***	
Date Became Current:		***City:***	CARSON
Date Ended Current:		***State:***	CA
Phone:	310-864-6720	***Country:***	
Source Type:	Implementer	***Zip Code:***	90745-4625

Owner/Operator Ind:	Current Operator	***Street No:***	
Type:	Other	***Street 1:***	1209 E CARSON STREET
Name:	RICHARD NICKEL	***Street 2:***	
Date Became Current:		***City:***	CARSON
Date Ended Current:		***State:***	CA
Phone:	310-864-6720	***Country:***	
Source Type:	Implementer	***Zip Code:***	90745

7	***7 of 8***	***ESE***	***0.02 / 123.52***	***19.19 / 2***	***TEXACO DOWNSTREAM #211316 1209 E CARSON ST CARSON CA 90745-1630***	***RCRA NON GEN***

EPA Handler ID:	CAL000254205
Gen Status Universe:	No Report
Contact Name:	KWAME AWUKU
Contact Address:	6001 BOLLINGER CANYON RD., , SAN RAMON, CA, 94583,
Contact Phone No and Ext:	877-386-6044
Contact Email:	NAWTDESK@CHEVRON.COM
Contact Country:	
County Name:	LOS ANGELES
EPA Region:	09
Land Type:	
Receive Date:	20020620

Violation/Evaluation Summary

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Note: NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility:	No
Onsite Burner Exemption:	No
Furnace Exemption:	No
Underground Injection Activity:	No
Commercial TSD:	No
Used Oil Transporter:	No
Used Oil Transfer Facility:	No
Used Oil Processor:	No
Used Oil Refiner:	No
Used Oil Burner:	No
Used Oil Market Burner:	No
Used Oil Spec Marketer:	No

Hazardous Waste Handler Details

Sequence No:	1
Receive Date:	20020620
Handler Name:	TEXACO DOWNSTREAM #211316
Source Type:	Implementer
Federal Waste Generator Code:	N
Generator Code Description:	Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind:	Current Owner	**Street No:**	
Type:	Other	**Street 1:**	PO BOX 6004
Name:	CHEVRON & ALICIA RIVERA	**Street 2:**	
Date Became Current:		**City:**	SAN RAMON
Date Ended Current:		**State:**	CA
Phone:	877-386-6044	**Country:**	
Source Type:	Implementer	**Zip Code:**	94583-0000
Owner/Operator Ind:	Current Operator	**Street No:**	
Type:	Other	**Street 1:**	6001 BOLLINGER CANYON RD.
Name:	KWAME AWUKU	**Street 2:**	
Date Became Current:		**City:**	SAN RAMON
Date Ended Current:		**State:**	CA
Phone:	877-386-6044	**Country:**	
Source Type:	Implementer	**Zip Code:**	94583

7	8 of 8	ESE	0.02 / 123.52	19.19 / 2	RICKS LUBE & TUNE & BRAKES 1209 E CARSON ST CARSON CA 90745	LA COUNTY CUPA

Facility ID: FA0006723
CERS ID: 10296610

Active Facility Details

PE: 3001

PE: 1002

8	1 of 1	W	0.03 /	16.48 /	MONTROSE CHEMICAL CORP.	NPL

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
			157.08	-1	20201 S NORMANDIE AVE TORRANCE CA 90502	

EPA ID: CAD008242711
SITE ID: 0900993
SEMS ID: 900993
Latitude: 33.848331
Longitude: -118.2983

NPL (SEMS FOIA 004)

Final Date: 10/04/89
Federal Facility: No
SAA (Superfund Alt.):
County: LOS ANGELES
Latitude: 33.848331
Longitude: -118.298300

NPL Status Information (EPA's Where You Live Map)

SITS ID: 937
Status: NPL Site
Construction Completion No: 0
Construction Completion:
Proposed Date: 10/15/1984
Listing Date: 10/04/1989
NOID Date:
Deletion Date:
Notice of Data Availability:
Site Listing Narrative: CAD008242711 (PDF)
Site Progress Profile: Montrose Chemical Corp.
Proposed Fr Notice: 10/15/1984 (PDF)
Listing Fr Notice: 10/04/1989 (PDF)
NOID Fr Notice:
Deletion Fr Notice:
Restoration Fr Notice:
Site Had a Partial Deletion: No

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
9	1 of 2	SSW	0.04 / 206.20	16.48 / -1	MONTROSE CHEMICAL CORP. 20201 S NORMANDIE AVE TORRANCE CA 90502	SEMS

EPA ID: CAD008242711
Site ID:
NPL:
Federal Facility:
Non NPL Status:
SuperF Alt Agrmnt:
FIPS Code:
Date SEMS List: 28-OCT-2020
Primary Name(MAP): MONTROSE CHEMICAL CORP.
Loc Address(MAP): 20201 SOUTH NORMANDIE AVENUE
City Name(MAP): TORRANCE
State Code(MAP): CA
Postal Code(MAP): 90502
Site Name: MONTROSE CHEMICAL CORP.
Street Address: 20201 S NORMANDIE AVE
Street Address 2:
City: TORRANCE
State: CA
Zip: 90502
County: LOS ANGELES
Latitude: 33.848331
Longitude: -118.298300
County Name(MAP): LOS ANGELES
Latitude83(MAP): 33.848331
Longitude83(MAP): -118.29830000000001
Region:
Cong District:

Site Level Information

Site ID: 0900993
NPL: Currently on the Final NPL
Federal Facility: No
FF Docket: No
Non NPL Status:
Superfund Alt Agmt: No
FIPS Code: 06037
Cong District: 36,37,43
Region: 09

Action Information

Site ID:	0900993	***Start Actual:***	03/02/1994
Operable Units:	04	***Finish Actual:***	
Action Code:	CO	***Qual:***	
Action Name:	RI/FS	***Curr Action Lead:***	EPA Perf
SEQ:	2		

Site ID:	0900993	***Start Actual:***	08/01/1990
Operable Units:	00	***Finish Actual:***	08/01/1990
Action Code:	RS	***Qual:***	
Action Name:	RV ASSESS	***Curr Action Lead:***	EPA Perf
SEQ:	1		

Site ID:	0900993	***Start Actual:***	03/30/1999
Operable Units:	03	***Finish Actual:***	03/30/1999
Action Code:	RO	***Qual:***	
Action Name:	ROD	***Curr Action Lead:***	EPA Perf
SEQ:	2		

Site ID:	0900993	***Start Actual:***	03/24/1994
Operable Units:	00	***Finish Actual:***	09/30/2009
Action Code:	RV	***Qual:***	S
Action Name:	RMVL	***Curr Action Lead:***	EPA Perf
SEQ:	2		

Site ID:	0900993	***Start Actual:***	04/01/1984
Operable Units:	00	***Finish Actual:***	04/01/1984
Action Code:	PA	***Qual:***	H
Action Name:	PA	***Curr Action Lead:***	EPA Perf
SEQ:	1		

Site ID:	0900993	***Start Actual:***	09/19/2012
Operable Units:	03	***Finish Actual:***	
Action Code:	BF	***Qual:***	
Action Name:	PRP RA	***Curr Action Lead:***	EPA Ovrsght
SEQ:	1		

Site ID:	0900993	***Start Actual:***	09/30/1998
Operable Units:	03	***Finish Actual:***	
Action Code:	OM	***Qual:***	
Action Name:	OM	***Curr Action Lead:***	EPA Ovrsght
SEQ:	2		

Site ID:	0900993	***Start Actual:***	04/07/2000
Operable Units:	00	***Finish Actual:***	
Action Code:	TG	***Qual:***	
Action Name:	TA GRANT	***Curr Action Lead:***	EPA Perf
SEQ:	1		

Site ID:	0900993	***Start Actual:***	06/01/1992
Operable Units:	01	***Finish Actual:***	08/12/1994
Action Code:	TS	***Qual:***	
Action Name:	TRTSTUDY	***Curr Action Lead:***	EPA Perf
SEQ:	1		

Site ID:	0900993	***Start Actual:***	04/30/1989
Operable Units:	00	***Finish Actual:***	
Action Code:	MA	***Qual:***	
Action Name:	ST COOP	***Curr Action Lead:***	EPA Perf
SEQ:	1		

Site ID:	0900993	***Start Actual:***	01/01/1980
Operable Units:	00	***Finish Actual:***	01/01/1980
Action Code:	DS	***Qual:***	
Action Name:	DISCVRY	***Curr Action Lead:***	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	12/11/1991
Operable Units:	00	**Finish Actual:**	12/11/1991
Action Code:	RS	**Qual:**	
Action Name:	RV ASSESS	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	06/01/1988
Operable Units:	00	**Finish Actual:**	06/01/1988
Action Code:	HR	**Qual:**	
Action Name:	HAZRANK	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	10/07/2010
Operable Units:	00	**Finish Actual:**	
Action Code:	MA	**Qual:**	
Action Name:	ST COOP	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	09/10/2004
Operable Units:	00	**Finish Actual:**	
Action Code:	CR	**Qual:**	
Action Name:	CI	**Curr Action Lead:**	EPA Perf
SEQ:	4		

Site ID:	0900993	**Start Actual:**	08/14/1997
Operable Units:	03	**Finish Actual:**	03/30/1999
Action Code:	FS	**Qual:**	
Action Name:	FS	**Curr Action Lead:**	EPA Perf
SEQ:	3		

Site ID:	0900993	**Start Actual:**	04/11/1994
Operable Units:	00	**Finish Actual:**	06/30/1999
Action Code:	RV	**Qual:**	C
Action Name:	RMVL	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	04/03/2001
Operable Units:	00	**Finish Actual:**	
Action Code:	TA	**Qual:**	
Action Name:	TECH ASSIST	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	04/19/2016
Operable Units:	00	**Finish Actual:**	
Action Code:	CR	**Qual:**	
Action Name:	CI	**Curr Action Lead:**	EPA Perf
SEQ:	6		

Site ID:	0900993	**Start Actual:**	09/03/2013
Operable Units:	05	**Finish Actual:**	
Action Code:	RA	**Qual:**	
Action Name:	RA	**Curr Action Lead:**	EPA Perf
SEQ:	14		

Site ID:	0900993	**Start Actual:**	01/08/1998
Operable Units:	01	**Finish Actual:**	
Action Code:	NK	**Qual:**	
Action Name:	PRP FS	**Curr Action Lead:**	EPA Ovrsght
SEQ:	3		

Site ID:	0900993	**Start Actual:**	01/17/2006
Operable Units:	06	**Finish Actual:**	01/17/2006
Action Code:	BB	**Qual:**	S
Action Name:	PRP RV	**Curr Action Lead:**	EPA Ovrsght
SEQ:	3		

Site ID:	0900993	**Start Actual:**	09/30/2009
Operable Units:	05	**Finish Actual:**	09/30/2009

Action Code:	RO	**Qual:**	
Action Name:	ROD	**Curr Action Lead:**	EPA Perf
SEQ:	4		

Site ID:	0900993	**Start Actual:**	08/01/1999
Operable Units:	03	**Finish Actual:**	05/27/2003
Action Code:	RD	**Qual:**	
Action Name:	RD	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	08/24/2000
Operable Units:	00	**Finish Actual:**	
Action Code:	AR	**Qual:**	
Action Name:	ADMIN REC	**Curr Action Lead:**	EPA Perf
SEQ:	5		

Site ID:	0900993	**Start Actual:**	10/15/1984
Operable Units:	00	**Finish Actual:**	10/15/1984
Action Code:	NP	**Qual:**	
Action Name:	PROPOSED	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	08/22/2013
Operable Units:	05	**Finish Actual:**	
Action Code:	RD	**Qual:**	
Action Name:	RD	**Curr Action Lead:**	EPA Perf
SEQ:	16		

Site ID:	0900993	**Start Actual:**	11/19/2018
Operable Units:	00	**Finish Actual:**	09/11/2019
Action Code:	FE	**Qual:**	
Action Name:	5 YEAR	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	02/19/1988
Operable Units:	00	**Finish Actual:**	06/21/1989
Action Code:	BB	**Qual:**	C
Action Name:	PRP RV	**Curr Action Lead:**	EPA Ovrsght
SEQ:	1		

Site ID:	0900993	**Start Actual:**	07/05/2006
Operable Units:	06	**Finish Actual:**	
Action Code:	NA	**Qual:**	
Action Name:	PRP RI	**Curr Action Lead:**	EPA Ovrsght
SEQ:	1		

Site ID:	0900993	**Start Actual:**	03/24/2000
Operable Units:	00	**Finish Actual:**	
Action Code:	AR	**Qual:**	V
Action Name:	ADMIN REC	**Curr Action Lead:**	EPA Perf
SEQ:	4		

Site ID:	0900993	**Start Actual:**	07/17/2003
Operable Units:	05	**Finish Actual:**	05/27/2009
Action Code:	CO	**Qual:**	
Action Name:	RI/FS	**Curr Action Lead:**	EPA Perf
SEQ:	3		

Site ID:	0900993	**Start Actual:**	01/02/1985
Operable Units:	00	**Finish Actual:**	
Action Code:	CR	**Qual:**	
Action Name:	CI	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	01/01/1985
Operable Units:	01	**Finish Actual:**	04/30/1986
Action Code:	RI	**Qual:**	
Action Name:	RI	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	08/29/2008
Operable Units:	04	**Finish Actual:**	
Action Code:	PD	**Qual:**	
Action Name:	SITE SEC	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	05/19/2010
Operable Units:	00	**Finish Actual:**	
Action Code:	CR	**Qual:**	
Action Name:	CI	**Curr Action Lead:**	EPA Perf
SEQ:	5		

Site ID:	0900993	**Start Actual:**	09/30/2015
Operable Units:	00	**Finish Actual:**	09/30/2015
Action Code:	FE	**Qual:**	
Action Name:	5 YEAR	**Curr Action Lead:**	EPA Perf
SEQ:	4		

Site ID:	0900993	**Start Actual:**	09/30/2009
Operable Units:	05	**Finish Actual:**	
Action Code:	RA	**Qual:**	
Action Name:	RA	**Curr Action Lead:**	EPA Perf
SEQ:	13		

Site ID:	0900993	**Start Actual:**	10/10/1986
Operable Units:	01	**Finish Actual:**	01/08/1998
Action Code:	BD	**Qual:**	
Action Name:	PRP RI/FS	**Curr Action Lead:**	EPA Ovrsght
SEQ:	2		

Site ID:	0900993	**Start Actual:**	09/24/2008
Operable Units:	07	**Finish Actual:**	
Action Code:	BD	**Qual:**	
Action Name:	PRP RI/FS	**Curr Action Lead:**	EPA Ovrsght
SEQ:	3		

Site ID:	0900993	**Start Actual:**	03/01/1992
Operable Units:	01	**Finish Actual:**	05/01/2017
Action Code:	ED	**Qual:**	
Action Name:	R/H ASMT	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	11/30/2004
Operable Units:	05	**Finish Actual:**	
Action Code:	AR	**Qual:**	
Action Name:	ADMIN REC	**Curr Action Lead:**	EPA Perf
SEQ:	6		

Site ID:	0900993	**Start Actual:**	04/12/2001
Operable Units:	04	**Finish Actual:**	03/06/2002
Action Code:	RV	**Qual:**	C
Action Name:	RMVL	**Curr Action Lead:**	EPA Perf
SEQ:	4		

Site ID:	0900993	**Start Actual:**	08/14/1997
Operable Units:	00	**Finish Actual:**	
Action Code:	CR	**Qual:**	
Action Name:	CI	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	05/27/2003
Operable Units:	03	**Finish Actual:**	09/19/2012
Action Code:	BE	**Qual:**	
Action Name:	PRP RD	**Curr Action Lead:**	EPA Ovrsght
SEQ:	2		

Site ID:	0900993	**Start Actual:**	01/08/1998
Operable Units:	03	**Finish Actual:**	

Action Code: NK
Action Name: PRP FS
SEQ: 4
Qual:
Curr Action Lead: EPA Ovrsght

Site ID: 0900993
Operable Units: 01
Action Code: OM
Action Name: OM
SEQ: 7
Start Actual: 03/06/2002
Finish Actual:
Qual:
Curr Action Lead: EPA Ovrsght

Site ID: 0900993
Operable Units: 06
Action Code: BD
Action Name: PRP RI/FS
SEQ: 4
Start Actual: 11/04/2016
Finish Actual:
Qual:
Curr Action Lead: EPA Ovrsght

Site ID: 0900993
Operable Units: 04
Action Code: RV
Action Name: RMVL
SEQ: 5
Start Actual: 12/03/2007
Finish Actual: 02/21/2008
Qual: C
Curr Action Lead: EPA Perf

Site ID: 0900993
Operable Units: 00
Action Code: AR
Action Name: ADMIN REC
SEQ: 2
Start Actual: 06/28/1994
Finish Actual: 06/28/1994
Qual: V
Curr Action Lead: EPA Perf

Site ID: 0900993
Operable Units: 01
Action Code: ED
Action Name: R/H ASMT
SEQ: 2
Start Actual: 03/01/1992
Finish Actual: 05/01/2017
Qual:
Curr Action Lead: EPA Perf

Site ID: 0900993
Operable Units: 00
Action Code: FE
Action Name: 5 YEAR
SEQ: 1
Start Actual: 09/12/2013
Finish Actual: 08/28/2014
Qual:
Curr Action Lead: EPA Perf

Site ID: 0900993
Operable Units: 03
Action Code: AR
Action Name: ADMIN REC
SEQ: 3
Start Actual: 05/01/1998
Finish Actual: 06/30/1998
Qual: E
Curr Action Lead: EPA Perf

Site ID: 0900993
Operable Units: 02
Action Code: EE
Action Name: EE/CA
SEQ: 3
Start Actual: 06/04/2008
Finish Actual:
Qual:
Curr Action Lead: EPA Perf

Site ID: 0900993
Operable Units: 00
Action Code: BB
Action Name: PRP RV
SEQ: 2
Start Actual: 02/19/1988
Finish Actual: 03/31/1999
Qual: C
Curr Action Lead: EPA Ovrsght

Site ID: 0900993
Operable Units: 03
Action Code: NK
Action Name: PRP FS
SEQ: 2
Start Actual: 10/28/1985
Finish Actual: 08/14/1997
Qual:
Curr Action Lead: EPA Ovrsght

Site ID: 0900993
Operable Units: 05
Action Code: RD
Action Name: RD
SEQ: 5
Start Actual: 07/22/2009
Finish Actual:
Qual:
Curr Action Lead: EPA Perf

Site ID:	0900993	**Start Actual:**	05/08/2001
Operable Units:	04	**Finish Actual:**	09/26/2002
Action Code:	RV	**Qual:**	C
Action Name:	RMVL	**Curr Action Lead:**	EPA Perf
SEQ:	3		

Site ID:	0900993	**Start Actual:**	04/11/1994
Operable Units:	00	**Finish Actual:**	09/24/1998
Action Code:	RC	**Qual:**	
Action Name:	RVL CRP	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	10/04/1989
Operable Units:	00	**Finish Actual:**	10/04/1989
Action Code:	NF	**Qual:**	
Action Name:	NPL FINL	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	07/09/1996
Operable Units:	00	**Finish Actual:**	09/28/2001
Action Code:	EE	**Qual:**	
Action Name:	EE/CA	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	04/01/1984
Operable Units:	00	**Finish Actual:**	04/01/1984
Action Code:	SI	**Qual:**	H
Action Name:	SI	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	01/08/1998
Operable Units:	01	**Finish Actual:**	05/18/1998
Action Code:	RI	**Qual:**	
Action Name:	RI	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	06/05/1991
Operable Units:	00	**Finish Actual:**	06/05/1991
Action Code:	AR	**Qual:**	V
Action Name:	ADMIN REC	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	02/15/2001
Operable Units:	00	**Finish Actual:**	
Action Code:	CR	**Qual:**	
Action Name:	CI	**Curr Action Lead:**	EPA Perf
SEQ:	3		

Site ID:	0900993	**Start Actual:**	01/01/1985
Operable Units:	02	**Finish Actual:**	
Action Code:	RI	**Qual:**	
Action Name:	RI	**Curr Action Lead:**	EPA Perf
SEQ:	3		

Site ID:	0900993	**Start Actual:**	10/01/2005
Operable Units:	06	**Finish Actual:**	
Action Code:	CO	**Qual:**	
Action Name:	RI/FS	**Curr Action Lead:**	EPA Perf
SEQ:	4		

Site ID:	0900993	**Start Actual:**	11/04/2016
Operable Units:	06	**Finish Actual:**	
Action Code:	BD	**Qual:**	
Action Name:	PRP RI/FS	**Curr Action Lead:**	EPA Ovrsght
SEQ:	4		

Site ID:	0900993	**Start Actual:**	03/24/2000
Operable Units:	00	**Finish Actual:**	

Action Code:	AR	**Qual:**	V
Action Name:	ADMIN REC	**Curr Action Lead:**	EPA Perf
SEQ:	4		

Site ID:	0900993	**Start Actual:**	12/03/2007
Operable Units:	04	**Finish Actual:**	02/21/2008
Action Code:	RV	**Qual:**	C
Action Name:	RMVL	**Curr Action Lead:**	EPA Perf
SEQ:	5		

Site ID:	0900993	**Start Actual:**	08/01/1999
Operable Units:	03	**Finish Actual:**	05/27/2003
Action Code:	RD	**Qual:**	
Action Name:	RD	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	10/04/1989
Operable Units:	00	**Finish Actual:**	10/04/1989
Action Code:	NF	**Qual:**	
Action Name:	NPL FINL	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	01/01/1985
Operable Units:	01	**Finish Actual:**	04/30/1986
Action Code:	RI	**Qual:**	
Action Name:	RI	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	03/30/1999
Operable Units:	03	**Finish Actual:**	03/30/1999
Action Code:	RO	**Qual:**	
Action Name:	ROD	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	10/07/2010
Operable Units:	00	**Finish Actual:**	
Action Code:	MA	**Qual:**	
Action Name:	ST COOP	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	09/30/2015
Operable Units:	00	**Finish Actual:**	09/30/2015
Action Code:	FE	**Qual:**	
Action Name:	5 YEAR	**Curr Action Lead:**	EPA Perf
SEQ:	4		

Site ID:	0900993	**Start Actual:**	09/30/2009
Operable Units:	05	**Finish Actual:**	
Action Code:	RA	**Qual:**	
Action Name:	RA	**Curr Action Lead:**	EPA Perf
SEQ:	13		

Site ID:	0900993	**Start Actual:**	09/03/2013
Operable Units:	05	**Finish Actual:**	
Action Code:	RA	**Qual:**	
Action Name:	RA	**Curr Action Lead:**	EPA Perf
SEQ:	14		

Site ID:	0900993	**Start Actual:**	05/27/2003
Operable Units:	03	**Finish Actual:**	09/19/2012
Action Code:	BE	**Qual:**	
Action Name:	PRP RD	**Curr Action Lead:**	EPA Ovrsght
SEQ:	2		

Site ID:	0900993	**Start Actual:**	02/19/1988
Operable Units:	00	**Finish Actual:**	03/31/1999
Action Code:	BB	**Qual:**	C
Action Name:	PRP RV	**Curr Action Lead:**	EPA Ovrsght
SEQ:	2		

Site ID:	0900993	**Start Actual:**	03/06/2002
Operable Units:	01	**Finish Actual:**	
Action Code:	OM	**Qual:**	
Action Name:	OM	**Curr Action Lead:**	EPA Ovrsght
SEQ:	7		

Site ID:	0900993	**Start Actual:**	04/01/1984
Operable Units:	00	**Finish Actual:**	04/01/1984
Action Code:	SI	**Qual:**	H
Action Name:	SI	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	04/11/1994
Operable Units:	00	**Finish Actual:**	06/30/1999
Action Code:	RV	**Qual:**	C
Action Name:	RMVL	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	01/08/1998
Operable Units:	01	**Finish Actual:**	
Action Code:	NK	**Qual:**	
Action Name:	PRP FS	**Curr Action Lead:**	EPA Ovrsght
SEQ:	3		

Site ID:	0900993	**Start Actual:**	01/17/2006
Operable Units:	06	**Finish Actual:**	01/17/2006
Action Code:	BB	**Qual:**	S
Action Name:	PRP RV	**Curr Action Lead:**	EPA Ovrsght
SEQ:	3		

Site ID:	0900993	**Start Actual:**	07/05/2006
Operable Units:	06	**Finish Actual:**	
Action Code:	NA	**Qual:**	
Action Name:	PRP RI	**Curr Action Lead:**	EPA Ovrsght
SEQ:	1		

Site ID:	0900993	**Start Actual:**	03/01/1992
Operable Units:	01	**Finish Actual:**	05/01/2017
Action Code:	ED	**Qual:**	
Action Name:	R/H ASMT	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	04/11/1994
Operable Units:	00	**Finish Actual:**	09/24/1998
Action Code:	RC	**Qual:**	
Action Name:	RVL CRP	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	09/12/2013
Operable Units:	00	**Finish Actual:**	08/28/2014
Action Code:	FE	**Qual:**	
Action Name:	5 YEAR	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	08/14/1997
Operable Units:	03	**Finish Actual:**	03/30/1999
Action Code:	FS	**Qual:**	
Action Name:	FS	**Curr Action Lead:**	EPA Perf
SEQ:	3		

Site ID:	0900993	**Start Actual:**	04/30/1989
Operable Units:	00	**Finish Actual:**	
Action Code:	MA	**Qual:**	
Action Name:	ST COOP	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	03/24/1994
Operable Units:	00	**Finish Actual:**	09/30/2009

Action Code:	RV	**Qual:**	S
Action Name:	RMVL	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	05/01/1998
Operable Units:	03	**Finish Actual:**	06/30/1998
Action Code:	AR	**Qual:**	E
Action Name:	ADMIN REC	**Curr Action Lead:**	EPA Perf
SEQ:	3		

Site ID:	0900993	**Start Actual:**	04/01/1984
Operable Units:	00	**Finish Actual:**	04/01/1984
Action Code:	PA	**Qual:**	H
Action Name:	PA	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	05/19/2010
Operable Units:	00	**Finish Actual:**	
Action Code:	CR	**Qual:**	
Action Name:	CI	**Curr Action Lead:**	EPA Perf
SEQ:	5		

Site ID:	0900993	**Start Actual:**	09/19/2012
Operable Units:	03	**Finish Actual:**	
Action Code:	BF	**Qual:**	
Action Name:	PRP RA	**Curr Action Lead:**	EPA Ovrsght
SEQ:	1		

Site ID:	0900993	**Start Actual:**	07/17/2003
Operable Units:	05	**Finish Actual:**	05/27/2009
Action Code:	CO	**Qual:**	
Action Name:	RI/FS	**Curr Action Lead:**	EPA Perf
SEQ:	3		

Site ID:	0900993	**Start Actual:**	04/12/2001
Operable Units:	04	**Finish Actual:**	03/06/2002
Action Code:	RV	**Qual:**	C
Action Name:	RMVL	**Curr Action Lead:**	EPA Perf
SEQ:	4		

Site ID:	0900993	**Start Actual:**	10/01/2005
Operable Units:	06	**Finish Actual:**	
Action Code:	CO	**Qual:**	
Action Name:	RI/FS	**Curr Action Lead:**	EPA Perf
SEQ:	4		

Site ID:	0900993	**Start Actual:**	04/19/2016
Operable Units:	00	**Finish Actual:**	
Action Code:	CR	**Qual:**	
Action Name:	CI	**Curr Action Lead:**	EPA Perf
SEQ:	6		

Site ID:	0900993	**Start Actual:**	09/10/2004
Operable Units:	00	**Finish Actual:**	
Action Code:	CR	**Qual:**	
Action Name:	CI	**Curr Action Lead:**	EPA Perf
SEQ:	4		

Site ID:	0900993	**Start Actual:**	09/30/2009
Operable Units:	05	**Finish Actual:**	09/30/2009
Action Code:	RO	**Qual:**	
Action Name:	ROD	**Curr Action Lead:**	EPA Perf
SEQ:	4		

Site ID:	0900993	**Start Actual:**	03/01/1992
Operable Units:	01	**Finish Actual:**	05/01/2017
Action Code:	ED	**Qual:**	
Action Name:	R/H ASMT	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	12/11/1991
Operable Units:	00	**Finish Actual:**	12/11/1991
Action Code:	RS	**Qual:**	
Action Name:	RV ASSESS	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	06/05/1991
Operable Units:	00	**Finish Actual:**	06/05/1991
Action Code:	AR	**Qual:**	V
Action Name:	ADMIN REC	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	08/29/2008
Operable Units:	04	**Finish Actual:**	
Action Code:	PD	**Qual:**	
Action Name:	SITE SEC	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	09/24/2008
Operable Units:	07	**Finish Actual:**	
Action Code:	BD	**Qual:**	
Action Name:	PRP RI/FS	**Curr Action Lead:**	EPA Ovrsght
SEQ:	3		

Site ID:	0900993	**Start Actual:**	04/07/2000
Operable Units:	00	**Finish Actual:**	
Action Code:	TG	**Qual:**	
Action Name:	TA GRANT	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	03/02/1994
Operable Units:	04	**Finish Actual:**	
Action Code:	CO	**Qual:**	
Action Name:	RI/FS	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	06/28/1994
Operable Units:	00	**Finish Actual:**	06/28/1994
Action Code:	AR	**Qual:**	V
Action Name:	ADMIN REC	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	06/01/1988
Operable Units:	00	**Finish Actual:**	06/01/1988
Action Code:	HR	**Qual:**	
Action Name:	HAZRANK	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	02/15/2001
Operable Units:	00	**Finish Actual:**	
Action Code:	CR	**Qual:**	
Action Name:	CI	**Curr Action Lead:**	EPA Perf
SEQ:	3		

Site ID:	0900993	**Start Actual:**	01/01/1985
Operable Units:	02	**Finish Actual:**	
Action Code:	RI	**Qual:**	
Action Name:	RI	**Curr Action Lead:**	EPA Perf
SEQ:	3		

Site ID:	0900993	**Start Actual:**	09/30/2020
Operable Units:	03	**Finish Actual:**	09/30/2020
Action Code:	RO	**Qual:**	
Action Name:	ROD	**Curr Action Lead:**	EPA Perf
SEQ:	7		

Site ID:	0900993	**Start Actual:**	08/22/2013
Operable Units:	05	**Finish Actual:**	

Action Code:	RD	**Qual:**	
Action Name:	RD	**Curr Action Lead:**	EPA Perf
SEQ:	16		

Site ID:	0900993	**Start Actual:**	09/06/2018
Operable Units:	00	**Finish Actual:**	09/29/2020
Action Code:	FE	**Qual:**	
Action Name:	5 YEAR	**Curr Action Lead:**	EPA Perf
SEQ:	5		

Site ID:	0900993	**Start Actual:**	01/08/1998
Operable Units:	03	**Finish Actual:**	09/30/2020
Action Code:	NK	**Qual:**	
Action Name:	PRP FS	**Curr Action Lead:**	EPA Ovrsght
SEQ:	4		

Site ID:	0900993	**Start Actual:**	02/19/1988
Operable Units:	00	**Finish Actual:**	06/21/1989
Action Code:	BB	**Qual:**	C
Action Name:	PRP RV	**Curr Action Lead:**	EPA Ovrsght
SEQ:	1		

Site ID:	0900993	**Start Actual:**	07/22/2009
Operable Units:	05	**Finish Actual:**	
Action Code:	RD	**Qual:**	
Action Name:	RD	**Curr Action Lead:**	EPA Perf
SEQ:	5		

Site ID:	0900993	**Start Actual:**	11/30/2004
Operable Units:	05	**Finish Actual:**	
Action Code:	AR	**Qual:**	
Action Name:	ADMIN REC	**Curr Action Lead:**	EPA Perf
SEQ:	6		

Site ID:	0900993	**Start Actual:**	05/08/2001
Operable Units:	04	**Finish Actual:**	09/26/2002
Action Code:	RV	**Qual:**	C
Action Name:	RMVL	**Curr Action Lead:**	EPA Perf
SEQ:	3		

Site ID:	0900993	**Start Actual:**	08/24/2000
Operable Units:	00	**Finish Actual:**	
Action Code:	AR	**Qual:**	
Action Name:	ADMIN REC	**Curr Action Lead:**	EPA Perf
SEQ:	5		

Site ID:	0900993	**Start Actual:**	06/01/1992
Operable Units:	01	**Finish Actual:**	08/12/1994
Action Code:	TS	**Qual:**	
Action Name:	TRTSTUDY	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	07/09/1996
Operable Units:	00	**Finish Actual:**	09/28/2001
Action Code:	EE	**Qual:**	
Action Name:	EE/CA	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	11/19/2018
Operable Units:	00	**Finish Actual:**	09/11/2019
Action Code:	FE	**Qual:**	
Action Name:	5 YEAR	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	08/01/1990
Operable Units:	00	**Finish Actual:**	08/01/1990
Action Code:	RS	**Qual:**	
Action Name:	RV ASSESS	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	01/02/1985
Operable Units:	00	**Finish Actual:**	
Action Code:	CR	**Qual:**	
Action Name:	CI	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	08/14/1997
Operable Units:	00	**Finish Actual:**	
Action Code:	CR	**Qual:**	
Action Name:	CI	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	10/15/1984
Operable Units:	00	**Finish Actual:**	10/15/1984
Action Code:	NP	**Qual:**	
Action Name:	PROPOSED	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	01/01/1980
Operable Units:	00	**Finish Actual:**	01/01/1980
Action Code:	DS	**Qual:**	
Action Name:	DISCVRY	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	01/08/1998
Operable Units:	01	**Finish Actual:**	05/18/1998
Action Code:	RI	**Qual:**	
Action Name:	RI	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	06/04/2008
Operable Units:	02	**Finish Actual:**	
Action Code:	EE	**Qual:**	
Action Name:	EE/CA	**Curr Action Lead:**	EPA Perf
SEQ:	3		

Site ID:	0900993	**Start Actual:**	04/03/2001
Operable Units:	00	**Finish Actual:**	
Action Code:	TA	**Qual:**	
Action Name:	TECH ASSIST	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	09/30/1998
Operable Units:	03	**Finish Actual:**	
Action Code:	OM	**Qual:**	
Action Name:	OM	**Curr Action Lead:**	EPA Ovrsght
SEQ:	2		

Site ID:	0900993	**Start Actual:**	10/28/1985
Operable Units:	03	**Finish Actual:**	08/14/1997
Action Code:	NK	**Qual:**	
Action Name:	PRP FS	**Curr Action Lead:**	EPA Ovrsght
SEQ:	2		

Site ID:	0900993	**Start Actual:**	10/10/1986
Operable Units:	01	**Finish Actual:**	01/08/1998
Action Code:	BD	**Qual:**	
Action Name:	PRP RI/FS	**Curr Action Lead:**	EPA Ovrsght
SEQ:	2		

Site Level Information

Site ID:	0900993	**Superfund Alt Agmt:**	No
NPL:	Currently on the Final NPL	**FIPS Code:**	06037
Federal Facility:	No	**Cong District:**	36,37,43
FF Docket:	No	**Region:**	09
Non NPL Status:			

Action Information

Site ID:	0900993	***Start Actual:***	03/02/1994
Operable Units:	04	***Finish Actual:***	
Action Code:	CO	***Qual:***	
Action Name:	RI/FS	***Curr Action Lead:***	EPA Perf
SEQ:	2		

Site ID:	0900993	***Start Actual:***	08/01/1990
Operable Units:	00	***Finish Actual:***	08/01/1990
Action Code:	RS	***Qual:***	
Action Name:	RV ASSESS	***Curr Action Lead:***	EPA Perf
SEQ:	1		

Site ID:	0900993	***Start Actual:***	03/30/1999
Operable Units:	03	***Finish Actual:***	03/30/1999
Action Code:	RO	***Qual:***	
Action Name:	ROD	***Curr Action Lead:***	EPA Perf
SEQ:	2		

Site ID:	0900993	***Start Actual:***	03/24/1994
Operable Units:	00	***Finish Actual:***	09/30/2009
Action Code:	RV	***Qual:***	S
Action Name:	RMVL	***Curr Action Lead:***	EPA Perf
SEQ:	2		

Site ID:	0900993	***Start Actual:***	04/01/1984
Operable Units:	00	***Finish Actual:***	04/01/1984
Action Code:	PA	***Qual:***	H
Action Name:	PA	***Curr Action Lead:***	EPA Perf
SEQ:	1		

Site ID:	0900993	***Start Actual:***	09/19/2012
Operable Units:	03	***Finish Actual:***	
Action Code:	BF	***Qual:***	
Action Name:	PRP RA	***Curr Action Lead:***	EPA Ovrsght
SEQ:	1		

Site ID:	0900993	***Start Actual:***	09/30/1998
Operable Units:	03	***Finish Actual:***	
Action Code:	OM	***Qual:***	
Action Name:	OM	***Curr Action Lead:***	EPA Ovrsght
SEQ:	2		

Site ID:	0900993	***Start Actual:***	04/07/2000
Operable Units:	00	***Finish Actual:***	
Action Code:	TG	***Qual:***	
Action Name:	TA GRANT	***Curr Action Lead:***	EPA Perf
SEQ:	1		

Site ID:	0900993	***Start Actual:***	06/01/1992
Operable Units:	01	***Finish Actual:***	08/12/1994
Action Code:	TS	***Qual:***	
Action Name:	TRTSTUDY	***Curr Action Lead:***	EPA Perf
SEQ:	1		

Site ID:	0900993	***Start Actual:***	04/30/1989
Operable Units:	00	***Finish Actual:***	
Action Code:	MA	***Qual:***	
Action Name:	ST COOP	***Curr Action Lead:***	EPA Perf
SEQ:	1		

Site ID:	0900993	***Start Actual:***	01/01/1980
Operable Units:	00	***Finish Actual:***	01/01/1980
Action Code:	DS	***Qual:***	
Action Name:	DISCVRY	***Curr Action Lead:***	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	12/11/1991
Operable Units:	00	**Finish Actual:**	12/11/1991
Action Code:	RS	**Qual:**	
Action Name:	RV ASSESS	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	06/01/1988
Operable Units:	00	**Finish Actual:**	06/01/1988
Action Code:	HR	**Qual:**	
Action Name:	HAZRANK	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	10/07/2010
Operable Units:	00	**Finish Actual:**	
Action Code:	MA	**Qual:**	
Action Name:	ST COOP	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	09/10/2004
Operable Units:	00	**Finish Actual:**	
Action Code:	CR	**Qual:**	
Action Name:	CI	**Curr Action Lead:**	EPA Perf
SEQ:	4		

Site ID:	0900993	**Start Actual:**	08/14/1997
Operable Units:	03	**Finish Actual:**	03/30/1999
Action Code:	FS	**Qual:**	
Action Name:	FS	**Curr Action Lead:**	EPA Perf
SEQ:	3		

Site ID:	0900993	**Start Actual:**	04/11/1994
Operable Units:	00	**Finish Actual:**	06/30/1999
Action Code:	RV	**Qual:**	C
Action Name:	RMVL	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	04/03/2001
Operable Units:	00	**Finish Actual:**	
Action Code:	TA	**Qual:**	
Action Name:	TECH ASSIST	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	04/19/2016
Operable Units:	00	**Finish Actual:**	
Action Code:	CR	**Qual:**	
Action Name:	CI	**Curr Action Lead:**	EPA Perf
SEQ:	6		

Site ID:	0900993	**Start Actual:**	09/03/2013
Operable Units:	05	**Finish Actual:**	
Action Code:	RA	**Qual:**	
Action Name:	RA	**Curr Action Lead:**	EPA Perf
SEQ:	14		

Site ID:	0900993	**Start Actual:**	01/08/1998
Operable Units:	01	**Finish Actual:**	
Action Code:	NK	**Qual:**	
Action Name:	PRP FS	**Curr Action Lead:**	EPA Ovrsght
SEQ:	3		

Site ID:	0900993	**Start Actual:**	01/17/2006
Operable Units:	06	**Finish Actual:**	01/17/2006
Action Code:	BB	**Qual:**	S
Action Name:	PRP RV	**Curr Action Lead:**	EPA Ovrsght
SEQ:	3		

Site ID:	0900993	**Start Actual:**	09/30/2009
Operable Units:	05	**Finish Actual:**	09/30/2009

Action Code:	RO	**Qual:**	
Action Name:	ROD	**Curr Action Lead:**	EPA Perf
SEQ:	4		

Site ID:	0900993	**Start Actual:**	08/01/1999
Operable Units:	03	**Finish Actual:**	05/27/2003
Action Code:	RD	**Qual:**	
Action Name:	RD	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	08/24/2000
Operable Units:	00	**Finish Actual:**	
Action Code:	AR	**Qual:**	
Action Name:	ADMIN REC	**Curr Action Lead:**	EPA Perf
SEQ:	5		

Site ID:	0900993	**Start Actual:**	10/15/1984
Operable Units:	00	**Finish Actual:**	10/15/1984
Action Code:	NP	**Qual:**	
Action Name:	PROPOSED	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	08/22/2013
Operable Units:	05	**Finish Actual:**	
Action Code:	RD	**Qual:**	
Action Name:	RD	**Curr Action Lead:**	EPA Perf
SEQ:	16		

Site ID:	0900993	**Start Actual:**	11/19/2018
Operable Units:	00	**Finish Actual:**	09/11/2019
Action Code:	FE	**Qual:**	
Action Name:	5 YEAR	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	02/19/1988
Operable Units:	00	**Finish Actual:**	06/21/1989
Action Code:	BB	**Qual:**	C
Action Name:	PRP RV	**Curr Action Lead:**	EPA Ovrsght
SEQ:	1		

Site ID:	0900993	**Start Actual:**	07/05/2006
Operable Units:	06	**Finish Actual:**	
Action Code:	NA	**Qual:**	
Action Name:	PRP RI	**Curr Action Lead:**	EPA Ovrsght
SEQ:	1		

Site ID:	0900993	**Start Actual:**	03/24/2000
Operable Units:	00	**Finish Actual:**	
Action Code:	AR	**Qual:**	V
Action Name:	ADMIN REC	**Curr Action Lead:**	EPA Perf
SEQ:	4		

Site ID:	0900993	**Start Actual:**	07/17/2003
Operable Units:	05	**Finish Actual:**	05/27/2009
Action Code:	CO	**Qual:**	
Action Name:	RI/FS	**Curr Action Lead:**	EPA Perf
SEQ:	3		

Site ID:	0900993	**Start Actual:**	01/02/1985
Operable Units:	00	**Finish Actual:**	
Action Code:	CR	**Qual:**	
Action Name:	CI	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	01/01/1985
Operable Units:	01	**Finish Actual:**	04/30/1986
Action Code:	RI	**Qual:**	
Action Name:	RI	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	08/29/2008
Operable Units:	04	**Finish Actual:**	
Action Code:	PD	**Qual:**	
Action Name:	SITE SEC	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	05/19/2010
Operable Units:	00	**Finish Actual:**	
Action Code:	CR	**Qual:**	
Action Name:	CI	**Curr Action Lead:**	EPA Perf
SEQ:	5		

Site ID:	0900993	**Start Actual:**	09/30/2015
Operable Units:	00	**Finish Actual:**	09/30/2015
Action Code:	FE	**Qual:**	
Action Name:	5 YEAR	**Curr Action Lead:**	EPA Perf
SEQ:	4		

Site ID:	0900993	**Start Actual:**	09/30/2009
Operable Units:	05	**Finish Actual:**	
Action Code:	RA	**Qual:**	
Action Name:	RA	**Curr Action Lead:**	EPA Perf
SEQ:	13		

Site ID:	0900993	**Start Actual:**	10/10/1986
Operable Units:	01	**Finish Actual:**	01/08/1998
Action Code:	BD	**Qual:**	
Action Name:	PRP RI/FS	**Curr Action Lead:**	EPA Ovrsght
SEQ:	2		

Site ID:	0900993	**Start Actual:**	09/24/2008
Operable Units:	07	**Finish Actual:**	
Action Code:	BD	**Qual:**	
Action Name:	PRP RI/FS	**Curr Action Lead:**	EPA Ovrsght
SEQ:	3		

Site ID:	0900993	**Start Actual:**	03/01/1992
Operable Units:	01	**Finish Actual:**	05/01/2017
Action Code:	ED	**Qual:**	
Action Name:	R/H ASMT	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	11/30/2004
Operable Units:	05	**Finish Actual:**	
Action Code:	AR	**Qual:**	
Action Name:	ADMIN REC	**Curr Action Lead:**	EPA Perf
SEQ:	6		

Site ID:	0900993	**Start Actual:**	04/12/2001
Operable Units:	04	**Finish Actual:**	03/06/2002
Action Code:	RV	**Qual:**	C
Action Name:	RMVL	**Curr Action Lead:**	EPA Perf
SEQ:	4		

Site ID:	0900993	**Start Actual:**	08/14/1997
Operable Units:	00	**Finish Actual:**	
Action Code:	CR	**Qual:**	
Action Name:	CI	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	05/27/2003
Operable Units:	03	**Finish Actual:**	09/19/2012
Action Code:	BE	**Qual:**	
Action Name:	PRP RD	**Curr Action Lead:**	EPA Ovrsght
SEQ:	2		

Site ID:	0900993	**Start Actual:**	01/08/1998
Operable Units:	03	**Finish Actual:**	

Action Code:	NK	**Qual:**	
Action Name:	PRP FS	**Curr Action Lead:**	EPA Ovrsght
SEQ:	4		

Site ID:	0900993	**Start Actual:**	03/06/2002
Operable Units:	01	**Finish Actual:**	
Action Code:	OM	**Qual:**	
Action Name:	OM	**Curr Action Lead:**	EPA Ovrsght
SEQ:	7		

Site ID:	0900993	**Start Actual:**	11/04/2016
Operable Units:	06	**Finish Actual:**	
Action Code:	BD	**Qual:**	
Action Name:	PRP RI/FS	**Curr Action Lead:**	EPA Ovrsght
SEQ:	4		

Site ID:	0900993	**Start Actual:**	12/03/2007
Operable Units:	04	**Finish Actual:**	02/21/2008
Action Code:	RV	**Qual:**	C
Action Name:	RMVL	**Curr Action Lead:**	EPA Perf
SEQ:	5		

Site ID:	0900993	**Start Actual:**	06/28/1994
Operable Units:	00	**Finish Actual:**	06/28/1994
Action Code:	AR	**Qual:**	V
Action Name:	ADMIN REC	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	03/01/1992
Operable Units:	01	**Finish Actual:**	05/01/2017
Action Code:	ED	**Qual:**	
Action Name:	R/H ASMT	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	09/12/2013
Operable Units:	00	**Finish Actual:**	08/28/2014
Action Code:	FE	**Qual:**	
Action Name:	5 YEAR	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	05/01/1998
Operable Units:	03	**Finish Actual:**	06/30/1998
Action Code:	AR	**Qual:**	E
Action Name:	ADMIN REC	**Curr Action Lead:**	EPA Perf
SEQ:	3		

Site ID:	0900993	**Start Actual:**	06/04/2008
Operable Units:	02	**Finish Actual:**	
Action Code:	EE	**Qual:**	
Action Name:	EE/CA	**Curr Action Lead:**	EPA Perf
SEQ:	3		

Site ID:	0900993	**Start Actual:**	02/19/1988
Operable Units:	00	**Finish Actual:**	03/31/1999
Action Code:	BB	**Qual:**	C
Action Name:	PRP RV	**Curr Action Lead:**	EPA Ovrsght
SEQ:	2		

Site ID:	0900993	**Start Actual:**	10/28/1985
Operable Units:	03	**Finish Actual:**	08/14/1997
Action Code:	NK	**Qual:**	
Action Name:	PRP FS	**Curr Action Lead:**	EPA Ovrsght
SEQ:	2		

Site ID:	0900993	**Start Actual:**	07/22/2009
Operable Units:	05	**Finish Actual:**	
Action Code:	RD	**Qual:**	
Action Name:	RD	**Curr Action Lead:**	EPA Perf
SEQ:	5		

Site ID:	0900993	**Start Actual:**	05/08/2001
Operable Units:	04	**Finish Actual:**	09/26/2002
Action Code:	RV	**Qual:**	C
Action Name:	RMVL	**Curr Action Lead:**	EPA Perf
SEQ:	3		

Site ID:	0900993	**Start Actual:**	04/11/1994
Operable Units:	00	**Finish Actual:**	09/24/1998
Action Code:	RC	**Qual:**	
Action Name:	RVL CRP	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	10/04/1989
Operable Units:	00	**Finish Actual:**	10/04/1989
Action Code:	NF	**Qual:**	
Action Name:	NPL FINL	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	07/09/1996
Operable Units:	00	**Finish Actual:**	09/28/2001
Action Code:	EE	**Qual:**	
Action Name:	EE/CA	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	04/01/1984
Operable Units:	00	**Finish Actual:**	04/01/1984
Action Code:	SI	**Qual:**	H
Action Name:	SI	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	01/08/1998
Operable Units:	01	**Finish Actual:**	05/18/1998
Action Code:	RI	**Qual:**	
Action Name:	RI	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	06/05/1991
Operable Units:	00	**Finish Actual:**	06/05/1991
Action Code:	AR	**Qual:**	V
Action Name:	ADMIN REC	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	02/15/2001
Operable Units:	00	**Finish Actual:**	
Action Code:	CR	**Qual:**	
Action Name:	CI	**Curr Action Lead:**	EPA Perf
SEQ:	3		

Site ID:	0900993	**Start Actual:**	01/01/1985
Operable Units:	02	**Finish Actual:**	
Action Code:	RI	**Qual:**	
Action Name:	RI	**Curr Action Lead:**	EPA Perf
SEQ:	3		

Site ID:	0900993	**Start Actual:**	10/01/2005
Operable Units:	06	**Finish Actual:**	
Action Code:	CO	**Qual:**	
Action Name:	RI/FS	**Curr Action Lead:**	EPA Perf
SEQ:	4		

Site ID:	0900993	**Start Actual:**	11/04/2016
Operable Units:	06	**Finish Actual:**	
Action Code:	BD	**Qual:**	
Action Name:	PRP RI/FS	**Curr Action Lead:**	EPA Ovrsght
SEQ:	4		

Site ID:	0900993	**Start Actual:**	03/24/2000
Operable Units:	00	**Finish Actual:**	

Action Code:	AR	**Qual:**	V
Action Name:	ADMIN REC	**Curr Action Lead:**	EPA Perf
SEQ:	4		

Site ID:	0900993	**Start Actual:**	12/03/2007
Operable Units:	04	**Finish Actual:**	02/21/2008
Action Code:	RV	**Qual:**	C
Action Name:	RMVL	**Curr Action Lead:**	EPA Perf
SEQ:	5		

Site ID:	0900993	**Start Actual:**	08/01/1999
Operable Units:	03	**Finish Actual:**	05/27/2003
Action Code:	RD	**Qual:**	
Action Name:	RD	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	10/04/1989
Operable Units:	00	**Finish Actual:**	10/04/1989
Action Code:	NF	**Qual:**	
Action Name:	NPL FINL	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	01/01/1985
Operable Units:	01	**Finish Actual:**	04/30/1986
Action Code:	RI	**Qual:**	
Action Name:	RI	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	03/30/1999
Operable Units:	03	**Finish Actual:**	03/30/1999
Action Code:	RO	**Qual:**	
Action Name:	ROD	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	10/07/2010
Operable Units:	00	**Finish Actual:**	
Action Code:	MA	**Qual:**	
Action Name:	ST COOP	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	09/30/2015
Operable Units:	00	**Finish Actual:**	09/30/2015
Action Code:	FE	**Qual:**	
Action Name:	5 YEAR	**Curr Action Lead:**	EPA Perf
SEQ:	4		

Site ID:	0900993	**Start Actual:**	09/30/2009
Operable Units:	05	**Finish Actual:**	
Action Code:	RA	**Qual:**	
Action Name:	RA	**Curr Action Lead:**	EPA Perf
SEQ:	13		

Site ID:	0900993	**Start Actual:**	09/03/2013
Operable Units:	05	**Finish Actual:**	
Action Code:	RA	**Qual:**	
Action Name:	RA	**Curr Action Lead:**	EPA Perf
SEQ:	14		

Site ID:	0900993	**Start Actual:**	05/27/2003
Operable Units:	03	**Finish Actual:**	09/19/2012
Action Code:	BE	**Qual:**	
Action Name:	PRP RD	**Curr Action Lead:**	EPA Ovrsght
SEQ:	2		

Site ID:	0900993	**Start Actual:**	02/19/1988
Operable Units:	00	**Finish Actual:**	03/31/1999
Action Code:	BB	**Qual:**	C
Action Name:	PRP RV	**Curr Action Lead:**	EPA Ovrsght
SEQ:	2		

Site ID:	0900993	**Start Actual:**	03/06/2002
Operable Units:	01	**Finish Actual:**	
Action Code:	OM	**Qual:**	
Action Name:	OM	**Curr Action Lead:**	EPA Ovrsght
SEQ:	7		

Site ID:	0900993	**Start Actual:**	04/01/1984
Operable Units:	00	**Finish Actual:**	04/01/1984
Action Code:	SI	**Qual:**	H
Action Name:	SI	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	04/11/1994
Operable Units:	00	**Finish Actual:**	06/30/1999
Action Code:	RV	**Qual:**	C
Action Name:	RMVL	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	01/08/1998
Operable Units:	01	**Finish Actual:**	
Action Code:	NK	**Qual:**	
Action Name:	PRP FS	**Curr Action Lead:**	EPA Ovrsght
SEQ:	3		

Site ID:	0900993	**Start Actual:**	01/17/2006
Operable Units:	06	**Finish Actual:**	01/17/2006
Action Code:	BB	**Qual:**	S
Action Name:	PRP RV	**Curr Action Lead:**	EPA Ovrsght
SEQ:	3		

Site ID:	0900993	**Start Actual:**	07/05/2006
Operable Units:	06	**Finish Actual:**	
Action Code:	NA	**Qual:**	
Action Name:	PRP RI	**Curr Action Lead:**	EPA Ovrsght
SEQ:	1		

Site ID:	0900993	**Start Actual:**	03/01/1992
Operable Units:	01	**Finish Actual:**	05/01/2017
Action Code:	ED	**Qual:**	
Action Name:	R/H ASMT	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	04/11/1994
Operable Units:	00	**Finish Actual:**	09/24/1998
Action Code:	RC	**Qual:**	
Action Name:	RVL CRP	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	09/12/2013
Operable Units:	00	**Finish Actual:**	08/28/2014
Action Code:	FE	**Qual:**	
Action Name:	5 YEAR	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	08/14/1997
Operable Units:	03	**Finish Actual:**	03/30/1999
Action Code:	FS	**Qual:**	
Action Name:	FS	**Curr Action Lead:**	EPA Perf
SEQ:	3		

Site ID:	0900993	**Start Actual:**	04/30/1989
Operable Units:	00	**Finish Actual:**	
Action Code:	MA	**Qual:**	
Action Name:	ST COOP	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	03/24/1994
Operable Units:	00	**Finish Actual:**	09/30/2009

Action Code:	RV	**Qual:**	S
Action Name:	RMVL	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	05/01/1998
Operable Units:	03	**Finish Actual:**	06/30/1998
Action Code:	AR	**Qual:**	E
Action Name:	ADMIN REC	**Curr Action Lead:**	EPA Perf
SEQ:	3		

Site ID:	0900993	**Start Actual:**	04/01/1984
Operable Units:	00	**Finish Actual:**	04/01/1984
Action Code:	PA	**Qual:**	H
Action Name:	PA	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	05/19/2010
Operable Units:	00	**Finish Actual:**	
Action Code:	CR	**Qual:**	
Action Name:	CI	**Curr Action Lead:**	EPA Perf
SEQ:	5		

Site ID:	0900993	**Start Actual:**	09/19/2012
Operable Units:	03	**Finish Actual:**	
Action Code:	BF	**Qual:**	
Action Name:	PRP RA	**Curr Action Lead:**	EPA Ovrsght
SEQ:	1		

Site ID:	0900993	**Start Actual:**	07/17/2003
Operable Units:	05	**Finish Actual:**	05/27/2009
Action Code:	CO	**Qual:**	
Action Name:	RI/FS	**Curr Action Lead:**	EPA Perf
SEQ:	3		

Site ID:	0900993	**Start Actual:**	04/12/2001
Operable Units:	04	**Finish Actual:**	03/06/2002
Action Code:	RV	**Qual:**	C
Action Name:	RMVL	**Curr Action Lead:**	EPA Perf
SEQ:	4		

Site ID:	0900993	**Start Actual:**	10/01/2005
Operable Units:	06	**Finish Actual:**	
Action Code:	CO	**Qual:**	
Action Name:	RI/FS	**Curr Action Lead:**	EPA Perf
SEQ:	4		

Site ID:	0900993	**Start Actual:**	04/19/2016
Operable Units:	00	**Finish Actual:**	
Action Code:	CR	**Qual:**	
Action Name:	CI	**Curr Action Lead:**	EPA Perf
SEQ:	6		

Site ID:	0900993	**Start Actual:**	09/10/2004
Operable Units:	00	**Finish Actual:**	
Action Code:	CR	**Qual:**	
Action Name:	CI	**Curr Action Lead:**	EPA Perf
SEQ:	4		

Site ID:	0900993	**Start Actual:**	09/30/2009
Operable Units:	05	**Finish Actual:**	09/30/2009
Action Code:	RO	**Qual:**	
Action Name:	ROD	**Curr Action Lead:**	EPA Perf
SEQ:	4		

Site ID:	0900993	**Start Actual:**	03/01/1992
Operable Units:	01	**Finish Actual:**	05/01/2017
Action Code:	ED	**Qual:**	
Action Name:	R/H ASMT	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	12/11/1991
Operable Units:	00	**Finish Actual:**	12/11/1991
Action Code:	RS	**Qual:**	
Action Name:	RV ASSESS	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	06/05/1991
Operable Units:	00	**Finish Actual:**	06/05/1991
Action Code:	AR	**Qual:**	V
Action Name:	ADMIN REC	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	08/29/2008
Operable Units:	04	**Finish Actual:**	
Action Code:	PD	**Qual:**	
Action Name:	SITE SEC	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	09/24/2008
Operable Units:	07	**Finish Actual:**	
Action Code:	BD	**Qual:**	
Action Name:	PRP RI/FS	**Curr Action Lead:**	EPA Ovrsght
SEQ:	3		

Site ID:	0900993	**Start Actual:**	04/07/2000
Operable Units:	00	**Finish Actual:**	
Action Code:	TG	**Qual:**	
Action Name:	TA GRANT	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	03/02/1994
Operable Units:	04	**Finish Actual:**	
Action Code:	CO	**Qual:**	
Action Name:	RI/FS	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	06/28/1994
Operable Units:	00	**Finish Actual:**	06/28/1994
Action Code:	AR	**Qual:**	V
Action Name:	ADMIN REC	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	06/01/1988
Operable Units:	00	**Finish Actual:**	06/01/1988
Action Code:	HR	**Qual:**	
Action Name:	HAZRANK	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	02/15/2001
Operable Units:	00	**Finish Actual:**	
Action Code:	CR	**Qual:**	
Action Name:	CI	**Curr Action Lead:**	EPA Perf
SEQ:	3		

Site ID:	0900993	**Start Actual:**	01/01/1985
Operable Units:	02	**Finish Actual:**	
Action Code:	RI	**Qual:**	
Action Name:	RI	**Curr Action Lead:**	EPA Perf
SEQ:	3		

Site ID:	0900993	**Start Actual:**	09/30/2020
Operable Units:	03	**Finish Actual:**	09/30/2020
Action Code:	RO	**Qual:**	
Action Name:	ROD	**Curr Action Lead:**	EPA Perf
SEQ:	7		

Site ID:	0900993	**Start Actual:**	08/22/2013
Operable Units:	05	**Finish Actual:**	

Action Code:	RD	**Qual:**	
Action Name:	RD	**Curr Action Lead:**	EPA Perf
SEQ:	16		

Site ID:	0900993	**Start Actual:**	09/06/2018
Operable Units:	00	**Finish Actual:**	09/29/2020
Action Code:	FE	**Qual:**	
Action Name:	5 YEAR	**Curr Action Lead:**	EPA Perf
SEQ:	5		

Site ID:	0900993	**Start Actual:**	01/08/1998
Operable Units:	03	**Finish Actual:**	09/30/2020
Action Code:	NK	**Qual:**	
Action Name:	PRP FS	**Curr Action Lead:**	EPA Ovrsght
SEQ:	4		

Site ID:	0900993	**Start Actual:**	02/19/1988
Operable Units:	00	**Finish Actual:**	06/21/1989
Action Code:	BB	**Qual:**	C
Action Name:	PRP RV	**Curr Action Lead:**	EPA Ovrsght
SEQ:	1		

Site ID:	0900993	**Start Actual:**	07/22/2009
Operable Units:	05	**Finish Actual:**	
Action Code:	RD	**Qual:**	
Action Name:	RD	**Curr Action Lead:**	EPA Perf
SEQ:	5		

Site ID:	0900993	**Start Actual:**	11/30/2004
Operable Units:	05	**Finish Actual:**	
Action Code:	AR	**Qual:**	
Action Name:	ADMIN REC	**Curr Action Lead:**	EPA Perf
SEQ:	6		

Site ID:	0900993	**Start Actual:**	05/08/2001
Operable Units:	04	**Finish Actual:**	09/26/2002
Action Code:	RV	**Qual:**	C
Action Name:	RMVL	**Curr Action Lead:**	EPA Perf
SEQ:	3		

Site ID:	0900993	**Start Actual:**	08/24/2000
Operable Units:	00	**Finish Actual:**	
Action Code:	AR	**Qual:**	
Action Name:	ADMIN REC	**Curr Action Lead:**	EPA Perf
SEQ:	5		

Site ID:	0900993	**Start Actual:**	06/01/1992
Operable Units:	01	**Finish Actual:**	08/12/1994
Action Code:	TS	**Qual:**	
Action Name:	TRTSTUDY	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	07/09/1996
Operable Units:	00	**Finish Actual:**	09/28/2001
Action Code:	EE	**Qual:**	
Action Name:	EE/CA	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	11/19/2018
Operable Units:	00	**Finish Actual:**	09/11/2019
Action Code:	FE	**Qual:**	
Action Name:	5 YEAR	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	08/01/1990
Operable Units:	00	**Finish Actual:**	08/01/1990
Action Code:	RS	**Qual:**	
Action Name:	RV ASSESS	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	01/02/1985
Operable Units:	00	**Finish Actual:**	
Action Code:	CR	**Qual:**	
Action Name:	CI	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	08/14/1997
Operable Units:	00	**Finish Actual:**	
Action Code:	CR	**Qual:**	
Action Name:	CI	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	10/15/1984
Operable Units:	00	**Finish Actual:**	10/15/1984
Action Code:	NP	**Qual:**	
Action Name:	PROPOSED	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	01/01/1980
Operable Units:	00	**Finish Actual:**	01/01/1980
Action Code:	DS	**Qual:**	
Action Name:	DISCVRY	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	01/08/1998
Operable Units:	01	**Finish Actual:**	05/18/1998
Action Code:	RI	**Qual:**	
Action Name:	RI	**Curr Action Lead:**	EPA Perf
SEQ:	2		

Site ID:	0900993	**Start Actual:**	06/04/2008
Operable Units:	02	**Finish Actual:**	
Action Code:	EE	**Qual:**	
Action Name:	EE/CA	**Curr Action Lead:**	EPA Perf
SEQ:	3		

Site ID:	0900993	**Start Actual:**	04/03/2001
Operable Units:	00	**Finish Actual:**	
Action Code:	TA	**Qual:**	
Action Name:	TECH ASSIST	**Curr Action Lead:**	EPA Perf
SEQ:	1		

Site ID:	0900993	**Start Actual:**	09/30/1998
Operable Units:	03	**Finish Actual:**	
Action Code:	OM	**Qual:**	
Action Name:	OM	**Curr Action Lead:**	EPA Ovrsght
SEQ:	2		

Site ID:	0900993	**Start Actual:**	10/28/1985
Operable Units:	03	**Finish Actual:**	08/14/1997
Action Code:	NK	**Qual:**	
Action Name:	PRP FS	**Curr Action Lead:**	EPA Ovrsght
SEQ:	2		

Site ID:	0900993	**Start Actual:**	10/10/1986
Operable Units:	01	**Finish Actual:**	01/08/1998
Action Code:	BD	**Qual:**	
Action Name:	PRP RI/FS	**Curr Action Lead:**	EPA Ovrsght
SEQ:	2		

REST Information

Registry ID:	110002630608	**Ref Point Desc:**	
Active Status:	CURRENTLY ON THE FINAL NPL	**HUC8 Code:**	18070104
Interest Type:	SUPERFUND NPL	**Public Ind:**	Y

Fac Url: https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110002630608
Program Url: http://www.epa.gov/superfund/action/law/cercla.htm

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Pgm Report: no data yet
Collect Mth Desc:
Accuracy Value:

Registry ID: 110002630608 **Ref Point Desc:**
Active Status: CURRENTLY ON THE FINAL NPL **HUC8 Code:** 18070104
Interest Type: SUPERFUND NPL **Public Ind:** Y
Fac Url: https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110002630608
Program Url: http://www.epa.gov/superfund/action/law/cercla.htm
Pgm Report: no data yet
Collect Mth Desc:
Accuracy Value: 0

Registry ID: 110002630608 **Ref Point Desc:**
Active Status: CURRENTLY ON THE FINAL NPL **HUC8 Code:** 18070104
Interest Type: SUPERFUND NPL **Public Ind:** Y
Fac Url: https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110002630608
Program Url: http://www.epa.gov/superfund/action/law/cercla.htm
Pgm Report: no data yet
Collect Mth Desc:
Accuracy Value:

9	2 of 2	SSW	0.04 / 206.20	16.48 / -1	MONTROSE CHEMICAL CORP. 20201 S NORMANDIE AVE TORRANCE CA 90502	SUPERFUND ROD

EPA ID: CAD008242711
Site ID: 0900993
NPL Status: Final
Non NPL Status:
County: LOS ANGELES
Region: 09
Data Source(s): U.S. EPA SUPERFUND PROGRAM - Source: SEMS Superfund Public User Database - FOIA-002 Records of Decision (RODS), ROD Amendments, and Explanation of Significant Differences (ESDs); Searchable Superfund Decision Documents database (https://www.epa.gov/superfund/search-superfund-documents), made available by the US Environmental Protection Agency (EPA). Retrieved on June 26, 2020.

Document Information

Doc ID: 1118039
Date: 09/30/2009
Pub No:
Description:
PDF Link: https://semspub.epa.gov/src/document/09/1118039
Title: Interim record of decision (ROD) for Palos Verdes Shelf, OU 5(130 pp, 6.69 MB)

Doc ID: 1109488
Date: 04/06/2006
Pub No:
Description:
PDF Link: https://semspub.epa.gov/src/document/09/1109488
Title: Record of decision (ROD) for Montrose Settlements Restoration Program final restoration plan & programmatic environmental impact statement/EIR, w/TL to W Hogarth fr P Montanio, 4/5/06(24 pp, 1.3 MB)

Doc ID: 88046440
Date: 08/13/2002
Pub No:
Description:
PDF Link: https://semspub.epa.gov/src/document/09/88046440
Title: Explanation of significant differences (ESD) fr Del Amo OU 2 Waste Pits Record of Decision (ROD)(16 pp, 788.31 KB)

Doc ID: 46394
Date: 03/30/1999
Pub No:
Description:
PDF Link: https://semspub.epa.gov/src/document/09/46394

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Title: Record of decision (ROD) for dual site groundwater OU, v2 of 2 - response summary (03 ROD 02 [Montrose]) (03 ROD 03 [Del Amo])(265 pp, 24.71 MB)

Doc ID: 46391
Date: 03/30/1999
Pub No:
Description:
PDF Link: https://semspub.epa.gov/src/document/09/46391
Title: Record of decision (ROD) for dual site groundwater OU, v1 of 2 - declaration & decision summary (03 ROD 02 [Montrose]) (03 ROD 03 [Del Amo])(241 pp, 13.5 MB)

Doc ID: 88040017
Date: 09/05/1997
Pub No:
Description:
PDF Link: https://semspub.epa.gov/src/document/09/88040017
Title: Record of decision (ROD) for waste pits OU, w/attchs A & B(252 pp, 12.54 MB)

Action Information

Seq ID: 2
Action Name: GOVT Decision Document (ROD)
Operable Unit Name: GROUNDWATER/NAPL (OU-03)
Actual Comp Date: 03/30/99

Seq ID: 4
Action Name: GOVT Decision Document (ROD)
Operable Unit Name: PALOS VERDES SHELF (OU-05)
Actual Comp Date: 09/30/09

10	1 of 1	WSW	0.04 / 208.68	16.68 / -1	1141 E CARSON ST CARSON CA 90745	LA HMS

Site No: 016527
Area: 22

Detail Info

Permit No: 000107736
Permit Cat Desc: Industrial Waste Permit
Status Code: CLOS
Status Desc: Permit Closed
Permit Status Desc: Permit Closed
Permit Type: 01
Permit Type Desc: Operating Industrial Waste Permit - Local Sewer
Permit Status Code: CLOS
Permit Category: I
File No: 021921
File Name: PARKING CONCEPTS INC

11	1 of 2	NE	0.04 / 221.83	16.46 / -1	21506 S PERRY ST CARSON CA 90745	LA HMS

Site No: 008368
Area: 22

Detail Info

Permit No: 000010246
Permit Cat Desc: Industrial Waste Permit
Status Code: CLOS
Status Desc: Permit Closed
Permit Status Desc: Permit Closed
Permit Type: 01
Permit Type Desc: Operating Industrial Waste Permit - Local Sewer
Permit Status Code: CLOS
Permit Category: I
File No: I08934
File Name: SENIOR CITIZENS CENTER

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
11	2 of 2	NE	0.04 / 221.83	16.46 / -1	TOP VEGTABLE FARMS 21506 PERRY ST CARSON CA 90745	LA COUNTY CUPA

Facility ID: FA0020587
CERS ID: 0

Inactive Facility Details

PE: 3001

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
12	1 of 1	NE	0.05 / 238.36	16.44 / -1	SHELL PIPELINE 21500 PERRY ST CARSON CA 90745	CLEANUP SITES

Global ID: SLT43288286
Status: OPEN - SITE ASSESSMENT
Status Date: 9/2/2015
Longitude: -118.252801895142
Site Facility Type: CLEANUP PROGRAM SITE
County: LOS ANGELES
Latitude: 33.8332693780119
Data Source: Cleanup Program Sites from GeoTracker Search; Cleanup Sites from GeoTracker Cleanup Sites Data Download

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail(as Nov 16 2020)

RB Case No: 0490B
Local Case No:
Begin Date: 3/1/1999
Stop Method:
Lead Agency: LOS ANGELES RWQCB (REGION 4)
Local Agency:
Potential COC: Benzene, Gasoline, MTBE / TBA / Other Fuel Oxygenates, Other Petroleum, Total Petroleum Hydrocarbons (TPH)
Potential Media of Concern: Aquifer used for drinking water supply, Contaminated Surface / Structure, Indoor Air, Other Groundwater (uses other than drinking water), Sediments, Soil, Soil Vapor, Surface water
How Discovered:
How Discovered Description:
Stop Description:
Calwater Watershed Name: Dominguez Channel (411.01)
DWR GW Subbasin Name: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Disadvantaged Community:
Site History:
CUF Case: NO
Case Worker: JYL
File Location: Regional Board

The Site is centered around a petroleum pipeline corridor which runs underneath S. Perry Street from Shell Carson Terminal to the north to E. Carson Street near the Dominguez Channel. Shell operated eight pipelines in this area from the mid-1920s through the early 1970s. Shell abandoned all eight pipelines; two were abandoned in 1962, while six were abandoned by 1971. Other pipelines in this area include two Unocal pipelines located on the east side of S. Perry Street and one Plains All American pipeline (formerly BP/ARCO/Four Corners) on the west side of S. Perry Street. Records indicated that the Shell pipelines have been abandoned in-place per regulatory standards at the time of abandonment; however, the Plains All American pipeline is active pipeline and reportedly carries crude oil. The chemicals of concern at the Site are TPHg, BTEX, and DIPE. Historically, the Site has been managed as multiple smaller areas with separate regulatory management. The smaller areas within the Site are as follows: • S. Perry Street and Surrounding Areas (including adjacent individual residences and nearby • streets) • Former Carson Air Harbor (CAH) property • Former Alexander Catania (A/C) Parcels/Perry Street Mini Park • Sea Crest Parcels • Other Residential Properties o Lorraine Condominiums o Colony Holdings Shell and other parties have engaged in soil and groundwater assessments, monitoring, remediation, and source-management programs at the various parcels encompassing the Site since 1990. During the development of the former A/C Parcels in early 1996, visibly stained and odorous soil was identified adjacent to S. Perry Street. A release from the petroleum pipelines was suspected to be the source of the impacts. The discovery of impacts and land development led to multiple investigations and remedial activity in subsequent years. Remediation efforts have included the excavation and offsite disposal of approximately 10,800 cubic yards of soil, passive light non-aqueous phase liquid (LNAPL) removal, and operation of a soil vapor treatment system at the CAH property. Three areas of the Site (CAH, A/C Parcels, and Sea Crest Parcels) have received case closure from regulatory agencies. Institutional controls have been implemented at the CAH property that limit land use and excavation activities, prohibits groundwater use and requires engineering controls in future construction. A portion of Sea Crest Parcels has restrictions on groundwater use and excavation. The former A/C parcels has restrictions on land use, groundwater use and excavation. The Site vicinity is underlain by perched groundwater within the Bellflower aquitard which occurs in the upper 200 feet bgs. Native materials within the investigated portion of the Bellflower aquitard consist primarily of sandy to silty clays. Within the clays shallow discontinuous sand lenses which extend to 35 feet bgs are referred to as the A Zone. A relatively continuous band of sandy soils with some interbedded clay lenses is present from approximately 35 to 50 feet bgs and is referred to as the B Zone. Fine-grained soils are present below 50 feet bgs to roughly 70 feet bgs. The C Zone comprises silty sands between approximately 70 and 80 feet bgs. A Zone groundwater generally flows southwest, B Zone groundwater flows southeast, and C Zone groundwater flows northwest. The Site is adjacent to the tidally influenced, brackish, clay-lined Dominguez Channel. B and C Zone wells show tidal influence, while A Zone tidal influence is limited.

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Activity(as Nov 16 2020)

Action Type: RESPONSE
Date : 2029-07-31 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 2029-01-31 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 2028-07-31 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 2028-01-31 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 2027-07-31 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 2027-01-31 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 2026-07-31 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 2026-01-31 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 2025-07-31 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 2025-01-31 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 2024-07-31 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 2024-01-31 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 2023-07-31 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 2023-01-31 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 2022-07-31 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 2022-01-31 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE

Date : 2021-07-31 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 2021-03-31 00:00:00
Action: Technical Memos

Action Type: RESPONSE
Date : 2021-01-31 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: ENFORCEMENT
Date : 2020-08-17 00:00:00
Action: Staff Letter

Action Type: RESPONSE
Date : 2020-08-14 00:00:00
Action: Other Workplan

Action Type: RESPONSE
Date : 2020-07-30 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 2020-06-03 00:00:00
Action: Technical Memos

Action Type: ENFORCEMENT
Date : 2020-05-13 00:00:00
Action: Staff Letter

Action Type: ENFORCEMENT
Date : 2020-03-27 00:00:00
Action: Staff Letter

Action Type: RESPONSE
Date : 2020-01-30 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 2019-07-30 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 2019-01-30 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 2018-08-29 00:00:00
Action: Remedial Investigation Report

Action Type: RESPONSE
Date : 2018-07-30 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: ENFORCEMENT
Date : 2018-06-14 00:00:00
Action: Staff Letter

Action Type: RESPONSE
Date : 2018-06-11 00:00:00
Action: Correspondence

Action Type: ENFORCEMENT
Date : 2018-03-13 00:00:00
Action: Staff Letter

Action Type: RESPONSE
Date : 2018-02-28 00:00:00

Action: Soil and Water Investigation Workplan

Action Type: ENFORCEMENT
Date : 2017-12-21 00:00:00
Action: Staff Letter

Action Type: RESPONSE
Date : 2017-12-19 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 2017-07-28 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 2017-01-13 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 2017-01-10 00:00:00
Action: Well Installation Report

Action Type: RESPONSE
Date : 2016-10-07 00:00:00
Action: Email Correspondence

Action Type: ENFORCEMENT
Date : 2016-08-08 00:00:00
Action: Staff Letter

Action Type: RESPONSE
Date : 2016-07-15 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 2016-03-10 00:00:00
Action: Well Installation Workplan

Action Type: RESPONSE
Date : 2016-01-29 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: ENFORCEMENT
Date : 2015-09-30 00:00:00
Action: Letter - Notice

Action Type: RESPONSE
Date : 2015-09-02 00:00:00
Action: Correspondence

Action Type: ENFORCEMENT
Date : 2015-09-02 00:00:00
Action: Letter - Notice

Action Type: RESPONSE
Date : 2011-07-29 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 2011-01-30 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 2010-09-30 00:00:00
Action: Site Assessment Report

Action Type: ENFORCEMENT
Date : 2010-08-11 00:00:00
Action: 13267 Requirement

Action Type: RESPONSE
Date : 2010-07-30 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: ENFORCEMENT
Date : 2010-07-21 00:00:00
Action: Site Visit / Inspection / Sampling

Action Type: ENFORCEMENT
Date : 2010-07-08 00:00:00
Action: Technical Correspondence / Assistance / Other

Action Type: ENFORCEMENT
Date : 2010-04-29 00:00:00
Action: 13267 Requirement

Action Type: ENFORCEMENT
Date : 2003-05-16 00:00:00
Action: * No Action

Action Type: RESPONSE
Date : 2003-01-17 00:00:00
Action: Other Report / Document

Action Type: RESPONSE
Date : 2002-09-27 00:00:00
Action: Technical Memos

Action Type: RESPONSE
Date : 2002-08-08 00:00:00
Action: Site Assessment Report

Action Type: RESPONSE
Date : 2002-07-31 00:00:00
Action: Site Assessment Report

Action Type: RESPONSE
Date : 2002-04-29 00:00:00
Action: Technical Memos

Action Type: RESPONSE
Date : 2002-04-22 00:00:00
Action: Other Report / Document

Action Type: RESPONSE
Date : 2002-04-03 00:00:00
Action: Risk Assessment Report

Action Type: ENFORCEMENT
Date : 2002-03-04 00:00:00
Action: Technical Correspondence / Assistance / Other

Action Type: RESPONSE
Date : 2001-11-09 00:00:00
Action: Other Report / Document

Action Type: ENFORCEMENT
Date : 2001-10-11 00:00:00
Action: 13267 Requirement

Action Type: RESPONSE
Date : 2001-09-07 00:00:00
Action: Unknown

Action Type: RESPONSE
Date : 2001-09-07 00:00:00
Action: Site Assessment Report

Action Type: RESPONSE
Date : 2001-05-22 00:00:00
Action: Other Report / Document

Action Type: RESPONSE
Date : 2001-04-30 00:00:00
Action: Remedial Investigation Workplan

Action Type: ENFORCEMENT
Date : 2001-04-19 00:00:00
Action: Technical Correspondence / Assistance / Other

Action Type: ENFORCEMENT
Date : 2001-03-13 00:00:00
Action: Staff Letter

Action Type: ENFORCEMENT
Date : 2001-02-09 00:00:00
Action: Staff Letter

Action Type: ENFORCEMENT
Date : 2000-09-08 00:00:00
Action: Staff Letter

Action Type: ENFORCEMENT
Date : 1999-08-13 00:00:00
Action: Technical Correspondence / Assistance / Other

Action Type: RESPONSE
Date : 1998-02-19 00:00:00
Action: Site Assessment Report

Action Type: RESPONSE
Date : 1997-07-03 00:00:00
Action: Other Workplan

Action Type: RESPONSE
Date : 1997-05-31 00:00:00
Action: Site Assessment Report

Action Type: RESPONSE
Date : 1997-01-03 00:00:00
Action: Other Report / Document

Action Type: RESPONSE
Date : 1996-12-18 00:00:00
Action: Correspondence

Action Type: RESPONSE
Date : 1996-12-01 00:00:00
Action: Soil and Water Investigation Workplan

Action Type: RESPONSE
Date : 1996-11-12 00:00:00
Action: Site Investigation Workplan

Action Type: RESPONSE
Date : 1995-09-13 00:00:00
Action: Preliminary Site Assessment Report

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History(as Nov 16 2020)

Status: Open - Site Assessment
Status Date: 2015-09-02 00:00:00

Status: Open - Site Assessment
Status Date: 2000-09-08 00:00:00

Status: Open - Case Begin Date
Status Date: 1999-03-01 00:00:00

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Contacts(as Nov 16 2020)

Contact Type: Regional Board Caseworker
Contact Name: JEANETTE LIU
Phone No: 2135766758
Organization Name: LOS ANGELES RWQCB (REGION 4)
Email: jeanette.liu@waterboards.ca.gov
Address: 320 W. 4th Street, Suite 200
City: LOS ANGELES

Cleanup Program Sites from GeoTracker Search - Regulatory Profile (as of Oct 06, 2020)

Project Status:
CUF Claim:
CUF Priority Assign:
CUF Amount Paid:
Facility Type:
User Defined Beneficial Use:
Designated Beneficial Use: MUN, AGR, IND, PROC
Designated Beneficl Use Desc: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, Industrial Process Supply
Project Oversight Agencies:
Report Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=SLT43288286
Cleanup Status Detail: OPEN - SITE ASSESSMENT AS OF 9/2/2015
Cleanup History Link: https://geotracker.waterboards.ca.gov/profile_report_include?global_id=SLT43288286&tabname=regulatoryhistory
Potential COC: BENZENE, GASOLINE, MTBE / TBA / OTHER FUEL OXYGENATES, OTHER PETROLEUM, TOTAL PETROLEUM HYDROCARBONS (TPH)
Potential Media of Concern: AQUIFER USED FOR DRINKING WATER SUPPLY, CONTAMINATED SURFACE / STRUCTURE, INDOOR AIR, OTHER GROUNDWATER (USES OTHER THAN DRINKING WATER), SEDIMENTS, SOIL, SOIL VAPOR, SURFACE WATER
GW Monitoring Freq:
DWR GW Sub Basin: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Calwater Watershed Name: Dominguez Channel (411.01)
Post Closure Site Management:
Future Land Use:
Cleanup Oversight Agencies: LOS ANGELES RWQCB (REGION 4) (LEAD) - CASE #: 0490B
CASEWORKER: JEANETTE LIU
WDR Place Type:
WDR File:
WDR Order:
File Location: REGIONAL BOARD
Composting Method:

Site History:

The Site is centered around a petroleum pipeline corridor which runs underneath S. Perry Street from Shell Carson Terminal to the north to E. Carson Street near the Dominguez Channel. Shell operated eight pipelines in this area from the mid-1920s through the early 1970s. Shell abandoned all eight pipelines; two were abandoned in 1962, while six were abandoned by 1971. Other pipelines in this area include two Unocal pipelines located on the east side of S. Perry Street and one Plains All American pipeline (formerly BP/ARCO/Four Corners) on the west side of S. Perry Street. Records indicated that the Shell pipelines have been abandoned in-place per regulatory standards at the time of abandonment; however, the Plains All American pipeline is active pipeline and reportedly carries crude oil.

The chemicals of concern at the Site are TPHg, BTEX, and DIPE.

Historically, the Site has been managed as multiple smaller areas with separate regulatory management. The smaller areas within the Site are as follows:

• S. Perry Street and Surrounding Areas (including adjacent individual residences and nearby
• streets)
• Former Carson Air Harbor (CAH) property
• Former Alexander Catania (A/C) Parcels/Perry Street Mini Park
• Sea Crest Parcels
• Other Residential Properties
o Lorraine Condominiums
o Colony Holdings

Shell and other parties have engaged in soil and groundwater assessments, monitoring, remediation, and source-management programs at the various parcels encompassing the Site since 1990. During the development of the former A/C Parcels in early 1996, visibly stained and odorous soil was identified adjacent to S. Perry Street. A release from the petroleum pipelines was suspected to be the source of the impacts. The discovery of impacts and land development led to multiple investigations and remedial activity in subsequent years.

Remediation efforts have included the excavation and offsite disposal of approximately 10,800 cubic yards of soil, passive light non-aqueous phase liquid (LNAPL) removal, and operation of a soil vapor treatment system at the CAH property. Three areas of the Site (CAH, A/C Parcels, and Sea Crest

Parcels) have received case closure from regulatory agencies. Institutional controls have been implemented at the CAH property that limit land use and excavation activities, prohibits groundwater use and requires engineering controls in future construction. A portion of Sea Crest Parcels has restrictions on groundwater use and excavation. The former A/C parcels has restrictions on land use, groundwater use and excavation.

The Site vicinity is underlain by perched groundwater within the Bellflower aquitard which occurs in the upper 200 feet bgs. Native materials within the investigated portion of the Bellflower aquitard consist primarily of sandy to silty clays. Within the clays shallow discontinuous sand lenses which extend to 35 feet bgs are referred to as the A Zone. A relatively continuous band of sandy soils with some interbedded clay lenses is present from approximately 35 to 50 feet bgs and is referred to as the B Zone. Fine-grained soils are present below 50 feet bgs to roughly 70 feet bgs. The C Zone comprises silty sands between approximately 70 and 80 feet bgs. A Zone groundwater generally flows southwest, B Zone groundwater flows southeast, and C Zone groundwater flows northwest. The Site is adjacent to the tidally influenced, brackish, clay-lined Dominguez Channel. B and C Zone wells show tidal influence, while A Zone tidal influence is limited.

Sites from GeoTracker Search - Regulatory Activities (as of Oct 06, 2020)

Action Type: Response Requested - Reports
Action Date: 7/31/2029
Received Issue Date:
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Action Type: Response Requested - Reports
Action Date: 1/31/2029
Received Issue Date:
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Action Type: Response Requested - Reports
Action Date: 7/31/2028
Received Issue Date:
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Action Type: Response Requested - Reports
Action Date: 1/31/2028
Received Issue Date:
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Action Type: Response Requested - Reports
Action Date: 7/31/2027
Received Issue Date:
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Action Type: Response Requested - Reports
Action Date: 1/31/2027
Received Issue Date:
Action: Monitoring Report - Semi-Annually

Doc Link:
Title Description Comments:

SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Action Type: Response Requested - Reports
Action Date: 7/31/2026
Received Issue Date:
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Action Type: Response Requested - Reports
Action Date: 1/31/2026
Received Issue Date:
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Action Type: Response Requested - Reports
Action Date: 7/31/2025
Received Issue Date:
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Action Type: Response Requested - Reports
Action Date: 1/31/2025
Received Issue Date:
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Action Type: Response Requested - Reports
Action Date: 7/31/2024
Received Issue Date:
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Action Type: Response Requested - Reports
Action Date: 1/31/2024
Received Issue Date:
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Action Type: Response Requested - Reports
Action Date: 7/31/2023
Received Issue Date:
Action: Monitoring Report - Semi-Annually

Doc Link:
Title Description Comments:

SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Action Type: Response Requested - Reports
Action Date: 1/31/2023
Received Issue Date:
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Action Type: Response Requested - Reports
Action Date: 7/31/2022
Received Issue Date:
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Action Type: Response Requested - Reports
Action Date: 1/31/2022
Received Issue Date:
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Action Type: Response Requested - Reports
Action Date: 7/31/2021
Received Issue Date:
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Action Type: Response Requested - Reports
Action Date: 3/31/2021
Received Issue Date:
Action: Technical Memos
Doc Link:
Title Description Comments:

Technical Report for Groundwater Well Installation and Soil Vapor Sampling

Action Type: Response Requested - Reports
Action Date: 1/31/2021
Received Issue Date:
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Action Type: Other Regulatory Actions
Action Date: 8/17/2020
Received Issue Date: 8/17/2020
Action: Staff Letter

Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6445297&temptable=ENFORCEMENT
Title Description Comments:

APPROVAL OF WORK PLAN FOR INSTALLATION OF GROUNDWATER MONITORING WELLS AND SOIL VAPOR SAMPLING AND REQUIREMENT FOR TECHNICAL REPORTS

Action Type: Response Requested - Workplans
Action Date: 8/14/2020
Received Issue Date: 7/30/2020
Action: Other Workplan
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=6022930
Title Description Comments:

WORK PLAN FOR INSTALLATION OF GROUNDWATER MONITORING WELLS AND SOIL VAPOR SAMPLING

Action Type: Response Requested - Reports
Action Date: 7/30/2020
Received Issue Date: 7/30/2020
Action: Monitoring Report - Semi-Annually
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=6172851
Title Description Comments:

2020 FIRST SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Action Type: Response Requested - Reports
Action Date: 6/3/2020
Received Issue Date: 5/26/2020
Action: Technical Memos
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=6018772
Title Description Comments:

ACETONE RESULT FOR WELL MW-3 - 2019 SECOND SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Action Type: Other Regulatory Actions
Action Date: 5/13/2020
Received Issue Date: 5/13/2020
Action: Staff Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6435276&temptable=ENFORCEMENT
Title Description Comments:

COMMENTS ON REMEDIAL INVESTIGATION REPORT AND REQUIREMENT FOR WORK PLANS FOR ADDITIONAL SITE ASSESSMENT

Action Type: Other Regulatory Actions
Action Date: 3/27/2020
Received Issue Date: 3/27/2020
Action: Staff Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6431138&temptable=ENFORCEMENT
Title Description Comments:

COMMENTS ON 2019 SECOND SEMI-ANNUAL GROUNDWATER MONITORING REPORT DATED JANUARY 7, 2020

Action Type: Response Requested - Reports
Action Date: 1/30/2020
Received Issue Date: 1/7/2020
Action: Monitoring Report - Semi-Annually
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=6172850
Title Description Comments:

2019 SECOND SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Action Type: Response Requested - Reports

Action Date: 7/30/2019
Received Issue Date: 7/2/2019
Action: Monitoring Report - Semi-Annually
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=6172849
Title Description Comments:

2019 FIRST SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Action Type: Response Requested - Reports
Action Date: 1/30/2019
Received Issue Date: 12/21/2018
Action: Monitoring Report - Semi-Annually
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=6172848
Title Description Comments:

2018 SECOND SEMESTER SEMIANNUAL GROUNDWATER MONITORING REPORT

Action Type: Response Requested - Reports
Action Date: 8/29/2018
Received Issue Date: 8/29/2018
Action: Remedial Investigation Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5959317
Title Description Comments:

REMEDIAL INVESTIGATION REPORT

Action Type: Response Requested - Reports
Action Date: 7/30/2018
Received Issue Date: 7/23/2018
Action: Monitoring Report - Semi-Annually
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=6172847
Title Description Comments:

2018 FIRST SEMESTER SEMIANNUAL GROUNDWATER MONITORING REPORT

Action Type: Other Regulatory Actions
Action Date: 6/14/2018
Received Issue Date: 6/14/2018
Action: Staff Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6361152&temptable=ENFORCEMENT
Title Description Comments:

APPROVAL OF TIME EXTENSION REQUEST FOR REMEDIAL INVESTIGATION REPORT

Action Type: Response Requested - Other
Action Date: 6/11/2018
Received Issue Date: 6/11/2018
Action: Correspondence
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5967629
Title Description Comments:

Time Extension Request for Remedial Investigation Report Submittal

Action Type: Other Regulatory Actions
Action Date: 3/13/2018
Received Issue Date: 3/13/2018
Action: Staff Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6351206&temptable=ENFORCEMENT
Title Description Comments:

APPROVAL OF RESPONSE TO COMMENTS ON THE REGIONAL BOARD LETTER DATED DECEMBER 21, 2017

Action Type: Response Requested - Workplans
Action Date: 2/28/2018
Received Issue Date: 2/28/2018
Action: Soil and Water Investigation Workplan
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5950868
Title Description Comments:

Requirement to submit soil gas and groundwater investigation workplans.

Action Type: Other Regulatory Actions
Action Date: 12/21/2017
Received Issue Date: 12/21/2017
Action: Staff Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6343984&temptable=ENFORCEMENT
Title Description Comments:

Requirement for Work Plan for Additional Soil Gas Assessment and Groundwater Assessment

Action Type: Response Requested - Reports
Action Date: 12/19/2017
Received Issue Date: 12/19/2017
Action: Monitoring Report - Semi-Annually
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5965045
Title Description Comments:

2017 SECOND SEMESTER SEMIANNUAL GROUNDWATER MONITORING REPORT

Action Type: Response Requested - Reports
Action Date: 7/28/2017
Received Issue Date: 7/28/2017
Action: Monitoring Report - Semi-Annually
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5965046
Title Description Comments:

2017 FIRST SEMESTER SEMIANNUAL GROUNDWATER MONITORING REPORT

Action Type: Response Requested - Reports
Action Date: 1/13/2017
Received Issue Date: 1/13/2017
Action: Monitoring Report - Semi-Annually
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5965047
Title Description Comments:

2016 SECOND SEMESTER SEMIANNUAL GROUNDWATER MONITORING REPORT

Action Type: Response Requested - Reports
Action Date: 1/10/2017
Received Issue Date: 1/10/2017
Action: Well Installation Report
Doc Link:
Title Description Comments:

Well installation and groundwater sampling report.

Action Type: Response Requested - Reports
Action Date: 1/10/2017
Received Issue Date: 1/10/2017
Action: Well Installation Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5965043
Title Description Comments:

GROUNDWATER MONITORING WELL INSTALLATION REPORT FOR EIGHT MONITORING WELLS INSTALLED NEAR THE INTERSECTION OFF S. PERRY STREET AND E. 215TH PLACE

Action Type: Response Requested - Other
Action Date: 10/7/2016
Received Issue Date: 10/7/2016
Action: Email Correspondence
Doc Link:
Title Description Comments:

Shell Pipeline Revised Boring Locations

Action Type: Response Requested - Other
Action Date: 10/7/2016
Received Issue Date: 10/7/2016
Action: Email Correspondence
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5907550
Title Description Comments:

Shell Pipeline Revised Boring Locations

Action Type: Other Regulatory Actions
Action Date: 8/8/2016
Received Issue Date: 8/8/2016
Action: Staff Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6294584&temptable=ENFORCEMENT
Title Description Comments:

Approval of Work Plan for Well Installation and Groundwater Sampling

Action Type: Response Requested - Reports
Action Date: 7/15/2016
Received Issue Date: 7/15/2016
Action: Monitoring Report - Semi-Annually
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5965048
Title Description Comments:

2016 FIRST SEMESTER SEMIANNUAL GROUNDWATER MONITORING REPORT

Action Type: Response Requested - Workplans
Action Date: 3/10/2016
Received Issue Date: 3/9/2016
Action: Well Installation Workplan
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5965044
Title Description Comments:

WELL INSTALLATION WORK PLAN

Action Type: Response Requested - Reports
Action Date: 1/29/2016
Received Issue Date: 1/29/2016
Action: Monitoring Report - Semi-Annually
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5965049
Title Description Comments:

2015 SECOND SEMESTER SEMIANNUAL GROUNDWATER MONITORING REPORT

Action Type: Notices
Action Date: 9/30/2015
Received Issue Date: 9/30/2015
Action: Letter - Notice
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6262702&temptable=ENFORCEMENT
Title Description Comments:

Approval of Request to Merge Three Groundwater Cases

Action Type: Notices
Action Date: 9/2/2015
Received Issue Date: 9/2/2015
Action: Letter - Notice
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6265322&temptable=ENFORCEMENT
Title Description Comments:

Revision to Current Case Tracking Numbers

Action Type: Response Requested - Other
Action Date: 9/2/2015
Received Issue Date: 9/2/2015
Action: Correspondence
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5855803
Title Description Comments:

Revision to Current Case Tracking Numbers (request to merge cases re: groundwater)

Action Type: Response Requested - Reports
Action Date: 7/29/2011
Received Issue Date: 7/30/2011
Action: Monitoring Report - Semi-Annually
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5965051
Title Description Comments:

2011 FIRST SEMESTER SEMIANNUAL GROUNDWATER MONITORING REPORT

Action Type: Response Requested - Reports
Action Date: 1/30/2011
Received Issue Date: 1/31/2011
Action: Monitoring Report - Semi-Annually
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5693389
Title Description Comments:

Groundwater Monitoring Report

Action Type: Response Requested - Reports
Action Date: *9/30/2010
Received Issue Date: 9/30/2010
Action: Site Assessment Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5693388
Title Description Comments:

Conceptual Site Model

Action Type: Enforcement/Orders
Action Date: 8/11/2010
Received Issue Date: 8/11/2010
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6061232&temptable=ENFORCEMENT
Title Description Comments:

Approval of Time Extension Request - for Conceptual Site Model

Action Type: Response Requested - Reports
Action Date: 7/30/2010
Received Issue Date: 7/30/2010
Action: Monitoring Report - Semi-Annually
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5672028
Title Description Comments:

GWM Report

Action Type: Other Regulatory Actions
Action Date: 7/21/2010
Received Issue Date: 7/21/2010
Action: Site Visit / Inspection / Sampling
Doc Link:
Title Description Comments:

Site Visit

Action Type: Other Regulatory Actions
Action Date: 7/8/2010
Received Issue Date: 7/8/2010
Action: Technical Correspondence / Assistance / Other
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6056514&temptable=ENFORCEMENT
Title Description Comments:

Annual Estimation Letter 2010-2011

Action Type: Enforcement/Orders
Action Date: 4/29/2010
Received Issue Date: 4/29/2010
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6049601&temptable=ENFORCEMENT
Title Description Comments:

Requirement for Updated GWM Report and SCM

Action Type: Enforcement - Other
Action Date: 5/16/2003
Received Issue Date: 5/16/2003
Action: * No Action
Doc Link:
Title Description Comments:

Action Type: Response Requested - Other
Action Date: 1/17/2003
Received Issue Date: 1/17/2003
Action: Other Report / Document
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5967693
Title Description Comments:

RESPONSE TO DTSC COMMENT LETTER

Action Type: Response Requested - Reports
Action Date: 9/27/2002
Received Issue Date: 9/27/2002
Action: Technical Memos
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5967692
Title Description Comments:

DRAFT RISK ASSESSMENT LETTER AND ADDITIONAL SOILS TESTING RESULTS FOR PERRY STREET PARK

Action Type: Response Requested - Reports
Action Date: 8/8/2002
Received Issue Date: 8/8/2002
Action: Site Assessment Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5645774
Title Description Comments:

Transmittal Letter Report of Findings, AC Parcel Surface Soil Sampling, Carson, California

Action Type: Response Requested - Reports
Action Date: 7/31/2002
Received Issue Date: 7/31/2002
Action: Site Assessment Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5645784
Title Description Comments:

Technical Report of Additional Soil Vapor, Soil, and Groundwater Sampling - Perry Street Investigation, Carson, California

Action Type: Response Requested - Reports
Action Date: 4/29/2002
Received Issue Date: 4/29/2002
Action: Technical Memos
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5967690
Title Description Comments:

EVALUATION OF BENZENE TRANSPORT THROUGH THE VADOSE ZONE

Action Type: Response Requested - Reports
Action Date: 4/29/2002
Received Issue Date: 4/29/2002
Action: Technical Memos
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5967689
Title Description Comments:

METALS DATA - SOIL

Action Type: Response Requested - Other
Action Date: 4/22/2002
Received Issue Date: 4/22/2002
Action: Other Report / Document
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5967685
Title Description Comments:

DEPARTMENT OF TOXIC SUBSTANCES CONTROL - HUMAN HEALTH RISK ASSESSMENT - UNDEVELOPED ALEXANDER/CATANIA PARCEL

Action Type: Response Requested - Reports
Action Date: 4/3/2002
Received Issue Date: 4/3/2002
Action: Risk Assessment Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5967684
Title Description Comments:

HUMAN HEALTH RISK ASSESSMENT REPORT - UNDEVELOPED ALEXANDER/CATANIA PARCEL

Action Type: Other Regulatory Actions
Action Date: 3/4/2002
Received Issue Date: 3/4/2002
Action: Technical Correspondence / Assistance / Other
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6361545&temptable=ENFORCEMENT
Title Description Comments:

DEPARTMENT OF TOXIC SUBSTANCES CONTROL REVIEW OF CONCEPTUAL SITE MODEL DATED SEPTEMBER 2001

Action Type: Response Requested - Other
Action Date: 11/9/2001
Received Issue Date: 11/9/2001
Action: Other Report / Document
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5967659
Title Description Comments:

TECHNICAL WORK PLAN FOR ADDITIONAL SOIL VAPOR, SOIL, AND GROUNDWATER SAMPLING

Action Type: Enforcement/Orders
Action Date: 10/11/2001
Received Issue Date: 10/11/2001
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6361543&temptable=ENFORCEMENT
Title Description Comments:

REQUEST FOR TECHNICAL WORK PLAN PURSUANT TO SECTION 13267 OF THE CALIFORNIA WATER CODE (cwc) - SHELL OIL COMPANY PERRY STREET PIPELINE RELEASE

Action Type: Response Requested - Reports
Action Date: 9/7/2001
Received Issue Date: 9/10/2001
Action: Site Assessment Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5738462
Title Description Comments:

Conceptual Site Model

Action Type: Response Requested - Other
Action Date: 9/7/2001
Received Issue Date: 9/7/2001
Action: Unknown
Doc Link:
Title Description Comments:

Conceptual Site Model

Action Type: Response Requested - Other
Action Date: 9/7/2001
Received Issue Date: 9/7/2001
Action: Unknown
Doc Link:
Title Description Comments:

Conceptual Site Model

Action Type: Response Requested - Other
Action Date: 5/22/2001
Received Issue Date: 5/22/2001
Action: Other Report / Document
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5967657
Title Description Comments:

WORK PLAN FOR SHALLOW SOIL VAPOR SAMPLING AND GROUNDWATER SAMPLING

Action Type: Response Requested - Workplans
Action Date: 4/30/2001
Received Issue Date: 4/30/2001
Action: Remedial Investigation Workplan
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5967655
Title Description Comments:

WORK PLAN FOR INVESTIGATION AND REMEDIATION OF PERRY STREET PIPELINE INVESTIGATION AREA

Action Type: Other Regulatory Actions
Action Date: 4/19/2001
Received Issue Date: 4/19/2001
Action: Technical Correspondence / Assistance / Other
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6361539&temptable=ENFORCEMENT

Title Description Comments:

REQUEST FOR GROUNDWATER SAMPLING AND SHALLOW SOIL VAPOR SURVEY

Action Type: Other Regulatory Actions
Action Date: 3/13/2001
Received Issue Date: 3/13/2001
Action: Staff Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6361538&temptable=ENFORCEMENT
Title Description Comments:

REQUEST FOR WORK PLAN FOR SOIL AND GROUNDWATER REMEDIATION AND ADDITIONAL SITE ASSESSMENT

Action Type: Other Regulatory Actions
Action Date: 2/9/2001
Received Issue Date: 2/9/2001
Action: Staff Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6361536&temptable=ENFORCEMENT
Title Description Comments:

REPORT REVIEW AND REQUEST WORK PLAN FOR SOIL AND GROUNDWATER REMEDIATION

Action Type: Other Regulatory Actions
Action Date: 9/8/2000
Received Issue Date: 9/8/2000
Action: Staff Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6361533&temptable=ENFORCEMENT
Title Description Comments:

REVIEW INVESTIGATION REPORTS AND REQUEST FOR SOIL AND GROUNDWATER CLEANUP WORK PLAN

Action Type: Other Regulatory Actions
Action Date: 8/13/1999
Received Issue Date: 8/13/1999
Action: Technical Correspondence / Assistance / Other
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6361532&temptable=ENFORCEMENT
Title Description Comments:

HEALTH RISK ASSESSMENT FOR THE SHELL OIL PIPELINE - PERRY STREET SITE

Action Type: Response Requested - Reports
Action Date: 2/19/1998
Received Issue Date: 2/19/1998
Action: Site Assessment Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5967651
Title Description Comments:

REPORT OF FOLLOW-UP INVESTIGATION

Action Type: Response Requested - Workplans
Action Date: 7/3/1997
Received Issue Date: 7/3/1997
Action: Other Workplan
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5967648
Title Description Comments:

WORK PLAN FOR FOLLOW-UP TO ADDITIONAL SOIL CHARACTERIZATION

Action Type: Response Requested - Reports
Action Date: 5/31/1997

Received Issue Date: 5/31/1997
Action: Site Assessment Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5967647
Title Description Comments:

REPORT OF ADDITIONAL SOIL CHARACTERIZATION

Action Type: Response Requested - Other
Action Date: 1/3/1997
Received Issue Date: 1/3/1997
Action: Other Report / Document
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5967646
Title Description Comments:

CLARIFICATIONS TO REVISED WORK PLAN FOR ADDITIONAL SOIL CHARACTERIZATION

Action Type: Response Requested - Other
Action Date: 12/18/1996
Received Issue Date: 12/18/1996
Action: Correspondence
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5967645
Title Description Comments:

RESPONSE TO RWQCB COMMENTS ON THE NOVEMBER 12, 1996 WORK PLAN FOR ADDITIONAL SOIL CHARACTERIZATION

Action Type: Response Requested - Workplans
Action Date: 12/1/1996
Received Issue Date: 12/1/1996
Action: Soil and Water Investigation Workplan
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5967644
Title Description Comments:

REVISED WORK PLAN FOR ADDITIONAL SOIL CHARACTERIZATION IN THE VICINITY OF PERRY STREET AND 215TH PLACE, CARSON, CALIFORNIA

Action Type: Response Requested - Workplans
Action Date: 11/12/1996
Received Issue Date: 11/12/1996
Action: Site Investigation Workplan
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5967643
Title Description Comments:

WORK PLAN FOR ADDITIONAL SOIL CHARACTERIZATION IN THE VICINITY OF PERRY STREET AND 215TH PLACE, CARSON, CALIFORNIA

Action Type: Response Requested - Reports
Action Date: 9/13/1995
Received Issue Date: 9/13/1995
Action: Preliminary Site Assessment Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SLT43288286&doc_id=5967642
Title Description Comments:

PHASE 1 ENVIRONMENTAL SITE ASSESSMENT UPDATE

Sites from GeoTracker Search - Documents (as of Oct 06, 2020)

Document Type: Site Documents
Document Date: 8/17/2020
Size :
Title: APPROVAL OF WORK PLAN FOR INSTALLATION OF GROUNDWATER MONITORING WELLS AND SOIL VAPOR SAMPLING AND REQUIREMENT FOR TECHNICAL REPORTS
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6445297
Type: STAFF LETTER
Submitted:
Submitted By: JEANETTE LIU (REGULATOR)

Document Type: Monitoring Reports **Submitted:**
Document Date: 7/30/2020 **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 26,767 KB
Title: 2020 FIRST SEMI-ANNUAL GROUNDWATER MONITORING REPORT JANUARY THROUGH JUNE 2020
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5396847069/SLT43288286.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY

Document Type: Site Documents **Submitted:**
Document Date: 7/30/2020 **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 1,330 KB
Title: WORK PLAN FOR INSTALLATION OF GROUNDWATER MONITORING WELLS AND SOIL VAPOR SAMPLING
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8316357553/SLT43288286.PDF
Type: SITE INVESTIGATION WORKPLAN

Document Type: Site Documents **Submitted:**
Document Date: 5/26/2020 **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 884 KB
Title: ACETONE RESULT FOR WELL MW-3 - 2019 SECOND SEMI-ANNUAL GROUNDWATER MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2461324870/SLT43288286.PDF
Type: TECHNICAL MEMOS

Document Type: Site Documents **Submitted:**
Document Date: 5/13/2020 **Submitted By:** JEANETTE LIU (REGULATOR)
Size :
Title: COMMENTS ON REMEDIAL INVESTIGATION REPORT AND REQUIREMENT FOR WORK PLANS FOR ADDITIONAL SITE ASSESSMENT
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6435276
Type: STAFF LETTER

Document Type: Site Documents **Submitted:**
Document Date: 3/27/2020 **Submitted By:** JEANETTE LIU (REGULATOR)
Size :
Title: COMMENTS ON 2019 SECOND SEMI-ANNUAL GROUNDWATER MONITORING REPORT DATED JANUARY 7, 2020
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6431138
Type: STAFF LETTER

Document Type: Monitoring Reports **Submitted:**
Document Date: 1/7/2020 **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 14,069 KB
Title: 2019 SECOND SEMI-ANNUAL GROUNDWATER MONITORING REPORT JULY THROUGH DECEMBER 2019
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3135591983/SLT43288286.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY

Document Type: Monitoring Reports **Submitted:**
Document Date: 7/2/2019 **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 10,716 KB
Title: 2019 FIRST SEMI-ANNUAL GROUNDWATER MONITORING REPORT JANUARY THROUGH JUNE 2019
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8807473242/SLT43288286.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY

Document Type: Site Documents **Submitted:**
Document Date: 1/31/2019* **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 56,907 KB
Title: REMEDIAL INVESTIGATION REPORT REVISED
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1340918421/SLT43288286.PDF
Type: REMEDIAL INVESTIGATION REPORT

Document Type: Monitoring Reports **Submitted:**
Document Date: 12/21/2018 **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 10,707 KB
Title: 2018 SECOND SEMIANNUAL GROUNDWATER MONITORING REPORT JULY THROUGH DECEMBER 2018
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3557080209/SLT43288286.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY

Document Type: Site Documents **Submitted:**
Document Date: 8/29/2018 **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 57,258 KB

Title: REMEDIAL INVESTIGATION REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2751288294/SLT43288286.PDF
Type: REMEDIAL INVESTIGATION REPORT

Document Type: Monitoring Reports **Submitted:**
Document Date: 7/23/2018 **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 9,219 KB
Title: 2018 FIRST SEMI-ANNUAL GROUNDWATER MONITORING REPORT JANUARY THROUGH JUNE
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5912118732/SLT43288286.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY

Document Type: Site Documents **Submitted:**
Document Date: 6/14/2018 **Submitted By:** JEANETTE LIU (REGULATOR)
Size :
Title: APPROVAL OF TIME EXTENSION REQUEST FOR REMEDIAL INVESTIGATION REPORT
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6361152
Type: STAFF LETTER

Document Type: Site Documents **Submitted:**
Document Date: 6/11/2018 **Submitted By:** JEANETTE LIU (REGULATOR)
Size :
Title: TIME EXTENSION REQUEST FOR REMEDIAL INVESTIGATION REPORT SUBMITTAL
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&document_id=5967629
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 3/13/2018 **Submitted By:** JEANETTE LIU (REGULATOR)
Size :
Title: APPROVAL OF RESPONSE TO COMMENTS ON THE REGIONAL BOARD LETTER DATED DECEMBER 21, 2017
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6351206
Type: STAFF LETTER

Document Type: Site Documents **Submitted:**
Document Date: 2/28/2018 **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 199 KB
Title: RESPONSE TO COMMENTS REQUIREMENTS FOR WORK PLAN FOR ADDITIONAL SOIL GAS ASSESSMENT AND GROUNDWATER ASSESSMENT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3990561127/SLT43288286.PDF
Type: RESPONSE TO COMMENTS

Document Type: Site Documents **Submitted:**
Document Date: 12/21/2017 **Submitted By:** JEANETTE LIU (REGULATOR)
Size :
Title: REQUIREMENT FOR WORK PLAN FOR ADDITIONAL SOIL GAS ASSESSMENT AND GROUNDWATER ASSESSMENT
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6343984
Type: STAFF LETTER

Document Type: Monitoring Reports **Submitted:**
Document Date: 12/19/2017 **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 19,555 KB
Title: 2017 SECOND SEMI-ANNUAL GROUNDWATER MONITORING REPORT JULY THROUGH DECEMBER 2017
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5476648151/SLT43288286.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY

Document Type: Monitoring Reports **Submitted:**
Document Date: 7/28/2017 **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 12,724 KB
Title: 2017 FIRST SEMI-ANNUAL GROUNDWATER MONITORING REPORT JANUARY THROUGH JUNE 2017
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1487159430/SLT43288286.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY

Document Type: Monitoring Reports **Submitted:**
Document Date: 1/13/2017 **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 9,397 KB
Title: 2016 SECOND SEMI-ANNUAL GROUNDWATER MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6926490485/SLT43288286.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY

Document Type: Site Documents
Document Date: 1/10/2017
Size : 4,872 KB
Title: GROUNDWATER MONITORING WELL INSTALLATION REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3113211095/SLT43288286.PDF
Type: WELL INSTALLATION REPORT
Submitted:
Submitted By: JESSICA CURRAN (CONTRACTOR)

Document Type: Site Documents
Document Date: 10/7/2016
Size :
Title: SHELL PIPELINE REVISED BORING LOCATIONS
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&document_id=5907550
Type: EMAIL CORRESPONDENCE
Submitted:
Submitted By: JEANETTE LIU (REGULATOR)

Document Type: Site Documents
Document Date: 8/8/2016
Size :
Title: APPROVAL OF WORK PLAN FOR WELL INSTALLATION AND GROUNDWATER SAMPLING
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6294584
Type: STAFF LETTER
Submitted:
Submitted By: JEANETTE LIU (REGULATOR)

Document Type: Monitoring Reports
Document Date: 7/15/2016*
Size : 21,395 KB
Title: 2016 FIRST SEMI-ANNUAL GROUNDWATER MONITORING REPORT JANUARY THROUGH JUNE 2016
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5159002721/SLT43288286.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY
Submitted:
Submitted By: JESSICA CURRAN (CONTRACTOR)

Document Type: Site Documents
Document Date: 3/9/2016*
Size : 806 KB
Title: WELL INSTALLATION WORK PLAN
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1743827521/SLT43288286.PDF
Type: WELL INSTALLATION WORKPLAN
Submitted:
Submitted By: JESSICA CURRAN (CONTRACTOR)

Document Type: Monitoring Reports
Document Date: 1/29/2016*
Size : 16,979 KB
Title: 2015 SECOND SEMI-ANNUAL GROUNDWATER MONITORING REPORT JULY THROUGH DECEMBER 2015
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9742639899/SLT43288286.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY
Submitted:
Submitted By: JESSICA CURRAN (CONTRACTOR)

Document Type: Site Documents
Document Date: 9/30/2015
Size :
Title: APPROVAL OF REQUEST TO MERGE THREE GROUNDWATER CASES
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6262702
Type: LETTER - NOTICE
Submitted:
Submitted By: GREG BISHOP (REGULATOR)

Document Type: Site Documents
Document Date: 9/2/2015
Size :
Title: REVISION TO CURRENT CASE TRACKING NUMBERS
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6265322
Type: LETTER - NOTICE
Submitted:
Submitted By: ASHEEKA PRASAD (REGULATOR)

Document Type: Site Documents
Document Date: 9/2/2015
Size :
Title: REVISION TO CURRENT CASE TRACKING NUMBERS (REQUEST TO MERGE CASES RE: GROUNDWATER)
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&document_id=5855803
Type: CORRESPONDENCE
Submitted:
Submitted By: GREG BISHOP (REGULATOR)

Document Type: Monitoring Reports
Document Date: 7/30/2011
Size : 3,398 KB
Title: 1ST SEMI-ANNUAL GROUNDWATER MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8801411449/SLT43288286.PDF
Submitted:
Submitted By: JESSICA CURRAN (CONTRACTOR)

Type: MONITORING REPORT - SEMI-ANNUALLY

Document Type: Monitoring Reports **Submitted:**
Document Date: 1/27/2011 **Submitted By:** EDMOND BOURKE (AUTH_RP)
Size : 1,964 KB
Title: 2ND SEMI-ANNUAL GROUNDWATER REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5140412330/SLT43288286.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY

Document Type: Site Documents **Submitted:**
Document Date: 1/27/2011 **Submitted By:** EDMOND BOURKE (AUTH_RP)
Size : 2,740 KB
Title: CONCEPTUAL SITE MODEL ADDITIONAL INFORMATION TM
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6159326136/SLT43288286.PDF
Type: OTHER REPORT / DOCUMENT

Document Type: Site Documents **Submitted:**
Document Date: 9/30/2010 **Submitted By:** EDMOND BOURKE (AUTH_RP)
Size : 5,726 KB
Title: CONCEPTUAL SITE MODEL
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1725861549/SLT43288286.PDF
Type: SITE CONCEPTUAL MODEL

Document Type: Site Documents **Submitted:**
Document Date: 8/11/2010 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF TIME EXTENSION REQUEST - FOR CONCEPTUAL SITE MODEL
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6061232
Type: 13267 REQUIREMENT

Document Type: Monitoring Reports **Submitted:**
Document Date: 7/30/2010 **Submitted By:** EDMOND BOURKE (AUTH_RP)
Size : 6,281 KB
Title: GROUNDWATER TECHNICAL REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2289094328/SLT43288286.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY

Document Type: Site Documents **Submitted:**
Document Date: 7/8/2010 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: ANNUAL ESTIMATION LETTER 2010-2011
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6056514
Type: TECHNICAL CORRESPONDENCE / ASSISTANCE / OTHER

Document Type: Site Documents **Submitted:**
Document Date: 4/29/2010 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: REQUIREMENT FOR UPDATED GWM REPORT AND SCM
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6049601
Type: 13267 REQUIREMENT

Document Type: Site Documents **Submitted:**
Document Date: 1/17/2003 **Submitted By:** JEANETTE LIU (REGULATOR)
Size :
Title: RESPONSE TO DTSC COMMENT LETTER
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&document_id=5967693
Type: OTHER REPORT / DOCUMENT

Document Type: Site Documents **Submitted:**
Document Date: 9/27/2002 **Submitted By:** JEANETTE LIU (REGULATOR)
Size :
Title: DRAFT RISK ASSESSMENT LETTER AND ADDITIONAL SOILS TESTING RESULTS FOR PERRY STREET PARK
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&document_id=5967692
Type: TECHNICAL MEMOS

Document Type: Site Documents **Submitted:**
Document Date: 8/8/2002 **Submitted By:** GREG BISHOP (REGULATOR)
Size :

Title: TRANSMITTAL LETTER REPORT OF FINDINGS, AC PARCEL SURFACE SOIL SAMPLING, CARSON, CALIFORNIA
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&document_id=5645774
Type: SITE ASSESSMENT REPORT

Document Type: Site Documents **Submitted:**
Document Date: 7/31/2002 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: TECHNICAL REPORT OF ADDITIONAL SOIL VAPOR, SOIL, AND GROUNDWATER SAMPLING - PERRY STREET INVESTIGATION, CARSON, CALIFORNIA
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&document_id=5645784
Type: SITE ASSESSMENT REPORT

Document Type: Site Documents **Submitted:**
Document Date: 4/29/2002 **Submitted By:** JEANETTE LIU (REGULATOR)
Size :
Title: EVALUATION OF BENZENE TRANSPORT THROUGH THE VADOSE ZONE
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&document_id=5967690
Type: TECHNICAL MEMOS

Document Type: Site Documents **Submitted:**
Document Date: 4/29/2002 **Submitted By:** JEANETTE LIU (REGULATOR)
Size :
Title: METALS DATA - SOIL
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&document_id=5967689
Type: TECHNICAL MEMOS

Document Type: Site Documents **Submitted:**
Document Date: 4/22/2002 **Submitted By:** JEANETTE LIU (REGULATOR)
Size :
Title: DEPARTMENT OF TOXIC SUBSTANCES CONTROL - HUMAN HEALTH RISK ASSESSMENT - UNDEVELOPED ALEXANDER/CATANIA PARCEL
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&document_id=5967685
Type: OTHER REPORT / DOCUMENT

Document Type: Site Documents **Submitted:**
Document Date: 4/3/2002 **Submitted By:** JEANETTE LIU (REGULATOR)
Size :
Title: HUMAN HEALTH RISK ASSESSMENT REPORT - UNDEVELOPED ALEXANDER/CATANIA PARCEL
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&document_id=5967684
Type: RISK ASSESSMENT REPORT

Document Type: Site Documents **Submitted:**
Document Date: 3/4/2002 **Submitted By:** JEANETTE LIU (REGULATOR)
Size :
Title: DEPARTMENT OF TOXIC SUBSTANCES CONTROL REVIEW OF CONCEPTUAL SITE MODEL DATED SEPTEMBER 2001
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6361545
Type: TECHNICAL CORRESPONDENCE / ASSISTANCE / OTHER

Document Type: Site Documents **Submitted:**
Document Date: 11/9/2001 **Submitted By:** JEANETTE LIU (REGULATOR)
Size :
Title: TECHNICAL WORK PLAN FOR ADDITIONAL SOIL VAPOR, SOIL, AND GROUNDWATER SAMPLING
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&document_id=5967659
Type: OTHER REPORT / DOCUMENT

Document Type: Site Documents **Submitted:**
Document Date: 10/11/2001 **Submitted By:** JEANETTE LIU (REGULATOR)
Size :
Title: REQUEST FOR TECHNICAL WORK PLAN PURSUANT TO SECTION 13267 OF THE CALIFORNIA WATER CODE (CWC) - SHELL OIL COMPANY PERRY STREET PIPELINE RELEASE
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6361543
Type: 13267 REQUIREMENT

Document Type: Site Documents **Submitted:**
Document Date: 9/10/2001 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: CONCEPTUAL SITE MODEL

Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&document_id=5738462
Type: SITE ASSESSMENT REPORT

Document Type: Site Documents **Submitted:**
Document Date: 5/22/2001 **Submitted By:** JEANETTE LIU (REGULATOR)
Size :
Title: WORK PLAN FOR SHALLOW SOIL VAPOR SAMPLING AND GROUNDWATER SAMPLING
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&document_id=5967657
Type: OTHER REPORT / DOCUMENT

Document Type: Site Documents **Submitted:**
Document Date: 4/30/2001 **Submitted By:** JEANETTE LIU (REGULATOR)
Size :
Title: WORK PLAN FOR INVESTIGATION AND REMEDIATION OF PERRY STREET PIPELINE INVESTIGATION AREA
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&document_id=5967655
Type: REMEDIAL INVESTIGATION WORKPLAN

Document Type: Site Documents **Submitted:**
Document Date: 4/19/2001 **Submitted By:** JEANETTE LIU (REGULATOR)
Size :
Title: REQUEST FOR GROUNDWATER SAMPLING AND SHALLOW SOIL VAPOR SURVEY
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6361539
Type: TECHNICAL CORRESPONDENCE / ASSISTANCE / OTHER

Document Type: Site Documents **Submitted:**
Document Date: 3/13/2001 **Submitted By:** JEANETTE LIU (REGULATOR)
Size :
Title: REQUEST FOR WORK PLAN FOR SOIL AND GROUNDWATER REMEDIATION AND ADDITIONAL SITE ASSESSMENT
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6361538
Type: STAFF LETTER

Document Type: Site Documents **Submitted:**
Document Date: 2/9/2001 **Submitted By:** JEANETTE LIU (REGULATOR)
Size :
Title: REPORT REVIEW AND REQUEST WORK PLAN FOR SOIL AND GROUNDWATER REMEDIATION
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6361536
Type: STAFF LETTER

Document Type: Site Documents **Submitted:**
Document Date: 9/8/2000 **Submitted By:** JEANETTE LIU (REGULATOR)
Size :
Title: REVIEW INVESTIGATION REPORTS AND REQUEST FOR SOIL AND GROUNDWATER CLEANUP WORK PLAN
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6361533
Type: STAFF LETTER

Document Type: Site Documents **Submitted:**
Document Date: 8/13/1999 **Submitted By:** JEANETTE LIU (REGULATOR)
Size :
Title: HEALTH RISK ASSESSMENT FOR THE SHELL OIL PIPELINE - PERRY STREET SITE
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&enforcement_id=6361532
Type: TECHNICAL CORRESPONDENCE / ASSISTANCE / OTHER

Document Type: Site Documents **Submitted:**
Document Date: 2/19/1998 **Submitted By:** JEANETTE LIU (REGULATOR)
Size :
Title: REPORT OF FOLLOW-UP INVESTIGATION
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&document_id=5967651
Type: SITE ASSESSMENT REPORT

Document Type: Site Documents **Submitted:**
Document Date: 7/3/1997 **Submitted By:** JEANETTE LIU (REGULATOR)
Size :
Title: WORK PLAN FOR FOLLOW-UP TO ADDITIONAL SOIL CHARACTERIZATION
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&document_id=5967648
Type: OTHER WORKPLAN

Document Type: Site Documents **Submitted:**
Document Date: 5/31/1997 **Submitted By:** JEANETTE LIU (REGULATOR)
Size :
Title: REPORT OF ADDITIONAL SOIL CHARACTERIZATION
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&document_id=5967647
Type: SITE ASSESSMENT REPORT

Document Type: Site Documents **Submitted:**
Document Date: 1/3/1997 **Submitted By:** JEANETTE LIU (REGULATOR)
Size :
Title: CLARIFICATIONS TO REVISED WORK PLAN FOR ADDITIONAL SOIL CHARACTERIZATION
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&document_id=5967646
Type: OTHER REPORT / DOCUMENT

Document Type: Site Documents **Submitted:**
Document Date: 12/18/1996 **Submitted By:** JEANETTE LIU (REGULATOR)
Size :
Title: RESPONSE TO RWQCB COMMENTS ON THE NOVEMBER 12, 1996 WORK PLAN FOR ADDITIONAL SOIL CHARACTERIZATION
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&document_id=5967645
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 12/1/1996 **Submitted By:** JEANETTE LIU (REGULATOR)
Size :
Title: REVISED WORK PLAN FOR ADDITIONAL SOIL CHARACTERIZATION IN THE VICINITY OF PERRY STREET AND 215TH PLACE, CARSON, CALIFORNIA
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&document_id=5967644
Type: SOIL AND WATER INVESTIGATION WORKPLAN

Document Type: Site Documents **Submitted:**
Document Date: 11/12/1996 **Submitted By:** JEANETTE LIU (REGULATOR)
Size :
Title: WORK PLAN FOR ADDITIONAL SOIL CHARACTERIZATION IN THE VICINITY OF PERRY STREET AND 215TH PLACE, CARSON, CALIFORNIA
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&document_id=5967643
Type: SITE INVESTIGATION WORKPLAN

Document Type: Site Documents **Submitted:**
Document Date: 9/13/1995 **Submitted By:** JEANETTE LIU (REGULATOR)
Size :
Title: PHASE 1 ENVIRONMENTAL SITE ASSESSMENT UPDATE
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43288286&document_id=5967642
Type: PRELIMINARY SITE ASSESSMENT REPORT

Sites from GeoTracker Search - Site Maps (as of Oct 06, 2020)

Title: MW-1 (MW-1) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 218 KB **Submitted:** 1/2/2019
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/3713635385/SLT43288286.PDF

Title: MW-9B (MW-9B) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 154 KB **Submitted:** 12/13/2017
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/2444617927/SLT43288286.PDF

Title: MW-9A (MW-9A) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 113 KB **Submitted:** 12/13/2017
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/1952322602/SLT43288286.PDF

Title: MW-8A (MW-8A) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 108 KB **Submitted:** 12/13/2017
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/9613540887/SLT43288286.PDF

Title: MW-7B (MW-7B) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 163 KB **Submitted:** 12/13/2017
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/5275598347/SLT43288286.PDF

Title: MW-3 (MW-3) **Submitted By:** JESSICA CURRAN (CONTRACTOR)

Size : 134 KB **Submitted:** 12/13/2017
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/4043677985/SLT43288286.PDF

Title: MW-5 (MW-5) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 96 KB **Submitted:** 12/13/2017
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/3313440144/SLT43288286.PDF

Title: MW-8C (MW-8C) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 209 KB **Submitted:** 12/13/2017
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/9598160028/SLT43288286.PDF

Title: MW-6B (MW-6B) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 153 KB **Submitted:** 12/13/2017
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/6568268060/SLT43288286.PDF

Title: MW-4 (MW-4) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 115 KB **Submitted:** 12/13/2017
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/1268060505/SLT43288286.PDF

Title: MW-6C (MW-6C) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 205 KB **Submitted:** 12/13/2017
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/3320532441/SLT43288286.PDF

Title: MW-2 (MW-2) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 105 KB **Submitted:** 12/13/2017
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/6496513068/SLT43288286.PDF

Title: MW-9C (MW-9C) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 211 KB **Submitted:** 12/13/2017
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/5979400873/SLT43288286.PDF

Title: MW-7A (MW-7A) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 116 KB **Submitted:** 12/13/2017
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/4449151813/SLT43288286.PDF

Title: MW-7C (MW-7C) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 235 KB **Submitted:** 12/13/2017
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/1706955194/SLT43288286.PDF

Title: MW-8B (MW-8B) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 147 KB **Submitted:** 12/13/2017
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/4076989948/SLT43288286.PDF

Title: A/C MW-5B (A/C MW-5B) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 189 KB **Submitted:** 1/10/2017
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/4214515388/SLT43288286.PDF

Title: A/C MW-6B (A/C MW-6B) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 197 KB **Submitted:** 1/10/2017
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/9143694043/SLT43288286.PDF

Title: A/C MW-8A (A/C MW-8A) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 130 KB **Submitted:** 1/10/2017
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/7402136266/SLT43288286.PDF

Title: A/C MW-8B (A/C MW-8B) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 139 KB **Submitted:** 1/10/2017
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/4696916580/SLT43288286.PDF

Title: A/C MW-7B (A/C MW-7B) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 132 KB **Submitted:** 1/10/2017
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/8038032233/SLT43288286.PDF

Title: A/C MW-6A (A/C MW-6A) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 135 KB **Submitted:** 1/10/2017
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/8899939179/SLT43288286.PDF

Title: A/C MW-5A (A/C MW-5A) **Submitted By:** JESSICA CURRAN (CONTRACTOR)
Size : 144 KB **Submitted:** 1/10/2017

Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/9953016817/SLT43288286.PDF

Title: A/C MW-7A (A/C MW-7A)
Size : 114 KB
Submitted By: JESSICA CURRAN (CONTRACTOR)
Submitted: 1/10/2017
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/7509416580/SLT43288286.PDF

Sites from GeoTracker Search - Cleanup Status History (as of Oct 06, 2020)

Status: Open - Site Assessment
Date : 9/2/2015

Status: Open - Site Assessment
Date : 9/8/2000

Status: Open - Case Begin Date
Date : 3/1/1999

Sites from GeoTracker Search - Related Cases (as of Oct 06, 2020)

Identifier: SL204EC2405
Status: COMPLETED - CASE CLOSED
Association: Related Global ID
Description:
Address: 21611 PERRY ST
City: CARSON
Project Name: CARSON AIR HARBOR
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=SL204EC2405

Identifier: T10000003058
Status: OPEN - SITE ASSESSMENT
Association: Related Global ID
Description:
Address: N/A Carson Street
City: CARSON
Project Name: Dominguez Channel @ Carson Street (RELLC)
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000003058

Identifier: SLT4L4901823
Status: COMPLETED - CASE CLOSED
Association: Related Global ID
Description:
Address: 1211 CARSON AVE.
City: CARSON
Project Name: SHELL PIPELINE LEAK - COLONY HOLDINGS
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=SLT4L4901823

Identifier: T10000003007
Status: COMPLETED - CASE CLOSED
Association: Related Global ID
Description:
Address: Carson Street
City: CARSON
Project Name: Shell Pipeline 0367 - Dominguez Channel @ Carson
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000003007

13	1 of 1	N	0.05 / 240.30	17.48 / 0	JANE ALIMURUNG 21508 ALVAR PL CARSON CA 90745	RCRA NON GEN

EPA Handler ID: CAC003052160
Gen Status Universe: No Report
Contact Name: JANE ALIMURUNG
Contact Address: 21508 ALVAR PL, , CARSON, CA, 90745,
Contact Phone No and Ext: 310-756-2120
Contact Email: NANCYRUIZ@ALLIANCE-ENVIRO.COM
Contact Country:
County Name: LOS ANGELES
EPA Region: 09
Land Type:
Receive Date: 20200121

Violation/Evaluation Summary

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Note: NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility:	No
Onsite Burner Exemption:	No
Furnace Exemption:	No
Underground Injection Activity:	No
Commercial TSD:	No
Used Oil Transporter:	No
Used Oil Transfer Facility:	No
Used Oil Processor:	No
Used Oil Refiner:	No
Used Oil Burner:	No
Used Oil Market Burner:	No
Used Oil Spec Marketer:	No

Hazardous Waste Handler Details

Sequence No:	1
Receive Date:	20200121
Handler Name:	JANE ALIMURUNG
Source Type:	Implementer
Federal Waste Generator Code:	N
Generator Code Description:	Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind:	Current Operator	**Street No:**	
Type:	Other	**Street 1:**	21508 ALVAR PL
Name:	JANE ALIMURUNG	**Street 2:**	
Date Became Current:		**City:**	CARSON
Date Ended Current:		**State:**	CA
Phone:	310-756-2120	**Country:**	
Source Type:	Implementer	**Zip Code:**	90745
Owner/Operator Ind:	Current Owner	**Street No:**	
Type:	Other	**Street 1:**	21508 ALVAR PL
Name:	JANE ALIMURUNG	**Street 2:**	
Date Became Current:		**City:**	CARSON
Date Ended Current:		**State:**	CA
Phone:	310-756-2120	**Country:**	
Source Type:	Implementer	**Zip Code:**	90745

14	*1 of 1*	***WSW***	***0.05 / 244.39***	***18.38 / 1***	***DISCOUNT VANS 1135 E CARSON ST CARSON CA 90745***	***LA COUNTY CUPA***

Facility ID:	FA0006721
CERS ID:	0

Inactive Facility Details

PE:	3001

15	*1 of 1*	***E***	***0.05 / 280.43***	***18.07 / 1***	***SHELL PIPELINE LEAK - COLONY HOLDINGS 1211 CARSON AVE.***	***CLEANUP SITES***

CARSON CA 90810

Global ID:	SLT4L4901823	***Site Facility Type:***	CLEANUP PROGRAM SITE
Status:	COMPLETED - CASE CLOSED	***County:***	LOS ANGELES
Status Date:	10/23/2015	***Latitude:***	33.8321731914137
Longitude:	-118.251836299896		
Data Source:	Cleanup Program Sites from GeoTracker Search; Cleanup Sites from GeoTracker Cleanup Sites Data Download		

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail(as Nov 16 2020)

RB Case No:	0490A	***CUF Case:***	NO
Local Case No:		***Case Worker:***	PC
Begin Date:		***File Location:***	Regional Board
Stop Method:	Other Means		
Lead Agency:	LOS ANGELES RWQCB (REGION 4)		
Local Agency:			
Potential COC:			
Potential Media of Concern:	Other Groundwater (uses other than drinking water), Soil, Soil Vapor		
How Discovered:			
How Discovered Description:			
Stop Description:			
Calwater Watershed Name:	Dominguez Channel (411.01)		
DWR GW Subbasin Name:	Coastal Plain Of Los Angeles - West Coast (4-011.03)		
Disadvantaged Community:			
Site History:			

This case has been merged into SCP Case 0490A (GeoTracker Global ID: SLT4L4901823).

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Activity(as Nov 16 2020)

Action Type:	ENFORCEMENT
Date :	2015-09-30 00:00:00
Action:	Letter - Notice
Action Type:	ENFORCEMENT
Date :	2015-09-02 00:00:00
Action:	Arbitration/Dispute Resolution
Action Type:	RESPONSE
Date :	2011-06-08 00:00:00
Action:	Site Investigation Workplan
Action Type:	ENFORCEMENT
Date :	2011-04-26 00:00:00
Action:	13267 Requirement
Action Type:	ENFORCEMENT
Date :	2010-07-08 00:00:00
Action:	Technical Correspondence / Assistance / Other
Action Type:	Other
Date :	1965-01-02 00:00:00
Action:	Leak Reported
Action Type:	Other
Date :	1965-01-02 00:00:00
Action:	Leak Stopped

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History(as Nov 16 2020)

Status:	Completed - Case Closed
Status Date:	2015-10-23 00:00:00
Status:	Open - Site Assessment

Status Date: 2015-10-20 00:00:00

Status: Completed - Case Closed
Status Date: 2015-09-02 00:00:00

Status: Open - Site Assessment
Status Date: 2010-08-04 00:00:00

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Contacts(as Nov 16 2020)

Contact Type: Regional Board Caseworker
Contact Name: PAUL CHO
Phone No:
Organization Name: LOS ANGELES RWQCB (REGION 4)
Email: pcho@waterboards.ca.gov
Address: 320 W. 4TH ST., SUITE 200
City: LOS ANGELES

Cleanup Program Sites from GeoTracker Search - Regulatory Profile (as of Oct 06, 2020)

Project Status:
CUF Claim:
CUF Priority Assign:
CUF Amount Paid:
Facility Type:
User Defined Beneficial Use:
Designated Beneficial Use: MUN, AGR, IND, PROC
Designated Beneficl Use Desc: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, Industrial Process Supply
Project Oversight Agencies:
Report Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=SLT4L4901823
Cleanup Status Detail: COMPLETED - CASE CLOSED AS OF 10/23/2015
Cleanup History Link: https://geotracker.waterboards.ca.gov/profile_report_include?global_id=SLT4L4901823&tabname=regulatoryhistory
Potential COC: PETROLEUM/FUELS/OILS, VOLATILE ORGANIC COMPOUNDS
Potential Media of Concern: OTHER GROUNDWATER (USES OTHER THAN DRINKING WATER), SOIL, SOIL VAPOR
GW Monitoring Freq:
DWR GW Sub Basin: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Calwater Watershed Name: Dominguez Channel (411.01)
Post Closure Site Management:
Future Land Use:
Cleanup Oversight Agencies: LOS ANGELES RWQCB (REGION 4) (LEAD) - CASE #: 0490A
CASEWORKER: PAUL CHO
Site History:

WDR Place Type:
WDR File:
WDR Order:
File Location: REGIONAL BOARD
Composting Method:

This case has been merged into SCP Case 0490A (GeoTracker Global ID: SLT4L4901823).

Sites from GeoTracker Search - Regulatory Activities (as of Oct 06, 2020)

Action Type: Notices
Action Date: 9/30/2015
Received Issue Date: 9/30/2015
Action: Letter - Notice
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SLT4L4901823&enforcement_id=6262700&temptable=ENFORCEMENT
Title Description Comments:

Approval of Request to Merge Three Groundwater Cases

Action Type: Other Regulatory Actions
Action Date: 9/2/2015
Received Issue Date: 9/2/2015
Action: Arbitration/Dispute Resolution
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SLT4L4901823&enforcement_id=6265324&temptable=ENFORCEMENT
Title Description Comments:

Revision to Current Case Tracking Numbers

Action Type: Response Requested - Workplans
Action Date: 6/8/2011
Received Issue Date:
Action: Site Investigation Workplan
Doc Link:
Title Description Comments:

Site Investigation Work Plan

Action Type: Enforcement/Orders
Action Date: 4/26/2011
Received Issue Date: 4/26/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SLT4L4901823&enforcement_id=6085591&temptable=ENFORCEMENT
Title Description Comments:

Requirement for Technical Report

Action Type: Other Regulatory Actions
Action Date: 7/8/2010
Received Issue Date: 7/8/2010
Action: Technical Correspondence / Assistance / Other
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SLT4L4901823&enforcement_id=6056512&temptable=ENFORCEMENT
Title Description Comments:

Annual Estimation Letter 2010-2011

Action Type: Leak Action
Action Date: 1/2/1965
Received Issue Date:
Action: Leak Reported
Doc Link:
Title Description Comments:

Action Type: Leak Action
Action Date: 1/2/1965
Received Issue Date:
Action: Leak Stopped
Doc Link:
Title Description Comments:

Sites from GeoTracker Search - Documents (as of Oct 06, 2020)

Document Type: Site Documents ***Submitted:***
Document Date: 9/30/2015 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF REQUEST TO MERGE THREE GROUNDWATER CASES
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT4L4901823&enforcement_id=6262700
Type: LETTER - NOTICE

Document Type: Site Documents ***Submitted:***
Document Date: 9/2/2015 ***Submitted By:*** ASHEEKA PRASAD (REGULATOR)
Size :
Title: REVISION TO CURRENT CASE TRACKING NUMBERS
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT4L4901823&enforcement_id=6265324
Type: ARBITRATION/DISPUTE RESOLUTION

Document Type: Site Documents ***Submitted:***
Document Date: 4/26/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)

Size :
Title: REQUIREMENT FOR TECHNICAL REPORT
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT4L4901823&enforcement_id=6085591
Type: 13267 REQUIREMENT

Document Type: Site Documents
Document Date: 7/8/2010
Submitted:
Submitted By: GREG BISHOP (REGULATOR)
Size :
Title: ANNUAL ESTIMATION LETTER 2010-2011
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT4L4901823&enforcement_id=6056512
Type: TECHNICAL CORRESPONDENCE / ASSISTANCE / OTHER

Sites from GeoTracker Search - Cleanup Status History (as of Oct 06, 2020)

Status: Completed - Case Closed
Date : 10/23/2015

Status: Open - Site Assessment
Date : 10/20/2015

Status: Completed - Case Closed
Date : 9/2/2015

Status: Open - Site Assessment
Date : 8/4/2010

Sites from GeoTracker Search - Related Cases (as of Oct 06, 2020)

Identifier: SL204EC2405
Address: 21611 PERRY ST
Status: COMPLETED - CASE CLOSED
City: CARSON
Association: Related Global ID
Description:
Project Name: CARSON AIR HARBOR
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=SL204EC2405

Identifier: SLT43288286
Address: 21500 PERRY ST
Status: OPEN - SITE ASSESSMENT
City: CARSON
Association: Related Global ID
Description:
Project Name: SHELL PIPELINE
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=SLT43288286

Identifier: T10000003007
Address: Carson Street
Status: COMPLETED - CASE CLOSED
City: CARSON
Association: Related Global ID
Description:
Project Name: Shell Pipeline 0367 - Dominguez Channel @ Carson
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000003007

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16 ***1 of 1*** ***SE*** ***0.06 / 303.72*** ***19.39 / 2***

COURTLAND PROWELL
"1216 CARSON STREET, EAST"
CARSON CA 90810

CLEANUP SITES

Global ID: SL0603720103
Site Facility Type: CLEANUP PROGRAM SITE
Status: COMPLETED - CASE CLOSED
County: LOS ANGELES
Status Date: 2/1/2002
Latitude: 33.8314067436534
Longitude: -118.253102302551
Data Source: Cleanup Program Sites from GeoTracker Search; Cleanup Sites from GeoTracker Cleanup Sites Data Download

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail(as Nov 16 2020)

RB Case No: 1110B
CUF Case: NO
Local Case No:
Case Worker: PC
Begin Date: 5/30/2000
File Location:
Stop Method:

Lead Agency: LOS ANGELES RWQCB (REGION 4)
Local Agency:
Potential COC:
Potential Media of Concern:
How Discovered:
How Discovered Description:
Stop Description:
Calwater Watershed Name: Dominguez Channel (411.01)
DWR GW Subbasin Name: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Disadvantaged Community:
Site History:

This site was closed on September 20, 2013. Petroleum impacts remain at the site and are being addressed under Regional Board SCP Case No. 1264 (GeoTracker Global ID No. T10000003058).

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Activity(as Nov 16 2020)

Action Type: ENFORCEMENT
Date : 2013-09-18 00:00:00
Action: Closure/No Further Action Letter

Action Type: ENFORCEMENT
Date : 2011-07-21 00:00:00
Action: Technical Correspondence / Assistance / Other

Action Type: RESPONSE
Date : 2011-06-16 00:00:00
Action: Site Assessment Report

Action Type: RESPONSE
Date : 2011-05-27 00:00:00
Action: Site Investigation Workplan

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History(as Nov 16 2020)

Status: Open - Site Assessment
Status Date: 2002-02-01 00:00:00

Status: Completed - Case Closed
Status Date: 2002-02-01 00:00:00

Status: Open - Case Begin Date
Status Date: 2000-05-30 00:00:00

Status: Open - Site Assessment
Status Date: 2000-05-30 00:00:00

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Contacts(as Nov 16 2020)

Contact Type: Regional Board Caseworker
Contact Name: PAUL CHO
Phone No:
Organization Name: LOS ANGELES RWQCB (REGION 4)
Email: pcho@waterboards.ca.gov
Address: 320 W. 4TH ST., SUITE 200
City: LOS ANGELES

Cleanup Program Sites from GeoTracker Search - Regulatory Profile (as of Oct 06, 2020)

Project Status:
CUF Claim:
CUF Priority Assign:
CUF Amount Paid:
Facility Type:
User Defined Beneficial Use:
Designated Beneficial Use: MUN, AGR, IND, PROC
WDR Place Type:
WDR File:
WDR Order:
File Location:
Composting Method:

Designated Beneficl Use Desc: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, Industrial Process Supply
Project Oversight Agencies:
Report Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=SL0603720103
Cleanup Status Detail: COMPLETED - CASE CLOSED AS OF 2/1/2002
Cleanup History Link: https://geotracker.waterboards.ca.gov/profile_report_include?global_id=SL0603720103&tabname=regulatoryhistory
Potential COC: NONE SPECIFIED
Potential Media of Concern: NONE SPECIFIED
GW Monitoring Freq:
DWR GW Sub Basin: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Calwater Watershed Name: Dominguez Channel (411.01)
Post Closure Site Management:
Future Land Use:
Cleanup Oversight Agencies: LOS ANGELES RWQCB (REGION 4) (LEAD) - CASE #: 1110B
CASEWORKER: PAUL CHO
Site History:

This site was closed on September 20, 2013. Petroleum impacts remain at the site and are being addressed under Regional Board SCP Case No. 1264 (GeoTracker Global ID No. T10000003058).

Sites from GeoTracker Search - Regulatory Activities (as of Oct 06, 2020)

Action Type: Other Regulatory Actions
Action Date: 9/18/2013
Received Issue Date: 9/18/2013
Action: Closure/No Further Action Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SL0603720103&enforcement_id=6176139&temptable=ENFORCEMENT
Title Description Comments:

No Further Action

Action Type: Other Regulatory Actions
Action Date: 7/21/2011
Received Issue Date: 7/21/2011
Action: Technical Correspondence / Assistance / Other
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SL0603720103&enforcement_id=6092926&temptable=ENFORCEMENT
Title Description Comments:

Site Status Letter

Action Type: Response Requested - Reports
Action Date: 6/16/2011
Received Issue Date: 6/16/2011
Action: Site Assessment Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SL0603720103&doc_id=5716254
Title Description Comments:

Additional Limited Phase II Environmental Site Assessment

Action Type: Response Requested - Workplans
Action Date: 5/27/2011
Received Issue Date: 5/27/2011
Action: Site Investigation Workplan
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=SL0603720103&doc_id=5714152
Title Description Comments:

Additional Phase II Environmental Site Assessment Work Plan

Sites from GeoTracker Search - Documents (as of Oct 06, 2020)

Document Type: Site Documents ***Submitted:***

Document Date: 9/18/2013 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: NO FURTHER ACTION
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SL0603720103&enforcement_id=6176139
Type: CLOSURE/NO FURTHER ACTION LETTER

Document Type: Site Documents **Submitted:**
Document Date: 7/21/2011 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: SITE STATUS LETTER
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SL0603720103&enforcement_id=6092926
Type: TECHNICAL CORRESPONDENCE / ASSISTANCE / OTHER

Document Type: Site Documents **Submitted:**
Document Date: 6/16/2011 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: ADDITIONAL LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SL0603720103&document_id=5716254
Type: SITE ASSESSMENT REPORT

Document Type: Site Documents **Submitted:**
Document Date: 5/27/2011 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: ADDITIONAL PHASE II ENVIRONMENTAL SITE ASSESSMENT WORK PLAN
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SL0603720103&document_id=5714152
Type: SITE INVESTIGATION WORKPLAN

Sites from GeoTracker Search - Cleanup Status History (as of Oct 06, 2020)

Status: Completed - Case Closed
Date : 2/1/2002

Status: Open - Site Assessment
Date : 2/1/2002

Status: Open - Case Begin Date
Date : 5/30/2000

Status: Open - Site Assessment
Date : 5/30/2000

Sites from GeoTracker Search - Related Cases (as of Oct 06, 2020)

Identifier: T10000003007 **Address:** Carson Street
Status: COMPLETED - CASE CLOSED **City:** CARSON
Association: Related Global ID
Description:
Project Name: Shell Pipeline 0367 - Dominguez Channel @ Carson
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000003007

17	1 of 1	ESE	0.06 / 310.23	19.61 / 2	1220 E CARSON ST CARSON CA 90745	LA HMS

Site No: 030261
Area: 22

Detail Info

Permit No: 000440561 **Permit Status Code:** CLOS
Permit Cat Desc: Industrial Waste Permit **Permit Category:** I
Status Code: CLOS **File No:** 043731
Status Desc: Permit Closed **File Name:** AMERICAN CAMPER SHELL
Permit Status Desc: Permit Closed
Permit Type: S4

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
Permit Type Desc:		Operating Industrial Waste Permit - Stormwater BMPs				

18	1 of 1	ESE	0.06 / 334.08	20.27 / 3	1226 E CARSON ST CARSON CA 90745	LA HMS

Site No: 027020
Area: 22

Detail Info

Permit No:
Permit Cat Desc:
Status Code: OPEN
Status Desc: File Opened, no permit exists
Permit Status Desc:
Permit Type:
Permit Type Desc:
Permit Status Code:
Permit Category:
File No: 037906
File Name: COMMUNITY DEVELOPMENT CENTER

19	1 of 4	SE	0.06 / 335.39	19.27 / 2	NICHOLSON INVESTMENT GROUP "1202 CARSON STREET, EAST" CARSON CA 90810	CLEANUP SITES

Global ID: SL0603755004
Status: COMPLETED - CASE CLOSED
Status Date: 9/20/2013
Longitude: -118.252544403076
Site Facility Type: CLEANUP PROGRAM SITE
County: LOS ANGELES
Latitude: 33.831299796908
Data Source: Cleanup Program Sites from GeoTracker Search; Cleanup Sites from GeoTracker Cleanup Sites Data Download

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail(as Nov 16 2020)

RB Case No:
Local Case No:
Begin Date: 5/30/2000
Stop Method:
Lead Agency:
Local Agency:
Potential COC:
Potential Media of Concern:
How Discovered:
How Discovered Description:
Stop Description:
Calwater Watershed Name: Dominguez Channel (411.01)
DWR GW Subbasin Name: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Disadvantaged Community:
Site History:
CUF Case: NO
Case Worker:
File Location:

This site was closed on September 20, 2013. Petroleum impacts remain at the site and are being addressed under Regional Board SCP Case No. 1264 (GeoTracker Global ID No. T10000003058).

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Activity(as Nov 16 2020)

Action Type: ENFORCEMENT
Date : 2013-09-18 00:00:00
Action: Closure/No Further Action Letter

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History(as Nov 16 2020)

Status: Completed - Case Closed
Status Date: 2013-09-20 00:00:00

Status: Open - Site Assessment
Status Date: 2002-02-01 00:00:00

Status: Open - Case Begin Date
Status Date: 2000-05-30 00:00:00

Status: Open - Site Assessment
Status Date: 2000-05-30 00:00:00

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Contacts(as Nov 16 2020)

Contact Type: Regional Board Caseworker
Contact Name: PAUL CHO
Phone No:
Organization Name: LOS ANGELES RWQCB (REGION 4)
Email: pcho@waterboards.ca.gov
Address: 320 W. 4TH ST., SUITE 200
City: LOS ANGELES

Cleanup Program Sites from GeoTracker Search - Regulatory Profile (as of Oct 06, 2020)

Project Status:
CUF Claim:
CUF Priority Assign:
CUF Amount Paid:
Facility Type:
User Defined Beneficial Use:
Designated Beneficial Use: MUN, AGR, IND, PROC
Designated Beneficl Use Desc: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, Industrial Process Supply
Project Oversight Agencies:
Report Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=SL0603755004
Cleanup Status Detail: COMPLETED - CASE CLOSED AS OF 9/20/2013
Cleanup History Link: https://geotracker.waterboards.ca.gov/profile_report_include?global_id=SL0603755004&tabname=regulatoryhistory
Potential COC: NONE SPECIFIED
Potential Media of Concern: NONE SPECIFIED
GW Monitoring Freq:
DWR GW Sub Basin: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Calwater Watershed Name: Dominguez Channel (411.01)
Post Closure Site Management:
Future Land Use:
Cleanup Oversight Agencies: LOS ANGELES RWQCB (REGION 4) (LEAD) - CASE #: 1110A
CASEWORKER: PAUL CHO
WDR Place Type:
WDR File:
WDR Order:
File Location:
Composting Method:
Site History:

This site was closed on September 20, 2013. Petroleum impacts remain at the site and are being addressed under Regional Board SCP Case No. 1264 (GeoTracker Global ID No. T10000003058).

Sites from GeoTracker Search - Regulatory Activities (as of Oct 06, 2020)

Action Type: Other Regulatory Actions
Action Date: 9/18/2013
Received Issue Date: 9/18/2013
Action: Closure/No Further Action Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SL0603755004&enforcement_id=6176138&temptable=ENFORCEMENT
Title Description Comments:

No Further Action

Sites from GeoTracker Search - Documents (as of Oct 06, 2020)

Document Type: Site Documents
Document Date: 9/18/2013
Size :
Submitted:
Submitted By: GREG BISHOP (REGULATOR)

Title: NO FURTHER ACTION
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SL0603755004&enforcement_id=6176138
Type: CLOSURE/NO FURTHER ACTION LETTER

Sites from GeoTracker Search - Cleanup Status History (as of Oct 06, 2020)

Status: Completed - Case Closed
Date : 9/20/2013

Status: Open - Site Assessment
Date : 2/1/2002

Status: Open - Case Begin Date
Date : 5/30/2000

Status: Open - Site Assessment
Date : 5/30/2000

Sites from GeoTracker Search - Related Cases (as of Oct 06, 2020)

Identifier: T10000003007
Status: COMPLETED - CASE CLOSED
Association: Related Global ID
Description:
Address: Carson Street
City: CARSON
Project Name: Shell Pipeline 0367 - Dominguez Channel @ Carson
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000003007

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19 | **2 of 4** | **SE** | **0.06 / 335.39** | **19.27 / 2** | **1202 E CARSON ST CARSON CA 90745** | **LA HMS**

Site No: 033566
Area: 22

Detail Info

Permit No: 000740092
Permit Cat Desc: Industrial Waste Permit
Status Code: PERM
Status Desc: Equipment Permitted
Permit Status Desc: Equipment Permitted
Permit Type: S4
Permit Type Desc: Operating Industrial Waste Permit - Stormwater BMPs
Permit Status Code: PERM
Permit Category: I
File No: 056807
File Name: INLAND KENWORTH

Detail Info

Permit No: 000729833
Permit Cat Desc: Industrial Waste Permit
Status Code: PERM
Status Desc: Equipment Permitted
Permit Status Desc: Equipment Permitted
Permit Type: 01
Permit Type Desc: Operating Industrial Waste Permit - Local Sewer
Permit Status Code: PERM
Permit Category: I
File No: 056807
File Name: INLAND KENWORTH

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19 | **3 of 4** | **SE** | **0.06 / 335.39** | **19.27 / 2** | **INLAND KENWORTH INC US 1202 E CARSON ST CARSON CA 90745** | **RCRA NON GEN**

EPA Handler ID: CAL000382039
Gen Status Universe: No Report
Contact Name: JAIME LARIOS-SERVICE MANAGER
Contact Address: 1600 W WASHINGTON BLVD, , MONTEBELLO, CA, 90640,
Contact Phone No and Ext: 323-278-4100

Contact Email: JAIMELARIOS@INLAND-GROUP.COM
Contact Country:
County Name: LOS ANGELES
EPA Region: 09
Land Type:
Receive Date: 20130130

Violation/Evaluation Summary

Note: NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No
Furnace Exemption: No
Underground Injection Activity: No
Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 20130130
Handler Name: INLAND KENWORTH INC US
Source Type: Implementer
Federal Waste Generator Code: N
Generator Code Description: Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind: Current Operator
Type: Other
Name: JAIME LARIOS-SERVICE MANAGER
Date Became Current:
Date Ended Current:
Phone: 323-278-4100
Source Type: Implementer
Street No:
Street 1: 1600 W WASHINGTON BLVD
Street 2:
City: MONTEBELLO
State: CA
Country:
Zip Code: 90640

Owner/Operator Ind: Current Owner
Type: Other
Name: INLAND KENWORTH INC
Date Became Current:
Date Ended Current:
Phone: 323-278-4100
Source Type: Implementer
Street No:
Street 1: 1600 W WASHINGTON BLVD
Street 2:
City: MONTEBELLO
State: CA
Country:
Zip Code: 90640-0000

19	4 of 4	SE	0.06 / 335.39	19.27 / 2	FORMER ACTIVE RV 1202 E CARSON ST CARSON CA 90745	RCRA LQG

EPA Handler ID: CAR000223115
Gen Status Universe: Large Quantity Generator

Contact Name:	GREG VOGELPOHL
Contact Address:	4700 LA HWY 22, STE 520, MANDEVILLE, LA, 70471, US
Contact Phone No and Ext:	805-286-4076
Contact Email:	VOGELPOHL@RELLC.NET
Contact Country:	US
County Name:	LOS ANGELES
EPA Region:	09
Land Type:	Private
Receive Date:	20120112

Violation/Evaluation Summary

Note:	NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility:	No
Onsite Burner Exemption:	No
Furnace Exemption:	No
Underground Injection Activity:	No
Commercial TSD:	No
Used Oil Transporter:	No
Used Oil Transfer Facility:	No
Used Oil Processor:	No
Used Oil Refiner:	No
Used Oil Burner:	No
Used Oil Market Burner:	No
Used Oil Spec Marketer:	No

Hazardous Waste Handler Details

Sequence No:	1
Receive Date:	20120112
Handler Name:	FORMER ACTIVE RV
Federal Waste Generator Code:	1
Generator Code Description:	Large Quantity Generator
Source Type:	Notification

Waste Code Details

Hazardous Waste Code:	135
Waste Code Description:	Unspecified aqueous solution
Hazardous Waste Code:	611
Waste Code Description:	Contaminated soil from site clean-ups
Hazardous Waste Code:	D018
Waste Code Description:	BENZENE

Owner/Operator Details

Owner/Operator Ind:	Current Owner	**Street No:**	
Type:	Private	**Street 1:**	1202 E CARSON ST
Name:	PROWELL FAMILY TRUST	**Street 2:**	
Date Became Current:	20020315	**City:**	CARSON
Date Ended Current:		**State:**	CA
Phone:	714-719-1621	**Country:**	US
Source Type:	Notification	**Zip Code:**	90745

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Owner/Operator Ind:	Current Operator	**Street No:**	
Type:	Private	**Street 1:**	
Name:	RELLC	**Street 2:**	
Date Became Current:	20111006	**City:**	
Date Ended Current:		**State:**	
Phone:		**Country:**	US
Source Type:	Notification	**Zip Code:**	

20	1 of 1	SSE	0.07 / 360.34	18.42 / 1	CHEVRON PIPELINE - DOMINGUEZ CHANNEL @ CARSON CARSON STREET CARSON CA 90745	CLEANUP SITES

Global ID:	T10000003005	**Site Facility Type:**	CLEANUP PROGRAM SITE
Status:	COMPLETED - CASE CLOSED	**County:**	LOS ANGELES
Status Date:	3/11/2016	**Latitude:**	33.8308675524486
Longitude:	-118.252715393901		
Data Source:	Cleanup Program Sites from GeoTracker Search; Cleanup Sites from GeoTracker Cleanup Sites Data Download		

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail(as Nov 16 2020)

RB Case No:	1259	**CUF Case:**	NO
Local Case No:		**Case Worker:**	PC
Begin Date:	4/26/2011	**File Location:**	
Stop Method:			
Lead Agency:	LOS ANGELES RWQCB (REGION 4)		
Local Agency:			
Potential COC:			
Potential Media of Concern:			
How Discovered:			
How Discovered Description:			
Stop Description:			
Calwater Watershed Name:	Dominguez Channel (411.01)		
DWR GW Subbasin Name:	Coastal Plain Of Los Angeles - West Coast (4-011.03)		
Disadvantaged Community:			
Site History:			

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Activity(as Nov 16 2020)

Action Type:	ENFORCEMENT
Date :	2016-02-03 00:00:00
Action:	File Review - Closure
Action Type:	ENFORCEMENT
Date :	2011-08-25 00:00:00
Action:	Preparation of Record for Appeal/Referral/Petition
Action Type:	RESPONSE
Date :	2011-06-08 00:00:00
Action:	Site Investigation Workplan
Action Type:	ENFORCEMENT
Date :	2011-05-23 00:00:00
Action:	13267 Requirement
Action Type:	RESPONSE
Date :	2011-05-06 00:00:00
Action:	Correspondence
Action Type:	ENFORCEMENT
Date :	2011-04-26 00:00:00
Action:	13267 Requirement

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History(as Nov 16 2020)

Status: Completed - Case Closed
Status Date: 2016-03-11 00:00:00

Status: Open - Inactive
Status Date: 2016-03-01 00:00:00

Status: Open - Inactive
Status Date: 2016-02-04 00:00:00

Status: Open - Site Assessment
Status Date: 2016-02-04 00:00:00

Status: Open - Site Assessment
Status Date: 2011-05-03 00:00:00

Status: Open - Case Begin Date
Status Date: 2011-04-26 00:00:00

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Contacts(as Nov 16 2020)

Contact Type: Regional Board Caseworker
Contact Name: PAUL CHO
Phone No:
Organization Name: LOS ANGELES RWQCB (REGION 4)
Email: pcho@waterboards.ca.gov
Address: 320 W. 4TH ST., SUITE 200
City: LOS ANGELES

Cleanup Program Sites from GeoTracker Search - Regulatory Profile (as of Oct 06, 2020)

Project Status:
CUF Claim:
CUF Priority Assign:
CUF Amount Paid:
Facility Type:
User Defined Beneficial Use:
Designated Beneficial Use: MUN, AGR, IND, PROC
Designated Beneficl Use Desc: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, Industrial Process Supply
Project Oversight Agencies:
Report Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000003005
Cleanup Status Detail: COMPLETED - CASE CLOSED AS OF 3/11/2016
Cleanup History Link: https://geotracker.waterboards.ca.gov/profile_report_include?global_id=T10000003005&tabname=regulatoryhistory
Potential COC: NONE SPECIFIED
Potential Media of Concern: NONE SPECIFIED
GW Monitoring Freq:
DWR GW Sub Basin: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Calwater Watershed Name: Dominguez Channel (411.01)
Post Closure Site Management:
Future Land Use:
Cleanup Oversight Agencies: LOS ANGELES RWQCB (REGION 4) (LEAD) - CASE #: 1259
CASEWORKER: PAUL CHO
Site History:

WDR Place Type:
WDR File:
WDR Order:
File Location:
Composting Method:

No site history available

Sites from GeoTracker Search - Regulatory Activities (as of Oct 06, 2020)

Action Type: Other Regulatory Actions
Action Date: 2/3/2016
Received Issue Date: 2/3/2016
Action: File Review - Closure
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003005&enforcement_id=6275373&temptable=ENFORCEMENT

Title Description Comments:

Merger of Cases into SCP Case No. 1264

Action Type: Other Regulatory Actions
Action Date: 8/25/2011
Received Issue Date: 8/25/2011
Action: Preparation of Record for Appeal/Referral/Petition
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003005&enforcement_id=6097245&temptable=ENFORCEMENT
Title Description Comments:

Response to OCC Request for Information

Action Type: Response Requested - Workplans
Action Date: 6/8/2011
Received Issue Date:
Action: Site Investigation Workplan
Doc Link:
Title Description Comments:

Site Investigation Work Plan

Action Type: Enforcement/Orders
Action Date: 5/23/2011
Received Issue Date: 5/23/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003005&enforcement_id=6087664&temptable=ENFORCEMENT
Title Description Comments:

RESPONSE TO CORRESPONDENCE ABOUT A WORK PLAN REQUIRED UNDER CWC SECTION 13267 ORDER DATED APRIL 26, 2011

Action Type: Response Requested - Other
Action Date: 5/6/2011
Received Issue Date: 5/6/2011
Action: Correspondence
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003005&doc_id=5712901
Title Description Comments:

Response to Requirement for Technical Report

Action Type: Enforcement/Orders
Action Date: 4/26/2011
Received Issue Date: 4/26/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003005&enforcement_id=6085557&temptable=ENFORCEMENT
Title Description Comments:

Requirement for Technical Report

Sites from GeoTracker Search - Documents (as of Oct 06, 2020)

Document Type: Site Documents
Document Date: 2/3/2016
Size :
Title: MERGER OF CASES INTO SCP CASE NO. 1264
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003005&enforcement_id=6275373
Type: FILE REVIEW - CLOSURE
Submitted:
Submitted By: GREG BISHOP (REGULATOR)

Document Type: Site Documents
Document Date: 8/25/2011
Submitted:
Submitted By: GREG BISHOP (REGULATOR)

Size :
Title: RESPONSE TO OCC REQUEST FOR INFORMATION
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003005&enforcement_id=6097245
Type: PREPARATION OF RECORD FOR APPEAL/REFERRAL/PETITION

Document Type: Site Documents ***Submitted:***
Document Date: 5/23/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: RESPONSE TO CORRESPONDENCE ABOUT A WORK PLAN REQUIRED UNDER CWC SECTION 13267 ORDER DATED APRIL 26, 2011
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003005&enforcement_id=6087664
Type: 13267 REQUIREMENT

Document Type: Site Documents ***Submitted:***
Document Date: 5/6/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: RESPONSE TO REQUIREMENT FOR TECHNICAL REPORT
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003005&document_id=5712901
Type: CORRESPONDENCE

Document Type: Site Documents ***Submitted:***
Document Date: 4/26/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: REQUIREMENT FOR TECHNICAL REPORT
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003005&enforcement_id=6085557
Type: 13267 REQUIREMENT

Sites from GeoTracker Search - Cleanup Status History (as of Oct 06, 2020)

Status: Completed - Case Closed
Date : 3/11/2016

Status: Open - Inactive
Date : 3/1/2016

Status: Open - Inactive
Date : 2/4/2016

Status: Open - Site Assessment
Date : 2/4/2016

Status: Open - Site Assessment
Date : 5/3/2011

Status: Open - Case Begin Date
Date : 4/26/2011

Sites from GeoTracker Search - Related Cases (as of Oct 06, 2020)

Identifier: T10000003007 ***Address:*** Carson Street
Status: COMPLETED - CASE CLOSED ***City:*** CARSON
Association: Related Global ID
Description:
Project Name: Shell Pipeline 0367 - Dominguez Channel @ Carson
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000003007

21	1 of 1	SSE	0.07 / 364.60	18.42 / 1	***CRIMSON PIPELINE - DOMINGUEZ CHANNEL @ CARSON CARSON STREET CARSON CA 90745***	***CLEANUP SITES***

Global ID: T10000003006 ***Site Facility Type:*** CLEANUP PROGRAM SITE
Status: COMPLETED - CASE CLOSED ***County:*** LOS ANGELES
Status Date: 3/11/2016 ***Latitude:*** 33.8308564120986
Longitude: -118.252710700035
Data Source: Cleanup Program Sites from GeoTracker Search; Cleanup Sites from GeoTracker Cleanup Sites Data Download

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail(as Nov 16 2020)

RB Case No: 1260
Local Case No:
Begin Date: 4/26/2011
Stop Method:
Lead Agency: LOS ANGELES RWQCB (REGION 4)
Local Agency:
Potential COC: Crude Oil, Other Petroleum
Potential Media of Concern: Aquifer used for drinking water supply, Contaminated Surface / Structure, Indoor Air, Other Groundwater (uses other than drinking water), Sediments, Soil, Soil Vapor, Surface water
How Discovered:
How Discovered Description:
Stop Description:
Calwater Watershed Name: Dominguez Channel (411.01)
DWR GW Subbasin Name: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Disadvantaged Community:
Site History:

CUF Case: NO
Case Worker: PC
File Location: Regional Board

This project is being managed under SCP Case No. 1264.

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Activity(as Nov 16 2020)

Action Type: ENFORCEMENT
Date : 2016-03-11 00:00:00
Action: Closure/No Further Action Letter

Action Type: ENFORCEMENT
Date : 2011-08-25 00:00:00
Action: Preparation of Record for Appeal/Referral/Petition

Action Type: RESPONSE
Date : 2011-06-08 00:00:00
Action: Site Investigation Workplan

Action Type: ENFORCEMENT
Date : 2011-05-23 00:00:00
Action: 13267 Requirement

Action Type: RESPONSE
Date : 2011-05-06 00:00:00
Action: Correspondence

Action Type: ENFORCEMENT
Date : 2011-04-26 00:00:00
Action: 13267 Requirement

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History(as Nov 16 2020)

Status: Completed - Case Closed
Status Date: 2016-03-11 00:00:00

Status: Open - Inactive
Status Date: 2016-02-04 00:00:00

Status: Open - Site Assessment
Status Date: 2016-02-04 00:00:00

Status: Open - Site Assessment
Status Date: 2011-05-03 00:00:00

Status: Open - Case Begin Date
Status Date: 2011-04-26 00:00:00

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Contacts(as Nov 16 2020)

Contact Type: Regional Board Caseworker
Contact Name: PAUL CHO
Phone No:
Organization Name: LOS ANGELES RWQCB (REGION 4)
Email: pcho@waterboards.ca.gov
Address: 320 W. 4TH ST., SUITE 200
City: LOS ANGELES

Cleanup Program Sites from GeoTracker Search - Regulatory Profile (as of Oct 06, 2020)

Project Status:
CUF Claim:
CUF Priority Assign:
CUF Amount Paid:
Facility Type:
User Defined Beneficial Use:
Designated Beneficial Use: MUN, AGR, IND, PROC
Designated Beneficl Use Desc: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, Industrial Process Supply
Project Oversight Agencies:
Report Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000003006
Cleanup Status Detail: COMPLETED - CASE CLOSED AS OF 3/11/2016
Cleanup History Link: https://geotracker.waterboards.ca.gov/profile_report_include?global_id=T10000003006&tabname=regulatoryhistory
Potential COC: CRUDE OIL, OTHER PETROLEUM
Potential Media of Concern: AQUIFER USED FOR DRINKING WATER SUPPLY, CONTAMINATED SURFACE / STRUCTURE, INDOOR AIR, OTHER GROUNDWATER (USES OTHER THAN DRINKING WATER), SEDIMENTS, SOIL, SOIL VAPOR, SURFACE WATER
GW Monitoring Freq:
DWR GW Sub Basin: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Calwater Watershed Name: Dominguez Channel (411.01)
Post Closure Site Management:
Future Land Use:
Cleanup Oversight Agencies: LOS ANGELES RWQCB (REGION 4) (LEAD) - CASE #: 1260
CASEWORKER: PAUL CHO
Site History:

This project is being managed under SCP Case No. 1264.

WDR Place Type:
WDR File:
WDR Order:
File Location: REGIONAL BOARD
Composting Method:

Sites from GeoTracker Search - Regulatory Activities (as of Oct 06, 2020)

Action Type: Other Regulatory Actions
Action Date: 3/11/2016
Received Issue Date: 3/11/2016
Action: Closure/No Further Action Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003006&enforcement_id=6278960&temptable=ENFORCEMENT
Title Description Comments:

Modification of Requirement and Notice of Violation

Action Type: Other Regulatory Actions
Action Date: 8/25/2011
Received Issue Date: 8/25/2011
Action: Preparation of Record for Appeal/Referral/Petition
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003006&enforcement_id=6097246&temptable=ENFORCEMENT
Title Description Comments:

Response to OCC Request for Information

Action Type: Response Requested - Workplans
Action Date: 6/8/2011
Received Issue Date:

Action: Site Investigation Workplan
Doc Link:
Title Description Comments:

Site Investigation Work Plan

Action Type: Enforcement/Orders
Action Date: 5/23/2011
Received Issue Date: 5/23/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003006&enforcement_id=6087665&temptable=ENFORCEMENT
Title Description Comments:

RESPONSE TO CORRESPONDENCE ABOUT A WORK PLAN REQUIRED UNDER CWC SECTION 13267 ORDER DATED APRIL 26, 2011

Action Type: Response Requested - Other
Action Date: 5/6/2011
Received Issue Date: 5/6/2011
Action: Correspondence
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003006&doc_id=5712731
Title Description Comments:

Requirement for Technical Report

Action Type: Enforcement/Orders
Action Date: 4/26/2011
Received Issue Date: 4/26/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003006&enforcement_id=6085562&temptable=ENFORCEMENT
Title Description Comments:

Requirement for Technical Report

Sites from GeoTracker Search - Documents (as of Oct 06, 2020)

Document Type: Site Documents ***Submitted:***
Document Date: 3/11/2016 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: MODIFICATION OF REQUIREMENT AND NOTICE OF VIOLATION
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003006&enforcement_id=6278960
Type: CLOSURE/NO FURTHER ACTION LETTER

Document Type: Site Documents ***Submitted:***
Document Date: 8/25/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: RESPONSE TO OCC REQUEST FOR INFORMATION
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003006&enforcement_id=6097246
Type: PREPARATION OF RECORD FOR APPEAL/REFERRAL/PETITION

Document Type: Site Documents ***Submitted:***
Document Date: 5/23/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: RESPONSE TO CORRESPONDENCE ABOUT A WORK PLAN REQUIRED UNDER CWC SECTION 13267 ORDER DATED APRIL 26, 2011
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003006&enforcement_id=6087665
Type: 13267 REQUIREMENT

Document Type: Site Documents ***Submitted:***
Document Date: 5/6/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: REQUIREMENT FOR TECHNICAL REPORT
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003006&document_id=5712731
Type: CORRESPONDENCE

Document Type: Site Documents
Document Date: 4/26/2011
Size :
Title: REQUIREMENT FOR TECHNICAL REPORT
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003006&enforcement_id=6085562
Type: 13267 REQUIREMENT
Submitted:
Submitted By: GREG BISHOP (REGULATOR)

Sites from GeoTracker Search - Cleanup Status History (as of Oct 06, 2020)

Status: Completed - Case Closed
Date : 3/11/2016

Status: Open - Inactive
Date : 2/4/2016

Status: Open - Site Assessment
Date : 2/4/2016

Status: Open - Site Assessment
Date : 5/3/2011

Status: Open - Case Begin Date
Date : 4/26/2011

Sites from GeoTracker Search - Related Cases (as of Oct 06, 2020)

Identifier: T10000003007
Status: COMPLETED - CASE CLOSED
Association: Related Global ID
Description:
Project Name: Shell Pipeline 0367 - Dominguez Channel @ Carson
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000003007
Address: Carson Street
City: CARSON

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
22	1 of 1	S	0.08 / 434.82	17.84 / 0	TESORO PIPELINE - DOMINGUEZ CHANNEL @ CARSON CARSON STREET CARSON CA 90745	CLEANUP SITES

Global ID: T10000003009
Status: COMPLETED - CASE CLOSED
Status Date: 3/11/2016
Longitude: -118.253700435162
Data Source: Cleanup Program Sites from GeoTracker Search; Cleanup Sites from GeoTracker Cleanup Sites Data Download
Site Facility Type: CLEANUP PROGRAM SITE
County: LOS ANGELES
Latitude: 33.8306402890212

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail(as Nov 16 2020)

RB Case No: 1262
Local Case No:
Begin Date: 4/26/2011
Stop Method:
Lead Agency: LOS ANGELES RWQCB (REGION 4)
Local Agency:
Potential COC:
Potential Media of Concern:
How Discovered:
How Discovered Description:
Stop Description:
Calwater Watershed Name: Dominguez Channel (411.01)
DWR GW Subbasin Name: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Disadvantaged Community:
Site History:
CUF Case: NO
Case Worker: PC
File Location:

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Activity(as Nov 16 2020)

Action Type: ENFORCEMENT
Date : 2016-02-03 00:00:00
Action: File Review - Closure

Action Type: RESPONSE
Date : 2014-02-07 00:00:00
Action: Well Destruction Report

Action Type: ENFORCEMENT
Date : 2013-12-30 00:00:00
Action: 13267 Requirement

Action Type: ENFORCEMENT
Date : 2013-05-24 00:00:00
Action: 13267 Requirement

Action Type: RESPONSE
Date : 2012-05-01 00:00:00
Action: Monitoring Report - Other

Action Type: ENFORCEMENT
Date : 2012-02-16 00:00:00
Action: 13267 Requirement

Action Type: RESPONSE
Date : 2011-11-08 00:00:00
Action: Request for Closure

Action Type: RESPONSE
Date : 2011-10-20 00:00:00
Action: Site Assessment Report

Action Type: ENFORCEMENT
Date : 2011-08-31 00:00:00
Action: 13267 Requirement

Action Type: ENFORCEMENT
Date : 2011-08-25 00:00:00
Action: Preparation of Record for Appeal/Referral/Petition

Action Type: ENFORCEMENT
Date : 2011-07-12 00:00:00
Action: 13267 Requirement

Action Type: RESPONSE
Date : 2011-06-08 00:00:00
Action: Site Investigation Workplan

Action Type: ENFORCEMENT
Date : 2011-06-08 00:00:00
Action: 13267 Requirement

Action Type: ENFORCEMENT
Date : 2011-04-26 00:00:00
Action: 13267 Requirement

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History(as Nov 16 2020)

Status: Completed - Case Closed
Status Date: 2016-03-11 00:00:00

Status: Open - Inactive
Status Date: 2016-03-01 00:00:00

Status: Open - Site Assessment

Status Date: 2011-05-03 00:00:00

Status: Open - Case Begin Date
Status Date: 2011-04-26 00:00:00

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Contacts(as Nov 16 2020)

Contact Type: Regional Board Caseworker
Contact Name: PAUL CHO
Phone No:
Organization Name: LOS ANGELES RWQCB (REGION 4)
Email: pcho@waterboards.ca.gov
Address: 320 W. 4TH ST., SUITE 200
City: LOS ANGELES

Cleanup Program Sites from GeoTracker Search - Regulatory Profile (as of Oct 06, 2020)

Project Status:
CUF Claim:
CUF Priority Assign:
CUF Amount Paid:
Facility Type:
User Defined Beneficial Use:
Designated Beneficial Use: MUN, AGR, IND, PROC
Designated Beneficl Use Desc: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, Industrial Process Supply
Project Oversight Agencies:
Report Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000003009
Cleanup Status Detail: COMPLETED - CASE CLOSED AS OF 3/11/2016
Cleanup History Link: https://geotracker.waterboards.ca.gov/profile_report_include?global_id=T10000003009&tabname=regulatoryhistory
Potential COC: NONE SPECIFIED
Potential Media of Concern: NONE SPECIFIED
GW Monitoring Freq:
DWR GW Sub Basin: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Calwater Watershed Name: Dominguez Channel (411.01)
Post Closure Site Management:
Future Land Use:
Cleanup Oversight Agencies: LOS ANGELES RWQCB (REGION 4) (LEAD) - CASE #: 1262
CASEWORKER: PAUL CHO
Site History:

WDR Place Type:
WDR File:
WDR Order:
File Location:
Composting Method:

No site history available

Sites from GeoTracker Search - Regulatory Activities (as of Oct 06, 2020)

Action Type: Other Regulatory Actions
Action Date: 2/3/2016
Received Issue Date: 2/3/2016
Action: File Review - Closure
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003009&enforcement_id=6275377&temptable=ENFORCEMENT
Title Description Comments:

Merger of Cases into SCP Case No. 1264

Action Type: Response Requested - Reports
Action Date: *2/7/2014
Received Issue Date:
Action: Well Destruction Report
Doc Link:
Title Description Comments:

Well Abandonment Report

Action Type: Enforcement/Orders

Action Date: 12/30/2013
Received Issue Date: 12/30/2013
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003009&enforcement_id=6186936&temptable=ENFORCEMENT
Title Description Comments:

Approval of Request for Extending the Technical Report Due Date(s) for a Well Abandonment Report

Action Type: Enforcement/Orders
Action Date: 5/24/2013
Received Issue Date: 5/24/2013
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003009&enforcement_id=6160328&temptable=ENFORCEMENT
Title Description Comments:

Approval of Well Abandonment Work Plan

Action Type: Response Requested - Reports
Action Date: 5/1/2012
Received Issue Date:
Action: Monitoring Report - Other
Doc Link:
Title Description Comments:

Groundwater Monitoring Report

Action Type: Enforcement/Orders
Action Date: 2/16/2012
Received Issue Date: 2/16/2012
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003009&enforcement_id=6113521&temptable=ENFORCEMENT
Title Description Comments:

Groundwater Monitoring Field Schedule

Action Type: Response Requested - Other
Action Date: 11/8/2011
Received Issue Date: 11/8/2011
Action: Request for Closure
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003009&doc_id=5850503
Title Description Comments:

Dominguez Channel Release

Action Type: Response Requested - Reports
Action Date: *10/20/2011
Received Issue Date: 10/20/2011
Action: Site Assessment Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003009&doc_id=5716993
Title Description Comments:

Well Installation Report

Action Type: Enforcement/Orders
Action Date: 8/31/2011
Received Issue Date: 8/31/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003009&enforcement_id=6097502&temptable=ENFORCEMENT
Title Description Comments:

Revised Deadlines for Technical Reporting

Action Type: Other Regulatory Actions
Action Date: 8/25/2011
Received Issue Date: 8/25/2011
Action: Preparation of Record for Appeal/Referral/Petition
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003009&enforcement_id=6097247&temptable=ENFORCEMENT
Title Description Comments:

Response to OCC Request for Information

Action Type: Enforcement/Orders
Action Date: 7/12/2011
Received Issue Date: 7/12/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003009&enforcement_id=6091982&temptable=ENFORCEMENT
Title Description Comments:

Approval of Investigation Work Plan

Action Type: Enforcement/Orders
Action Date: 6/8/2011
Received Issue Date: 6/8/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003009&enforcement_id=6089128&temptable=ENFORCEMENT
Title Description Comments:

Response to Correspondence about a Work Plan Required

Action Type: Response Requested - Workplans
Action Date: 6/8/2011
Received Issue Date: 6/8/2011
Action: Site Investigation Workplan
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003009&doc_id=5714881
Title Description Comments:

Work Plan for Soil and Grab Groundwater Sampling between Tesoro Line 21 and the Dominguez Channel Release

Action Type: Response Requested - Workplans
Action Date: 6/8/2011
Received Issue Date: 6/8/2011
Action: Site Investigation Workplan
Doc Link:
Title Description Comments:

Site Investigation Work Plan

Action Type: Enforcement/Orders
Action Date: 4/26/2011
Received Issue Date: 4/26/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003009&enforcement_id=6085582&temptable=ENFORCEMENT
Title Description Comments:

Requirement for Technical Report

Sites from GeoTracker Search - Documents (as of Oct 06, 2020)

Document Type: Site Documents ***Submitted:***

Document Date: 2/3/2016 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: MERGER OF CASES INTO SCP CASE NO. 1264
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003009&enforcement_id=6275377
Type: FILE REVIEW - CLOSURE

Document Type: Site Documents **Submitted:**
Document Date: 1/21/2014* **Submitted By:** MIGUEL TSENG (AUTH_RP)
Size : 2,703 KB
Title: DOMINGUEZ CHANNEL 1Q14 WELL ABANDONMENT GEO_REOPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8594124972/T10000003009.PDF
Type: WELL DESTRUCTION REPORT

Document Type: Site Documents **Submitted:**
Document Date: 12/30/2013 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF REQUEST FOR EXTENDING THE TECHNICAL REPORT DUE DATE(S) FOR A WELL ABANDONMENT REPORT
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003009&enforcement_id=6186936
Type: 13267 REQUIREMENT

Document Type: Site Documents **Submitted:**
Document Date: 5/24/2013 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF WELL ABANDONMENT WORK PLAN
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003009&enforcement_id=6160328
Type: 13267 REQUIREMENT

Document Type: Site Documents **Submitted:**
Document Date: 11/5/2012* **Submitted By:** MIGUEL TSENG (AUTH_RP)
Size : 1,291 KB
Title: DOMINGUEZ CHANNEL 4Q12 WELL ABANDONMENT GEO_REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6774733781/T10000003009.PDF
Type: WELL DESTRUCTION WORKPLAN

Document Type: Monitoring Reports **Submitted:**
Document Date: 5/1/2012 **Submitted By:** MIGUEL TSENG (AUTH_RP)
Size : 8,972 KB
Title: DOMINGUEZ CHANNEL 1Q12 GEO_REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9876972973/T10000003009.PDF
Type: MONITORING REPORT - QUARTERLY

Document Type: Site Documents **Submitted:**
Document Date: 2/16/2012 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: GROUNDWATER MONITORING FIELD SCHEDULE
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003009&enforcement_id=6113521
Type: 13267 REQUIREMENT

Document Type: Site Documents **Submitted:**
Document Date: 11/8/2011 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: DOMINGUEZ CHANNEL RELEASE
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003009&document_id=5850503
Type: REQUEST FOR CLOSURE

Document Type: Site Documents **Submitted:**
Document Date: 10/20/2011 **Submitted By:** MIGUEL TSENG (AUTH_RP)
Size : 12,622 KB
Title: DOMINGUEZ CHANNEL TECHNICAL REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9889921069/T10000003009.PDF
Type: SITE INVESTIGATION

Document Type: Site Documents **Submitted:**
Document Date: 8/31/2011 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: REVISED DEADLINES FOR TECHNICAL REPORTING
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003009&enforcement_id=6097502
Type: 13267 REQUIREMENT

Document Type: Site Documents ***Submitted:***
Document Date: 8/25/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: RESPONSE TO OCC REQUEST FOR INFORMATION
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003009&enforcement_id=6097247
Type: PREPARATION OF RECORD FOR APPEAL/REFERRAL/PETITION

Document Type: Site Documents ***Submitted:***
Document Date: 7/12/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF INVESTIGATION WORK PLAN
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003009&enforcement_id=6091982
Type: 13267 REQUIREMENT

Document Type: Site Documents ***Submitted:***
Document Date: 6/8/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: RESPONSE TO CORRESPONDENCE ABOUT A WORK PLAN REQUIRED
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003009&enforcement_id=6089128
Type: 13267 REQUIREMENT

Document Type: Site Documents ***Submitted:***
Document Date: 6/8/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: WORK PLAN FOR SOIL AND GRAB GROUNDWATER SAMPLING BETWEEN TESORO LINE 21 AND THE DOMINGUEZ CHANNEL RELEASE
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003009&document_id=5714881
Type: SITE INVESTIGATION WORKPLAN

Document Type: Site Documents ***Submitted:***
Document Date: 4/26/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: REQUIREMENT FOR TECHNICAL REPORT
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003009&enforcement_id=6085582
Type: 13267 REQUIREMENT

Sites from GeoTracker Search - Site Maps (as of Oct 06, 2020)

Title: DOMINGUEZ CHANNEL MW-2 BORING LOG (MW-2) ***Submitted By:*** MIGUEL TSENG (AUTH_RP)
Size : 294 KB ***Submitted:*** 9/7/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/1678725481/T10000003009.PDF

Title: DOMINGUEZ CHANNEL MW-1 BORING LOG (MW-1) ***Submitted By:*** MIGUEL TSENG (AUTH_RP)
Size : 287 KB ***Submitted:*** 9/7/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/5396748363/T10000003009.PDF

Sites from GeoTracker Search - Cleanup Status History (as of Oct 06, 2020)

Status: Completed - Case Closed
Date : 3/11/2016

Status: Open - Inactive
Date : 3/1/2016

Status: Open - Site Assessment
Date : 5/3/2011

Status: Open - Case Begin Date
Date : 4/26/2011

Sites from GeoTracker Search - Related Cases (as of Oct 06, 2020)

Identifier: T10000003007 ***Address:*** Carson Street

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Status: COMPLETED - CASE CLOSED
City: CARSON
Association: Related Global ID
Description:
Project Name: Shell Pipeline 0367 - Dominguez Channel @ Carson
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000003007

23	1 of 1	NNE	0.09 / 460.33	16.52 / -1	J & M PERALTA FARMS 21420 PERRY ST CARSON CA 90745	LA COUNTY CUPA

Facility ID: FA0020586
CERS ID: 0

Inactive Facility Details

PE: 3001

24	1 of 3	N	0.09 / 461.01	17.48 / 0	SEA CREST PARCEL (A.K.A. PERRY STREET INVESTIGATION AREA) INTERSECTION OF ALVAR STREET AND WINGATE STREET, BORDERED TO THE EAST BY PERRY STREET CARSON CA 90745	VCP

Estor/EPA ID: 60000140
Site Code: 401295
Nat Priority List: NO
Acres: 1 ACRES
Special Program:
Funding: SITE PROPONENT
Assembly District: 64
Senate District: 35
School District:
Permit Renewal Lead:
Project Manager:
Supervisor: JOHN SCANDURA
Public Partici Spclst:
Census Tract: 6037543306
County: LOS ANGELES
Latitude: 33.83396
Longitude: -118.25367
APN: NONE SPECIFIED
Cleanup Status: CERTIFIED O&M - LAND USE RESTRICTIONS ONLY AS OF 5/14/2012
Cleanup Oversight Agencies: DTSC - SITE CLEANUP PROGRAM - LEAD AGENCY
Site Type: VOLUNTARY CLEANUP
Office: CLEANUP CYPRESS
Past Use that Caused Contam: AGRICULTURAL - LIVESTOCK
Potential Media Affected: SOIL
Site History:

The site has been proposed for housing development and DTSC is reviewing the additional site assessment workplan.

The Site is owned by Triton Diagnostics, Inc. Extensive soil, soil vapor, and groundwater sampling on the subject property has identified petroleum hydrocarbon impact along the front 4 lots that border Perry Street. According to information provided by the Proponent in the Application, the remaining back 5 lots have not been impacted. The maximum concentration of benzene detected at the Site is 5.3 milligrams per kilogram (mg/kg).

The Site consists of a half-acre parcel, located in an area, which surrounded by residential developments. This Site is currently vacant (with a native grass cover) and surrounded by a chain link fence and is currently graded for residential pad placement. Residential development is planned for the Site.

The subject property was once part of a larger agricultural land use through the 1980's. This operation was ceased and the land sold off to facilitate residential land uses.

Potential Contamin of Concern:

BENZ[A]ANTHRACENE, POLYCHLORINATED BIPHENYLS (PCBS), POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS), VOLATILE ORGANICS (8260B VOCS)

Status: CERTIFIED O&M - LAND USE RESTRICTIONS ONLY - LAND USE RESTRICTIONS
Program Type: VOLUNTARY CLEANUP
CalEnviroScreen Score: 91-95%
Summary Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=60000140

Land Use Restrictions

Site Management Requirements: NONE SPECIFIED
Title: Land Use Covenant
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?cmd=radocuments&global_id=60000140&enforcement_id=60261524
Date Recorded: 1/17/2012

Completed Activities

Title: Sea Crest RA Completion Report
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&doc_id=6016962
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Removal Action Completion Report
Date Completed: 1/24/2011
Comments: RACR approved. Land use covenant needed for parcel #6 to prevent excavation below 7.5 feet.

Title: Notice of Exemption
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&enforcement_id=60194102
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: CEQA - Notice of Exemption
Date Completed: 6/7/2010
Comments: Notice of Exemption approved.

Title: Sea Crest Removal Action Workplan
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&doc_id=6016957
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Removal Action Workplan
Date Completed: 6/7/2010
Comments: Public comments addressed, Removal Action Workplan approved.

Title: PEA Work Plan
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&doc_id=6011610
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Preliminary Endangerment Assessment Workplan
Date Completed: 12/14/2006
Comments: PEA Workplan approved.

Title: Certification
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&enforcement_id=60281219
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Certification
Date Completed: 3/15/2012
Comments:

Title: Draft Report of Findings and Remedial Assessment, Volumes I ,2, June 2007
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&doc_id=6015977
Area Name:
Area Link:
Sub Area:
Sub Area Link:

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Document Type: Preliminary Endangerment Assessment Report
Date Completed: 9/24/2008
Comments: DTSC approved the document. RWQCB retains jurisdiction over the Perry Street area groundwater.

Title: Annual Cost Estimate
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&enforcement_id=60282003
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Annual Oversight Cost Estimate
Date Completed: 10/24/2011
Comments:

Title: Land Use Covenant
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&enforcement_id=60261524
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Land Use Restriction
Date Completed: 1/17/2012
Comments: Land Use Covenant Recorded by County

Title: 2008 Annual Cost Estimate: Sea Crest Parcel, Carson California
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&enforcement_id=6012249
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Correspondence
Date Completed: 12/7/2007
Comments: DTSC sent to RP letter: 2008 ANNUAL COST ESTIMATE: SEA CREST PARCEL PART OF THE PERRY STREET INVESTIGATION AREA; CARSON, CALIFORNIA.

Title: Voluntary Cleanup Agreement
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&enforcement_id=6011008
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Standard Voluntary Agreement
Date Completed: 1/10/2006
Comments: Voluntary Agreement was fully executed.

Title: Annual Cost Estimate
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&enforcement_id=6017571
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Annual Oversight Cost Estimate
Date Completed: 10/12/2009
Comments:

24	2 of 3	N	0.09 / 461.01	17.48 / 0	SEA CREST PARCEL (A.K.A. PERRY STREET INVESTIGATION AREA) INTERSECTION OF ALVAR STREET AND WINGATE STREET, BORDERED TO THE EAST BY PERRY STREET CARSON CA 90745	LUR

Estor/EPA ID: 60000140
Site Code: 401295
Nat Priority List: NO
Acres: 1 ACRES
Permit Renewal Lead:
Project Manager:
Supervisor: JOHN SCANDURA
Public Partici Spclst:

Special Program:		***Census Tract:***	6037543306
Funding:	SITE PROPONENT	***County:***	LOS ANGELES
Assembly District:	64	***Latitude:***	33.83396
Senate District:	35	***Longitude:***	-118.25367
School District:			

APN: NONE SPECIFIED
Cleanup Status: CERTIFIED O&M - LAND USE RESTRICTIONS ONLY AS OF 5/14/2012
Cleanup Oversight Agencies: DTSC - SITE CLEANUP PROGRAM - LEAD AGENCY
Site Type: VOLUNTARY CLEANUP
Office: CLEANUP CYPRESS
Past Use that Caused Contam: AGRICULTURAL - LIVESTOCK
Potential Media Affected: SOIL
Potential Contamin of Concern:

BENZ[A]ANTHRACENE, POLYCHLORINATED BIPHENYLS (PCBS), POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS), VOLATILE ORGANICS (8260B VOCS)

Site History:

The site has been proposed for housing development and DTSC is reviewing the additional site assessment workplan.

The Site is owned by Triton Diagnostics, Inc. Extensive soil, soil vapor, and groundwater sampling on the subject property has identified petroleum hydrocarbon impact along the front 4 lots that border Perry Street. According to information provided by the Proponent in the Application, the remaining back 5 lots have not been impacted. The maximum concentration of benzene detected at the Site is 5.3 milligrams per kilogram (mg/kg).

The Site consists of a half-acre parcel, located in an area, which surrounded by residential developments. This Site is currently vacant (with a native grass cover) and surrounded by a chain link fence and is currently graded for residential pad placement. Residential development is planned for the Site.

The subject property was once part of a larger agricultural land use through the 1980's. This operation was ceased and the land sold off to facilitate residential land uses.

Status: CERTIFIED O&M - LAND USE RESTRICTIONS ONLY - LAND USE RESTRICTIONS
Program Type: VOLUNTARY CLEANUP
CalEnviroScreen Score: 91-95%
Summary Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=60000140

Land Use Restrictions

Site Management Requirements: NONE SPECIFIED
Title: Land Use Covenant
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?cmd=radocuments&global_id=60000140&enforcement_id=60261524
Date Recorded: 1/17/2012

Completed Activities

Title: PEA Work Plan
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&doc_id=6011610
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Preliminary Endangerment Assessment Workplan
Date Completed: 12/14/2006
Comments: PEA Workplan approved.

Title: Annual Cost Estimate
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&enforcement_id=6017571
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Annual Oversight Cost Estimate
Date Completed: 10/12/2009
Comments:

Title: Land Use Covenant
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&enforcement_id=60261524
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Land Use Restriction
Date Completed: 1/17/2012
Comments: Land Use Covenant Recorded by County

Title: 2008 Annual Cost Estimate: Sea Crest Parcel, Carson California
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&enforcement_id=6012249
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Correspondence
Date Completed: 12/7/2007
Comments: DTSC sent to RP letter: 2008 ANNUAL COST ESTIMATE: SEA CREST PARCEL PART OF THE PERRY STREET INVESTIGATION AREA; CARSON, CALIFORNIA.

Title: Certification
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&enforcement_id=60281219
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Certification
Date Completed: 3/15/2012
Comments:

Title: Voluntary Cleanup Agreement
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&enforcement_id=6011008
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Standard Voluntary Agreement
Date Completed: 1/10/2006
Comments: Voluntary Agreement was fully executed.

Title: Sea Crest Removal Action Workplan
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&doc_id=6016957
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Removal Action Workplan
Date Completed: 6/7/2010
Comments: Public comments addressed, Removal Action Workplan approved.

Title: Sea Crest RA Completion Report
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&doc_id=6016962
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Removal Action Completion Report
Date Completed: 1/24/2011
Comments: RACR approved. Land use covenant needed for parcel #6 to prevent excavation below 7.5 feet.

Title: Notice of Exemption
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&enforcement_id=60194102
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: CEQA - Notice of Exemption

Date Completed: 6/7/2010
Comments: Notice of Exemption approved.

Title: Annual Cost Estimate
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&enforcement_id=60282003
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Annual Oversight Cost Estimate
Date Completed: 10/24/2011
Comments:

Title: Draft Report of Findings and Remedial Assessment, Volumes I ,2, June 2007
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&doc_id=6015977
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Preliminary Endangerment Assessment Report
Date Completed: 9/24/2008
Comments: DTSC approved the document. RWQCB retains jurisdiction over the Perry Street area groundwater.

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
24	3 of 3	N	0.09 / 461.01	17.48 / 0	SEA CREST PARCEL (A.K.A. PERRY STREET INVESTIGATION AREA) INTERSECTION OF ALVAR STREET AND WINGATE STREET, BORDERED TO THE EAST BY PERRY STREET CARSON CA 90745	ENVIROSTOR

Estor/EPA ID: 60000140
Site Code: 401295
Nat Priority List: NO
APN: NONE SPECIFIED
Census Tract: 6037543306
Site Type: VOLUNTARY CLEANUP
Address Description: INTERSECTION OF ALVAR STREET AND WINGATE STREET, BORDERED TO THE EAST BY PERRY STREET
Office: CLEANUP CYPRESS
Special Program:
Funding: SITE PROPONENT
Assembly District: 64
Senate District: 35
Permit Renewal Lead:
Public Partici Spclst:
Project Manager:
County: LOS ANGELES
Latitude: 33.83396
Longitude: -118.25367
Acres: 1 ACRES
Supervisor: JOHN SCANDURA
Cleanup Status: CERTIFIED O&M - LAND USE RESTRICTIONS ONLY AS OF 5/14/2012
Cleanup Oversight Agencies: DTSC - SITE CLEANUP PROGRAM - LEAD AGENCY
School District:
Past Use that Caused Contam: AGRICULTURAL - LIVESTOCK
Potential Media Affected: SOIL
Potential Contamin of Concern:

BENZ[A]ANTHRACENE, POLYCHLORINATED BIPHENYLS (PCBS), POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS), VOLATILE ORGANICS (8260B VOCS)

Site History:

The site has been proposed for housing development and DTSC is reviewing the additional site assessment workplan.

The Site is owned by Triton Diagnostics, Inc. Extensive soil, soil vapor, and groundwater sampling on the subject property has identified petroleum hydrocarbon impact along the front 4 lots that border Perry Street. According to information provided by the Proponent in the Application, the remaining back 5 lots have not been impacted. The maximum concentration of benzene detected at the Site is 5.3 milligrams per kilogram (mg/kg).

The Site consists of a half-acre parcel, located in an area, which surrounded by residential developments. This Site is currently vacant (with a native grass cover) and surrounded by a chain link fence and is currently graded for residential pad placement. Residential development is planned for the Site.

The subject property was once part of a larger agricultural land use through the 1980's. This operation was ceased and the land sold off to facilitate residential land uses.

Status: CERTIFIED O&M - LAND USE RESTRICTIONS ONLY - LAND USE RESTRICTIONS
A2 Program Type: VOLUNTARY CLEANUP
CalEnviroScreen Score: 91-95%
Summary Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=60000140

Land Use Restrictions

Site Management Requirements: NONE SPECIFIED
Title: Land Use Covenant
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?cmd=radocuments&global_id=60000140&enforcement_id=60261524
Date Recorded: 1/17/2012

Completed Activities

Title: Sea Crest RA Completion Report
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&doc_id=6016962
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Removal Action Completion Report
Date Completed: 1/24/2011
Comments: RACR approved. Land use covenant needed for parcel #6 to prevent excavation below 7.5 feet.

Title: Draft Report of Findings and Remedial Assessment, Volumes I ,2, June 2007
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&doc_id=6015977
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Preliminary Endangerment Assessment Report
Date Completed: 9/24/2008
Comments: DTSC approved the document. RWQCB retains jurisdiction over the Perry Street area groundwater.

Title: Certification
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&enforcement_id=60281219
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Certification
Date Completed: 3/15/2012
Comments:

Title: Notice of Exemption
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&enforcement_id=60194102
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: CEQA - Notice of Exemption
Date Completed: 6/7/2010
Comments: Notice of Exemption approved.

Title: PEA Work Plan
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&doc_id=6011610
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Preliminary Endangerment Assessment Workplan
Date Completed: 12/14/2006
Comments: PEA Workplan approved.

Title: Voluntary Cleanup Agreement

Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&enforcement_id=6011008
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Standard Voluntary Agreement
Date Completed: 1/10/2006
Comments: Voluntary Agreement was fully executed.

Title: Annual Cost Estimate
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&enforcement_id=6017571
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Annual Oversight Cost Estimate
Date Completed: 10/12/2009
Comments:

Title: Land Use Covenant
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&enforcement_id=60261524
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Land Use Restriction
Date Completed: 1/17/2012
Comments: Land Use Covenant Recorded by County

Title: Annual Cost Estimate
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&enforcement_id=60282003
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Annual Oversight Cost Estimate
Date Completed: 10/24/2011
Comments:

Title: 2008 Annual Cost Estimate: Sea Crest Parcel, Carson California
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&enforcement_id=6012249
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Correspondence
Date Completed: 12/7/2007
Comments: DTSC sent to RP letter: 2008 ANNUAL COST ESTIMATE: SEA CREST PARCEL PART OF THE PERRY STREET INVESTIGATION AREA; CARSON, CALIFORNIA.

Title: Sea Crest Removal Action Workplan
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000140&doc_id=6016957
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Removal Action Workplan
Date Completed: 6/7/2010
Comments: Public comments addressed, Removal Action Workplan approved.

25	1 of 1	SSE	0.10 / 523.20	16.55 / -1	DOMINGUEZ CHANNEL @ CARSON STREET (RELLC) N/A CARSON STREET CARSON CA 90745	CLEANUP SITES

Global ID: T10000003058
Status: OPEN - SITE ASSESSMENT
Status Date: 2/10/2016
Site Facility Type: CLEANUP PROGRAM SITE
County: LOS ANGELES
Latitude: 33.8303996564984

Longitude: -118.252973556519
Data Source: Cleanup Program Sites from GeoTracker Search; Cleanup Sites from GeoTracker Cleanup Sites Data Download

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail(as Nov 16 2020)

RB Case No: 1264
Local Case No:
Begin Date: 6/14/2011
Stop Method:
Lead Agency: LOS ANGELES RWQCB (REGION 4)
Local Agency:
Potential COC: Gasoline, Other Petroleum
Potential Media of Concern: Contaminated Surface / Structure, Other Groundwater (uses other than drinking water), Sediments, Soil, Soil Vapor, Surface water, Under Investigation
How Discovered:
How Discovered Description:
Stop Description:
Calwater Watershed Name: Dominguez Channel (411.01)
DWR GW Subbasin Name: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Disadvantaged Community:
Site History:

CUF Case: NO
Case Worker: MN
File Location: Regional Board

A petroleum sheen appeared on the surface of the Dominguez Channel, approximately 400 feet south of Carson Street in Carson, in January 2011. Investigation is mostly complete. LNAPL is being recovered in wells adjacent to the channel to prevent a recurrence of the sheen. Additional remediation measure are being explored.

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Activity(as Nov 16 2020)

Action Type: RESPONSE
Date : 2020-08-15 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2020-07-15 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2020-06-15 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2020-05-15 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2020-04-07 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2020-03-15 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2020-03-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2020-02-06 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2020-01-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2019-12-08 00:00:00

Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2019-11-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2019-10-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2019-09-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2019-08-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2019-07-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2019-06-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2019-05-07 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2019-04-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2019-03-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2019-02-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2019-01-09 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2018-12-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2018-11-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2018-10-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2018-09-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2018-08-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2018-07-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2018-05-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2018-04-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2018-03-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2018-02-09 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2018-01-15 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 2018-01-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2017-12-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2017-11-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2017-10-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2017-09-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2017-08-08 00:00:00
Action: Monitoring Report - Other

Action Type: ENFORCEMENT
Date : 2017-07-18 00:00:00
Action: Preliminary Site Review

Action Type: RESPONSE
Date : 2017-07-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2017-06-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2017-05-26 00:00:00
Action: Site Assessment Report

Action Type: RESPONSE
Date : 2017-05-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2017-04-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2017-03-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2017-02-08 00:00:00
Action: Monitoring Report - Other

Action Type: ENFORCEMENT
Date : 2017-02-07 00:00:00
Action: 13267 Requirement - #R4-2013-0007

Action Type: RESPONSE
Date : 2017-01-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2016-12-21 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 2016-12-09 00:00:00
Action: Site Investigation Workplan

Action Type: RESPONSE
Date : 2016-12-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2016-11-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2016-10-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2016-09-30 00:00:00
Action: Site Assessment Report

Action Type: RESPONSE
Date : 2016-09-30 00:00:00
Action: Correspondence

Action Type: RESPONSE
Date : 2016-09-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2016-08-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2016-07-08 00:00:00
Action: Monitoring Report - Other

Action Type: ENFORCEMENT
Date : 2016-06-29 00:00:00
Action: Staff Letter - #R4-2013-0007

Action Type: RESPONSE
Date : 2016-06-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2016-05-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE

Date : 2016-04-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2016-03-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2016-02-08 00:00:00
Action: Monitoring Report - Other

Action Type: ENFORCEMENT
Date : 2016-02-03 00:00:00
Action: File Review - Closure

Action Type: RESPONSE
Date : 2016-01-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2015-12-15 00:00:00
Action: Site Assessment Report

Action Type: RESPONSE
Date : 2015-12-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2015-12-01 00:00:00
Action: Correspondence

Action Type: RESPONSE
Date : 2015-11-12 00:00:00
Action: Correspondence

Action Type: RESPONSE
Date : 2015-11-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2015-10-08 00:00:00
Action: Monitoring Report - Other

Action Type: ENFORCEMENT
Date : 2015-09-22 00:00:00
Action: 13267 Requirement

Action Type: RESPONSE
Date : 2015-09-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2015-08-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2015-07-08 00:00:00
Action: Monitoring Report - Other

Action Type: ENFORCEMENT
Date : 2015-07-06 00:00:00
Action: Clean-up and Abatement Order

Action Type: ENFORCEMENT
Date : 2015-07-03 00:00:00
Action: Clean-up and Abatement Order

Action Type: RESPONSE
Date : 2015-06-23 00:00:00

Action: Correspondence

Action Type: RESPONSE
Date : 2015-06-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2015-05-12 00:00:00
Action: Site Assessment Report

Action Type: RESPONSE
Date : 2015-05-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2015-04-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2015-03-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2015-02-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2015-01-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2014-12-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2014-11-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2014-10-30 00:00:00
Action: Site Assessment Report

Action Type: RESPONSE
Date : 2014-10-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2014-09-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2014-08-29 00:00:00
Action: Site Assessment Report

Action Type: RESPONSE
Date : 2014-08-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2014-07-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2014-06-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2014-05-08 00:00:00
Action: Monitoring Report - Other

Action Type: ENFORCEMENT
Date : 2014-04-15 00:00:00
Action: Clean-up and Abatement Order

Action Type: RESPONSE
Date : 2014-04-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2014-03-31 00:00:00
Action: Site Assessment Report

Action Type: RESPONSE
Date : 2014-03-13 00:00:00
Action: Technical Memos

Action Type: RESPONSE
Date : 2014-03-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2014-02-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2014-01-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2013-12-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2013-11-08 00:00:00
Action: Monitoring Report - Other

Action Type: ENFORCEMENT
Date : 2013-11-01 00:00:00
Action: Clean-up and Abatement Order

Action Type: ENFORCEMENT
Date : 2013-10-23 00:00:00
Action: Clean-up and Abatement Order

Action Type: RESPONSE
Date : 2013-10-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2013-09-20 00:00:00
Action: Site Investigation Workplan - Regulator Responded

Action Type: ENFORCEMENT
Date : 2013-09-19 00:00:00
Action: Clean-up and Abatement Order

Action Type: RESPONSE
Date : 2013-09-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2013-08-30 00:00:00
Action: Corrective Action Plan / Remedial Action Plan - Regulator Responded

Action Type: RESPONSE
Date : 2013-08-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2013-07-31 00:00:00
Action: Monitoring Report - Semi-Annually

Action Type: ENFORCEMENT
Date : 2013-07-30 00:00:00
Action: Clean-up and Abatement Order

Action Type: RESPONSE
Date : 2013-07-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2013-07-01 00:00:00
Action: Conceptual Site Model

Action Type: RESPONSE
Date : 2013-06-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2013-05-31 00:00:00
Action: Site Investigation Workplan - Regulator Responded

Action Type: ENFORCEMENT
Date : 2013-05-29 00:00:00
Action: Clean-up and Abatement Order

Action Type: ENFORCEMENT
Date : 2013-05-09 00:00:00
Action: Clean-up and Abatement Order

Action Type: RESPONSE
Date : 2013-05-08 00:00:00
Action: Monitoring Report - Other

Action Type: RESPONSE
Date : 2013-05-06 00:00:00
Action: Corrective Action Plan / Remedial Action Plan

Action Type: RESPONSE
Date : 2013-05-06 00:00:00
Action: Other Workplan

Action Type: RESPONSE
Date : 2013-04-25 00:00:00
Action: Monitoring Report - Other

Action Type: ENFORCEMENT
Date : 2013-03-22 00:00:00
Action: Staff Letter

Action Type: ENFORCEMENT
Date : 2013-03-22 00:00:00
Action: Clean-up and Abatement Order

Action Type: ENFORCEMENT
Date : 2013-02-08 00:00:00
Action: Clean-up and Abatement Order

Action Type: RESPONSE
Date : 2013-01-17 00:00:00
Action: Site Assessment Report

Action Type: RESPONSE
Date : 2012-08-17 00:00:00
Action: Other Report / Document

Action Type: RESPONSE

Date : 2012-08-14 00:00:00
Action: Other Report / Document

Action Type: RESPONSE
Date : 2012-07-31 00:00:00
Action: Site Assessment Report

Action Type: RESPONSE
Date : 2012-07-31 00:00:00
Action: Well Installation Report

Action Type: ENFORCEMENT
Date : 2012-07-13 00:00:00
Action: Clean-up and Abatement Order

Action Type: RESPONSE
Date : 2012-07-12 00:00:00
Action: Other Report / Document

Action Type: ENFORCEMENT
Date : 2012-06-20 00:00:00
Action: Clean-up and Abatement Order

Action Type: ENFORCEMENT
Date : 2012-06-12 00:00:00
Action: 13267 Requirement

Action Type: RESPONSE
Date : 2012-05-30 00:00:00
Action: Site Assessment Report

Action Type: RESPONSE
Date : 2012-05-01 00:00:00
Action: Site Assessment Report

Action Type: RESPONSE
Date : 2012-05-01 00:00:00
Action: Monitoring Report - Other

Action Type: ENFORCEMENT
Date : 2012-04-10 00:00:00
Action: 13267 Requirement

Action Type: RESPONSE
Date : 2012-04-03 00:00:00
Action: Technical Memos

Action Type: RESPONSE
Date : 2012-04-03 00:00:00
Action: Unknown

Action Type: ENFORCEMENT
Date : 2012-03-23 00:00:00
Action: 13267 Requirement

Action Type: RESPONSE
Date : 2012-03-13 00:00:00
Action: Site Assessment Report

Action Type: ENFORCEMENT
Date : 2012-02-16 00:00:00
Action: 13267 Requirement

Action Type: ENFORCEMENT
Date : 2012-02-08 00:00:00
Action: File Review - Closure

Action Type: ENFORCEMENT
Date : 2012-02-08 00:00:00

Action: 13267 Requirement

Action Type: ENFORCEMENT
Date : 2012-02-08 00:00:00
Action: Closure/No Further Action Letter

Action Type: RESPONSE
Date : 2012-02-02 00:00:00
Action: Technical Memos

Action Type: RESPONSE
Date : 2012-02-02 00:00:00
Action: Unknown

Action Type: RESPONSE
Date : 2012-01-23 00:00:00
Action: Site Assessment Report

Action Type: RESPONSE
Date : 2012-01-09 00:00:00
Action: Site Assessment Report

Action Type: ENFORCEMENT
Date : 2011-12-23 00:00:00
Action: 13267 Requirement

Action Type: ENFORCEMENT
Date : 2011-12-22 00:00:00
Action: 13267 Requirement

Action Type: ENFORCEMENT
Date : 2011-12-13 00:00:00
Action: 13267 Requirement

Action Type: ENFORCEMENT
Date : 2011-11-01 00:00:00
Action: 13267 Requirement

Action Type: ENFORCEMENT
Date : 2011-10-26 00:00:00
Action: 13267 Requirement

Action Type: ENFORCEMENT
Date : 2011-10-21 00:00:00
Action: 13267 Requirement

Action Type: ENFORCEMENT
Date : 2011-10-20 00:00:00
Action: 13267 Requirement

Action Type: RESPONSE
Date : 2011-10-20 00:00:00
Action: Site Assessment Report

Action Type: ENFORCEMENT
Date : 2011-10-20 00:00:00
Action: Cost Recovery Agreement / N. of Reimbursement

Action Type: ENFORCEMENT
Date : 2011-08-31 00:00:00
Action: 13267 Requirement

Action Type: ENFORCEMENT
Date : 2011-08-02 00:00:00
Action: Technical Correspondence / Assistance / Other

Action Type: RESPONSE
Date : 2011-08-01 00:00:00
Action: Other Report / Document

Action Type: ENFORCEMENT
Date : 2011-07-21 00:00:00
Action: 13267 Requirement

Action Type: ENFORCEMENT
Date : 2011-07-19 00:00:00
Action: 13267 Requirement

Action Type: ENFORCEMENT
Date : 2011-06-30 00:00:00
Action: 13267 Requirement

Action Type: RESPONSE
Date : 2011-06-22 00:00:00
Action: Preliminary Site Assessment Workplan

Action Type: RESPONSE
Date : 2011-06-14 00:00:00
Action: Correspondence

Action Type: RESPONSE
Date : 2011-01-10 00:00:00
Action: Site Investigation

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History(as Nov 16 2020)

Status: Open - Site Assessment
Status Date: 2016-02-10 00:00:00

Status: Open - Site Assessment
Status Date: 2011-06-14 00:00:00

Status: Open - Case Begin Date
Status Date: 2011-06-14 00:00:00

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Contacts(as Nov 16 2020)

Contact Type: Regional Board Caseworker
Contact Name: MAJD NIMA
Phone No: 2135766707
Organization Name: LOS ANGELES RWQCB (REGION 4)
Email: majd.nima@waterboards.ca.gov
Address: 320 W. 4th St Suite 200
City: LOS ANGELES

Cleanup Program Sites from GeoTracker Search - Regulatory Profile (as of Oct 06, 2020)

Project Status:
CUF Claim:
CUF Priority Assign:
CUF Amount Paid:
Facility Type:
User Defined Beneficial Use:
Designated Beneficial Use: MUN, AGR, IND, PROC
Designated Beneficl Use Desc: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, Industrial Process Supply
Project Oversight Agencies:
Report Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000003058
Cleanup Status Detail: OPEN - SITE ASSESSMENT AS OF 2/10/2016
Cleanup History Link: https://geotracker.waterboards.ca.gov/profile_report_include?global_id=T10000003058&tabname=regulatoryhistory
Potential COC: GASOLINE, OTHER PETROLEUM
Potential Media of Concern: CONTAMINATED SURFACE / STRUCTURE, OTHER GROUNDWATER (USES OTHER THAN DRINKING WATER), SEDIMENTS, SOIL, SOIL VAPOR, SURFACE WATER, UNDER INVESTIGATION
GW Monitoring Freq:
DWR GW Sub Basin: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Calwater Watershed Name: Dominguez Channel (411.01)
Post Closure Site Management:
WDR Place Type:
WDR File:
WDR Order:
File Location: REGIONAL BOARD
Composting Method:

Future Land Use:
Cleanup Oversight Agencies: LOS ANGELES RWQCB (REGION 4) (LEAD) - CASE #: 1264
CASEWORKER: MAJD NIMA
Site History:

A petroleum sheen appeared on the surface of the Dominguez Channel, approximately 400 feet south of Carson Street in Carson, in January 2011. Investigation is mostly complete. LNAPL is being recovered in wells adjacent to the channel to prevent a recurrence of the sheen. Additional remediation measure are being explored.

Sites from GeoTracker Search - Regulatory Activities (as of Oct 06, 2020)

Action Type: Enforcement - Other
Action Date:
Received Issue Date:
Action: Unknown
Doc Link:
Title Description Comments:

Action Type: Enforcement - Other
Action Date:
Received Issue Date:
Action: Unknown
Doc Link:
Title Description Comments:

Action Type: Response Requested - Reports
Action Date: 8/15/2020
Received Issue Date: 8/6/2020
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6030398
Title Description Comments:

Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 7/15/2020
Received Issue Date: 7/7/2020
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6030393
Title Description Comments:

Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 6/15/2020
Received Issue Date: 6/5/2020
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6030392
Title Description Comments:

Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 5/15/2020
Received Issue Date: 5/8/2020
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6030390
Title Description Comments:

Monthly Status Update Report

Action Type: Response Requested - Reports

Action Date: 4/7/2020
Received Issue Date: 4/7/2020
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6030389
Title Description Comments:

Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 3/15/2020
Received Issue Date: 3/4/2020
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6030394
Title Description Comments:

Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 3/8/2020
Received Issue Date: 3/4/2020
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6019013
Title Description Comments:

Monthly update reports

Action Type: Response Requested - Reports
Action Date: 2/6/2020
Received Issue Date: 2/6/2020
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6030386
Title Description Comments:

Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 1/8/2020
Received Issue Date: 1/7/2020
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186603
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 12/8/2019
Received Issue Date: 12/6/2019
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186602
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 11/8/2019
Received Issue Date: 11/7/2019
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186601
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports

Action Date: 10/8/2019
Received Issue Date: 10/9/2019
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186600
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 9/8/2019
Received Issue Date: 9/6/2019
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186599
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 8/8/2019
Received Issue Date: 8/7/2019
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186598
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 7/8/2019
Received Issue Date: 7/8/2019
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186597
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 6/8/2019
Received Issue Date: 6/8/2019
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5998115
Title Description Comments:

LNAPL MONTHLY STATUS UPDATE REPORT

Action Type: Response Requested - Reports
Action Date: 5/7/2019
Received Issue Date: 5/7/2019
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5998114
Title Description Comments:

LNAPL MONTHLY STATUS UPDATE REPORT

Action Type: Response Requested - Reports
Action Date: 4/8/2019
Received Issue Date: 4/4/2019
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186594
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports

Action Date: 3/8/2019
Received Issue Date: 3/7/2019
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186593
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 2/8/2019
Received Issue Date: 2/8/2019
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186592
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 1/9/2019
Received Issue Date: 1/9/2019
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186591
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 12/8/2018
Received Issue Date: 12/7/2018
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186590
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 11/8/2018
Received Issue Date: 11/7/2018
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186589
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 10/8/2018
Received Issue Date: 10/8/2018
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186588
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 9/8/2018
Received Issue Date: 9/5/2018
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186587
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports

Action Date: 8/8/2018
Received Issue Date: 8/7/2018
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186586
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 7/8/2018
Received Issue Date: 7/6/2018
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186585
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 5/8/2018
Received Issue Date: 5/8/2018
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186583
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 4/8/2018
Received Issue Date: 4/8/2018
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186582
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 3/8/2018
Received Issue Date: 3/8/2018
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186581
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 2/9/2018
Received Issue Date: 2/9/2018
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186580
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 1/15/2018
Received Issue Date: 12/18/2017
Action: Monitoring Report - Semi-Annually
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5962923
Title Description Comments:

2017 Second Semi-annual Groundwater Monitoring Report

Action Type: Response Requested - Reports

Action Date: 1/8/2018
Received Issue Date: 1/8/2018
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186579
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 12/8/2017
Received Issue Date: 12/11/2017
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186578
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 11/8/2017
Received Issue Date: 11/8/2017
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186577
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 10/8/2017
Received Issue Date: 10/6/2017
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186576
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 9/8/2017
Received Issue Date: 9/7/2017
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186575
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 8/8/2017
Received Issue Date: 8/4/2017
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186574
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Other Regulatory Actions
Action Date: 7/18/2017
Received Issue Date: 7/18/2017
Action: Preliminary Site Review
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6421943&temptable=ENFORCEMENT
Title Description Comments:

OEHHA human health risk assessment letter

Action Type: Response Requested - Reports

Action Date: 7/8/2017
Received Issue Date: 7/6/2017
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186573
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 6/8/2017
Received Issue Date: 6/8/2017
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186572
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 5/26/2017
Received Issue Date: 5/16/2017
Action: Site Assessment Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5920710
Title Description Comments:

Go Kart World Sub-Slab Vapor Report

Action Type: Response Requested - Reports
Action Date: 5/8/2017
Received Issue Date: 5/5/2017
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186571
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 4/8/2017
Received Issue Date: 4/5/2017
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186570
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 3/8/2017
Received Issue Date: 3/7/2017
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186569
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 2/8/2017
Received Issue Date: 2/6/2017
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186568
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Enforcement/Orders

Action Date: 2/7/2017
Received Issue Date: 2/7/2017
Action: 13267 Requirement - #R4-2013-0007
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6311507&temptable=ENFORCEMENT
Title Description Comments:

Workplan Approval Letter GoKart Sub-Slab SVS

Action Type: Response Requested - Reports
Action Date: 1/8/2017
Received Issue Date: 1/6/2017
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186567
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 12/21/2016
Received Issue Date: 12/21/2016
Action: Monitoring Report - Semi-Annually
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5920652
Title Description Comments:

2016 Second Semi-annual Groundwater Monitoring Report

Action Type: Response Requested - Workplans
Action Date: 12/9/2016
Received Issue Date: 12/9/2016
Action: Site Investigation Workplan
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5989472
Title Description Comments:

Sub-slab Soil Gas Sampling Work Plan

Action Type: Response Requested - Reports
Action Date: 12/8/2016
Received Issue Date: 12/8/2016
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186566
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 11/8/2016
Received Issue Date: 11/7/2016
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186565
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 10/8/2016
Received Issue Date: 10/6/2016
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186564
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports

Action Date: *9/30/2016
Received Issue Date: 9/7/2016
Action: Site Assessment Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5846862
Title Description Comments:

Boring Installation Report - Go Kart World

Action Type: Response Requested - Other
Action Date: *9/30/2016
Received Issue Date: 9/9/2016
Action: Correspondence
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5858436
Title Description Comments:

Status of access request at Go Kart World

Action Type: Response Requested - Reports
Action Date: 9/8/2016
Received Issue Date: 9/8/2016
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186563
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 8/8/2016
Received Issue Date: 8/8/2016
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186562
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 7/8/2016
Received Issue Date: 7/6/2016
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186561
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Other Regulatory Actions
Action Date: 6/29/2016
Received Issue Date: 6/29/2016
Action: Staff Letter - #R4-2013-0007
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6290194&temptable=ENFORCEMENT
Title Description Comments:

APPROVAL OF DUE DATE EXTENSION FOR REPORT SUBMITTAL OF SOIL AND GROUNDWATER ASSESSMENT, GO KART WORLD FACILITY

Action Type: Response Requested - Reports
Action Date: 6/8/2016
Received Issue Date: 6/2/2016
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186560
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports

Action Date: 5/8/2016
Received Issue Date: 5/6/2016
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186559
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 4/8/2016
Received Issue Date: 4/3/2015
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186558
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 3/8/2016
Received Issue Date: 3/7/2016
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186557
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 2/8/2016
Received Issue Date: 2/5/2016
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186556
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Other Regulatory Actions
Action Date: 2/3/2016
Received Issue Date: 2/3/2016
Action: File Review - Closure
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6275372&temptable=ENFORCEMENT
Title Description Comments:

Merger of Cases into SCP Case No. 1264

Action Type: Response Requested - Reports
Action Date: 1/8/2016
Received Issue Date: 1/6/2016
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186555
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 12/15/2015
Received Issue Date: 12/15/2015
Action: Site Assessment Report
Doc Link:
Title Description Comments:

Boring and/or Well Installation Report - Western Levee

Action Type: Response Requested - Reports

Action Date: 12/8/2015
Received Issue Date: 12/4/2015
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186554
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Other
Action Date: 12/1/2015
Received Issue Date: 12/1/2015
Action: Correspondence
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5989623
Title Description Comments:

TIME EXTENSION REQUEST FOR REPORT SUBMITTAL ADDITIONAL WESTERN LEVEE ASSESSMENT ƒÃ¾

Action Type: Response Requested - Other
Action Date: 11/12/2015
Received Issue Date: 12/1/2015
Action: Correspondence
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5989621
Title Description Comments:

Time Extension for Soil and Groundwater Assessment, Go Kart World

Action Type: Response Requested - Reports
Action Date: 11/8/2015
Received Issue Date: 11/5/2015
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186553
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 10/8/2015
Received Issue Date: 10/7/2015
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186552
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Enforcement/Orders
Action Date: 9/22/2015
Received Issue Date: 9/22/2015
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6261145&temptable=ENFORCEMENT
Title Description Comments:

Access Request - Go Kart World

Action Type: Response Requested - Reports
Action Date: 9/8/2015
Received Issue Date: 9/8/2015
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186551
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 8/8/2015
Received Issue Date: 8/7/2015
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186550
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 7/8/2015
Received Issue Date: 7/8/2015
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186549
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Enforcement/Orders
Action Date: 7/6/2015
Received Issue Date: 7/6/2015
Action: Clean-up and Abatement Order
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6251077&temptable=ENFORCEMENT
Title Description Comments:

Approval of Additional Western Levee Assessment Work Plan

Action Type: Enforcement/Orders
Action Date: 7/3/2015
Received Issue Date: 7/3/2015
Action: Clean-up and Abatement Order
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6251076&temptable=ENFORCEMENT
Title Description Comments:

Approval of Soil and Groundwater Assessment Work Plan

Action Type: Response Requested - Other
Action Date: 6/23/2015
Received Issue Date: 6/23/2016
Action: Correspondence
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5989626
Title Description Comments:

TIME EXTENSION REQUEST FOR REPORT SUBMITTAL SOIL AND GROUNDWATER ASSESSMENT, GO KART WORLD FACILITY

Action Type: Response Requested - Reports
Action Date: 6/8/2015
Received Issue Date: 6/3/2015
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186548
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 5/12/2015
Received Issue Date: 5/12/2016
Action: Site Assessment Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5989613
Title Description Comments:

Additional Site Assessment Western Levee

Action Type: Response Requested - Reports
Action Date: 5/8/2015
Received Issue Date: 5/7/2015
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186547
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 4/8/2015
Received Issue Date: 4/3/2015
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186546
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 3/8/2015
Received Issue Date: 3/4/2015
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186545
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 2/8/2015
Received Issue Date: 2/6/2015
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186544
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 1/8/2015
Received Issue Date: 1/8/2015
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186543
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 12/8/2014
Received Issue Date: 12/5/2014
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186542
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 11/8/2014
Received Issue Date: 11/7/2014
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186541
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 10/30/2014
Received Issue Date: 10/2/2014
Action: Site Assessment Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5802697
Title Description Comments:

Report on geophysical confirmation borings

Action Type: Response Requested - Reports
Action Date: 10/30/2014
Received Issue Date: 10/2/2014
Action: Site Assessment Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5802698
Title Description Comments:

Final Geophysical Report

Action Type: Response Requested - Reports
Action Date: 10/8/2014
Received Issue Date: 10/1/2014
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186540
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 9/8/2014
Received Issue Date: 9/5/2014
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186539
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: *8/29/2014
Received Issue Date: 8/25/2014
Action: Site Assessment Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5783086
Title Description Comments:

LNAPL recovery well installation report

Action Type: Response Requested - Reports
Action Date: 8/8/2014
Received Issue Date: 8/8/2014
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186538
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 7/8/2014
Received Issue Date: 7/7/2014
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186537
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 6/8/2014
Received Issue Date: 6/6/2014
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186536
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 5/8/2014
Received Issue Date: 5/2/2014
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186535
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Enforcement/Orders
Action Date: 4/15/2014
Received Issue Date: 4/15/2014
Action: Clean-up and Abatement Order
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6200379&temptable=ENFORCEMENT
Title Description Comments:

Approval of Work Plan for Geophysical Survey Confirmation Borings

Action Type: Enforcement/Orders
Action Date: 4/15/2014
Received Issue Date: 4/15/2014
Action: Clean-up and Abatement Order
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6199996&temptable=ENFORCEMENT
Title Description Comments:

Approval of Extension Request for Submittal of LNAPL Recovery Well Installation Report

Action Type: Response Requested - Reports
Action Date: 4/8/2014
Received Issue Date: 4/7/2014
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186534
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: *3/31/2014
Received Issue Date: 4/20/2014
Action: Site Assessment Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5786920
Title Description Comments:

Submit GeoTrax Survey™ Report

Action Type: Response Requested - Reports
Action Date: 3/13/2014
Received Issue Date: 2/5/2014
Action: Technical Memos
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5788242
Title Description Comments:

Report on installation of R-MW-13A/B and R-MW-14A/B

Action Type: Response Requested - Reports
Action Date: 3/8/2014
Received Issue Date: 3/5/2014
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186533
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 2/8/2014
Received Issue Date: 2/5/2014
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186532
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 1/8/2014
Received Issue Date: 1/7/2014
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186531
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 12/8/2013
Received Issue Date: 12/6/2013
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186530
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 11/8/2013
Received Issue Date: 11/6/2013
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186529
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Enforcement/Orders
Action Date: 11/1/2013
Received Issue Date: 11/1/2013
Action: Clean-up and Abatement Order
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6181336&temptable=ENFORCEMENT
Title Description Comments:

Approval of Well Installation Work Plan East of Former Active RV

Action Type: Enforcement/Orders
Action Date: 10/23/2013
Received Issue Date: 10/23/2013
Action: Clean-up and Abatement Order
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6180120&temptable=ENFORCEMENT
Title Description Comments:

Approval of GeoTrax Survey™ Screening Work Plan

Action Type: Response Requested - Reports
Action Date: 10/8/2013
Received Issue Date: 10/8/2013
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186528
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Workplans
Action Date: 9/20/2013
Received Issue Date: 8/29/2013
Action: Site Investigation Workplan - Regulator Responded
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5776870
Title Description Comments:

Supplemental Work Plan (Assessment)

Action Type: Enforcement/Orders
Action Date: 9/19/2013
Received Issue Date: 9/19/2013
Action: Clean-up and Abatement Order
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6176137&temptable=ENFORCEMENT
Title Description Comments:

Approval of LNAPL Recovery Well Installation Work Plan

Action Type: Response Requested - Reports
Action Date: 9/8/2013
Received Issue Date: 9/6/2013
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186527
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Workplans
Action Date: 8/30/2013
Received Issue Date: 8/29/2013
Action: Corrective Action Plan / Remedial Action Plan - Regulator Responded
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5762577
Title Description Comments:

Interim Remedial Action Plan (Directive 3)

Action Type: Response Requested - Reports
Action Date: 8/8/2013
Received Issue Date: 8/6/2013
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186526
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Reports
Action Date: 7/31/2013
Received Issue Date: 7/25/2013
Action: Monitoring Report - Semi-Annually
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5762582

Title Description Comments:

Groundwater Monitoring Report (Directive 8)

Action Type: Enforcement/Orders
Action Date: 7/30/2013
Received Issue Date: 7/30/2013
Action: Clean-up and Abatement Order
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6169775&temptable=ENFORCEMENT
Title Description Comments:

Approval of Master Work Plan

Action Type: Response Requested - Reports
Action Date: 7/8/2013
Received Issue Date: 7/5/2013
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186525
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Other
Action Date: 7/1/2013
Received Issue Date: 6/28/2013
Action: Conceptual Site Model
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5762578
Title Description Comments:

Site Conceptual Model (Directive 4)

Action Type: Response Requested - Reports
Action Date: 6/8/2013
Received Issue Date: 6/7/2013
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186524
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Workplans
Action Date: 5/31/2013
Received Issue Date: 5/31/2013
Action: Site Investigation Workplan - Regulator Responded
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5762579
Title Description Comments:

Site Investigation - Master Work Plan (Directive 5a)

Action Type: Enforcement/Orders
Action Date: 5/29/2013
Received Issue Date: 5/29/2013
Action: Clean-up and Abatement Order
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6160654&temptable=ENFORCEMENT
Title Description Comments:

Approval of Interim Mitigation Plan

Action Type: Enforcement/Orders
Action Date: 5/9/2013
Received Issue Date: 5/9/2013
Action: Clean-up and Abatement Order

Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6158716&temptable=ENFORCEMENT
Title Description Comments:

Approval of Groundwater Monitoring Work Plan

Action Type: Response Requested - Reports
Action Date: 5/8/2013
Received Issue Date: 5/6/2013
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186523
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Response Requested - Workplans
Action Date: *5/6/2013
Received Issue Date: 5/31/2013
Action: Corrective Action Plan / Remedial Action Plan
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5762575
Title Description Comments:

Work Plan for Containment of Petroleum Hydrocarbons and Associated Waste (Directive 1)

Action Type: Response Requested - Workplans
Action Date: *5/6/2013
Received Issue Date: 5/6/2013
Action: Other Workplan
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5762581
Title Description Comments:

Groundwater Monitoring Work Plan (Directive 8)

Action Type: Response Requested - Workplans
Action Date: *5/6/2013
Received Issue Date: 5/6/2013
Action: Corrective Action Plan / Remedial Action Plan
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5762576
Title Description Comments:

Work Plan for Removal/Disposal of Hydrcarbons in Channel Sub-Drain System (Directive 2)

Action Type: Response Requested - Reports
Action Date: 4/25/2013
Received Issue Date: 4/25/2013
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=6186522
Title Description Comments:

LNAPL Monthly Status Update Report

Action Type: Other Regulatory Actions
Action Date: 3/22/2013
Received Issue Date: 3/22/2013
Action: Staff Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6153134&temptable=ENFORCEMENT
Title Description Comments:

Approval of Interim Mitigation Plan Addendum

Action Type: Enforcement/Orders
Action Date: 3/22/2013
Received Issue Date: 3/22/2013

Action: Clean-up and Abatement Order
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6153058&temptable=ENFORCEMENT
Title Description Comments:

Approval of Extension Request for Items Required Under CAO R4-2013-0007

Action Type: Enforcement/Orders
Action Date: 2/8/2013
Received Issue Date: 2/8/2013
Action: Clean-up and Abatement Order
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6149037&temptable=ENFORCEMENT
Title Description Comments:

Cleanup and Abatement Order No. R4-2013-0007

Action Type: Response Requested - Reports
Action Date: 1/17/2013
Received Issue Date: 1/17/2013
Action: Site Assessment Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5993577
Title Description Comments:

OEHHA-Sub-slab soil vapor sampling health risk assessment for Active RV

Action Type: Response Requested - Other
Action Date: 8/17/2012
Received Issue Date: 8/17/2012
Action: Other Report / Document
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5749267
Title Description Comments:

BP - Response to Draft CAO

Action Type: Response Requested - Other
Action Date: 8/17/2012
Received Issue Date: 8/17/2012
Action: Other Report / Document
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5749275
Title Description Comments:

Plains AAP - Response to Draft CAO

Action Type: Response Requested - Other
Action Date: 8/17/2012
Received Issue Date: 8/17/2012
Action: Other Report / Document
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5749273
Title Description Comments:

ExxonMobil Pipeline Company - Response to Draft CAO

Action Type: Response Requested - Other
Action Date: 8/17/2012
Received Issue Date: 8/17/2012
Action: Other Report / Document
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5749270
Title Description Comments:

CEMC - Response to Draft CAO

Action Type: Response Requested - Other
Action Date: 8/14/2012

Received Issue Date: 8/14/2012
Action: Other Report / Document
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5749271
Title Description Comments:

City of Carson - Response to Draft CAO

Action Type: Response Requested - Reports
Action Date: 7/31/2012
Received Issue Date: 7/12/2012
Action: Site Assessment Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5733771
Title Description Comments:

Soil Investigation Report (Active RV)

Action Type: Response Requested - Reports
Action Date: 7/31/2012
Received Issue Date: 7/12/2012
Action: Site Assessment Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5733772
Title Description Comments:

Report on Subslab Investigation (Active RV)

Action Type: Response Requested - Reports
Action Date: 7/31/2012
Received Issue Date: 5/31/2012
Action: Well Installation Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5734492
Title Description Comments:

Active RV Well Reconstruction Report

Action Type: Enforcement/Orders
Action Date: 7/13/2012
Received Issue Date: 7/13/2012
Action: Clean-up and Abatement Order
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6130194&temptable=ENFORCEMENT
Title Description Comments:

Extension to Comment Period for Draft CAO R4-2012-0103

Action Type: Response Requested - Other
Action Date: 7/12/2012
Received Issue Date: 7/12/2012
Action: Other Report / Document
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5749276
Title Description Comments:

Equilon/Shell - Comments on Draft CAO

Action Type: Enforcement/Orders
Action Date: 6/20/2012
Received Issue Date: 6/20/2012
Action: Clean-up and Abatement Order
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6125704&temptable=ENFORCEMENT
Title Description Comments:

Draft Cleanup and Abatement Order No. R4-2012-0103

Action Type: Enforcement/Orders

Action Date: 6/12/2012
Received Issue Date: 6/12/2012
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6125726&temptable=ENFORCEMENT
Title Description Comments:

Satisfaction of 13267 Order Requirements (Carson Air Harbor Site)

Action Type: Response Requested - Reports
Action Date: 5/30/2012
Received Issue Date: 4/3/2012
Action: Site Assessment Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5731041
Title Description Comments:

Supplemental Site Assessment Report (Active RV Wells & W. 138th Street CPT/Hydropunch)

Action Type: Response Requested - Reports
Action Date: 5/1/2012
Received Issue Date: 5/3/2012
Action: Monitoring Report - Other
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5731576
Title Description Comments:

Groundwater Monitoring Field Schedule

Action Type: Response Requested - Reports
Action Date: 5/1/2012
Received Issue Date: 4/30/2012
Action: Site Assessment Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5727918
Title Description Comments:

Channel Boring Report

Action Type: Enforcement/Orders
Action Date: 4/10/2012
Received Issue Date: 4/10/2012
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6118292&temptable=ENFORCEMENT
Title Description Comments:

Approval of Supplemental Site Assessment Work Plan - Reconstruction of Wells MW-2A-RV and MW-4A-RV

Action Type: Response Requested - Reports
Action Date: 4/3/2012
Received Issue Date: 4/3/2012
Action: Technical Memos
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5734374
Title Description Comments:

Addendum to Technical Report on Pipeline Inventory

Action Type: Response Requested - Other
Action Date: 4/3/2012
Received Issue Date: 4/3/2012
Action: Unknown
Doc Link:
Title Description Comments:

Addendum to Technical Report on Pipeline Inventory

Action Type: Response Requested - Other
Action Date: 4/3/2012
Received Issue Date: 4/3/2012
Action: Unknown
Doc Link:
Title Description Comments:

Addendum to Technical Report on Pipeline Inventory

Action Type: Enforcement/Orders
Action Date: 3/23/2012
Received Issue Date: 3/23/2012
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6116885&temptable=ENFORCEMENT
Title Description Comments:

Approval of Supplemental Site Assessment Work Plan, Subslab Soil Vapor Sampling (Active RV)

Action Type: Enforcement/Orders
Action Date: 3/23/2012
Received Issue Date: 3/23/2012
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6116882&temptable=ENFORCEMENT
Title Description Comments:

Approval of Supplemental Site Assessment Work Plan (Active RV)

Action Type: Response Requested - Reports
Action Date: 3/13/2012
Received Issue Date: 3/7/2012
Action: Site Assessment Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5727040
Title Description Comments:

Soil Vapor Report - Active RV

Action Type: Enforcement/Orders
Action Date: 2/16/2012
Received Issue Date: 2/16/2012
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6113523&temptable=ENFORCEMENT
Title Description Comments:

Groundwater Monitoring Field Schedule

Action Type: Other Regulatory Actions
Action Date: 2/8/2012
Received Issue Date: 2/8/2012
Action: File Review - Closure
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6112957&temptable=ENFORCEMENT
Title Description Comments:

Satisfaction of 13267 Order Requirements and Return of Case to UST Program (Former Texaco Service Station)

Action Type: Other Regulatory Actions
Action Date: 2/8/2012
Received Issue Date: 2/8/2012
Action: Closure/No Further Action Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6112955&temptable=ENFORCEMENT
Title Description Comments:

Satisfaction of 13267 Order Requirements and Return of Case to UST Program (76 Service Station)

Action Type: Enforcement/Orders
Action Date: 2/8/2012
Received Issue Date: 2/8/2012
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6112953&temptable=ENFORCEMENT
Title Description Comments:

Approval of Supplemental Site Assessment Work Plan

Action Type: Response Requested - Other
Action Date: 2/2/2012
Received Issue Date: 2/2/2012
Action: Unknown
Doc Link:
Title Description Comments:

Carson Street Channel Spill - Letter Report

Action Type: Response Requested - Other
Action Date: 2/2/2012
Received Issue Date: 2/2/2012
Action: Unknown
Doc Link:
Title Description Comments:

Carson Street Channel Spill - Letter Report

Action Type: Response Requested - Other
Action Date: 2/2/2012
Received Issue Date: 2/2/2012
Action: Unknown
Doc Link:
Title Description Comments:

Carson Street Channel Spill - Letter Report

Action Type: Response Requested - Reports
Action Date: 2/2/2012
Received Issue Date: 2/2/2012
Action: Technical Memos
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5730963
Title Description Comments:

Carson Street Channel Spill - Letter Report

Action Type: Response Requested - Reports
Action Date: 1/23/2012
Received Issue Date: 1/20/2012
Action: Site Assessment Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5724579
Title Description Comments:

Report on Additional Assessment (Channel wells, etc.)

Action Type: Response Requested - Reports
Action Date: 1/9/2012
Received Issue Date: 1/6/2012
Action: Site Assessment Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5724395
Title Description Comments:

Site Assessment Report (Active RV) - Wells Installation

Action Type: Enforcement/Orders
Action Date: 12/23/2011
Received Issue Date: 12/23/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6107068&temptable=ENFORCEMENT
Title Description Comments:

Approval of Supplemental Site Assessment Work Plan

Action Type: Enforcement/Orders
Action Date: 12/22/2011
Received Issue Date: 12/22/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6106987&temptable=ENFORCEMENT
Title Description Comments:

Approval of Time Extension for Tidal Study Report

Action Type: Enforcement/Orders
Action Date: 12/13/2011
Received Issue Date: 12/13/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6106063&temptable=ENFORCEMENT
Title Description Comments:

Crimson Pipeline L.P. - Requirement for Technical Report on Pipeline Inventory

Action Type: Enforcement/Orders
Action Date: 12/13/2011
Received Issue Date: 12/13/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6106069&temptable=ENFORCEMENT
Title Description Comments:

Shell Oil Products US - Requirement for Technical Report on Pipeline Inventory

Action Type: Enforcement/Orders
Action Date: 12/13/2011
Received Issue Date: 12/13/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6106067&temptable=ENFORCEMENT
Title Description Comments:

Plains All American Pipeline, L.P. - Requirement for Technical Report on Pipeline Inventory

Action Type: Enforcement/Orders
Action Date: 12/13/2011
Received Issue Date: 12/13/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6106064&temptable=ENFORCEMENT
Title Description Comments:

Tesoro Refining and Marketing Corporation - Requirement for Technical Report on Pipeline Inventory

Action Type: Enforcement/Orders

Action Date: 12/13/2011
Received Issue Date: 12/13/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6106158&temptable=ENFORCEMENT
Title Description Comments:

Approval of Supplemental Site Assessment Work Plan - Soil Vapor Study at Former Active RV

Action Type: Enforcement/Orders
Action Date: 12/13/2011
Received Issue Date: 12/13/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6106062&temptable=ENFORCEMENT
Title Description Comments:

ConocoPhillips Company - Requirement for Technical Report on Pipeline Inventory

Action Type: Enforcement/Orders
Action Date: 12/13/2011
Received Issue Date: 12/13/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6106066&temptable=ENFORCEMENT
Title Description Comments:

Exxon-Mobil Corporation - Requirement for Technical Report on Pipeline Inventory

Action Type: Enforcement/Orders
Action Date: 12/13/2011
Received Issue Date: 12/13/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6106060&temptable=ENFORCEMENT
Title Description Comments:

Chevron EMC - Requirement for Technical Report on Pipeline Inventory

Action Type: Enforcement/Orders
Action Date: 12/13/2011
Received Issue Date: 12/13/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6106059&temptable=ENFORCEMENT
Title Description Comments:

BP Pipelines/ARCO - Requirement for Technical Report on Pipeline Inventory

Action Type: Enforcement/Orders
Action Date: 12/13/2011
Received Issue Date: 12/13/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6106058&temptable=ENFORCEMENT
Title Description Comments:

Air Products and Chemicals, Inc. - Requirement for Technical Report on Pipeline Inventory

Action Type: Enforcement/Orders
Action Date: 11/1/2011
Received Issue Date: 11/1/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6102699&temptable=ENFORCEMENT

Title Description Comments:

Approval of Supplemental Site Assessment Work Plan

Action Type: Enforcement/Orders
Action Date: 10/26/2011
Received Issue Date: 10/26/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6102418&temptable=ENFORCEMENT
Title Description Comments:

Approval of Supplemental Site Assessment Work Plan - Active RV

Action Type: Enforcement/Orders
Action Date: 10/21/2011
Received Issue Date: 10/21/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6101782&temptable=ENFORCEMENT
Title Description Comments:

Approval of Tidal Study Work Plan

Action Type: Agreements
Action Date: 10/20/2011
Received Issue Date: 10/20/2011
Action: Cost Recovery Agreement / N. of Reimbursement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6101415&temptable=ENFORCEMENT
Title Description Comments:

Site Cleanup Program Cost Reimbursement Account

Action Type: Enforcement/Orders
Action Date: 10/20/2011
Received Issue Date: 10/20/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6101416&temptable=ENFORCEMENT
Title Description Comments:

Approval of Supplemental Site Assessment Work Plan (at former Active RV Property)

Action Type: Response Requested - Reports
Action Date: *10/20/2011
Received Issue Date: 12/8/2011
Action: Site Assessment Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5718091
Title Description Comments:

Site Assessment Report

Action Type: Response Requested - Reports
Action Date: *10/20/2011
Received Issue Date: 10/20/2011
Action: Site Assessment Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5718093
Title Description Comments:

Site Assessment Report

Action Type: Response Requested - Reports
Action Date: *10/20/2011

Received Issue Date: 10/20/2011
Action: Site Assessment Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5716345
Title Description Comments:

Well Install/Channel Borings/Channel Sediment Assessment Report

Action Type: Enforcement/Orders
Action Date: 8/31/2011
Received Issue Date: 8/31/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6097498&temptable=ENFORCEMENT
Title Description Comments:

Revised Deadlines for Technical Reporting

Action Type: Other Regulatory Actions
Action Date: 8/2/2011
Received Issue Date: 8/2/2011
Action: Technical Correspondence / Assistance / Other
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6094313&temptable=ENFORCEMENT
Title Description Comments:

SCP Oversight Cost Reimbursement Account

Action Type: Response Requested - Other
Action Date: 8/1/2011
Received Issue Date: 8/1/2011
Action: Other Report / Document
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5716344
Title Description Comments:

Report on Benchmark Installation

Action Type: Enforcement/Orders
Action Date: 7/21/2011
Received Issue Date: 7/21/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6093233&temptable=ENFORCEMENT
Title Description Comments:

Approval of Work Plan - 76 Service Station

Action Type: Enforcement/Orders
Action Date: 7/21/2011
Received Issue Date: 7/21/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6092929&temptable=ENFORCEMENT
Title Description Comments:

Approval of Work Plan - CAH

Action Type: Enforcement/Orders
Action Date: 7/21/2011
Received Issue Date: 7/21/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6093236&temptable=ENFORCEMENT
Title Description Comments:

Approval of Work Plan - Former Texaco Service Station

Action Type: Enforcement/Orders
Action Date: 7/19/2011
Received Issue Date: 7/19/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6092924&temptable=ENFORCEMENT
Title Description Comments:

Approval of Time Extension for Subdrain Evaluation and Placement of Absorbent Material

Action Type: Enforcement/Orders
Action Date: 6/30/2011
Received Issue Date: 6/30/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6091041&temptable=ENFORCEMENT
Title Description Comments:

Approval of Work Plan to Assess the LNAPL Release in the Dominguez Channel South of Carson Street

Action Type: Response Requested - Workplans
Action Date: 6/22/2011
Received Issue Date: 6/22/2011
Action: Preliminary Site Assessment Workplan
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5715830
Title Description Comments:

Work Plan to Assess the Light Non-Aqueous Phase Liquid Release in the Dominguez Channel South of Carson Street

Action Type: Response Requested - Other
Action Date: 6/14/2011
Received Issue Date: 6/14/2011
Action: Correspondence
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5715297
Title Description Comments:

Chevron - Transfer to RELLC

Action Type: Response Requested - Other
Action Date: 6/14/2011
Received Issue Date: 6/14/2011
Action: Correspondence
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5715299
Title Description Comments:

Transfer to RELLC from Chevron and Shell

Action Type: Response Requested - Other
Action Date: 6/14/2011
Received Issue Date: 6/14/2011
Action: Correspondence
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5715295
Title Description Comments:

Shell Oil Products US - Transfer to RELLC

Action Type: Response Requested - Reports
Action Date: 1/10/2011
Received Issue Date: 1/27/2012
Action: Site Investigation
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003058&doc_id=5724080
Title Description Comments:

Sites from GeoTracker Search - Documents (as of Oct 06, 2020)

Document Type: Site Documents ***Submitted:***
Document Date: 9/8/2020 ***Submitted By:*** JESSICA CURRAN (AUTH_RP)
Size : 6,059 KB
Title: MONTHLY STATUS UPDATE - SEPTEMBER 4, 2020
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7126063466/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents ***Submitted:***
Document Date: 8/6/2020 ***Submitted By:*** JESSICA CURRAN (AUTH_RP)
Size : 5,970 KB
Title: MONTHLY STATUS UPDATE - AUGUST 6, 2020
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2410076439/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Monitoring Reports ***Submitted:***
Document Date: 7/14/2020 ***Submitted By:*** JESSICA CURRAN (AUTH_RP)
Size : 15,912 KB
Title: 2020 FIRST SEMI-ANNUAL GROUNDWATER MONITORING REPORT JANUARY THROUGH JUNE 2020
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1452126562/T10000003058.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY

Document Type: Site Documents ***Submitted:***
Document Date: 7/7/2020 ***Submitted By:*** JESSICA CURRAN (AUTH_RP)
Size : 6,080 KB
Title: MONTHLY STATUS UPDATE - JULY 7, 2020
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7884478986/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents ***Submitted:***
Document Date: 6/5/2020 ***Submitted By:*** JESSICA CURRAN (AUTH_RP)
Size : 6,073 KB
Title: MONTHLY STATUS UPDATE - JUNE 5, 2020
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9625921428/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents ***Submitted:***
Document Date: 5/8/2020 ***Submitted By:*** JESSICA CURRAN (AUTH_RP)
Size : 6,469 KB
Title: MONTHLY STATUS UPDATE - MAY 7, 2020
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4657329857/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents ***Submitted:***
Document Date: 4/7/2020 ***Submitted By:*** JESSICA CURRAN (AUTH_RP)
Size : 6,426 KB
Title: MONTHLY STATUS UPDATE - APRIL 6, 2020
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7002798259/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents ***Submitted:***
Document Date: 3/4/2020 ***Submitted By:*** JESSICA CURRAN (AUTH_RP)
Size : 6,419 KB
Title: MONTHLY STATUS UPDATE MARCH 3, 2020
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5358912587/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents ***Submitted:***
Document Date: 2/6/2020* ***Submitted By:*** JESSICA CURRAN (AUTH_RP)
Size : 6,853 KB
Title: MONTHLY STATUS UPDATE - FEBRUARY 6, 2020
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2868230998/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 1/7/2020* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 5,181 KB
Title: MONTHLY STATUS UPDATE - JANUARY 7, 2020
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8360021770/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Monitoring Reports **Submitted:**
Document Date: 1/6/2020* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 17,694 KB
Title: 2019 SECOND SEMI-ANNUAL GROUNDWATER MONITORING REPORT JULY THROUGH DECEMBER 2019
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4465567469/T10000003058.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY

Document Type: Site Documents **Submitted:**
Document Date: 12/6/2019* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,684 KB
Title: MONTHLY STATUS UPDATE - DECEMBER 5, 2019
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9943213343/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 11/7/2019 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,657 KB
Title: MONTHLY STATUS UPDATE - NOVEMBER 7, 2019
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6821230411/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 10/9/2019* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,993 KB
Title: MONTHLY STATUS UPDATE OCTOBER 8, 2019
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5494711756/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 9/6/2019* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,178 KB
Title: MONTHLY STATUS UPDATE - SEPTEMBER 6, 2019
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6299204945/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 8/7/2019* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,165 KB
Title: MONTHLY STATUS UPDATE - AUGUST 7,2019
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7476427555/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 7/8/2019 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,224 KB
Title: MONTHLY STATUS UPDATE JULY 8, 2019
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5996895849/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Monitoring Reports **Submitted:**
Document Date: 7/2/2019 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 12,443 KB
Title: 2019 FIRST SEMI-ANNUAL GROUNDWATER MONITORING REPORT JANUARY THROUGH JUNE 2019
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3542935311/T10000003058.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY

Document Type: Site Documents **Submitted:**
Document Date: 6/8/2019 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,150 KB
Title: MONTHLY STATUS UPDATE JUNE 7, 2019
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1891058802/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 5/7/2019 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,076 KB
Title: MONTHLY STATUS UPDATE - MAY 7, 2019
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4523877084/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 4/4/2019 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,076 KB
Title: MONTHLY STATUS UPDATE - APRIL 4,2019
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8732327401/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 3/7/2019 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,210 KB
Title: MONTHLY STATUS REPORT - MARCH 7, 2019
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3554443597/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 2/8/2019* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,996 KB
Title: MONTHLY STATUS UPDATE - FEBRUARY 8, 2019
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8096603631/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 1/9/2019* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,071 KB
Title: MONTHLY STATUS UPDATE - JANUARY 8, 2019
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7927716195/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Monitoring Reports **Submitted:**
Document Date: 12/21/2018* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 11,050 KB
Title: 2018 SECOND SEMIANNUAL GROUNDWATER MONITORING REPORT JULY THROUGH DECEMBER 2018
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8136293888/T10000003058.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY

Document Type: Site Documents **Submitted:**
Document Date: 12/7/2018* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,984 KB
Title: MONTHLY STATUS UPDATE DECEMBER 7, 2018
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6760994970/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 11/7/2018 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,977 KB
Title: MONTHLY STATUS UPDATE - NOVEMBER 7,2018
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5039245843/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 10/8/2018 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,197 KB
Title: MONTHLY STATUS UPDATE -OCTOBER 7, 2018
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3411002814/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 9/5/2018 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,308 KB
Title: MONTHLY STATUS UPDATE - SEPTEMBER 5, 2018
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2274948358/T10000003058.PDF

Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 8/7/2018* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,169 KB
Title: MONTHLY STATUS UPDATE - AUGUST 7,2018
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1252258539/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Monitoring Reports **Submitted:**
Document Date: 7/23/2018 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 17,772 KB
Title: 2018 FIRST SEMI-ANNUAL GROUNDWATER MONITORING REPORT JANUARY THROUGH JUNE
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2472976922/T10000003058.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY

Document Type: Site Documents **Submitted:**
Document Date: 7/6/2018 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,169 KB
Title: MONTHLY STATUS UPDATE - JULY 6, 2018
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5567742407/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 6/6/2018 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,987 KB
Title: MONTHLY STATUS UPDATE - JUNE 6, 2018
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6970669686/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 5/8/2018* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,917 KB
Title: MONTHLY STATUS UPDATE - MAY 8, 2018
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2786169886/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 4/6/2018 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,997 KB
Title: MONTHLY STATUS UPDATE - APRIL 6,2018
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3653073251/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 3/8/2018* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,144 KB
Title: MONTHLY STATUS UPDATE - MARCH 8,2018
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4718665003/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 2/9/2018 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,166 KB
Title: MONTHLY STATUS UPDATE - FEBRUARY 8, 2018
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7956285476/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 1/8/2018 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,120 KB
Title: MONTHLY STATUS UPDATE - JANUARY 8, 2018
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1945730805/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Monitoring Reports **Submitted:**
Document Date: 12/18/2017* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 15,407 KB
Title: 2017 SECOND SEMI-ANNUAL GROUNDWATER MONITORING REPORT JULY THROUGH DECEMBER 2017

Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4168725788/T10000003058.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY

Document Type: Site Documents **Submitted:**
Document Date: 12/11/2017* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,118 KB
Title: MONTHLY STATUS UPDATE - DECEMBER 8,2017
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5499444782/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 11/8/2017 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,101 KB
Title: MONTHLY STATUS UPDATE - NOVEMBER 7,2017
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5002450764/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 10/6/2017 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,103 KB
Title: MONTHLY STATUS UPDATE - OCTOBER 6,2017
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9298330903/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 9/7/2017 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,129 KB
Title: MONTHLY STATUS UPDATE - SEPTEMBER 7, 2017
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9771478474/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 8/4/2017* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,146 KB
Title: MONTHLY STATUS UPDATE - AUGUST 4,2017
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2377905488/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 7/18/2017 **Submitted By:** MAJD NIMA (REGULATOR)
Size :
Title: OEHHA HUMAN HEALTH RISK ASSESSMENT LETTER
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6421943
Type: PRELIMINARY SITE REVIEW

Document Type: Site Documents **Submitted:**
Document Date: 7/6/2017 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,133 KB
Title: MONTHLY STATUS UPDATE - JULY 6, 2017
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7287735223/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Monitoring Reports **Submitted:**
Document Date: 6/29/2017 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 13,134 KB
Title: 2017 FIRST SEMI-ANNUAL GROUNDWATER MONITORING REPORT JANUARY THROUGH JUNE 2017
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5567445755/T10000003058.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY

Document Type: Site Documents **Submitted:**
Document Date: 6/8/2017 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,135 KB
Title: MONTHLY STATUS UPDATE - JUNE 7,2017
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1594069063/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 5/16/2017 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,690 KB

Title: SUBSLAB SOIL VAPOR SAMPLING REPORT GO KART WORLD
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8212165534/T10000003058.PDF
Type: SITE ASSESSMENT REPORT

Document Type: Site Documents **Submitted:**
Document Date: 5/5/2017 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,083 KB
Title: MONTHLY STATUS UPDATE - MAY 5, 2017
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1818910598/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 4/5/2017 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,166 KB
Title: MONTHLY STATUS UPDATE - APRIL 5,2017
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8957391560/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 3/7/2017 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,997 KB
Title: MONTHLY STATUS UPDATE - MARCH 7,2017
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2279165863/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 2/7/2017 **Submitted By:** MAJD NIMA (REGULATOR)
Size :
Title: WORKPLAN APPROVAL LETTER GOKART SUB-SLAB SVS
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6311507
Type: 13267 REQUIREMENT

Document Type: Site Documents **Submitted:**
Document Date: 2/6/2017 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,492 KB
Title: MONTHLY STATUS UPDATE - FEBRUARY 6, 2017
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4403032302/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 1/6/2017 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,554 KB
Title: MONTHLY STATUS UPDATE - JANUARY 6,2017
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1676477253/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Monitoring Reports **Submitted:**
Document Date: 12/22/2016 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 13,623 KB
Title: 2016 SECOND SEMI-ANNUAL GROUNDWATER MONITORING REPORT JULY THROUGH DECEMBER 2016
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4497240066/T10000003058.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY

Document Type: Site Documents **Submitted:**
Document Date: 12/9/2016 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,031 KB
Title: SUBSLAB SOIL VAPOR SAMPLING WORK PLAN
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2067316412/T10000003058.PDF
Type: SITE INVESTIGATION WORKPLAN

Document Type: Site Documents **Submitted:**
Document Date: 12/8/2016 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,432 KB
Title: MONTHLY STATUS UPDATE - DECEMBER 7, 2016
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7499870061/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 11/7/2016 **Submitted By:** JESSICA CURRAN (AUTH_RP)

Size : 2,397 KB
Title: MONTHLY STATUS UPDATE - NOVEMBER 5, 2016
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7374422073/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents ***Submitted:***
Document Date: 10/6/2016 ***Submitted By:*** JESSICA CURRAN (AUTH_RP)
Size : 2,417 KB
Title: MONTHLY STATUS UPDATE - OCTOBER 6, 2016
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6933561861/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents ***Submitted:***
Document Date: 9/9/2016 ***Submitted By:*** JESSICA CURRAN (AUTH_RP)
Size : 3,174 KB
Title: GO KART WORLD ASSESSMENT REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4037840425/T10000003058.PDF
Type: SITE ASSESSMENT REPORT

Document Type: Site Documents ***Submitted:***
Document Date: 9/8/2016 ***Submitted By:*** JESSICA CURRAN (AUTH_RP)
Size : 2,176 KB
Title: MONTHLY STATUS UPDATE - AUGUST 2016
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4447081148/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents ***Submitted:***
Document Date: 8/8/2016 ***Submitted By:*** JESSICA CURRAN (AUTH_RP)
Size : 2,250 KB
Title: MONTHLY STATUS REPORT - AUGUST 8, 2016
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9330985724/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents ***Submitted:***
Document Date: 7/6/2016 ***Submitted By:*** JESSICA CURRAN (AUTH_RP)
Size : 2,264 KB
Title: MONTHLY STATUS REPORT - JULY 6, 2016
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1053541719/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Monitoring Reports ***Submitted:***
Document Date: 7/5/2016 ***Submitted By:*** JESSICA CURRAN (AUTH_RP)
Size : 17,841 KB
Title: 2016 FIRST SEMI-ANNUAL GROUNDWATER MONITORING REPORT JANUARY THROUGH JUNE 2016
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5951209783/T10000003058.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY

Document Type: Site Documents ***Submitted:***
Document Date: 6/29/2016 ***Submitted By:*** MAJD NIMA (REGULATOR)
Size :
Title: APPROVAL OF DUE DATE EXTENSION FOR REPORT SUBMITTAL OF SOIL AND GROUNDWATER ASSESSMENT, GO KART WORLD FACILITY
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6290194
Type: STAFF LETTER

Document Type: Site Documents ***Submitted:***
Document Date: 6/2/2016 ***Submitted By:*** JESSICA CURRAN (AUTH_RP)
Size : 2,007 KB
Title: MONTHLY STATUS REPORT - JUNE 2, 2016
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6068961441/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents ***Submitted:***
Document Date: 5/23/2016 ***Submitted By:*** JESSICA CURRAN (AUTH_RP)
Size : 22 KB
Title: TIME EXTENSION REQUEST FOR REPORT SUBMITTAL SOIL AND GROUNDWATER ASSESSMENT, GO KART WORLD FACILITY
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1387663424/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 5/12/2016* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 7,997 KB
Title: ADDITIONAL SITE ASSESSMENT REPORT WESTERN LEVEE
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4227217257/T10000003058.PDF
Type: SITE ASSESSMENT REPORT

Document Type: Site Documents **Submitted:**
Document Date: 5/6/2016* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,262 KB
Title: MONTHLY STATUS REPORT - MAY 5, 2016
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6619589447/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 4/6/2016* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,237 KB
Title: MONTHLY STATUS REPORT - APRIL 6, 2016
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9470717012/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 3/7/2016* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,547 KB
Title: MONTHLY STATUS REPORT - MARCH 7, 2016
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6723043859/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 2/5/2016* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,294 KB
Title: MONTHLY STATUS REPORT - FEBRUARY 5, 2016
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9006956636/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 2/3/2016 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: MERGER OF CASES INTO SCP CASE NO. 1264
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6275372
Type: FILE REVIEW - CLOSURE

Document Type: Monitoring Reports **Submitted:**
Document Date: 1/18/2016* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 16,548 KB
Title: 2015 SECOND SEMI-ANNUAL GROUNDWATER MONITORING REPORT JULY THROUGH DECEMBER 2015
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3818674445/T10000003058.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY

Document Type: Site Documents **Submitted:**
Document Date: 1/6/2016* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,201 KB
Title: MONTHLY STATUS REPORT - JANUARY 6, 2016
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9888204991/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 12/4/2015* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,491 KB
Title: MONTHLY STATUS REPORT - DECEMBER 4, 2015
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7422416448/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 12/1/2015* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 22 KB
Title: TIME EXTENSION REQUEST FOR REPORT SUBMITTAL ADDITIONAL WESTERN LEVEE ASSESSMENT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4959479629/T10000003058.PDF

Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 11/12/2015* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 22 KB
Title: TIME EXTENSION REQUEST FOR REPORT SUBMITTAL EXTENSION GO KART WORLD ASSESSMENT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3304926276/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 11/5/2015* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,603 KB
Title: MONTHLY STATUS REPORT - NOVEMBER 5, 2015
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9787947237/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 10/7/2015* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,355 KB
Title: MONTHLY STATUS REPORT - OCTOBER 7, 2015
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6387290298/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 9/22/2015 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: ACCESS REQUEST - GO KART WORLD
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6261145
Type: 13267 REQUIREMENT

Document Type: Site Documents **Submitted:**
Document Date: 9/8/2015 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,539 KB
Title: MONTHLY STATUS REPORT - SEPTEMBER 3, 2015
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9965334057/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 8/7/2015 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,851 KB
Title: MONTHLY STATUS REPORT - AUGUST 7, 2015
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3020677566/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Monitoring Reports **Submitted:**
Document Date: 7/8/2015* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 14,665 KB
Title: 2015 FIRST SEMI-ANNUAL GROUNDWATER MONITORING REPORT JANUARY THROUGH JUNE 2015
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1307970166/T10000003058.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY

Document Type: Site Documents **Submitted:**
Document Date: 7/8/2015* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,322 KB
Title: MONTHLY STATUS REPORT - JULY 8, 2015
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2624731481/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 7/6/2015 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF ADDITIONAL WESTERN LEVEE ASSESSMENT WORK PLAN
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6251077
Type: CLEAN-UP AND ABATEMENT ORDER

Document Type: Site Documents **Submitted:**
Document Date: 7/3/2015 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF SOIL AND GROUNDWATER ASSESSMENT WORK PLAN

Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6251076
Type: CLEAN-UP AND ABATEMENT ORDER

Document Type: Site Documents **Submitted:**
Document Date: 6/3/2015 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,486 KB
Title: MONTHLY STATUS REPORT - JUNE 3, 2015
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8548652410/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 6/2/2015 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,890 KB
Title: SOIL AND GROUNDWATER ASSESSMENT WORK PLAN GO KART FACILITY
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8117613375/T10000003058.PDF
Type: SOIL AND WATER INVESTIGATION WORKPLAN

Document Type: Site Documents **Submitted:**
Document Date: 6/2/2015* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,191 KB
Title: ADDITIONAL WESTERN LEVEE ASSESSMENT WORK PLAN
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5242914557/T10000003058.PDF
Type: SOIL AND WATER INVESTIGATION WORKPLAN

Document Type: Site Documents **Submitted:**
Document Date: 5/7/2015* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,716 KB
Title: MONTHLY STATUS REPORT - MAY 7, 2015
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9084967076/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 4/3/2015 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,292 KB
Title: MONTHLY STATUS REPORT - APRIL 3, 2015
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1581672430/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 3/30/2015 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 16,528 KB
Title: GEOTRAX SURVEY SCREENING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3695623815/T10000003058.PDF
Type: SITE INVESTIGATION

Document Type: Site Documents **Submitted:**
Document Date: 3/4/2015* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 691 KB
Title: GROUNDWATER MONITORING WELL DESTRUCTIONS FORMER TEXACO
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5537635147/T10000003058.PDF
Type: WELL DESTRUCTION REPORT

Document Type: Site Documents **Submitted:**
Document Date: 3/4/2015* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,988 KB
Title: MONTHLY STATUS REPORT - MARCH 4, 2015
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9232874274/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 2/6/2015* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,409 KB
Title: MONTHLY STATUS REPORT - FEBRUARY 5, 2015
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8526449620/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Monitoring Reports **Submitted:**
Document Date: 1/21/2015 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 7,548 KB

Title: 2014 SECOND SEMI-ANNUAL GROUNDWATER MONITORING REPORT JULY THROUGH DECEMBER 2014
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5002282321/T10000003058.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY

Document Type: Site Documents **Submitted:**
Document Date: 1/20/2015* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,877 KB
Title: LNAPL RECOVERY WELL R-MW-12 INSTALLATION REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2561652898/T10000003058.PDF
Type: WELL INSTALLATION REPORT

Document Type: Site Documents **Submitted:**
Document Date: 1/8/2015* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,689 KB
Title: MONTHLY STATUS UPDATE - JANUARY 7, 2015
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3426293551/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 12/5/2014* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,867 KB
Title: MONTHLY STATUS UPDATE - DECEMBER 5, 2014
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7032830417/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 11/7/2014* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,179 KB
Title: MONTHLY STATUS UPDATE - NOVEMBER 7, 2014
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1266639471/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 10/2/2014* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,417 KB
Title: ADDITIONAL GEOTRAX SURVEY SCREENING CONFIRMATION BORINGS
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7980263888/T10000003058.PDF
Type: OTHER WORKPLAN

Document Type: Site Documents **Submitted:**
Document Date: 10/1/2014* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,148 KB
Title: MONTHLY STATUS UPDATE SEPTEMBER 2014
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4669786572/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 9/5/2014* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,443 KB
Title: MONTHLY STATUE UPDATE AUGUST 2014
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7307395279/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 8/25/2014 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,003 KB
Title: LNAPL RECOVERY WELL R-MW-11 INSTALLATION REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2928794205/T10000003058.PDF
Type: WELL INSTALLATION REPORT

Document Type: Site Documents **Submitted:**
Document Date: 8/8/2014 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,421 KB
Title: MONTHLY STATUS REPORT - AUGUST 7, 2014
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4588075757/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Monitoring Reports **Submitted:**
Document Date: 7/9/2014* **Submitted By:** JESSICA CURRAN (AUTH_RP)

Size : 13,207 KB
Title: 2014 FIRST SEMI-ANNUAL GROUNDWATER MONITORING REPORT (JANUARY THROUGH JUNE)
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9136964917/T10000003058.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY

Document Type: Site Documents **Submitted:**
Document Date: 7/7/2014* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,313 KB
Title: MONTHLY STATUS REPORT - JULY 7, 2014
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4338103532/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 6/6/2014* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,935 KB
Title: MONTHLY STATUS REPORT - JUNE 7, 2014
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7007920742/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 5/2/2014* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,858 KB
Title: MONTHLY STATUS REPORT - MAY 2, 2014
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6979003846/T10000003058.PDF
Type: STATUS / PROGRESS REPORTS

Document Type: Site Documents **Submitted:**
Document Date: 4/15/2014 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF EXTENSION REQUEST FOR SUBMITTAL OF LNAPL RECOVERY WELL INSTALLATION REPORT
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6199996
Type: CLEAN-UP AND ABATEMENT ORDER

Document Type: Site Documents **Submitted:**
Document Date: 4/15/2014 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF WORK PLAN FOR GEOPHYSICAL SURVEY CONFIRMATION BORINGS
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6200379
Type: CLEAN-UP AND ABATEMENT ORDER

Document Type: Site Documents **Submitted:**
Document Date: 4/7/2014* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,211 KB
Title: MONTHLY STATUS REPORT - APRIL 7, 2014
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1131430923/T10000003058.PDF
Type: STATUS / PROGRESS REPORTS

Document Type: Site Documents **Submitted:**
Document Date: 3/20/2014* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 12,186 KB
Title: GEOTRAX SURVEY SCREENING INTERIM REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6694828093/T10000003058.PDF
Type: INTERIM REMEDIAL ACTION REPORT

Document Type: Site Documents **Submitted:**
Document Date: 3/5/2014 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 33 KB
Title: TIME EXTENSION REQUEST FOR REPORT FOR LNAPL RECOVERY WELL INSTALLATION
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9605381071/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 3/5/2014* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,852 KB
Title: MONTHLY STATUS UPDATE - MARCH 5, 2014
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4265281021/T10000003058.PDF
Type: STATUS / PROGRESS REPORTS

Document Type: Site Documents **Submitted:**
Document Date: 2/5/2014* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,484 KB
Title: MONTHLY STATUS REPORT - JANUARY 2014
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9559685885/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 2/5/2014* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 5,830 KB
Title: WELL INSTALLATION REPORT WELLS R-MW-13A/B AND R-MW-14A/B
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9390359103/T10000003058.PDF
Type: WELL INSTALLATION REPORT

Document Type: Site Documents **Submitted:**
Document Date: 1/29/2014* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 33 KB
Title: TIME EXTENSION REQUEST FOR REPORT SUBMITTAL GEOTRAX SURVEY SCREENING
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4984815239/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 1/7/2014 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,037 KB
Title: MONTHLY STATUS REPORT - DECEMBER 2013
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6467864930/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Monitoring Reports **Submitted:**
Document Date: 12/20/2013 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 10,466 KB
Title: 2013 SECOND SEMIANNUAL GROUNDWATER MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9597314059/T10000003058.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY

Document Type: Site Documents **Submitted:**
Document Date: 12/6/2013* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,762 KB
Title: MONTHLY STATUS UPDATE - DECEMBER 6, 2013
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5964494228/T10000003058.PDF
Type: PROGRESS REPORT (SOIL/GW/ UPDATES)

Document Type: Site Documents **Submitted:**
Document Date: 11/6/2013* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,787 KB
Title: MONTHLY STATUS UPDATE - NOVEMBER 6, 2013
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4491931974/T10000003058.PDF
Type: STATUS / PROGRESS REPORTS

Document Type: Site Documents **Submitted:**
Document Date: 11/1/2013 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF WELL INSTALLATION WORK PLAN EAST OF FORMER ACTIVE RV
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6181336
Type: CLEAN-UP AND ABATEMENT ORDER

Document Type: Site Documents **Submitted:**
Document Date: 10/23/2013 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF GEOTRAX SURVEY™ SCREENING WORK PLAN
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6180120
Type: CLEAN-UP AND ABATEMENT ORDER

Document Type: Site Documents **Submitted:**
Document Date: 10/11/2013 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,675 KB
Title: WELL INSTALLATION WORK PLAN EAST OF FORMER ACTIVE RV
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1395058810/T10000003058.PDF
Type: WELL INSTALLATION WORKPLAN

Document Type: Site Documents **Submitted:**
Document Date: 10/11/2013 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 6,431 KB
Title: GEOTRAX SURVEY SCREENING
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5637101650/T10000003058.PDF
Type: SITE INVESTIGATION WORKPLAN

Document Type: Site Documents **Submitted:**
Document Date: 10/8/2013 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,783 KB
Title: MONTHLY STATUS UPDATE OCTOBER 8, 2013
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4732938647/T10000003058.PDF
Type: STATUS / PROGRESS REPORTS

Document Type: Site Documents **Submitted:**
Document Date: 9/19/2013 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF LNAPL RECOVERY WELL INSTALLATION WORK PLAN
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6176137
Type: CLEAN-UP AND ABATEMENT ORDER

Document Type: Site Documents **Submitted:**
Document Date: 9/6/2013 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,794 KB
Title: MONTHLY STATUS REPORT - AUGUST 6, 2013
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6685531556/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 8/29/2013 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 615 KB
Title: LNAPL RECOVERY WELL INSTALLATION WORK PLAN
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5790360927/T10000003058.PDF
Type: WELL INSTALLATION WORKPLAN

Document Type: Site Documents **Submitted:**
Document Date: 8/29/2013* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 591 KB
Title: INTERIM REMEDIAL ACTION PLAN
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1445972502/T10000003058.PDF
Type: INTERIM REMEDIAL ACTION REPORT

Document Type: Site Documents **Submitted:**
Document Date: 8/6/2013 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,456 KB
Title: MONTHLY STATUS UPDATE - AUGUST 6, 2013
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5862967789/T10000003058.PDF
Type: STATUS / PROGRESS REPORTS

Document Type: Site Documents **Submitted:**
Document Date: 7/30/2013 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF MASTER WORK PLAN
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6169775
Type: CLEAN-UP AND ABATEMENT ORDER

Document Type: Monitoring Reports **Submitted:**
Document Date: 7/25/2013 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 12,798 KB
Title: 2013 FIRST SEMI-ANNUAL GROUNDWATER MONITORING REPORT JANUARY THROUGH JUNE 2013
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4987672328/T10000003058.PDF
Type: MONITORING REPORT - SEMI-ANNUALLY

Document Type: Site Documents **Submitted:**
Document Date: 7/5/2013 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,438 KB
Title: MONTHLY STATUS REPORT - JULY 5, 2013
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8423664152/T10000003058.PDF

Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 6/28/2013 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 19,189 KB
Title: SITE CONCEPTUAL MODEL UPDATE
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1283250927/T10000003058.PDF
Type: CONCEPTUAL SITE MODEL

Document Type: Site Documents **Submitted:**
Document Date: 6/7/2013 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,630 KB
Title: MONTHLY STATUS REPORT - JUNE 7, 2013
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7388238131/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 5/31/2013 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,443 KB
Title: DOMINGUEZ CHANNEL MASTER WORK PLAN CAO R4-2013-0007
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2438759982/T10000003058.PDF
Type: SITE INVESTIGATION WORKPLAN

Document Type: Site Documents **Submitted:**
Document Date: 5/29/2013 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF INTERIM MITIGATION PLAN
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6160654
Type: CLEAN-UP AND ABATEMENT ORDER

Document Type: Site Documents **Submitted:**
Document Date: 5/9/2013 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF GROUNDWATER MONITORING WORK PLAN
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6158716
Type: CLEAN-UP AND ABATEMENT ORDER

Document Type: Site Documents **Submitted:**
Document Date: 5/6/2013 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,989 KB
Title: DOMINGUEZ CHANNEL GROUNDWATER MONITORING WORK PLAN CAO R4-2013-0007
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9593690395/T10000003058.PDF
Type: OTHER WORKPLAN

Document Type: Site Documents **Submitted:**
Document Date: 5/6/2013 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,383 KB
Title: DOMINGUEZ CHANNEL INTERIM MITIGATION PLAN CAO R4-2013-0007
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2220681369/T10000003058.PDF
Type: OTHER WORKPLAN

Document Type: Site Documents **Submitted:**
Document Date: 5/6/2013 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,706 KB
Title: MONTHLY STATUS UPDATE - MAY 6, 2013
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3741697192/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 4/5/2013 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,778 KB
Title: MONTHLY STATUS UPDATE - APRIL 5, 2013
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8115222990/T10000003058.PDF
Type: STATUS / PROGRESS REPORTS

Document Type: Site Documents **Submitted:**
Document Date: 3/22/2013 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF INTERIM MITIGATION PLAN ADDENDUM

Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6153134
Type: STAFF LETTER

Document Type: Site Documents **Submitted:**
Document Date: 3/22/2013 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF EXTENSION REQUEST FOR ITEMS REQUIRED UNDER CAO R4-2013-0007
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6153058
Type: CLEAN-UP AND ABATEMENT ORDER

Document Type: Site Documents **Submitted:**
Document Date: 3/22/2013 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,664 KB
Title: WEEKLY STATUS UPDATE - MARCH 22, 2013
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7883805751/T10000003058.PDF
Type: STATUS / PROGRESS REPORTS

Document Type: Site Documents **Submitted:**
Document Date: 3/15/2013 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,743 KB
Title: WEEKLY STATUS UPDATE - MARCH 15, 2013
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3653380632/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 3/15/2013 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,414 KB
Title: INTERIM MITIGATION PLAN ADDENDUM
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4860105395/T10000003058.PDF
Type: INTERIM REMEDIAL ACTION PLAN

Document Type: Site Documents **Submitted:**
Document Date: 3/15/2013 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 89 KB
Title: TIME EXTENSION REQUEST FOR WORK PLAN SUBMITTAL 03-15-13
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2512195646/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 3/8/2013 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,197 KB
Title: MONTHLY REPORT ON LNAPL COLLECTION - FEBRUARY 2013
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8472278654/T10000003058.PDF
Type: STATUS / PROGRESS REPORTS

Document Type: Site Documents **Submitted:**
Document Date: 3/8/2013 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,743 KB
Title: WEEKLY STATUS UPDATE - MARCH 8, 2013
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9340318202/T10000003058.PDF
Type: STATUS / PROGRESS REPORTS

Document Type: Site Documents **Submitted:**
Document Date: 3/1/2013 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,864 KB
Title: WEEKLY STATUS UPDATE - MARCH 1, 2013
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1242486178/T10000003058.PDF
Type: STATUS / PROGRESS REPORTS

Document Type: Site Documents **Submitted:**
Document Date: 2/22/2013 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,856 KB
Title: WEEKLY STATUS UPDATE - FEBRUARY 22, 2013
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3789350390/T10000003058.PDF
Type: STATUS / PROGRESS REPORTS

Document Type: Site Documents **Submitted:**
Document Date: 2/15/2013* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,736 KB

Title: WEEKLY STATUS UPDATE - FEBRUARY 15, 2013
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9505399584/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 2/8/2013 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: CLEANUP AND ABATEMENT ORDER NO. R4-2013-0007
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6149037
Type: CLEAN-UP AND ABATEMENT ORDER

Document Type: Site Documents **Submitted:**
Document Date: 2/8/2013* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,856 KB
Title: WEEKLY STATUS UPDATE - FEBRUARY 8, 2013
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7171766161/T10000003058.PDF
Type: STATUS / PROGRESS REPORTS

Document Type: Site Documents **Submitted:**
Document Date: 2/7/2013* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,252 KB
Title: MONTHLY REPORT ON LNAPL COLLECTION - JANUARY 2013
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3781021058/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 2/1/2013* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,951 KB
Title: WEEKLY STATUS REPORT - FEBRUARY 1, 2013
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4346637785/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 1/25/2013* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,950 KB
Title: WEEKLY STATUS UPDATE - JANUARY 25, 2013
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2821866869/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 1/18/2013 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,950 KB
Title: WEEKLY STATUS UPDATE - JANUARY 18, 2013
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3565503954/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 1/17/2013 **Submitted By:** MAJD NIMA (REGULATOR)
Size :
Title: OEHHA-SUB-SLAB SOIL VAPOR SAMPLING HEALTH RISK ASSESSMENT FOR ACTIVE RV - REGULATOR RESPONSE
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&document_id=5993577
Type: SITE ASSESSMENT REPORT

Document Type: Site Documents **Submitted:**
Document Date: 1/11/2013 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,049 KB
Title: WEEKLY STATUS UPDATE - JANUARY 11, 2013
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6124912321/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 1/8/2013 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,308 KB
Title: MONTHLY REPORT ON LNAPL COLLECTION - DECEMBER 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1729399919/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**

Document Date: 1/4/2013 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,259 KB
Title: WEEKLY STATUS UPDATE JANUARY 4, 2013
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6700912415/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 12/28/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,737 KB
Title: WEEKLY STATUS UPDATE - DECEMBER 28, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6807569384/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 12/21/2012* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,436 KB
Title: WEEKLY STATUS UPDATE - DECEMBER 21, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4060424089/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 12/14/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,948 KB
Title: WEEKLY STATUS UPDATE - DECEMBER 14, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6221592009/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 12/7/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,669 KB
Title: WEEKLY STATUS UPDATE - DECEMBER 7, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9316434741/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 12/4/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,182 KB
Title: MONTHLY REPORT ON LNAPL COLLECTION - NOVEMBER 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2847260951/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 11/30/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,330 KB
Title: WEEKLY STATUS REPORT NOVEMBER 30, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2755859315/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 11/23/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,720 KB
Title: WEEKLY STATUS UPDATE - NOVEMBER 23, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4176069140/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 11/16/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,583 KB
Title: WEEKLY STATUS UPDATE - NOVEMBER 16, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8395093798/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 11/9/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,584 KB
Title: WEEKLY STATUS UPDATE - NOVEMBER 9, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7423230767/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 11/8/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,289 KB
Title: MONTHLY REPORT ON LNAPL COLLECTION - OCTOBER 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8153442323/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 11/2/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,656 KB
Title: WEEKLY STATUS UPDATE NOVEMBER 2, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8580748796/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 10/26/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,691 KB
Title: WEEKLY STATUS UPDATE OCTOBER 26, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3685254931/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 10/19/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,005 KB
Title: WEEKLY STATUS REPORT - OCTOBER 19, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6213895678/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 10/12/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,832 KB
Title: WEEKLY STATUS UPDATE - OCTOBER 12, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4208622038/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 10/5/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,851 KB
Title: MONTHLY REPORT ON LNAPL COLLECTION - SEPTEMBER 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9671665966/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 10/5/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,415 KB
Title: WEEKLY STATUS UPDATE - OCTOBER 5, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2123809099/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 10/2/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 44 KB
Title: RELLC LTR TO RWQCB - DOMINGUEZ CHANNEL RELEASE INVESTIGATION AND SHELL CARSON AIR HARBOR
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7169005632/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 9/28/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,743 KB
Title: WEEKLY STATUS UPDATE - SEPTEMBER 28, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2432126879/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 9/21/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,167 KB
Title: WEEKLY STATUS UPDATE - SEPTEMBER 21, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6645095109/T10000003058.PDF

Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 9/14/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,167 KB
Title: WEEKLY STATUS UPDATE - SEPTEMBER 14, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2646733105/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 9/7/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,264 KB
Title: MONTHLY REPORT ON LNAPL COLLECTION - AUGUST 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9799235045/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 9/7/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,200 KB
Title: WEEKLY STATUS UPDATE - SEPTEMBER 7, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6960876405/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 8/31/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,330 KB
Title: WEEKLY STATUS UPDATE - AUGUST 31, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2194416105/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 8/24/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,305 KB
Title: 12-0824_LARWQCB STATUS UPDATE FINAL
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5072284758/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 8/17/2012 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: CEMC - RESPONSE TO DRAFT CAO
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&document_id=5749270
Type: OTHER REPORT / DOCUMENT

Document Type: Site Documents **Submitted:**
Document Date: 8/17/2012 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: EXXONMOBIL PIPELINE COMPANY - RESPONSE TO DRAFT CAO
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&document_id=5749273
Type: OTHER REPORT / DOCUMENT

Document Type: Site Documents **Submitted:**
Document Date: 8/17/2012 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: PLAINS AAP - RESPONSE TO DRAFT CAO
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&document_id=5749275
Type: OTHER REPORT / DOCUMENT

Document Type: Site Documents **Submitted:**
Document Date: 8/17/2012 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: BP - RESPONSE TO DRAFT CAO - REGULATOR RESPONSE
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&document_id=5749267
Type: OTHER REPORT / DOCUMENT

Document Type: Site Documents **Submitted:**
Document Date: 8/17/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,104 KB
Title: WEEKLY STATUS UPDATE - AUGUST 17, 2012

Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8039411425/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 8/14/2012 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: CITY OF CARSON - RESPONSE TO DRAFT CAO
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&document_id=5749271
Type: OTHER REPORT / DOCUMENT

Document Type: Site Documents **Submitted:**
Document Date: 8/10/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,274 KB
Title: WEEKLY STATUS UPDATE AUGUST 10, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8598525941/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 8/7/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,244 KB
Title: MONTHLY REPORT ON LNAPL COLLECTION - JULY 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3797962963/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 8/3/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,358 KB
Title: WEEKLY STATUS UPDATE AUGUST 3, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7420292675/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 7/27/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,224 KB
Title: WEEKLY STATUS UPDATE JULY 27, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3588300585/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 7/20/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,150 KB
Title: WEEKLY STATUS UPDATE - JULY 20, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2637726783/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 7/13/2012 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: EXTENSION TO COMMENT PERIOD FOR DRAFT CAO R4-2012-0103
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6130194
Type: CLEAN-UP AND ABATEMENT ORDER

Document Type: Site Documents **Submitted:**
Document Date: 7/13/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,282 KB
Title: WEEKLY STATUS UPDATE - JULY 13, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1213516175/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 7/12/2012 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: EQUILON/SHELL - COMMENTS ON DRAFT CAO
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&document_id=5749276
Type: OTHER REPORT / DOCUMENT

Document Type: Site Documents **Submitted:**
Document Date: 7/12/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 7,583 KB

Title: SUPPLEMENTAL SITE ASSESSMENT REPORT SOIL INVESTIGATION AT THE FORMER ACTIVE RV JULY 12, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1961685121/T10000003058.PDF
Type: SITE ASSESSMENT REPORT

Document Type: Site Documents **Submitted:**
Document Date: 7/6/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,038 KB
Title: WEEKLY STATUS UPDATE - JULY 6, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1274991869/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 7/2/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,166 KB
Title: MONTHLY REPORT ON LNAPL COLLECTION - JUNE 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1613233447/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 6/29/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,146 KB
Title: WEEKLY STATUS UPDATE - JUNE 29, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6817779481/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 6/26/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,448 KB
Title: SUPPLEMENTAL SITE ASSESSMENT REPORT SUBSLAB SOIL VAPOR SAMPLING FORMER ACTIVE RV JUNE 26, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3504302918/T10000003058.PDF
Type: SITE ASSESSMENT REPORT

Document Type: Site Documents **Submitted:**
Document Date: 6/22/2012* **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,434 KB
Title: WEEKLY STATUS UPDATE - JUNE 22, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8374068498/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 6/20/2012 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: DRAFT CLEANUP AND ABATEMENT ORDER NO. R4-2012-0103
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6125704
Type: CLEAN-UP AND ABATEMENT ORDER

Document Type: Site Documents **Submitted:**
Document Date: 6/15/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,139 KB
Title: WEEKLY STATUS UPDATE JUNE 15, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2423598527/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 6/12/2012 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: SATISFACTION OF 13267 ORDER REQUIREMENTS (CARSON AIR HARBOR SITE)
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6125726
Type: 13267 REQUIREMENT

Document Type: Site Documents **Submitted:**
Document Date: 6/8/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,949 KB
Title: WEEKLY STATUS UPDATE JUNE 8, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3556813061/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 6/1/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,137 KB
Title: WEEKLY STATUS UPDATE JUNE 1, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9775956153/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 6/1/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,278 KB
Title: MONTHLY REPORT ON LNAPL COLLECTION - MAY 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2904813647/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 5/31/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,200 KB
Title: SOIL AND GROUNDWATER INVESTIGATION AND RESCONSTRUCTION OF WELLS MW-2A-RV AND MW-4A-RV AT FORMER ACTIVE RV
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5056074023/T10000003058.PDF
Type: SITE INVESTIGATION

Document Type: Site Documents **Submitted:**
Document Date: 5/25/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,115 KB
Title: WEEKLY STATUS UPDATE MAY 25, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8652125060/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 5/18/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,131 KB
Title: WEEKLY STATUS UPDATE MAY 18, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7602065980/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 5/11/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,129 KB
Title: WEEKLY STATUS UPDATE 5-11-12
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6107151806/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 5/4/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,863 KB
Title: WEEKLY STATUS UPDATE 5-4-12
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1765929460/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 5/3/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,349 KB
Title: MONTHLY STATUS UPDATE 5-3-12
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5839584290/T10000003058.PDF
Type: STATUS / PROGRESS REPORTS

Document Type: Site Documents **Submitted:**
Document Date: 5/3/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 20,946 KB
Title: SUPPLEMENTAL SITE ASSESSMENT REPORT TEXT, TABLES, FIGURES, APPENDICES A-H
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2945973217/T10000003058.PDF
Type: SITE ASSESSMENT REPORT

Document Type: Site Documents **Submitted:**
Document Date: 4/30/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 26,263 KB
Title: SUPPLEMENTAL SITE ASSESSMENT REPORT APPENDIX I-L APRIL 30, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1961760759/T10000003058.PDF

Type: SITE ASSESSMENT REPORT

Document Type: Site Documents **Submitted:**
Document Date: 4/27/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,056 KB
Title: WEEKLY STATUS UPDATE APRIL 27, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8491622209/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 4/20/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,456 KB
Title: WEEKLY STATUS REPORT APRIL 20, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9402692437/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 4/13/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,841 KB
Title: PIPELINE ASSESSMENT UPDATE REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1201893627/T10000003058.PDF
Type: SPECIAL STUDIES AND INVESTIGATIONS

Document Type: Site Documents **Submitted:**
Document Date: 4/13/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,478 KB
Title: WEEKLY STATUS UPDATE APRIL 13, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7924977123/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 4/10/2012 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF SUPPLEMENTAL SITE ASSESSMENT WORK PLAN - RECONSTRUCTION OF WELLS MW-2A-RV AND MW-4A-RV
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6118292
Type: 13267 REQUIREMENT

Document Type: Site Documents **Submitted:**
Document Date: 4/6/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,434 KB
Title: WEEKLY STATUS UPDATE APRIL 6, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9585202813/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 4/3/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,167 KB
Title: MONTHLY REPORT ON LNAPL COLLECTION - MARCH 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5041379809/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 4/3/2012 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: ADDENDUM TO TECHNICAL REPORT ON PIPELINE INVENTORY - REGULATOR RESPONSE
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&document_id=5734374
Type: TECHNICAL MEMOS

Document Type: Site Documents **Submitted:**
Document Date: 4/3/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,508 KB
Title: SUPPLEMENTAL SITE ASSESSMENT WORK PLAN RECONSTRUCTION OF WELL MW-2A-RV AND MW-4A-RV
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3370956361/T10000003058.PDF
Type: OTHER REPORT / DOCUMENT

Document Type: Site Documents **Submitted:**
Document Date: 3/30/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)

Size : 4,559 KB
Title: WEEKLY STATUS REPORT - MARCH 30, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3485152482/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 3/23/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,493 KB
Title: WEEKLY STATUS REPORT - MARCH 23, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9940444231/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 3/23/2012 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF SUPPLEMENTAL SITE ASSESSMENT WORK PLAN, SUBSLAB SOIL VAPOR SAMPLING (ACTIVE RV)
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6116885
Type: 13267 REQUIREMENT

Document Type: Site Documents **Submitted:**
Document Date: 3/23/2012 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF SUPPLEMENTAL SITE ASSESSMENT WORK PLAN (ACTIVE RV)
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6116882
Type: 13267 REQUIREMENT

Document Type: Site Documents **Submitted:**
Document Date: 3/20/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,609 KB
Title: SUPPLEMENTAL SITE ASSESSMENT WORK PLAN SUBSLAB SOIL VAPOR SAMPLING AT FORMER ACTIVE RV
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2167169153/T10000003058.PDF
Type: OTHER WORKPLAN

Document Type: Site Documents **Submitted:**
Document Date: 3/20/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,511 KB
Title: SUPPLEMENTAL SITE ASSESSMENT WORK PLAN SOIL INVESTIGATION AT FORMER ACTIVE RV
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6445967912/T10000003058.PDF
Type: OTHER WORKPLAN

Document Type: Site Documents **Submitted:**
Document Date: 3/16/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,367 KB
Title: WEEKLY STATUS REPORT - MARCH 16, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8375544250/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 3/9/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,488 KB
Title: WEEKLY STATUS REPORT - MARCH 9, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1053330898/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 3/7/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,908 KB
Title: SUPPLEMENTAL SITE ASSESSMENT REPORT SOIL VAPOR STUDY AT FORMER ACTIVE RV
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3610808610/T10000003058.PDF
Type: SITE ASSESSMENT REPORT

Document Type: Site Documents **Submitted:**
Document Date: 3/7/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,191 KB
Title: MONTHLY REPORT ON LNAPL COLLECTION - FEBRUARY 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1616515398/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 3/2/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,329 KB
Title: WEEKLY STATUS REPORT - MARCH 2, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8995869457/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 2/24/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,271 KB
Title: WEEKLY STATUS UPDATE - FEBRUARY 24, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9682802498/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 2/17/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,280 KB
Title: WEEKLY STATUS REPORT - FEBRUARY 17, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8374784111/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 2/16/2012 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: GROUNDWATER MONITORING FIELD SCHEDULE
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6113523
Type: 13267 REQUIREMENT

Document Type: Site Documents **Submitted:**
Document Date: 2/10/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,263 KB
Title: WEEKLY STATUS REPORT - FEBRUARY 10, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5831586480/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 2/8/2012 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: SATISFACTION OF 13267 ORDER REQUIREMENTS AND RETURN OF CASE TO UST PROGRAM (FORMER TEXACO SERVICE STATION)
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6112957
Type: FILE REVIEW - CLOSURE

Document Type: Site Documents **Submitted:**
Document Date: 2/8/2012 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: SATISFACTION OF 13267 ORDER REQUIREMENTS AND RETURN OF CASE TO UST PROGRAM (76 SERVICE STATION)
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6112955
Type: CLOSURE/NO FURTHER ACTION LETTER

Document Type: Site Documents **Submitted:**
Document Date: 2/8/2012 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF SUPPLEMENTAL SITE ASSESSMENT WORK PLAN
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6112953
Type: 13267 REQUIREMENT

Document Type: Site Documents **Submitted:**
Document Date: 2/3/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,367 KB
Title: DOMINGUEZ CHANNEL WEEKLY STATUS UPDATE FEBRUARY 3, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5614331841/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 2/3/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,309 KB

Title: MONTHLY REPORT ON LNAPL COLLECTION - JANUARY 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7407374083/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 2/2/2012 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: CARSON STREET CHANNEL SPILL - LETTER REPORT - REGULATOR RESPONSE
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&document_id=5730963
Type: TECHNICAL MEMOS

Document Type: Site Documents **Submitted:**
Document Date: 2/1/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,047 KB
Title: SUPPLEMENTAL SITE ASSESSMENT WORK PLAN
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6572285473/T10000003058.PDF
Type: SITE ASSESSMENT REPORT

Document Type: Site Documents **Submitted:**
Document Date: 1/27/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 6,128 KB
Title: TIDAL STUDY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2257492005/T10000003058.PDF
Type: SPECIAL STUDIES AND INVESTIGATIONS

Document Type: Site Documents **Submitted:**
Document Date: 1/27/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,233 KB
Title: WEEKLY STATUS UPDATE - JANUARY 27, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7684430718/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 1/20/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,231 KB
Title: WEEKLY STATUS UPDATE - JANUARY 20, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9024983227/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 1/20/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 7,278 KB
Title: ADDITIONAL SITE ASSESSMENT REPORT SOIL AND GROUNDWATER INVESTIGATION
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2982228100/T10000003058.PDF
Type: SITE ASSESSMENT REPORT

Document Type: Site Documents **Submitted:**
Document Date: 1/13/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,109 KB
Title: WEEKLY STATUS UPDATE JANUARY 13, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7134872376/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 1/6/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,109 KB
Title: WEEKLY STATUS UPDATE - JANUARY 6, 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7034835100/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 1/6/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,484 KB
Title: MONTHLY REPORT ON LNAPL COLLECTION - DECEMBER 2011
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6869794487/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 1/6/2012 **Submitted By:** JESSICA CURRAN (AUTH_RP)

Size : 3,638 KB
Title: SUPPLEMENTAL SITE ASSESSMENT REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4647672295/T10000003058.PDF
Type: SITE ASSESSMENT REPORT

Document Type: Site Documents **Submitted:**
Document Date: 12/30/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,123 KB
Title: WEEKLY STATUS UPDATE - DECEMBER 30, 2011
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6541303277/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 12/23/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 4,246 KB
Title: WEEKLY STATUS UPDATE - DECEMBER 23, 2011
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7538757264/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 12/23/2011 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF SUPPLEMENTAL SITE ASSESSMENT WORK PLAN
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6107068
Type: 13267 REQUIREMENT

Document Type: Site Documents **Submitted:**
Document Date: 12/22/2011 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF TIME EXTENSION FOR TIDAL STUDY REPORT
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6106987
Type: 13267 REQUIREMENT

Document Type: Site Documents **Submitted:**
Document Date: 12/21/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,393 KB
Title: ADDITIONAL ASSESSMENT WORK PLAN
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6241376519/T10000003058.PDF
Type: PRELIMINARY SITE ASSESSMENT WORKPLAN

Document Type: Site Documents **Submitted:**
Document Date: 12/16/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,995 KB
Title: WEEKLY STATUS UPDATE - DECEMBER 16, 2011
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4408802807/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 12/13/2011 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: CRIMSON PIPELINE L.P. - REQUIREMENT FOR TECHNICAL REPORT ON PIPELINE INVENTORY
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6106063
Type: 13267 REQUIREMENT

Document Type: Site Documents **Submitted:**
Document Date: 12/13/2011 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: CHEVRON EMC - REQUIREMENT FOR TECHNICAL REPORT ON PIPELINE INVENTORY
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6106060
Type: 13267 REQUIREMENT

Document Type: Site Documents **Submitted:**
Document Date: 12/13/2011 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: SHELL OIL PRODUCTS US - REQUIREMENT FOR TECHNICAL REPORT ON PIPELINE INVENTORY
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6106069
Type: 13267 REQUIREMENT

Document Type: Site Documents **Submitted:**

Document Date: 12/13/2011 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: PLAINS ALL AMERICAN PIPELINE, L.P. - REQUIREMENT FOR TECHNICAL REPORT ON PIPELINE INVENTORY
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6106067
Type: 13267 REQUIREMENT

Document Type: Site Documents **Submitted:**
Document Date: 12/13/2011 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF SUPPLEMENTAL SITE ASSESSMENT WORK PLAN - SOIL VAPOR STUDY AT FORMER ACTIVE RV
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6106158
Type: 13267 REQUIREMENT

Document Type: Site Documents **Submitted:**
Document Date: 12/13/2011 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: EXXON-MOBIL CORPORATION - REQUIREMENT FOR TECHNICAL REPORT ON PIPELINE INVENTORY
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6106066
Type: 13267 REQUIREMENT

Document Type: Site Documents **Submitted:**
Document Date: 12/13/2011 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: CONOCOPHILLIPS COMPANY - REQUIREMENT FOR TECHNICAL REPORT ON PIPELINE INVENTORY
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6106062
Type: 13267 REQUIREMENT

Document Type: Site Documents **Submitted:**
Document Date: 12/13/2011 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: BP PIPELINES/ARCO - REQUIREMENT FOR TECHNICAL REPORT ON PIPELINE INVENTORY
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6106059
Type: 13267 REQUIREMENT

Document Type: Site Documents **Submitted:**
Document Date: 12/13/2011 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: AIR PRODUCTS AND CHEMICALS, INC. - REQUIREMENT FOR TECHNICAL REPORT ON PIPELINE INVENTORY
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6106058
Type: 13267 REQUIREMENT

Document Type: Site Documents **Submitted:**
Document Date: 12/13/2011 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: TESORO REFINING AND MARKETING CORPORATION - REQUIREMENT FOR TECHNICAL REPORT ON PIPELINE INVENTORY
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6106064
Type: 13267 REQUIREMENT

Document Type: Site Documents **Submitted:**
Document Date: 12/9/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,988 KB
Title: WEEKLY STATUS UPDATE - DECEMBER 9, 2011
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3555478930/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 12/8/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,317 KB
Title: MONTHLY REPORT ON LNAPL COLLECTION - NOVEMBER 2011
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9181641936/T10000003058.PDF
Type: STATUS / PROGRESS REPORTS

Document Type: Site Documents **Submitted:**
Document Date: 12/8/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,906 KB

Title: SUPPLEMENTAL SITE ASSESSMENT WORK PLANSOIL VAPOR STUDY AT FORMER ACTIVE RV
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8704239845/T10000003058.PDF
Type: OTHER WORKPLAN

Document Type: Site Documents **Submitted:**
Document Date: 12/8/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,782 KB
Title: INTERIM PIPELINE ASSESSMENT REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7727552056/T10000003058.PDF
Type: OTHER REPORT / DOCUMENT

Document Type: Site Documents **Submitted:**
Document Date: 12/2/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,991 KB
Title: WEEKLY STATUS UPDATE - DECEMBER 2, 2011
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4224781811/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 11/23/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,991 KB
Title: WEEKLY STATUS UPDATE - 11-23-11
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9868653297/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 11/18/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,944 KB
Title: WEEKLY STATUS UPDATE - 11-18-11
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3265042901/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 11/11/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,942 KB
Title: WEEKLY STATUS UPDATE 11-11-11
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3682801246/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 11/8/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,091 KB
Title: MONTHLY REPORT ON LNAPL - OCTOBER 2011
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1652460753/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 11/4/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,831 KB
Title: WEEKLY STATUS UPDATE 11-04-2011
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7201827287/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 11/1/2011 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF SUPPLEMENTAL SITE ASSESSMENT WORK PLAN
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6102699
Type: 13267 REQUIREMENT

Document Type: Site Documents **Submitted:**
Document Date: 10/28/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,790 KB
Title: WEEKLY STATUS UPDATE OCTOBER 21, 2011
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3446179986/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 10/28/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)

Size : 3,967 KB
Title: WEEKLY STATUS UPDATE OCTOBER 28, 2011
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8521621644/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents ***Submitted:***
Document Date: 10/26/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF SUPPLEMENTAL SITE ASSESSMENT WORK PLAN - ACTIVE RV
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6102418
Type: 13267 REQUIREMENT

Document Type: Site Documents ***Submitted:***
Document Date: 10/25/2011 ***Submitted By:*** JESSICA CURRAN (AUTH_RP)
Size : 27,936 KB
Title: LIGHT NON-AQUEOUS PHASE LIQUID RELEASE REPORT APPENDIX
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7026020824/T10000003058.PDF
Type: SITE INVESTIGATION

Document Type: Site Documents ***Submitted:***
Document Date: 10/25/2011 ***Submitted By:*** JESSICA CURRAN (AUTH_RP)
Size : 2,069 KB
Title: WORK PLAN-ADDITIONAL ASSESSMENT DOMINGUEZ CHANNEL WORK PLAN
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5849579811/T10000003058.PDF
Type: SOIL AND WATER INVESTIGATION WORKPLAN

Document Type: Site Documents ***Submitted:***
Document Date: 10/21/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF TIDAL STUDY WORK PLAN
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6101782
Type: 13267 REQUIREMENT

Document Type: Site Documents ***Submitted:***
Document Date: 10/20/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: SITE CLEANUP PROGRAM COST REIMBURSEMENT ACCOUNT
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6101415
Type: COST RECOVERY AGREEMENT / N. OF REIMBURSEMENT

Document Type: Site Documents ***Submitted:***
Document Date: 10/20/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF SUPPLEMENTAL SITE ASSESSMENT WORK PLAN (AT FORMER ACTIVE RV PROPERTY)
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6101416
Type: 13267 REQUIREMENT

Document Type: Site Documents ***Submitted:***
Document Date: 10/20/2011 ***Submitted By:*** JESSICA CURRAN (AUTH_RP)
Size : 19,021 KB
Title: LIGHT NON-AQUEOUS PHASE LIQUID RELEASE REPORT TEXT, TABLES AND FIGURES
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1534970879/T10000003058.PDF
Type: SITE ASSESSMENT REPORT

Document Type: Site Documents ***Submitted:***
Document Date: 10/14/2011 ***Submitted By:*** JESSICA CURRAN (AUTH_RP)
Size : 3,663 KB
Title: WEEKLY STATUS UPDATE OCTOBER 14, 2011
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1657913148/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents ***Submitted:***
Document Date: 10/7/2011 ***Submitted By:*** JESSICA CURRAN (AUTH_RP)
Size : 3,647 KB
Title: WEEKLY STATUS UPDATE OCTOBER 7, 2011
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7452102601/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Monitoring Reports ***Submitted:***

Document Date: 10/7/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,118 KB
Title: MONTHLY REPORT ON LNAPL COLLECTION - SEPTEMBER 2011
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9397409021/T10000003058.PDF
Type: MONITORING REPORT - OTHER

Document Type: Site Documents **Submitted:**
Document Date: 9/30/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,679 KB
Title: WEEKLY STATUS UPDATE SEPTEMBER 30, 2011
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2508030712/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 9/30/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 578 KB
Title: WORK PLAN-RELLC -DOMINGUEZ CHANNEL SCREENING LEVEL OUTDOOR AIR ASSESSMENT WORK PLAN
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2752227067/T10000003058.PDF
Type: OTHER WORKPLAN

Document Type: Site Documents **Submitted:**
Document Date: 9/26/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,126 KB
Title: RELLC -DOMINGUEZ CHANNEL INTERIM MITIGATION PLAN
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6253259241/T10000003058.PDF
Type: OTHER REPORT / DOCUMENT

Document Type: Site Documents **Submitted:**
Document Date: 9/23/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,750 KB
Title: WORK PLAN-DOMINGUEZ CHANNEL ASSESSMENT WORK PLAN
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2084919750/T10000003058.PDF
Type: SOIL AND WATER INVESTIGATION WORKPLAN

Document Type: Site Documents **Submitted:**
Document Date: 9/23/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,660 KB
Title: WEEKLY STATUS UPDATE SEPTEMBER 23, 2011
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5611830949/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 9/23/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,502 KB
Title: WORK PLAN-RELLC -DOMINGUEZ CHANNEL TIDAL STUDY WORK PLAN
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5385075390/T10000003058.PDF
Type: OTHER REPORT / DOCUMENT

Document Type: Site Documents **Submitted:**
Document Date: 9/16/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,613 KB
Title: WEEKLY STATUS UPDATE SEPTEMBER 16, 2011
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4907984435/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 9/9/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,657 KB
Title: WEEKLY STATUS UPDATE SEPTEMBER 9, 2011
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5647431373/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 9/9/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,205 KB
Title: MONTHLY REPORT ON LNAPL COLLECTION - AUGUST 2011
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1711716651/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 9/6/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,656 KB
Title: WEEKLY STATUS UPDATE SEPTEMBER 2, 2011
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9710584282/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 9/1/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 3,423 KB
Title: TECHNICAL SUBMITTAL CPT/ROST LOGS, WELL LOGS, AND SURVEY DATA INVESTIGATIVE ORDER 8-31-11 DOMINGUEZ CHANNEL
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3105039477/T10000003058.PDF
Type: SITE INVESTIGATION

Document Type: Site Documents **Submitted:**
Document Date: 9/1/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 5,942 KB
Title: TECHNICAL SUBMITTAL CPT/ROST LOGS, WELL LOGS, AND SURVEY DATA INVESTIGATIVE ORDER 8-31-11 CARSON AIR HARBOR
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5719883739/T10000003058.PDF
Type: SITE INVESTIGATION

Document Type: Site Documents **Submitted:**
Document Date: 9/1/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,615 KB
Title: TECHNICAL SUBMITTAL CPT/ROST LOGS, WELL LOGS, AND SURVEY DATA INVESTIGATIVE ORDER 8-31-11 TEXACO
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4662301599/T10000003058.PDF
Type: SITE INVESTIGATION

Document Type: Site Documents **Submitted:**
Document Date: 9/1/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 2,030 KB
Title: TECHNICAL SUBMITTAL CPT/ROST LOGS, WELL LOGS, AND SURVEY DATA INVESTIGATIVE ORDER 8-31-11 76 STATION
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2949735283/T10000003058.PDF
Type: SITE INVESTIGATION

Document Type: Site Documents **Submitted:**
Document Date: 8/31/2011 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: REVISED DEADLINES FOR TECHNICAL REPORTING
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6097498
Type: 13267 REQUIREMENT

Document Type: Site Documents **Submitted:**
Document Date: 8/29/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,408 KB
Title: WEEKLY STATUS UPDATE AUGUST 26, 2011
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9164704322/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 8/22/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,408 KB
Title: WEEKLY STATUS UPDATE 8-19-11
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8099797070/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 8/15/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,399 KB
Title: WEEKLY STATUS UPDATE 8-12-11
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4002436339/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**

Document Date: 8/9/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 894 KB
Title: MONTHLY REPORT ON LNAPL COLLECTION - JULY 2011
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1469052910/T10000003058.PDF
Type: STATUS / PROGRESS REPORTS

Document Type: Site Documents **Submitted:**
Document Date: 8/8/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,400 KB
Title: WEEKLY STATUS UPDATE AUGUST 5, 2011
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2591613709/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 8/2/2011 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: SCP OVERSIGHT COST REIMBURSEMENT ACCOUNT
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6094313
Type: TECHNICAL CORRESPONDENCE / ASSISTANCE / OTHER

Document Type: Site Documents **Submitted:**
Document Date: 8/2/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 457 KB
Title: SURVEY BENCHMARK
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2953016161/T10000003058.PDF
Type: OTHER REPORT / DOCUMENT

Document Type: Site Documents **Submitted:**
Document Date: 7/29/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,379 KB
Title: WEEKLY STATUS UPDATE JULY 29, 2011
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4119986295/T10000003058.PDF
Type: CORRESPONDENCE

Document Type: Site Documents **Submitted:**
Document Date: 7/26/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,486 KB
Title: WORK PLAN TO ASSESS THE LIGHT NON-AQUEOUS PHASE LIQUID RELEASE IN THE DOMINGUEZ CHANNEL
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6134400367/T10000003058.PDF
Type: SITE INVESTIGATION WORKPLAN

Document Type: Site Documents **Submitted:**
Document Date: 7/26/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,213 KB
Title: REVISED SITE ASSESSMENT WORK PLAN 76 STATION 6082
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4228068053/T10000003058.PDF
Type: SITE INVESTIGATION WORKPLAN

Document Type: Site Documents **Submitted:**
Document Date: 7/26/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 1,691 KB
Title: REVISED SITE ASSESSMENT WORK PLAN FORMER TEXACO STATION
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6893140435/T10000003058.PDF
Type: SITE INVESTIGATION WORKPLAN

Document Type: Site Documents **Submitted:**
Document Date: 7/26/2011 **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 538 KB
Title: REVISED SITE DELINEATION WORK PLAN CARSON AIR HARBOR JULY 6, 2011
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9874862611/T10000003058.PDF
Type: SITE INVESTIGATION WORKPLAN

Document Type: Site Documents **Submitted:**
Document Date: 7/21/2011 **Submitted By:** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF WORK PLAN - 76 SERVICE STATION
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6093233
Type: 13267 REQUIREMENT

Document Type: Site Documents ***Submitted:***
Document Date: 7/21/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF WORK PLAN - CAH
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6092929
Type: 13267 REQUIREMENT

Document Type: Site Documents ***Submitted:***
Document Date: 7/21/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF WORK PLAN - FORMER TEXACO SERVICE STATION
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6093236
Type: 13267 REQUIREMENT

Document Type: Site Documents ***Submitted:***
Document Date: 7/19/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF TIME EXTENSION FOR SUBDRAIN EVALUATION AND PLACEMENT OF ABSORBENT MATERIAL
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6092924
Type: 13267 REQUIREMENT

Document Type: Site Documents ***Submitted:***
Document Date: 6/30/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: APPROVAL OF WORK PLAN TO ASSESS THE LNAPL RELEASE IN THE DOMINGUEZ CHANNEL SOUTH OF CARSON STREET
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&enforcement_id=6091041
Type: 13267 REQUIREMENT

Document Type: Site Documents ***Submitted:***
Document Date: 6/22/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: WORK PLAN TO ASSESS THE LIGHT NON-AQUEOUS PHASE LIQUID RELEASE IN THE DOMINGUEZ CHANNEL SOUTH OF CARSON STREET
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&document_id=5715830
Type: PRELIMINARY SITE ASSESSMENT WORKPLAN

Document Type: Site Documents ***Submitted:***
Document Date: 6/14/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: SHELL OIL PRODUCTS US - TRANSFER TO RELLC
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&document_id=5715295
Type: CORRESPONDENCE

Document Type: Site Documents ***Submitted:***
Document Date: 6/14/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: CHEVRON - TRANSFER TO RELLC
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&document_id=5715297
Type: CORRESPONDENCE

Document Type: Site Documents ***Submitted:***
Document Date: 6/14/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: TRANSFER TO RELLC FROM CHEVRON AND SHELL
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003058&document_id=5715299
Type: CORRESPONDENCE

Sites from GeoTracker Search - Site Maps (as of Oct 06, 2020)

Title: R-MW-12 (R-MW-12) ***Submitted By:*** JESSICA CURRAN (AUTH_RP)
Size : 151 KB ***Submitted:*** 9/16/2015
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/9357520818/T10000003058.PDF

Title: CD-03G (CD-03G) ***Submitted By:*** JESSICA CURRAN (AUTH_RP)
Size : 71 KB ***Submitted:*** 3/31/2015

Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/6819536328/T10000003058.PDF

Title: CD-06A (CD-06A) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 66 KB **Submitted:** 3/31/2015
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/1419624090/T10000003058.PDF

Title: CD-01A (CD-01A) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 69 KB **Submitted:** 3/31/2015
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/8954011440/T10000003058.PDF

Title: CD-03F (CD-03F) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 68 KB **Submitted:** 3/31/2015
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/4402198135/T10000003058.PDF

Title: CD-03C (CD-03C) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 72 KB **Submitted:** 3/31/2015
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/9817710638/T10000003058.PDF

Title: CD-05C (CD-05C) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 68 KB **Submitted:** 3/31/2015
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/4389365911/T10000003058.PDF

Title: CD-03B (CD-03B) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 70 KB **Submitted:** 3/31/2015
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/2041361212/T10000003058.PDF

Title: CD-03D (CD-03D) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 72 KB **Submitted:** 3/31/2015
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/9457185268/T10000003058.PDF

Title: CD-03E (CD-03E) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 73 KB **Submitted:** 3/31/2015
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/6680976629/T10000003058.PDF

Title: CD-05A (CD-05A) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 72 KB **Submitted:** 3/31/2015
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/2471290349/T10000003058.PDF

Title: CD-06B (CD-06B) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 67 KB **Submitted:** 3/31/2015
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/8861504733/T10000003058.PDF

Title: CD-01C (CD-01C) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 68 KB **Submitted:** 3/31/2015
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/4435645818/T10000003058.PDF

Title: CD-09B (CD-09B) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 69 KB **Submitted:** 3/31/2015
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/1823007941/T10000003058.PDF

Title: CD-03A (CD-03A) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 71 KB **Submitted:** 3/31/2015
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/2647406876/T10000003058.PDF

Title: CD-06C (CD-06C) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 67 KB **Submitted:** 3/31/2015
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/6262442052/T10000003058.PDF

Title: CD-01B (CD-01B) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 68 KB **Submitted:** 3/31/2015
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/4389151871/T10000003058.PDF

Title: CD-05B (CD-05B) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 69 KB **Submitted:** 3/31/2015
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/1977240860/T10000003058.PDF

Title: R-MW-11 (R-MW-11) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 152 KB **Submitted:** 8/25/2014
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/6624254345/T10000003058.PDF

Title: BORING LOG B-2-RV (B-2-RV) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 72 KB **Submitted:** 7/13/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/6721649110/T10000003058.PDF

Title: BORING LOG B-3-RV (B-3-RV) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 79 KB **Submitted:** 7/13/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/5698872387/T10000003058.PDF

Title: BORING LOG B-1-RV (B-1-RV) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 67 KB **Submitted:** 7/13/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/8026365160/T10000003058.PDF

Title: BORING LOG B-5-RV (B-5-RV) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 67 KB **Submitted:** 7/13/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/2126942455/T10000003058.PDF

Title: BORING LOG B-6-RV (B-6-RV) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 72 KB **Submitted:** 7/13/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/1248198747/T10000003058.PDF

Title: BORING LOG B-4-RV (B-4-RV) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 72 KB **Submitted:** 7/13/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/2938871264/T10000003058.PDF

Title: SV-10-RV (SV-10-RV) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 61 KB **Submitted:** 5/17/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/7826537370/T10000003058.PDF

Title: V-24 (V-24) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 74 KB **Submitted:** 5/17/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/5087096452/T10000003058.PDF

Title: SV-4-RV (SV-4-RV) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 64 KB **Submitted:** 5/17/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/3620558977/T10000003058.PDF

Title: SV-8-RV (SV-8-RV) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 65 KB **Submitted:** 5/17/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/4064783751/T10000003058.PDF

Title: V-13 (V-13) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 63 KB **Submitted:** 5/17/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/1552396655/T10000003058.PDF

Title: V-18 (V-18) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 63 KB **Submitted:** 5/17/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/7277770280/T10000003058.PDF

Title: SV-5-RV (SV-5-RV) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 63 KB **Submitted:** 5/17/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/5953534722/T10000003058.PDF

Title: SV-6-RV (SV-6-RV) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 61 KB **Submitted:** 5/17/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/2374409496/T10000003058.PDF

Title: SV-7-RV (SV-7-RV) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 61 KB **Submitted:** 5/17/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/8910812318/T10000003058.PDF

Title: SV-9-RV (SV-9-RV) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 62 KB **Submitted:** 5/17/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/3086211442/T10000003058.PDF

Title: V-15 (V-15) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 63 KB **Submitted:** 5/17/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/2208555102/T10000003058.PDF

Title: MW-4B-RV (MW-4B-RV) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 125 KB **Submitted:** 5/17/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/7647297680/T10000003058.PDF

Title: V-19 (V-19) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 74 KB **Submitted:** 5/17/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/9796498119/T10000003058.PDF

Title: SV-1-RV (SV-1-RV) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 61 KB **Submitted:** 5/17/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/3688374340/T10000003058.PDF

Title: SV-2-RV (SV-2-RV) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 61 KB **Submitted:** 5/17/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/9928359270/T10000003058.PDF

Title: V-11 (V-11) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 63 KB **Submitted:** 5/17/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/4883712053/T10000003058.PDF

Title: V-14 (V-14) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 57 KB **Submitted:** 5/17/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/5080793261/T10000003058.PDF

Title: V-9 (V-9) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 63 KB **Submitted:** 5/17/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/4644622087/T10000003058.PDF

Title: V-25 (V-25) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 57 KB **Submitted:** 5/17/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/7383121550/T10000003058.PDF

Title: V-22 (V-22) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 57 KB **Submitted:** 5/17/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/2899338722/T10000003058.PDF

Title: V-23 (V-23) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 59 KB **Submitted:** 5/17/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/4736798882/T10000003058.PDF

Title: V-21 (V-21) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 63 KB **Submitted:** 5/17/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/4730466723/T10000003058.PDF

Title: MW-2A-RV REVISED (MW-2A-RV) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 121 KB **Submitted:** 5/17/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/5654927074/T10000003058.PDF

Title: MW-5A-RV (MW-5A-RV) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 103 KB **Submitted:** 5/17/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/9393599748/T10000003058.PDF

Title: V-10 (V-10) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 57 KB **Submitted:** 5/17/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/8315678417/T10000003058.PDF

Title: V-17 (V-17) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 57 KB **Submitted:** 5/17/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/9026121020/T10000003058.PDF

Title: V-20 (V-20) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 63 KB **Submitted:** 5/17/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/4092758119/T10000003058.PDF

Title: V-16 (V-16) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 63 KB **Submitted:** 5/17/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/7874664247/T10000003058.PDF

Title: SV-3-RV (SV-3-RV) **Submitted By:** JESSICA CURRAN (AUTH_RP)

Size :	61 KB	**Submitted:**	5/17/2012
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/6922612011/T10000003058.PDF		

Title:	MW-4A-RV (MW-4A-RV)	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	120 KB	**Submitted:**	5/17/2012
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/4112258851/T10000003058.PDF		

Title:	MW-5B-RV (MW-5B-RV)	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	131 KB	**Submitted:**	5/17/2012
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/4320587098/T10000003058.PDF		

Title:	V-7 (V-7)	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	58 KB	**Submitted:**	5/17/2012
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/3934966981/T10000003058.PDF		

Title:	V-8 (V-8)	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	57 KB	**Submitted:**	5/17/2012
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/6170213222/T10000003058.PDF		

Title:	V-12 (V-12)	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	58 KB	**Submitted:**	5/17/2012
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/1938140153/T10000003058.PDF		

Title:	V-26 (V-26)	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	62 KB	**Submitted:**	5/17/2012
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/8728514909/T10000003058.PDF		

Title:	GEO_MAP	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	594 KB	**Submitted:**	2/7/2012
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_map/9515248119/T10000003058.PDF		

Title:	GEO_MAP	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	777 KB	**Submitted:**	2/7/2012
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_map/6466841936/T10000003058.PDF		

Title:	R-MW-9B (R-MW-9B)	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	143 KB	**Submitted:**	1/27/2012
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/2222651183/T10000003058.PDF		

Title:	MW-1B-RV (MW-1B-RV)	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	138 KB	**Submitted:**	1/27/2012
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/7099654436/T10000003058.PDF		

Title:	R-MW-6B (R-MW-6B)	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	149 KB	**Submitted:**	1/27/2012
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/2489379167/T10000003058.PDF		

Title:	R-MW-10A (R-MW-10A)	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	99 KB	**Submitted:**	1/27/2012
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/1685978710/T10000003058.PDF		

Title:	MW-2B-RV (MW-2B-RV)	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	125 KB	**Submitted:**	1/27/2012
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/6967880189/T10000003058.PDF		

Title:	MW-3A-RV (MW-3A-RV)	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	110 KB	**Submitted:**	1/27/2012
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/2160920143/T10000003058.PDF		

Title:	R-MW-1C (R-MW-1C)	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	183 KB	**Submitted:**	1/27/2012
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/6117538392/T10000003058.PDF		

Title:	MW-3B-RV (MW-3B-RV)	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	126 KB	**Submitted:**	1/27/2012
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/9850385308/T10000003058.PDF		

Title:	HA-2 (HA-2)	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	58 KB	**Submitted:**	1/27/2012

Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/2719542741/T10000003058.PDF

Title: R-MW-1B (R-MW-1B) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 147 KB **Submitted:** 1/27/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/4561787426/T10000003058.PDF

Title: R-MW-7B (R-MW-7B) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 149 KB **Submitted:** 1/27/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/7674651384/T10000003058.PDF

Title: R-MW-10B (R-MW-10B) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 127 KB **Submitted:** 1/27/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/9714512646/T10000003058.PDF

Title: HA-1 (HA-1) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 56 KB **Submitted:** 1/27/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/9671930968/T10000003058.PDF

Title: MW-1A-RV (MW-1A-RV) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 116 KB **Submitted:** 1/27/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/3963332414/T10000003058.PDF

Title: R-MW-6C (R-MW-6C) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 179 KB **Submitted:** 1/27/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/6351038634/T10000003058.PDF

Title: R-MW-10C (R-MW-10C) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 177 KB **Submitted:** 1/27/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/2293197572/T10000003058.PDF

Title: R-MW-8A (R-MW-8A) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 104 KB **Submitted:** 1/27/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/5456298768/T10000003058.PDF

Title: R-MW-8B (R-MW-8B) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 153 KB **Submitted:** 1/27/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/9081787049/T10000003058.PDF

Title: MW-2A-RV (MW-2A-RV) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 110 KB **Submitted:** 1/27/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/4463821351/T10000003058.PDF

Title: R-MW-7A (R-MW-7A) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 98 KB **Submitted:** 1/27/2012
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/6724436461/T10000003058.PDF

Title: CPT-20-(CAH) (CPT-20-(CAH)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 74 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/2320771217/T10000003058.PDF

Title: CPT-11-(CAH) (CPT-11-(CAH)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 72 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/2651742398/T10000003058.PDF

Title: S-2 (S-2) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 56 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/8280822038/T10000003058.PDF

Title: V-1 (V-1) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 76 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/2492157936/T10000003058.PDF

Title: V-2 (V-2) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 76 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/2146570861/T10000003058.PDF

Title: MW-8B-(TEX) (MW-8B-(TEX)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 113 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/3564116716/T10000003058.PDF

Title: MW-9B-(TEX) (MW-9B-(TEX)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 98 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/8322809875/T10000003058.PDF

Title: SV-1-(TEX) (SV-1-(TEX)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 68 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/5314405083/T10000003058.PDF

Title: SV-3-(TEX) (SV-3-(TEX)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 68 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/3403915345/T10000003058.PDF

Title: CPT-01-(CAH) (CPT-01-(CAH)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 71 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/4337652921/T10000003058.PDF

Title: CPT-03-(CAH) (CPT-03-(CAH)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 69 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/8640790581/T10000003058.PDF

Title: CPT-15-(CAH) (CPT-15-(CAH)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 75 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/7073115050/T10000003058.PDF

Title: CPT-25-(CAH) (CPT-25-(CAH)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 100 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/2860886573/T10000003058.PDF

Title: CPT-1-(76) (CPT-1-(76)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 176 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/8066375672/T10000003058.PDF

Title: CPT-04-(CAH) (CPT-04-(CAH)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 72 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/5464353442/T10000003058.PDF

Title: CPT-13-(CAH) (CPT-13-(CAH)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 70 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/5982560515/T10000003058.PDF

Title: MW-7C-(CAH) (MW-7C-(CAH)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 235 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/5546765923/T10000003058.PDF

Title: R-MW-2 (R-MW-2) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 168 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/7214838683/T10000003058.PDF

Title: R-MW-4 (R-MW-4) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 169 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/6496332824/T10000003058.PDF

Title: V-3 (V-3) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 78 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/3041407287/T10000003058.PDF

Title: MW-8C-(TEX) (MW-8C-(TEX)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 140 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/8720387279/T10000003058.PDF

Title: SV-2-(TEX) (SV-2-(TEX)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 66 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/8894647181/T10000003058.PDF

Title: CPT-12-(CAH) (CPT-12-(CAH)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 70 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/2576370179/T10000003058.PDF

Title:	CPT-10-(CAH) (CPT-10-(CAH))	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	72 KB	**Submitted:**	8/31/2011
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/5797474682/T10000003058.PDF		
Title:	CPT-19-(CAH) (CPT-19-(CAH))	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	75 KB	**Submitted:**	8/31/2011
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/1654418230/T10000003058.PDF		
Title:	CPT-17-(CAH) (CPT-17-(CAH))	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	75 KB	**Submitted:**	8/31/2011
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/8149976372/T10000003058.PDF		
Title:	CPT-2-(TEX) (CPT-2-(TEX))	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	91 KB	**Submitted:**	8/31/2011
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/9182764708/T10000003058.PDF		
Title:	MW-9B-(TEX) (MW-9-(TEX))	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	98 KB	**Submitted:**	8/31/2011
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/8337737977/T10000003058.PDF		
Title:	MW-13B-(TEX) (MW-13B-(TEX))	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	109 KB	**Submitted:**	8/31/2011
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/3732344865/T10000003058.PDF		
Title:	CPT-05-(CAH) (CPT-05-(CAH))	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	71 KB	**Submitted:**	8/31/2011
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/6503110766/T10000003058.PDF		
Title:	CPT-24-(CAH) (CPT-24-(CAH))	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	100 KB	**Submitted:**	8/31/2011
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/9406336486/T10000003058.PDF		
Title:	MW-6B-(CAH) (MW-6B-(CAH))	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	153 KB	**Submitted:**	8/31/2011
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/4644975066/T10000003058.PDF		
Title:	MW-6C-(CAH) (MW-6C-(CAH))	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	205 KB	**Submitted:**	8/31/2011
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/8297402918/T10000003058.PDF		
Title:	MW-8C-(CAH) (MW-8C-(CAH))	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	209 KB	**Submitted:**	8/31/2011
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/6284772515/T10000003058.PDF		
Title:	R-MW-1 (R-MW-1)	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	162 KB	**Submitted:**	8/31/2011
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/6851603209/T10000003058.PDF		
Title:	V-5 (V-5)	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	56 KB	**Submitted:**	8/31/2011
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/9984971046/T10000003058.PDF		
Title:	CPT-3-(TEX) (CPT-3-(TEX))	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	94 KB	**Submitted:**	8/31/2011
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/3133839428/T10000003058.PDF		
Title:	MW-13C-(TEX) (MW-13C-(TEX))	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	126 KB	**Submitted:**	8/31/2011
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/2484297990/T10000003058.PDF		
Title:	GEO_MAP	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	799 KB	**Submitted:**	8/31/2011
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_map/3429783642/T10000003058.PDF		
Title:	GEO_MAP	**Submitted By:**	JESSICA CURRAN (AUTH_RP)
Size :	283 KB	**Submitted:**	8/31/2011
Link:	https://geotracker.waterboards.ca.gov/esi/uploads/geo_map/9953229784/T10000003058.PDF		
Title:	MW-7B-(CAH) (MW-7B-(CAH))	**Submitted By:**	JESSICA CURRAN (AUTH_RP)

Size : 163 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/9328231096/T10000003058.PDF

Title: MW-8A-(CAH) (MW-8A-(CAH)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 108 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/4489826977/T10000003058.PDF

Title: S-5 (S-5) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 56 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/6575118958/T10000003058.PDF

Title: MW-5-(CAH) (MW-5-(CAH)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 96 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/7906491875/T10000003058.PDF

Title: MW-9A-(CAH) (MW-9A-(CAH)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 113 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/2877362847/T10000003058.PDF

Title: MW-9C-(CAH) (MW-9C-(CAH)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 211 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/3844162940/T10000003058.PDF

Title: R-MW-3 (R-MW-3) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 172 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/2410527050/T10000003058.PDF

Title: V-6 (V-6) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 66 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/5883117616/T10000003058.PDF

Title: CPT-06-(CAH) (CPT-06-(CAH)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 73 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/7637948572/T10000003058.PDF

Title: CPT-16-(CAH) (CPT-16-(CAH)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 74 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/7568058788/T10000003058.PDF

Title: CPT-21-(CAH) (CPT-21-(CAH)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 76 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/4111510515/T10000003058.PDF

Title: CPT-22-(CAH) (CPT-22-(CAH)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 99 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/8153380632/T10000003058.PDF

Title: CPT-23-(CAH) (CPT-23-(CAH)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 91 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/4469115495/T10000003058.PDF

Title: CPT-26-(CAH) (CPT-26-(CAH)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 148 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/9845412492/T10000003058.PDF

Title: MW-9C-(76) (MW-9C-(76)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 205 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/7354566216/T10000003058.PDF

Title: CPT-02-(CAH) (CPT-02-(CAH)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 71 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/3321044206/T10000003058.PDF

Title: CPT-07-(CAH) (CPT-07-(CAH)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 71 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/3826291918/T10000003058.PDF

Title: CPT-09-(CAH) (CPT-09-(CAH)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 71 KB **Submitted:** 8/31/2011

Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/4530942559/T10000003058.PDF

Title: CPT-14-(CAH) (CPT-14-(CAH)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 74 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/8466053783/T10000003058.PDF

Title: CPT-18-(CAH) (CPT-18-(CAH)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 75 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/9848408520/T10000003058.PDF

Title: MW-7A-(CAH) (MW-7A-(CAH)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 116 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/3985956847/T10000003058.PDF

Title: MW-9B-(CAH) (MW-9B-(CAH)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 154 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/3099835991/T10000003058.PDF

Title: MW-04-(CAH) (MW-04-(CAH)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 115 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/9526783764/T10000003058.PDF

Title: S-6 (S-6) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 56 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/1361115455/T10000003058.PDF

Title: V-4 (V-4) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 57 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/4116429150/T10000003058.PDF

Title: MW-9C-(TEX) (MW-9C-(TEX)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 122 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/2255233049/T10000003058.PDF

Title: S-1 (S-1) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 63 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/5321904003/T10000003058.PDF

Title: S-3 (S-3) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 55 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/8465970635/T10000003058.PDF

Title: S-4 (S-4) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 63 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/3939411938/T10000003058.PDF

Title: GEO_MAP **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 354 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_map/3587599992/T10000003058.PDF

Title: GEO_MAP **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 726 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_map/4522156715/T10000003058.PDF

Title: MW-8B-(CAH) (MW-8B-(CAH)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 147 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/3037424743/T10000003058.PDF

Title: MW-02-(CAH) (MW-02-(CAH)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 105 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/2508362770/T10000003058.PDF

Title: R-MW-5 (R-MW-5) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 171 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/3089124321/T10000003058.PDF

Title: R-MW-6 (R-MW-6) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 158 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/3646575868/T10000003058.PDF

Title: MW-3-(CAH) (MW-3-(CAH)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 134 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/2828061699/T10000003058.PDF

Title: CPT-08-(CAH) (CPT-08-(CAH)) **Submitted By:** JESSICA CURRAN (AUTH_RP)
Size : 84 KB **Submitted:** 8/31/2011
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/5172067224/T10000003058.PDF

Sites from GeoTracker Search - Cleanup Status History (as of Oct 06, 2020)

Status: Open - Site Assessment
Date : 2/10/2016

Status: Open - Case Begin Date
Date : 6/14/2011

Status: Open - Site Assessment
Date : 6/14/2011

Sites from GeoTracker Search - Related Cases (as of Oct 06, 2020)

Identifier: SLT43288286 **Address:** 21500 PERRY ST
Status: OPEN - SITE ASSESSMENT **City:** CARSON
Association: Related Global ID
Description:
Project Name: SHELL PIPELINE
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=SLT43288286

Identifier: SL204EC2405 **Address:** 21611 PERRY ST
Status: COMPLETED - CASE CLOSED **City:** CARSON
Association: Related Global ID
Description:
Project Name: CARSON AIR HARBOR
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=SL204EC2405

26	1 of 1	SSE	0.11 / 571.91	16.50 / -1	DOMINGUEZ CHANNEL @ CARSON STREET (LADPW) DOMINGUEZ CHANNEL CARSON CA 90745	CLEANUP SITES

Global ID: T10000003004 **Site Facility Type:** CLEANUP PROGRAM SITE
Status: COMPLETED - CASE CLOSED **County:** LOS ANGELES
Status Date: 2/17/2012 **Latitude:** 33.8302659714708
Longitude: -118.252930641174
Data Source: Cleanup Program Sites from GeoTracker Search; Cleanup Sites from GeoTracker Cleanup Sites Data Download

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail(as Nov 16 2020)

RB Case No: 1258 **CUF Case:** NO
Local Case No: **Case Worker:** PC
Begin Date: 4/15/2011 **File Location:**
Stop Method:
Lead Agency: LOS ANGELES RWQCB (REGION 4)
Local Agency:
Potential COC: Diesel, Gasoline, Other Petroleum
Potential Media of Concern: Contaminated Surface / Structure, Other Groundwater (uses other than drinking water), Sediments, Soil, Soil Vapor, Surface water, Under Investigation
How Discovered:
How Discovered Description: Visible sheen on water surface in Dominguez Channel.
Stop Description:
Calwater Watershed Name: Dominguez Channel (411.01)
DWR GW Subbasin Name: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Disadvantaged Community:
Site History:

Investigation and containment of LNAPL within the Dominguez Channel, approximately 400 feet south of Carson Street in Carson, California.

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Activity(as Nov 16 2020)

Action Type: ENFORCEMENT
Date : 2012-02-15 00:00:00
Action: Closure/No Further Action Letter

Action Type: ENFORCEMENT
Date : 2011-08-16 00:00:00
Action: Rescission of Enforcement Action

Action Type: RESPONSE
Date : 2011-07-07 00:00:00
Action: Other Report / Document

Action Type: ENFORCEMENT
Date : 2011-06-09 00:00:00
Action: 13267 Requirement

Action Type: RESPONSE
Date : 2011-06-08 00:00:00
Action: Interim Remedial Action Plan

Action Type: ENFORCEMENT
Date : 2011-05-27 00:00:00
Action: Clean-up and Abatement Order

Action Type: RESPONSE
Date : 2011-05-26 00:00:00
Action: Other Report / Document

Action Type: ENFORCEMENT
Date : 2011-05-17 00:00:00
Action: Clean-up and Abatement Order

Action Type: ENFORCEMENT
Date : 2011-05-13 00:00:00
Action: Technical Correspondence / Assistance / Other

Action Type: RESPONSE
Date : 2011-04-28 00:00:00
Action: Correspondence

Action Type: ENFORCEMENT
Date : 2011-04-15 00:00:00
Action: Staff Letter

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History(as Nov 16 2020)

Status: Completed - Case Closed
Status Date: 2012-02-17 00:00:00

Status: Open - Site Assessment
Status Date: 2011-05-03 00:00:00

Status: Open - Case Begin Date
Status Date: 2011-04-15 00:00:00

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Contacts(as Nov 16 2020)

Contact Type: Regional Board Caseworker
Contact Name: PAUL CHO
Phone No:
Address: 320 W. 4TH ST., SUITE 200
City: LOS ANGELES

Organization Name: LOS ANGELES RWQCB (REGION 4)
Email: pcho@waterboards.ca.gov

Cleanup Program Sites from GeoTracker Search - Regulatory Profile (as of Oct 06, 2020)

Project Status:
CUF Claim:
CUF Priority Assign:
CUF Amount Paid:
Facility Type:
User Defined Beneficial Use:
Designated Beneficial Use: MUN, AGR, IND, PROC
Designated Beneficl Use Desc: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, Industrial Process Supply
Project Oversight Agencies:
Report Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000003004
Cleanup Status Detail: COMPLETED - CASE CLOSED AS OF 2/17/2012
Cleanup History Link: https://geotracker.waterboards.ca.gov/profile_report_include?global_id=T10000003004&tabname=regulatoryhistory
Potential COC: DIESEL, GASOLINE, OTHER PETROLEUM
Potential Media of Concern: CONTAMINATED SURFACE / STRUCTURE, OTHER GROUNDWATER (USES OTHER THAN DRINKING WATER), SEDIMENTS, SOIL, SOIL VAPOR, SURFACE WATER, UNDER INVESTIGATION
GW Monitoring Freq:
DWR GW Sub Basin: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Calwater Watershed Name: Dominguez Channel (411.01)
Post Closure Site Management:
Future Land Use:
Cleanup Oversight Agencies: LOS ANGELES RWQCB (REGION 4) (LEAD) - CASE #: 1258
CASEWORKER: PAUL CHO
Site History:

WDR Place Type:
WDR File:
WDR Order:
File Location:
Composting Method:

Investigation and containment of LNAPL within the Dominguez Channel, approximately 400 feet south of Carson Street in Carson, California.

Sites from GeoTracker Search - Regulatory Activities (as of Oct 06, 2020)

Action Type: Other Regulatory Actions
Action Date: 2/15/2012
Received Issue Date: 2/15/2012
Action: Closure/No Further Action Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003004&enforcement_id=6113537&temptable=ENFORCEMENT
Title Description Comments:

Acknowledgement of LNAPL Containment Operations by Another Party

Action Type: Enforcement/Orders
Action Date: 8/16/2011
Received Issue Date: 8/16/2011
Action: Rescission of Enforcement Action
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003004&enforcement_id=6096113&temptable=ENFORCEMENT
Title Description Comments:

Rescission of CAO R4-2011-0065

Action Type: Response Requested - Other
Action Date: 7/7/2011
Received Issue Date: 6/16/2011
Action: Other Report / Document
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003004&doc_id=5714950
Title Description Comments:

Env. assessment, geotechnical, construction/upgrade, pipeline documents

Action Type: Enforcement/Orders

Action Date: 6/9/2011
Received Issue Date: 6/9/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003004&enforcement_id=6089127&temptable=ENFORCEMENT
Title Description Comments:

Requirement for Technical Reports

Action Type: Response Requested - Workplans
Action Date: 6/8/2011
Received Issue Date: 6/8/2011
Action: Interim Remedial Action Plan
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003004&doc_id=5714883
Title Description Comments:

Interim Remedial Action Plan

Action Type: Enforcement/Orders
Action Date: 5/27/2011
Received Issue Date: 5/27/2011
Action: Clean-up and Abatement Order
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003004&enforcement_id=6088055&temptable=ENFORCEMENT
Title Description Comments:

RESPONSE TO EXTENSION REQUEST FOR DUE DATES IN CLEANUP AND ABATEMENT ORDER NO. R4-2011-0065 PURSUANT TO CALIFORNIA WATER CODE SECTION 13304

Action Type: Response Requested - Other
Action Date: 5/26/2011
Received Issue Date: 5/26/2011
Action: Other Report / Document
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003004&doc_id=5714107
Title Description Comments:

Request for Extension of Time - CAO R4-2011-0065

Action Type: Enforcement/Orders
Action Date: 5/17/2011
Received Issue Date: 5/17/2011
Action: Clean-up and Abatement Order
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003004&enforcement_id=6087067&temptable=ENFORCEMENT
Title Description Comments:

Cleanup and Abatement Order No. R4-2011-0065

Action Type: Other Regulatory Actions
Action Date: 5/13/2011
Received Issue Date: 5/13/2011
Action: Technical Correspondence / Assistance / Other
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003004&enforcement_id=6086720&temptable=ENFORCEMENT
Title Description Comments:

May 13, 2011 Meeting - Attendance List and PowerPoint Presentation

Action Type: Response Requested - Other
Action Date: 4/28/2011
Received Issue Date: 4/28/2011
Action: Correspondence
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T10000003004&doc_id=5712286
Title Description Comments:

Response to Directive to Remove Hydrocarbon from Dominguez Channel Subdrain System

Action Type: Other Regulatory Actions
Action Date: 4/15/2011
Received Issue Date: 4/15/2011
Action: Staff Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003004&enforcement_id=6085552&temptable=ENFORCEMENT
Title Description Comments:

Directive to Remove Hydrocarbon from Dominguez Channel Subdrain System Under Order R4-0182-011, Los Angeles County Municipal Separate Storm Water Permit

Sites from GeoTracker Search - Documents (as of Oct 06, 2020)

Document Type: Site Documents ***Submitted:***
Document Date: 2/15/2012 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: ACKNOWLEDGEMENT OF LNAPL CONTAINMENT OPERATIONS BY ANOTHER PARTY
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003004&enforcement_id=6113537
Type: CLOSURE/NO FURTHER ACTION LETTER

Document Type: Site Documents ***Submitted:***
Document Date: 8/16/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: RESCISSION OF CAO R4-2011-0065
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003004&enforcement_id=6096113
Type: RESCISSION OF ENFORCEMENT ACTION

Document Type: Site Documents ***Submitted:***
Document Date: 6/16/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: ENV. ASSESSMENT, GEOTECHNICAL, CONSTRUCTION/UPGRADE, PIPELINE DOCUMENTS - REGULATOR RESPONSE
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003004&document_id=5714950
Type: OTHER REPORT / DOCUMENT

Document Type: Site Documents ***Submitted:***
Document Date: 6/9/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: REQUIREMENT FOR TECHNICAL REPORTS
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003004&enforcement_id=6089127
Type: 13267 REQUIREMENT

Document Type: Site Documents ***Submitted:***
Document Date: 6/8/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: INTERIM REMEDIAL ACTION PLAN
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003004&document_id=5714883
Type: INTERIM REMEDIAL ACTION PLAN

Document Type: Site Documents ***Submitted:***
Document Date: 6/8/2011* ***Submitted By:*** JESSICA CURRAN (CONTRACTOR)
Size : 1,142 KB
Title: SITE DELINEATION WORK PLAN, CARSON AIR HARBOR
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7679570019/T10000003004.PDF
Type: SITE INVESTIGATION WORKPLAN

Document Type: Site Documents ***Submitted:***
Document Date: 5/27/2011 ***Submitted By:*** GREG BISHOP (REGULATOR)
Size :
Title: RESPONSE TO EXTENSION REQUEST FOR DUE DATES IN CLEANUP AND ABATEMENT ORDER NO. R4-2011-0065 PURSUANT TO CALIFORNIA WATER CODE SECTION 13304
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003004&enforcement_id=6088055
Type: CLEAN-UP AND ABATEMENT ORDER

Document Type: Site Documents
Document Date: 5/26/2011
Size :
Title: REQUEST FOR EXTENSION OF TIME - CAO R4-2011-0065
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003004&document_id=5714107
Type: OTHER REPORT / DOCUMENT
Submitted:
Submitted By: GREG BISHOP (REGULATOR)

Document Type: Site Documents
Document Date: 5/17/2011
Size :
Title: CLEANUP AND ABATEMENT ORDER NO. R4-2011-0065
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003004&enforcement_id=6087067
Type: CLEAN-UP AND ABATEMENT ORDER
Submitted:
Submitted By: GREG BISHOP (REGULATOR)

Document Type: Site Documents
Document Date: 5/13/2011
Size :
Title: MAY 13, 2011 MEETING - ATTENDANCE LIST AND POWERPOINT PRESENTATION
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003004&enforcement_id=6086720
Type: TECHNICAL CORRESPONDENCE / ASSISTANCE / OTHER
Submitted:
Submitted By: GREG BISHOP (REGULATOR)

Document Type: Site Documents
Document Date: 4/28/2011
Size :
Title: RESPONSE TO DIRECTIVE TO REMOVE HYDROCARBON FROM DOMINGUEZ CHANNEL SUBDRAIN SYSTEM
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003004&document_id=5712286
Type: CORRESPONDENCE
Submitted:
Submitted By: GREG BISHOP (REGULATOR)

Document Type: Site Documents
Document Date: 4/15/2011
Size :
Title: DIRECTIVE TO REMOVE HYDROCARBON FROM DOMINGUEZ CHANNEL SUBDRAIN SYSTEM UNDER ORDER R4-0182-011, LOS ANGELES COUNTY MUNICIPAL SEPARATE STORM WATER PERMIT
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003004&enforcement_id=6085552
Type: STAFF LETTER
Submitted:
Submitted By: GREG BISHOP (REGULATOR)

Sites from GeoTracker Search - Cleanup Status History (as of Oct 06, 2020)

Status: Completed - Case Closed
Date : 2/17/2012

Status: Open - Site Assessment
Date : 5/3/2011

Status: Open - Case Begin Date
Date : 4/15/2011

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
27	1 of 1	ESE	0.11 / 587.60	21.76 / 4	1249 E CARSON ST CARSON CA 907451630	LA HMS

Site No: 031727
Area: 22

Detail Info

Permit No: 000574047
Permit Cat Desc: Industrial Waste Permit
Status Code: CLOS
Status Desc: Permit Closed
Permit Status Desc: Permit Closed
Permit Type: 01
Permit Type Desc: Operating Industrial Waste Permit - Local Sewer
Permit Status Code: CLOS
Permit Category: I
File No: 049696
File Name: SAMOAN CONGREGATIONAL CHRIST

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Detail Info

Permit No:	000552861	***Permit Status Code:***	CLOS
Permit Cat Desc:	Industrial Waste Permit	***Permit Category:***	I
Status Code:	CLOS	***File No:***	049696
Status Desc:	Permit Closed	***File Name:***	SAMOAN CONGREGATIONAL CHRIST
Permit Status Desc:	Permit Closed		
Permit Type:	S4		
Permit Type Desc:	Operating Industrial Waste Permit - Stormwater BMPs		

Detail Info

Permit No:	000896782	***Permit Status Code:***	PERM
Permit Cat Desc:	Industrial Waste Permit	***Permit Category:***	I
Status Code:	PERM	***File No:***	065310
Status Desc:	Equipment Permitted	***File Name:***	TRIEDSTONE MBC
Permit Status Desc:	Equipment Permitted		
Permit Type:	S4		
Permit Type Desc:	Operating Industrial Waste Permit - Stormwater BMPs		

Detail Info

Permit No:	000896781	***Permit Status Code:***	PERM
Permit Cat Desc:	Industrial Waste Permit	***Permit Category:***	I
Status Code:	PERM	***File No:***	065310
Status Desc:	Equipment Permitted	***File Name:***	TRIEDSTONE MBC
Permit Status Desc:	Equipment Permitted		
Permit Type:	01		
Permit Type Desc:	Operating Industrial Waste Permit - Local Sewer		

28	***1 of 1***	***WSW***	***0.11 / 595.84***	***22.46 / 5***	***1101 E CARSON ST CARSON CA 90745***	***LA HMS***

Site No:	004375
Area:	22

Detail Info

Permit No:	000002053	***Permit Status Code:***	CLOS
Permit Cat Desc:	Industrial Waste Permit	***Permit Category:***	I
Status Code:	CLOS	***File No:***	I04533
Status Desc:	Permit Closed	***File Name:***	EXXON CO USA (DEST)
Permit Status Desc:	Permit Closed		
Permit Type:	00		
Permit Type Desc:	Open Industrial Waste Permit Record (historic)		

29	***1 of 1***	***NNE***	***0.12 / 633.37***	***16.51 / -1***	***21402 S PERRY ST CARSON CA 907451609***	***LA HMS***

Site No:	024160
Area:	22

Detail Info

Permit No:		***Permit Status Code:***	
Permit Cat Desc:		***Permit Category:***	
Status Code:	OPEN	***File No:***	033510
Status Desc:	File Opened, no permit exists	***File Name:***	PAT'S ART WORKS
Permit Status Desc:			
Permit Type:			

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
Permit Type Desc:						
30	1 of 2	NW	0.12 / 651.82	29.69 / 12	RICHARD CORPUZ 21408 S TROYTON LANE CARSON CA 90745-1617	RCRA NON GEN

EPA Handler ID: CAC003023437
Gen Status Universe: No Report
Contact Name: RICHARD CORPUZ
Contact Address: 21408 S TROYTON LANE, , CARSON, CA, 90745-1617,
Contact Phone No and Ext: 562-234-1010
Contact Email: GENEVADEGUIRE@ALLIANCE-ENVIRO.COM
Contact Country:
County Name: LOS ANGELES
EPA Region: 09
Land Type:
Receive Date: 20190710

Violation/Evaluation Summary

Note: NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No
Furnace Exemption: No
Underground Injection Activity: No
Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 20190710
Handler Name: RICHARD CORPUZ
Source Type: Implementer
Federal Waste Generator Code: N
Generator Code Description: Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind: Current Owner
Type: Other
Name: RICHARD CORPUZ
Date Became Current:
Date Ended Current:
Phone: 562-234-1010
Source Type: Implementer
Street No:
Street 1: 21408 S TROYTON LANE
Street 2:
City: CARSON
State: CA
Country:
Zip Code: 90745-1617

Owner/Operator Ind: Current Operator
Type: Other
Name: RICHARD CORPUZ
Street No:
Street 1: 21408 S TROYTON LANE
Street 2:

Date Became Current:		**City:**	CARSON	
Date Ended Current:		**State:**	CA	
Phone:	562-234-1010	**Country:**		
Source Type:	Implementer	**Zip Code:**	90745-1617	

30 | **2 of 2** | **NW** | **0.12 / 651.82** | **29.69 / 12** | **RICHARD CORPUZ**
21408 S TROYTON LN
CARSON CA 90745-1617 | **RCRA NON GEN**

EPA Handler ID:	CAC003057301
Gen Status Universe:	No Report
Contact Name:	RICHARD CORPUZ
Contact Address:	21408 S TROYTON LN, , CARSON, CA, 90745-1617,
Contact Phone No and Ext:	562-234-1010
Contact Email:	NANCYRUIZ@ALLIANCE-ENVIRO.COM
Contact Country:	
County Name:	LOS ANGELES
EPA Region:	09
Land Type:	
Receive Date:	20200224

Violation/Evaluation Summary

Note:	NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility:	No
Onsite Burner Exemption:	No
Furnace Exemption:	No
Underground Injection Activity:	No
Commercial TSD:	No
Used Oil Transporter:	No
Used Oil Transfer Facility:	No
Used Oil Processor:	No
Used Oil Refiner:	No
Used Oil Burner:	No
Used Oil Market Burner:	No
Used Oil Spec Marketer:	No

Hazardous Waste Handler Details

Sequence No:	1
Receive Date:	20200224
Handler Name:	RICHARD CORPUZ
Source Type:	Implementer
Federal Waste Generator Code:	N
Generator Code Description:	Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind:	Current Owner	**Street No:**	
Type:	Other	**Street 1:**	21408 S TROYTON LN
Name:	RICHARD CORPUZ	**Street 2:**	
Date Became Current:		**City:**	CARSON
Date Ended Current:		**State:**	CA
Phone:	562-234-1010	**Country:**	
Source Type:	Implementer	**Zip Code:**	90745-1617

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Owner/Operator Ind:	Current Operator	**Street No:**	
Type:	Other	**Street 1:**	21408 S TROYTON LN
Name:	RICHARD CORPUZ	**Street 2:**	
Date Became Current:		**City:**	CARSON
Date Ended Current:		**State:**	CA
Phone:	562-234-1010	**Country:**	
Source Type:	Implementer	**Zip Code:**	90745-1617

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
31	1 of 1	SSE	0.13 / 686.07	17.05 / 0	SHELL PIPELINE 0367 - DOMINGUEZ CHANNEL @ CARSON CARSON STREET CARSON CA 90745	CLEANUP SITES

Global ID:	T10000003007	**Site Facility Type:**	CLEANUP PROGRAM SITE
Status:	COMPLETED - CASE CLOSED	**County:**	LOS ANGELES
Status Date:	3/11/2016	**Latitude:**	33.8299518108331
Longitude:	-118.253029882908		
Data Source:	Cleanup Program Sites from GeoTracker Search; Cleanup Sites from GeoTracker Cleanup Sites Data Download		

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail(as Nov 16 2020)

RB Case No:	1261A	**CUF Case:**	NO
Local Case No:		**Case Worker:**	PC
Begin Date:	4/26/2011	**File Location:**	
Stop Method:			
Lead Agency:	LOS ANGELES RWQCB (REGION 4)		
Local Agency:			
Potential COC:			
Potential Media of Concern:			
How Discovered:			
How Discovered Description:			
Stop Description:			
Calwater Watershed Name:	Dominguez Channel (411.01)		
DWR GW Subbasin Name:	Coastal Plain Of Los Angeles - West Coast (4-011.03)		
Disadvantaged Community:			
Site History:			

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Activity(as Nov 16 2020)

Action Type:	ENFORCEMENT
Date :	2016-02-03 00:00:00
Action:	File Review - Closure
Action Type:	RESPONSE
Date :	2011-06-08 00:00:00
Action:	Site Investigation Workplan
Action Type:	ENFORCEMENT
Date :	2011-04-26 00:00:00
Action:	13267 Requirement

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History(as Nov 16 2020)

Status:	Completed - Case Closed
Status Date:	2016-03-11 00:00:00
Status:	Open - Inactive
Status Date:	2016-03-01 00:00:00
Status:	Open - Inactive
Status Date:	2016-02-04 00:00:00
Status:	Open - Site Assessment

Status Date: 2016-02-04 00:00:00

Status: Open - Site Assessment
Status Date: 2011-05-03 00:00:00

Status: Open - Case Begin Date
Status Date: 2011-04-26 00:00:00

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Contacts(as Nov 16 2020)

Contact Type: Regional Board Caseworker
Contact Name: PAUL CHO
Phone No:
Organization Name: LOS ANGELES RWQCB (REGION 4)
Email: pcho@waterboards.ca.gov
Address: 320 W. 4TH ST., SUITE 200
City: LOS ANGELES

Cleanup Program Sites from GeoTracker Search - Regulatory Profile (as of Oct 06, 2020)

Project Status:
CUF Claim:
CUF Priority Assign:
CUF Amount Paid:
Facility Type:
User Defined Beneficial Use:
Designated Beneficial Use: MUN, AGR, IND, PROC
Designated Beneficl Use Desc: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, Industrial Process Supply
Project Oversight Agencies:
Report Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000003007
Cleanup Status Detail: COMPLETED - CASE CLOSED AS OF 3/11/2016
Cleanup History Link: https://geotracker.waterboards.ca.gov/profile_report_include?global_id=T10000003007&tabname=regulatoryhistory
Potential COC: NONE SPECIFIED
Potential Media of Concern: NONE SPECIFIED
GW Monitoring Freq:
DWR GW Sub Basin: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Calwater Watershed Name: Dominguez Channel (411.01)
Post Closure Site Management:
Future Land Use:
Cleanup Oversight Agencies: LOS ANGELES RWQCB (REGION 4) (LEAD) - CASE #: 1261A
CASEWORKER: PAUL CHO
WDR Place Type:
WDR File:
WDR Order:
File Location:
Composting Method:
Site History:

No site history available

Sites from GeoTracker Search - Regulatory Activities (as of Oct 06, 2020)

Action Type: Other Regulatory Actions
Action Date: 2/3/2016
Received Issue Date: 2/3/2016
Action: File Review - Closure
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003007&enforcement_id=6275374&temptable=ENFORCEMENT
Title Description Comments:

Merger of Cases into SCP Case No. 1264

Action Type: Response Requested - Workplans
Action Date: 6/8/2011
Received Issue Date:
Action: Site Investigation Workplan
Doc Link:
Title Description Comments:

Site Investigation Work Plan

Action Type: Enforcement/Orders
Action Date: 4/26/2011
Received Issue Date: 4/26/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003007&enforcement_id=6085574&temptable=ENFORCEMENT
Title Description Comments:

Requirement for Technical Report

Sites from GeoTracker Search - Documents (as of Oct 06, 2020)

Document Type: Site Documents
Document Date: 2/3/2016
Size :
Submitted:
Submitted By: GREG BISHOP (REGULATOR)
Title: MERGER OF CASES INTO SCP CASE NO. 1264
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003007&enforcement_id=6275374
Type: FILE REVIEW - CLOSURE

Document Type: Site Documents
Document Date: 4/26/2011
Size :
Submitted:
Submitted By: GREG BISHOP (REGULATOR)
Title: REQUIREMENT FOR TECHNICAL REPORT
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003007&enforcement_id=6085574
Type: 13267 REQUIREMENT

Sites from GeoTracker Search - Cleanup Status History (as of Oct 06, 2020)

Status: Completed - Case Closed
Date : 3/11/2016

Status: Open - Inactive
Date : 3/1/2016

Status: Open - Inactive
Date : 2/4/2016

Status: Open - Site Assessment
Date : 2/4/2016

Status: Open - Site Assessment
Date : 5/3/2011

Status: Open - Case Begin Date
Date : 4/26/2011

Sites from GeoTracker Search - Related Cases (as of Oct 06, 2020)

Identifier: T10000003010
Status: COMPLETED - CASE CLOSED
Association: Related Global ID
Description:
Address: Carson Street
City: CARSON
Project Name: BP Pipeline - Dominguez Channel @ Carson
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000003010

Identifier: SL0603720103
Status: COMPLETED - CASE CLOSED
Association: Related Global ID
Description:
Address: 1216 CARSON STREET, EAST
City: CARSON
Project Name: COURTLAND PROWELL
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=SL0603720103

Identifier: SL373472450
Address: 20945 WILMINGTON AVE

Status: OPEN - REMEDIATION **City:** CARSON
Association: Related Global ID
Description:
Project Name: SHELL - CARSON TERMINAL
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=SL373472450

Identifier: T10000003008 **Address:** Carson Street
Status: COMPLETED - CASE CLOSED **City:** CARSON
Association: Related Global ID
Description:
Project Name: Shell Pipeline Corridor - w/o Dominguez Channel @ Carson
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000003008

Identifier: T0603702871 **Address:** 1025 CARSON ST E
Status: OPEN - REMEDIATION **City:** CARSON
Association: Related Global ID
Description:
Project Name: TOSCO - 76 STATION #6082
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T0603702871

Identifier: SL204EC2405 **Address:** 21611 PERRY ST
Status: COMPLETED - CASE CLOSED **City:** CARSON
Association: Related Global ID
Description:
Project Name: CARSON AIR HARBOR
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=SL204EC2405

Identifier: SLT4L4901823 **Address:** 1211 CARSON AVE.
Status: COMPLETED - CASE CLOSED **City:** CARSON
Association: Related Global ID
Description:
Project Name: SHELL PIPELINE LEAK - COLONY HOLDINGS
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=SLT4L4901823

Identifier: T10000003006 **Address:** Carson Street
Status: COMPLETED - CASE CLOSED **City:** CARSON
Association: Related Global ID
Description:
Project Name: Crimson Pipeline - Dominguez Channel @ Carson
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000003006

Identifier: SL0603755004 **Address:** 1202 CARSON STREET, EAST
Status: COMPLETED - CASE CLOSED **City:** CARSON
Association: Related Global ID
Description:
Project Name: NICHOLSON INVESTMENT GROUP
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=SL0603755004

Identifier: T10000003005 **Address:** Carson Street
Status: COMPLETED - CASE CLOSED **City:** CARSON
Association: Related Global ID
Description:
Project Name: Chevron Pipeline - Dominguez Channel @ Carson
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000003005

Identifier: SLT43288286 **Address:** 21500 PERRY ST
Status: OPEN - SITE ASSESSMENT **City:** CARSON
Association: Related Global ID
Description:
Project Name: SHELL PIPELINE
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=SLT43288286

Identifier: T10000003009 **Address:** Carson Street
Status: COMPLETED - CASE CLOSED **City:** CARSON
Association: Related Global ID
Description:
Project Name: Tesoro Pipeline - Dominguez Channel @ Carson
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000003009

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Identifier:	T0603722212	**Address:**	1209 CARSON ST. E.
Status:	COMPLETED - CASE CLOSED	**City:**	CARSON
Association:	Related Global ID		
Description:			
Project Name:	TEXACO SERVICE STATION (FORMER)		
Project Link:	https://geotracker.waterboards.ca.gov/profile_report?global_id=T0603722212		

32	1 of 1	WSW	0.14 / 750.27	20.43 / 3	DOMINGUEZ CHANNEL SOUTH OF CARSON ST 405 FWY AND E CARSON ST 330 FT E OF INTERSECTION CARSON CA 90745	RCRA SQG

EPA Handler ID:	CAR000221580
Gen Status Universe:	Small Quantity Generator
Contact Name:	GREG VOGELPOHL
Contact Address:	4700 LA HWY 22, STE 520, MANDEVILLE, LA, 70471, US
Contact Phone No and Ext:	985-792-1302
Contact Email:	JENG@RELLC.NET
Contact Country:	US
County Name:	LOS ANGELES
EPA Region:	09
Land Type:	Other
Receive Date:	20111006

Violation/Evaluation Summary

Note: NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility:	No
Onsite Burner Exemption:	No
Furnace Exemption:	No
Underground Injection Activity:	No
Commercial TSD:	No
Used Oil Transporter:	No
Used Oil Transfer Facility:	No
Used Oil Processor:	No
Used Oil Refiner:	No
Used Oil Burner:	No
Used Oil Market Burner:	No
Used Oil Spec Marketer:	No

Hazardous Waste Handler Details

Sequence No:	1
Receive Date:	20110913
Handler Name:	DOMINGUEZ CHANNEL SOUTH OF CARSON ST
Federal Waste Generator Code:	2
Generator Code Description:	Small Quantity Generator
Source Type:	Notification

Waste Code Details

Hazardous Waste Code:	135
Waste Code Description:	Unspecified aqueous solution
Hazardous Waste Code:	611

Waste Code Description: Contaminated soil from site clean-ups

Hazardous Waste Code: D001
Waste Code Description: IGNITABLE WASTE

Hazardous Waste Code: D008
Waste Code Description: LEAD

Hazardous Waste Code: D018
Waste Code Description: BENZENE

Hazardous Waste Handler Details

Sequence No: 2
Receive Date: 20111006
Handler Name: DOMINGUEZ CHANNEL SOUTH OF CARSON ST
Federal Waste Generator Code: 2
Generator Code Description: Small Quantity Generator
Source Type: Notification

Waste Code Details

Hazardous Waste Code: 135
Waste Code Description: Unspecified aqueous solution

Hazardous Waste Code: 611
Waste Code Description: Contaminated soil from site clean-ups

Hazardous Waste Code: D001
Waste Code Description: IGNITABLE WASTE

Hazardous Waste Code: D008
Waste Code Description: LEAD

Hazardous Waste Code: D018
Waste Code Description: BENZENE

Owner/Operator Details

Owner/Operator Ind:	Current Owner	**Street No:**	
Type:	Other	**Street 1:**	100 BAYVIEW CIRCLE
Name:	CARSON ESTATE TRUST	**Street 2:**	STE 3500
Date Became Current:	19190731	**City:**	NEWPORT BEACH
Date Ended Current:		**State:**	CA
Phone:	949-725-6530	**Country:**	US
Source Type:	Notification	**Zip Code:**	92660

Owner/Operator Ind:	Current Operator	**Street No:**	
Type:	Private	**Street 1:**	
Name:	RELLC	**Street 2:**	
Date Became Current:	20110622	**City:**	
Date Ended Current:		**State:**	
Phone:		**Country:**	US
Source Type:	Notification	**Zip Code:**	

Historical Handler Details

Receive Dt: 20110913
Generator Code Description: Small Quantity Generator
Handler Name: DOMINGUEZ CHANNEL SOUTH OF CARSON ST

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
33	1 of 1	WNW	0.14 / 751.82	22.48 / 5	TOSCO/UNOCAL #31088 1025 E CARSON ST	DELISTED TNK

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
					CARSON CA 90745	

Delisted Storage Tanks

Facility ID:	24785	***Latitude:***	33.833354
Permitting Agency:	LOS ANGELES COUNTY	***Longitude:***	-118.255623
County:	Los Angeles		
Original Source:	UST		
Record Date:	30-JAN-2017		

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
34	1 of 1	SE	0.14 / 753.46	22.31 / 5	MICHAEL LEGASPI 1228 E 218TH ST CARSON CA 90745	RCRA NON GEN

EPA Handler ID:	CAC002971858
Gen Status Universe:	No Report
Contact Name:	MICHAEL LEGASPI
Contact Address:	1228 E 218TH ST, , CARSON, CA, 90745,
Contact Phone No and Ext:	310-408-6176
Contact Email:	JOE@SIRRIS.BIZ
Contact Country:	
County Name:	LOS ANGELES
EPA Region:	09
Land Type:	
Receive Date:	20180720

Violation/Evaluation Summary

Note:	NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility:	No
Onsite Burner Exemption:	No
Furnace Exemption:	No
Underground Injection Activity:	No
Commercial TSD:	No
Used Oil Transporter:	No
Used Oil Transfer Facility:	No
Used Oil Processor:	No
Used Oil Refiner:	No
Used Oil Burner:	No
Used Oil Market Burner:	No
Used Oil Spec Marketer:	No

Hazardous Waste Handler Details

Sequence No:	1
Receive Date:	20180720
Handler Name:	MICHAEL LEGASPI
Source Type:	Implementer
Federal Waste Generator Code:	N
Generator Code Description:	Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind: Current Owner ***Street No:***

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Type:	Other	**Street 1:**	1228 E 218TH ST
Name:	MICHAEL LEGASPI	**Street 2:**	
Date Became Current:		**City:**	CARSON
Date Ended Current:		**State:**	CA
Phone:	310-408-6176	**Country:**	
Source Type:	Implementer	**Zip Code:**	90745
Owner/Operator Ind:	Current Operator	**Street No:**	
Type:	Other	**Street 1:**	1228 E 218TH ST
Name:	MICHAEL LEGASPI	**Street 2:**	
Date Became Current:		**City:**	CARSON
Date Ended Current:		**State:**	CA
Phone:	310-408-6176	**Country:**	
Source Type:	Implementer	**Zip Code:**	90745

35	1 of 12	W	0.15 / 785.39	21.23 / 4	**76 SERVICE STATION** **1025 E. CARSON STREET** **CARSON CA 90746**	**CLEANUP SITES**

Global ID:	T10000003492	**Site Facility Type:**	CLEANUP PROGRAM SITE
Status:	COMPLETED - CASE CLOSED	**County:**	LOS ANGELES
Status Date:	2/8/2012	**Latitude:**	33.8319459314573
Longitude:	-118.256953954697		
Data Source:	Cleanup Program Sites from GeoTracker Search; Cleanup Sites from GeoTracker Cleanup Sites Data Download		

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail(as Nov 16 2020)

RB Case No:	1271	**CUF Case:**	NO
Local Case No:		**Case Worker:**	PC
Begin Date:	4/26/2011	**File Location:**	
Stop Method:			
Lead Agency:	LOS ANGELES RWQCB (REGION 4)		
Local Agency:			
Potential COC:			
Potential Media of Concern:			
How Discovered:			
How Discovered Description:			
Stop Description:			
Calwater Watershed Name:	Dominguez Channel (411.01)		
DWR GW Subbasin Name:	Coastal Plain Of Los Angeles - West Coast (4-011.03)		
Disadvantaged Community:			
Site History:			

Investigation of possible LNAPL impacts to the Dominguez Channel. This case remains active with the Regional Board UST program.

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Activity(as Nov 16 2020)

Action Type:	ENFORCEMENT
Date :	2012-02-08 00:00:00
Action:	Closure/No Further Action Letter
Action Type:	ENFORCEMENT
Date :	2011-04-26 00:00:00
Action:	13267 Requirement
Action Type:	Other
Date :	2011-04-26 00:00:00
Action:	Leak Discovery

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History(as Nov 16 2020)

Status:	Completed - Case Closed
Status Date:	2012-02-08 00:00:00

Status: Open - Site Assessment
Status Date: 2011-04-26 00:00:00

Status: Open - Case Begin Date
Status Date: 2011-04-26 00:00:00

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Contacts(as Nov 16 2020)

Contact Type: Regional Board Caseworker
Contact Name: PAUL CHO
Phone No:
Organization Name: LOS ANGELES RWQCB (REGION 4)
Email: pcho@waterboards.ca.gov
Address: 320 W. 4TH ST., SUITE 200
City: LOS ANGELES

Cleanup Program Sites from GeoTracker Search - Regulatory Profile (as of Oct 06, 2020)

Project Status:
CUF Claim:
CUF Priority Assign:
CUF Amount Paid:
Facility Type:
User Defined Beneficial Use:
Designated Beneficial Use: MUN, AGR, IND, PROC
Designated Beneficl Use Desc: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, Industrial Process Supply
Project Oversight Agencies:
Report Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000003492
Cleanup Status Detail: COMPLETED - CASE CLOSED AS OF 2/8/2012
Cleanup History Link: https://geotracker.waterboards.ca.gov/profile_report_include?global_id=T10000003492&tabname=regulatoryhistory
Potential COC: NONE SPECIFIED
Potential Media of Concern: NONE SPECIFIED
GW Monitoring Freq:
DWR GW Sub Basin: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Calwater Watershed Name: Dominguez Channel (411.01)
Post Closure Site Management:
Future Land Use:
Cleanup Oversight Agencies: LOS ANGELES RWQCB (REGION 4) (LEAD) - CASE #: 1271
CASEWORKER: PAUL CHO
WDR Place Type:
WDR File:
WDR Order:
File Location:
Composting Method:
Site History:

Investigation of possible LNAPL impacts to the Dominguez Channel. This case remains active with the Regional Board UST program.

Sites from GeoTracker Search - Regulatory Activities (as of Oct 06, 2020)

Action Type: Other Regulatory Actions
Action Date: 2/8/2012
Received Issue Date: 2/8/2012
Action: Closure/No Further Action Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003492&enforcement_id=6112958&temptable=ENFORCEMENT
Title Description Comments:

Satisfaction of 13267 Order Requirements and Return of Case to UST Program

Action Type: Enforcement/Orders
Action Date: 4/26/2011
Received Issue Date: 4/26/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003492&enforcement_id=6109079&temptable=ENFORCEMENT
Title Description Comments:

Requirement for Technical Report

Action Type: Leak Action
Action Date: 4/26/2011
Received Issue Date:
Action: Leak Discovery
Doc Link:
Title Description Comments:

Sites from GeoTracker Search - Documents (as of Oct 06, 2020)

Document Type: Site Documents
Document Date: 2/8/2012
Size :
Title: SATISFACTION OF 13267 ORDER REQUIREMENTS AND RETURN OF CASE TO UST PROGRAM
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003492&enforcement_id=6112958
Type: CLOSURE/NO FURTHER ACTION LETTER
Submitted:
Submitted By: GREG BISHOP (REGULATOR)

Document Type: Site Documents
Document Date: 4/26/2011
Size :
Title: REQUIREMENT FOR TECHNICAL REPORT
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003492&enforcement_id=6109079
Type: 13267 REQUIREMENT
Submitted:
Submitted By: GREG BISHOP (REGULATOR)

Sites from GeoTracker Search - Cleanup Status History (as of Oct 06, 2020)

Status: Completed - Case Closed
Date : 2/8/2012

Status: Open - Case Begin Date
Date : 4/26/2011

Status: Open - Site Assessment
Date : 4/26/2011

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
35	2 of 12	W	0.15 / 785.39	21.23 / 4	TOSCO - 76 STATION #6082 1025 CARSON ST E CARSON CA 90745	LUST

Global ID: T0603702871
Status: OPEN - REMEDIATION
Status Date: 10/20/2006
Case Type: LUST CLEANUP SITE
Date Source: LUST Cleanup Sites from GeoTracker Search; LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download
County: LOS ANGELES
Latitude: 33.8318880023522
Longitude: -118.256921768188

LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail(as Nov 16 2020)

RB Case No: I-02903
Local Case No:
Begin Date: 8/20/1990
Lead Agency: LOS ANGELES RWQCB (REGION 4)
Local Agency: LOS ANGELES COUNTY
CUF Case: YES
Potential Media of Concern: Aquifer used for drinking water supply
How Discovered Description:
Calwater Watershed Name: Dominguez Channel (411.01)
DWR GW Subbasin Name: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Disadvantaged Community:
Site History:
Potential COC: Gasoline
How Discovered: Tank Closure
Stop Method:
Stop Description:
Case Worker: JW
File Location: Regional Board

LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Activity(as Nov 16 2020)

Action Type: RESPONSE
Date : 8/14/2020
Action: Site Assessment Report

Action Type: RESPONSE
Date : 7/15/2020
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 7/15/2020
Action: CAP/RAP - Final Remediation / Design Plan

Action Type: ENFORCEMENT
Date : 5/8/2020
Action: Staff Letter

Action Type: RESPONSE
Date : 5/1/2020
Action: Other Workplan - Regulator Responded

Action Type: RESPONSE
Date : 1/15/2020
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 11/25/2019
Action: Pilot Study/ Treatability Report

Action Type: RESPONSE
Date : 8/5/2019
Action: Site Investigation Workplan - Regulator Responded

Action Type: RESPONSE
Date : 7/15/2019
Action: Monitoring Report - Semi-Annually

Action Type: ENFORCEMENT
Date : 4/16/2019
Action: Clean Up Fund - Case Closure Review Summary Report (RSR)

Action Type: RESPONSE
Date : 1/15/2019
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 7/15/2018
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 1/15/2018
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 7/15/2017
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 1/15/2017
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 8/23/2016
Action: CAP/RAP - Final Remediation / Design Plan

Action Type: RESPONSE
Date : 7/15/2016
Action: Monitoring Report - Semi-Annually

Action Type: ENFORCEMENT
Date : 6/29/2016
Action: Staff Letter

Action Type: RESPONSE
Date : 5/26/2016
Action: Pilot Study / Treatability Workplan - Regulator Responded

Action Type: ENFORCEMENT
Date : 4/7/2016
Action: Staff Letter

Action Type: RESPONSE
Date : 1/15/2016
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 7/15/2015
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 1/15/2015
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 7/15/2014
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 1/15/2014
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 7/15/2013
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 1/15/2013
Action: Remedial Progress Report

Action Type: RESPONSE
Date : 1/15/2013
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 10/15/2012
Action: Remedial Progress Report

Action Type: RESPONSE
Date : 7/15/2012
Action: Remedial Progress Report

Action Type: RESPONSE
Date : 12/14/2011
Action: Remedial Progress Report

Action Type: ENFORCEMENT
Date : 8/25/2011
Action: Preparation of Record for Appeal/Referral/Petition

Action Type: ENFORCEMENT
Date : 7/21/2011
Action: 13267 Requirement

Action Type: RESPONSE
Date : 7/15/2011
Action: Monitoring Report - Semi-Annually

Action Type: ENFORCEMENT

Date : 6/8/2011
Action: 13267 Requirement

Action Type: RESPONSE
Date : 5/24/2011
Action: Remedial Progress Report

Action Type: ENFORCEMENT
Date : 4/26/2011
Action: 13267 Requirement

Action Type: RESPONSE
Date : 1/15/2011
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 7/15/2010
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 1/15/2010
Action: Monitoring Report - Semi-Annually

Action Type: RESPONSE
Date : 7/15/2009
Action: Monitoring Report - Semi-Annually

Action Type: ENFORCEMENT
Date : 6/15/2009
Action: Staff Letter

Action Type: RESPONSE
Date : 4/15/2009
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 1/15/2009
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 12/15/2008
Action: Other Report / Document

Action Type: RESPONSE
Date : 12/15/2008
Action: Well Installation Report

Action Type: ENFORCEMENT
Date : 10/29/2008
Action: Staff Letter

Action Type: RESPONSE
Date : 10/15/2008
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 9/4/2008
Action: Well Installation Workplan

Action Type: RESPONSE
Date : 7/15/2008
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 4/15/2008
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 1/15/2008

Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 10/15/2007
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 7/15/2007
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 4/15/2007
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 1/15/2007
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 10/15/2006
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 10/15/2006
Action: Remedial Progress Report

Action Type: ENFORCEMENT
Date : 9/20/2006
Action: Staff Letter

Action Type: RESPONSE
Date : 8/16/2006
Action: Soil and Water Investigation Workplan

Action Type: RESPONSE
Date : 7/15/2006
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 4/15/2006
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 1/15/2006
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 10/15/2005
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 7/15/2005
Action: Monitoring Report - Quarterly

Action Type: REMEDIATION
Date : 5/1/2005
Action: Pump & Treat (P&T) Groundwater

Action Type: RESPONSE
Date : 4/15/2005
Action: Monitoring Report - Quarterly

Action Type: REMEDIATION
Date : 3/16/2005
Action: Soil Vapor Extraction (SVE)

Action Type: RESPONSE
Date : 1/15/2005
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 10/15/2004
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 7/15/2004
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 4/15/2004
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 1/15/2004
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 10/15/2003
Action: Soil and Water Investigation Report

Action Type: RESPONSE
Date : 7/15/2003
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 4/15/2003
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 1/15/2003
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 10/17/2002
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 7/15/2002
Action: Monitoring Report - Quarterly

Action Type: RESPONSE
Date : 4/15/2002
Action: Monitoring Report - Quarterly

Action Type: ENFORCEMENT
Date : 4/12/2001
Action: Staff Letter

Action Type: Other
Date : 8/22/1990
Action: Leak Reported

Action Type: Other
Date : 8/21/1990
Action: Leak Discovery

Action Type: Other
Date : 8/21/1990
Action: Leak Stopped

LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Contacts(as Nov 16 2020)

Contact Type: Local Agency Caseworker
Contact Name: JOHN AWUJO
City: ALHAMBRA
Organization Name: LOS ANGELES COUNTY
Address: 900 S FREMONT AVE
Email: jawujo@dpw.lacounty.gov
Phone No: 6264583507

Contact Type:	Regional Board Caseworker	**Address:**	320 WEST 4TH STREET, SUITE 200
Contact Name:	JIMMIE WOO	**Email:**	jwoo@waterboards.ca.gov
City:	LOS ANGELES	**Phone No:**	2135766600
Organization Name:	LOS ANGELES RWQCB (REGION 4)		

LUST Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History(as Nov 16 2020)

Status:	Open - Remediation
Status Date:	10/20/2006
Status:	Open - Site Assessment
Status Date:	8/16/2006
Status:	Open - Remediation
Status Date:	4/12/2001
Status:	Open - Site Assessment
Status Date:	1/14/1993
Status:	Open - Site Assessment
Status Date:	10/13/1990
Status:	Open - Verification Monitoring
Status Date:	8/22/1990
Status:	Open - Site Assessment
Status Date:	8/20/1990
Status:	Open - Case Begin Date
Status Date:	8/20/1990

LUST Sites from GeoTracker Search - Regulatory Profile (as of Oct 06, 2020)

Site Facility Name:	TOSCO - 76 STATION #6082	**Potential COC:**	GASOLINE
Site Facility Type:	LUST CLEANUP SITE	**Facility Type:**	
Cleanup Status:	OPEN - REMEDIATION	**Composting Method:**	
Project Status:		**Address:**	1025 CARSON ST E
WDR Place Type:		**City:**	CARSON
WDR File:		**Zip:**	90745
WDR Order:		**County:**	LOS ANGELES
CUF Priority Assig:	D	**CUF Claim:**	7562
CUF Amount Paid:	$162,274		

File Location:	REGIONAL BOARD
Designated Beneficial Use:	MUN, AGR, IND, PROC
Project Oversight Agencies:	
Report Link:	https://geotracker.waterboards.ca.gov/profile_report?global_id=T0603702871
Cleanup Status Detail:	OPEN - REMEDIATION AS OF 10/20/2006
Cleanup History Link:	https://geotracker.waterboards.ca.gov/profile_report_include?global_id=T0603702871&tabname=regulatoryhistory
Potential Media of Concern:	AQUIFER USED FOR DRINKING WATER SUPPLY
User Defined Beneficial Use:	
DWR GW Sub Basin:	Coastal Plain Of Los Angeles - West Coast (4-011.03)
Calwater Watershed Name:	Dominguez Channel (411.01)
Post Closure Site Management:	
Future Land Use:	
Cleanup Oversight Agencies:	LOS ANGELES RWQCB (REGION 4) (LEAD) - CASE #: I-02903 CASEWORKER: JIMMIE WOO LOS ANGELES COUNTY CASEWORKER: JOHN AWUJO
Gndwater Monitoring Freque:	# OF WELLS MONITORED - SEMI-ANNUALLY : 16
Designated Beneficial Use Desc:	Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, Industrial Process Supply
Site History:	

No site history available

LUST Sites from GeoTracker Search - Cleanup Status History (as of Oct 06, 2020)

Status: Open - Remediation
Date : 10/20/2006

Status: Open - Site Assessment
Date : 8/16/2006

Status: Open - Remediation
Date : 4/12/2001

Status: Open - Site Assessment
Date : 1/14/1993

Status: Open - Site Assessment
Date : 10/13/1990

Status: Open - Verification Monitoring
Date : 8/22/1990

Status: Open - Site Assessment
Date : 8/20/1990

Status: Open - Case Begin Date
Date : 8/20/1990

LUST Sites from GeoTracker Search - Cleanup Action Report (as of Oct 06, 2020)

Action Type: PUMP & TREAT (P&T) GROUNDWATER
Begin Date: 5/1/2005
Phase: Water
End Date: 5/1/2012
Contaminant Mass Removed: 485,046 Gallons
Description:

Action Type: SOIL VAPOR EXTRACTION (SVE)
Begin Date: 3/16/2005
Phase: Soil Vapor
End Date: 5/1/2012
Contaminant Mass Removed: 28,302 Pounds
Description:

LUST Sites from GeoTracker Search - Regulatory Activities (as of Oct 06, 2020)

Action Type: Response Requested - Reports
Action Date: 8/14/2020
Received Issue Date: 8/14/2020
Action: Site Assessment Report
Doc Link:
Title Description Comments:

Action Type: Response Requested - Reports
Action Date: 7/15/2020
Received Issue Date: 7/15/2020
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

Action Type: Other Regulatory Actions
Action Date: 5/8/2020
Received Issue Date: 5/8/2020
Action: Staff Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T0603702871&enforcement_id=6434920&temptable=ENFORCEMENT
Title Description Comments:

Pilot Study Approval

Action Type: Response Requested - Workplans
Action Date: 5/1/2020
Received Issue Date: 5/1/2020
Action: Other Workplan - Regulator Responded
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T0603702871&doc_id=6031243
Title Description Comments:

Action Type: Response Requested - Reports
Action Date: 1/15/2020
Received Issue Date: 1/7/2020
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

- 2nd Semi-annual 2019 GWM Report

Action Type: Response Requested - Reports
Action Date: 11/25/2019
Received Issue Date: 11/25/2019
Action: Pilot Study/ Treatability Report
Doc Link:
Title Description Comments:

- Feasibility Study/Corrective Action Plan/SCM

Action Type: Response Requested - Workplans
Action Date: 8/5/2019
Received Issue Date: 8/5/2019
Action: Site Investigation Workplan - Regulator Responded
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T0603702871&doc_id=6022520
Title Description Comments:

2000-10-23 Response to RWQCB Letter and Supplementary Offsite Assessment Work Plan

Action Type: Response Requested - Reports
Action Date: 7/15/2019
Received Issue Date: 7/15/2019
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

First 2019 Semi-annual GWM Report

Action Type: Other Regulatory Actions
Action Date: 4/16/2019
Received Issue Date: 4/16/2019
Action: Clean Up Fund - Case Closure Review Summary Report (RSR)
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T0603702871&enforcement_id=6399536&temptable=ENFORCEMENT
Title Description Comments:

7562 First RSR Addl Work April 2019

Action Type: Response Requested - Reports
Action Date: 1/15/2019
Received Issue Date: 1/11/2019
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

4th 2018 Semi-annual GWM Report

Action Type: Response Requested - Reports

Action Date: 7/15/2018
Received Issue Date: 7/11/2018
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

2nd Q 2018 Semi-annual GWM Report

Action Type: Response Requested - Reports
Action Date: 1/15/2018
Received Issue Date: 1/9/2018
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

4th Q 2017 Semi-annual GWM Report

Action Type: Response Requested - Reports
Action Date: 7/15/2017
Received Issue Date: 7/13/2017
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

2nd 2017 Semi-annual GWM Report

Action Type: Response Requested - Reports
Action Date: 1/15/2017
Received Issue Date: 1/9/2017
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

4th Q 2016 GWM Report

Action Type: Response Requested - Workplans
Action Date: 8/23/2016
Received Issue Date: 5/1/2020
Action: CAP/RAP - Final Remediation / Design Plan
Doc Link:
Title Description Comments:

Action Type: Response Requested - Reports
Action Date: 7/15/2016
Received Issue Date: 7/15/2016
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

2Q16 GWMR Final All

Action Type: Other Regulatory Actions
Action Date: 6/29/2016
Received Issue Date: 6/29/2016
Action: Staff Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T0603702871&enforcement_id=6290065&temptable=ENFORCEMENT
Title Description Comments:

Approve Feasibility Remedial Plan

Action Type: Response Requested - Workplans
Action Date: 5/26/2016

Received Issue Date: 5/26/2016
Action: Pilot Study / Treatability Workplan - Regulator Responded
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T0603702871&doc_id=5886090
Title Description Comments:

Action Type: Other Regulatory Actions
Action Date: 4/7/2016
Received Issue Date: 4/7/2016
Action: Staff Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T0603702871&enforcement_id=6281765&temptable=ENFORCEMENT
Title Description Comments:

Require Remedial Action Plan

Action Type: Response Requested - Reports
Action Date: 1/15/2016
Received Issue Date: 1/15/2016
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

4th Q 2015 GWM Report

Action Type: Response Requested - Reports
Action Date: 7/15/2015
Received Issue Date: 7/10/2015
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

2nd Q 2015 GWM Report

Action Type: Response Requested - Reports
Action Date: 1/15/2015
Received Issue Date: 1/15/2015
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

4th Q 2014 Semi-annual GWM Report

Action Type: Response Requested - Reports
Action Date: 7/15/2014
Received Issue Date: 7/14/2014
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

2nd Q2014 Semi-annual GWM Report

Action Type: Response Requested - Reports
Action Date: 1/15/2014
Received Issue Date: 1/13/2014
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

4th Qtr 2013 Semi-annual GWM Report

Action Type: Response Requested - Reports
Action Date: 7/15/2013
Received Issue Date: 7/12/2013

Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

2nd Qtr 2013 Semi-annual GW Monitoring Report

Action Type: Response Requested - Reports
Action Date: 1/15/2013
Received Issue Date: 1/11/2013
Action: Monitoring Report - Semi-Annually
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T0603702871&doc_id=5761577
Title Description Comments:

Action Type: Response Requested - Reports
Action Date: 1/15/2013
Received Issue Date: 1/2/2013
Action: Remedial Progress Report
Doc Link:
Title Description Comments:

Action Type: Response Requested - Reports
Action Date: 10/15/2012
Received Issue Date: 10/12/2012
Action: Remedial Progress Report
Doc Link:
Title Description Comments:

Action Type: Response Requested - Reports
Action Date: 7/15/2012
Received Issue Date: 7/5/2012
Action: Remedial Progress Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T0603702871&doc_id=5751519
Title Description Comments:

Action Type: Response Requested - Reports
Action Date: 12/14/2011
Received Issue Date: 12/14/2011
Action: Remedial Progress Report
Doc Link:
Title Description Comments:

Action Type: Other Regulatory Actions
Action Date: 8/25/2011
Received Issue Date: 8/25/2011
Action: Preparation of Record for Appeal/Referral/Petition
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T0603702871&enforcement_id=6097251&temptable=ENFORCEMENT
Title Description Comments:

Response to OCC Request for Information

Action Type: Enforcement/Orders
Action Date: 7/21/2011
Received Issue Date: 7/21/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T0603702871&enforcement_id=6093331&temptable=ENFORCEMENT
Title Description Comments:

Workplan Approval

Action Type: Response Requested - Reports
Action Date: 7/15/2011

Received Issue Date: 7/13/2011
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

Action Type: Enforcement/Orders
Action Date: 6/8/2011
Received Issue Date: 6/8/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T0603702871&enforcement_id=6089041&temptable=ENFORCEMENT
Title Description Comments:

Extension

Action Type: Response Requested - Reports
Action Date: 5/24/2011
Received Issue Date: 5/24/2011
Action: Remedial Progress Report
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T0603702871&doc_id=5714022
Title Description Comments:

Action Type: Enforcement/Orders
Action Date: 4/26/2011
Received Issue Date: 4/26/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T0603702871&enforcement_id=6085254&temptable=ENFORCEMENT
Title Description Comments:

Dominguez Channel 13267 Order

Action Type: Response Requested - Reports
Action Date: 1/15/2011
Received Issue Date: 1/13/2011
Action: Monitoring Report - Semi-Annually
Doc Link: https://geotracker.waterboards.ca.gov/view_documents_all?global_id=T0603702871&doc_id=5703440
Title Description Comments:

Action Type: Response Requested - Reports
Action Date: 7/15/2010
Received Issue Date: 7/14/2010
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

Action Type: Response Requested - Reports
Action Date: 1/15/2010
Received Issue Date: 1/19/2010
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

Action Type: Response Requested - Reports
Action Date: 7/15/2009
Received Issue Date: 7/14/2009
Action: Monitoring Report - Semi-Annually
Doc Link:
Title Description Comments:

Action Type: Other Regulatory Actions
Action Date: 6/15/2009

Received Issue Date: 6/15/2009
Action: Staff Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T0603702871&enforcement_id=6022211&temptable=ENFORCEMENT
Title Description Comments:

Action Type: Response Requested - Reports
Action Date: 4/15/2009
Received Issue Date: 4/13/2009
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Action Type: Response Requested - Reports
Action Date: 1/15/2009
Received Issue Date: 1/12/2009
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Action Type: Response Requested - Other
Action Date: 12/15/2008
Received Issue Date: 2/24/2009
Action: Other Report / Document
Doc Link:
Title Description Comments:

Pipepline Information

Action Type: Response Requested - Reports
Action Date: 12/15/2008
Received Issue Date: 2/24/2009
Action: Well Installation Report
Doc Link:
Title Description Comments:

Action Type: Other Regulatory Actions
Action Date: 10/29/2008
Received Issue Date: 10/29/2008
Action: Staff Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T0603702871&enforcement_id=5992198&temptable=ENFORCEMENT
Title Description Comments:

Workplan Approval

Action Type: Response Requested - Reports
Action Date: 10/15/2008
Received Issue Date: 10/14/2008
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Action Type: Response Requested - Workplans
Action Date: 9/4/2008
Received Issue Date: 9/4/2008
Action: Well Installation Workplan
Doc Link:
Title Description Comments:

Action Type: Response Requested - Reports
Action Date: 7/15/2008

Received Issue Date: 7/8/2008
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Action Type: Response Requested - Reports
Action Date: 4/15/2008
Received Issue Date: 4/14/2008
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly

Action Type: Response Requested - Reports
Action Date: 1/15/2008
Received Issue Date: 1/15/2008
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly

Action Type: Response Requested - Reports
Action Date: 10/15/2007
Received Issue Date: 10/15/2007
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly

Action Type: Response Requested - Reports
Action Date: 7/15/2007
Received Issue Date: 7/16/2007
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly

Action Type: Response Requested - Reports
Action Date: 4/15/2007
Received Issue Date: 4/19/2007
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly

Action Type: Response Requested - Reports
Action Date: 1/15/2007
Received Issue Date: 1/16/2007
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly

Action Type: Response Requested - Reports
Action Date: 10/15/2006
Received Issue Date: 10/20/2006
Action: Monitoring Report - Quarterly

Doc Link:
Title Description Comments:

Monitoring Report - Quarterly

Action Type: Response Requested - Reports
Action Date: 10/15/2006
Received Issue Date: 10/20/2006
Action: Remedial Progress Report
Doc Link:
Title Description Comments:

Remedial Progress Report

Action Type: Other Regulatory Actions
Action Date: 9/20/2006
Received Issue Date: 9/20/2006
Action: Staff Letter
Doc Link:
Title Description Comments:

Action Type: Response Requested - Workplans
Action Date: 8/16/2006
Received Issue Date: 8/16/2006
Action: Soil and Water Investigation Workplan
Doc Link:
Title Description Comments:

Soil and Water Investigation Workplan

Action Type: Response Requested - Reports
Action Date: 7/15/2006
Received Issue Date: 7/20/2006
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly

Action Type: Response Requested - Reports
Action Date: 4/15/2006
Received Issue Date: 4/17/2006
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly

Action Type: Response Requested - Reports
Action Date: 1/15/2006
Received Issue Date: 1/30/2006
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly - QMR 4/05

Action Type: Response Requested - Reports
Action Date: 10/15/2005
Received Issue Date: 10/24/2005
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly

Action Type: Response Requested - Reports
Action Date: 7/15/2005
Received Issue Date: 8/9/2005
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly - QMR 2/05

Action Type: Response Requested - Reports
Action Date: 4/15/2005
Received Issue Date: 4/27/2005
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly - QMR 1/05

Action Type: Response Requested - Reports
Action Date: 1/15/2005
Received Issue Date: 2/1/2005
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly - 4TH QMR 2004

Action Type: Response Requested - Reports
Action Date: 10/15/2004
Received Issue Date: 10/19/2004
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly

Action Type: Response Requested - Reports
Action Date: 7/15/2004
Received Issue Date: 8/10/2004
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly

Action Type: Response Requested - Reports
Action Date: 4/15/2004
Received Issue Date: 4/29/2004
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly

Action Type: Response Requested - Reports
Action Date: 1/15/2004
Received Issue Date: 1/16/2004
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly

Action Type: Response Requested - Reports
Action Date: 10/15/2003
Received Issue Date: 10/28/2003
Action: Soil and Water Investigation Report
Doc Link:
Title Description Comments:

Soil and Water Investigation Report

Action Type: Response Requested - Reports
Action Date: 7/15/2003
Received Issue Date: 7/18/2003
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly

Action Type: Response Requested - Reports
Action Date: 4/15/2003
Received Issue Date: 4/16/2003
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly - 1ST QMR 2003

Action Type: Response Requested - Reports
Action Date: 1/15/2003
Received Issue Date: 1/15/2003
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly - 4TH QMR 2002

Action Type: Response Requested - Reports
Action Date: 10/17/2002
Received Issue Date: 10/17/2002
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly - 3RD QMR 2002

Action Type: Response Requested - Reports
Action Date: 7/15/2002
Received Issue Date: 7/15/2002
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly - 2ND QMR 2002

Action Type: Response Requested - Reports
Action Date: 4/15/2002
Received Issue Date: 4/15/2002
Action: Monitoring Report - Quarterly
Doc Link:
Title Description Comments:

Monitoring Report - Quarterly - 1ST QMR 2002

Action Type: Other Regulatory Actions
Action Date: 4/12/2001
Received Issue Date: 4/12/2001
Action: Staff Letter
Doc Link:
Title Description Comments:

Action Type: Cleanup Action
Action Date: 5/1/2005
Received Issue Date:
Action: Pump & Treat (P&T) Groundwater
Doc Link:
Title Description Comments:

Action Type: Cleanup Action
Action Date: 3/16/2005
Received Issue Date:
Action: Soil Vapor Extraction (SVE)
Doc Link:
Title Description Comments:

Action Type: Leak Action
Action Date: 8/22/1990
Received Issue Date:
Action: Leak Reported
Doc Link:
Title Description Comments:

Action Type: Leak Action
Action Date: 8/21/1990
Received Issue Date:
Action: Leak Discovery
Doc Link:
Title Description Comments:

Action Type: Leak Action
Action Date: 8/21/1990
Received Issue Date:
Action: Leak Stopped
Doc Link:
Title Description Comments:

Action Type: Response Requested - Workplans
Action Date: 7/15/2020
Received Issue Date:
Action: CAP/RAP - Final Remediation / Design Plan
Doc Link:
Title Description Comments:

LUST Sites from GeoTracker Search - Site Maps (as of Oct 06, 2020)

Title: SITE ASSESSMENT REPORT (AS-1)
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/7947347819/T0603702871.PDF
Size : 112 KB
Submitted By: GHD (CONTRACTOR)
Submitted: 8/14/2020

Title: SITE ASSESSMENT REPORT (MW-1)
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/4584408104/T0603702871.PDF
Size : 160 KB

Submitted By: GHD (CONTRACTOR)
Submitted: 8/14/2020

Title: SITE ASSESSMENT REPORT (TW-2)
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/6552420496/T0603702871.PDF
Size : 203 KB
Submitted By: GHD (CONTRACTOR)
Submitted: 8/14/2020

Title: SITE ASSESSMENT REPORT (MW-2A)
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/7768013715/T0603702871.PDF
Size : 221 KB
Submitted By: GHD (CONTRACTOR)
Submitted: 8/14/2020

Title: SITE ASSESSMENT REPORT (TW-1)
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/3848348796/T0603702871.PDF
Size : 142 KB
Submitted By: GHD (CONTRACTOR)
Submitted: 8/14/2020

Title: GEO_MAP
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_map/9694756567/T0603702871.PDF
Size : 156 KB
Submitted By: GHD (CONTRACTOR)
Submitted: 8/14/2020

Title: MW-9C BORING LOG (MW-9C)
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_bore/3016173601/T0603702871.PDF
Size : 89 KB
Submitted By: STEVEN COLE (CONTRACTOR)
Submitted: 4/23/2012

Title: GEO_MAP
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_map/6997309386/T0603702871.PDF
Size : 293 KB
Submitted By: STEVEN COLE (CONTRACTOR)
Submitted: 4/23/2012

Title: GEO_MAP
Link: https://geotracker.waterboards.ca.gov/esi/uploads/geo_map/7440976798/T0603702871.pdf
Size : 210 KB
Submitted By: TRC IRVINE (CONTRACTOR)
Submitted: 8/24/2005

LUST Sites from GeoTracker Search - Documents (as of Oct 06, 2020)

Document Type: Site Documents
Document Date: 9/30/2020
Type: CORRESPONDENCE
Title: SITE STATUS UPDATE
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4214211225/T0603702871.PDF
Size : 175 KB
Submitted By: GHD (CONTRACTOR)
Submitted:

Document Type: Site Documents
Document Date: 8/14/2020
Type: SITE ASSESSMENT REPORT
Title: SITE ASSESSMENT REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6422012567/T0603702871.PDF
Size : 9,130 KB
Submitted By: GHD (CONTRACTOR)
Submitted:

Document Type: Monitoring Reports
Document Date: 7/15/2020
Type: MONITORING REPORT - SEMI-ANNUALLY
Title: FIRST SEMI-ANNUAL 2020 GROUNDWATER MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8800411522/T0603702871.PDF
Size : 3,987 KB
Submitted By: GHD (CONTRACTOR)
Submitted:

Document Type: Site Documents
Document Date: 7/2/2020
Type: CORRESPONDENCE
Size : 177 KB
Submitted By: GHD (CONTRACTOR)
Submitted:

Title: REMEDIAL ACTION REPORT EXTENSION REQUEST
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1960735619/T0603702871.PDF

Document Type: Site Documents **Size :** 169 KB
Document Date: 6/5/2020 **Submitted By:** GHD (CONTRACTOR)
Type: CORRESPONDENCE **Submitted:**
Title: CHANGE OF MANAGEMENT NOTIFICATION
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6919245839/T0603702871.PDF

Document Type: Site Documents **Size :**
Document Date: 5/8/2020 **Submitted By:** JIMMIE WOO (REGULATOR)
Type: STAFF LETTER **Submitted:**
Title: PILOT STUDY APPROVAL
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0603702871&enforcement_id=6434920

Document Type: Site Documents **Size :** 6,056 KB
Document Date: 5/1/2020 **Submitted By:** GHD (CONTRACTOR)
Type: OTHER WORKPLAN **Submitted:**
Title: WORK PLAN FOR FEASIBILITY TESTING
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5660680949/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 3,889 KB
Document Date: 1/7/2020* **Submitted By:** GHD (CONTRACTOR)
Type: MONITORING REPORT - SEMI-ANNUALLY **Submitted:**
Title: SECOND SEMI-ANNUAL 2019 GROUNDWATER MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8511196434/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 2,196 KB
Document Date: 1/7/2020 **Submitted By:** GHD (CONTRACTOR)
Type: MONITORING REPORT - SEMI-ANNUALLY **Submitted:**
Title: SECOND SEMI-ANNUAL 2019 GROUNDWATER MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2886495769/T0603702871.PDF

Document Type: Site Documents **Size :** 3,873 KB
Document Date: 11/25/2019 **Submitted By:** GHD (CONTRACTOR)
Type: CAP/RAP - FEASIBILITY STUDY REPORT **Submitted:**
Title: SITE CONCEPTUAL MODEL AND FEASIBILITY STUDY/CORRECTIVE ACTION PLAN
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3849977970/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 4,425 KB
Document Date: 7/15/2019 **Submitted By:** GHD (CONTRACTOR)
Type: MONITORING REPORT - SEMI-ANNUALLY **Submitted:**
Title: FIRST SEMI-ANNUAL 2019 GROUNDWATER MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9168971180/T0603702871.PDF

Document Type: Site Documents **Size :**
Document Date: 4/16/2019 **Submitted By:** (REGULATOR)
Type: CLEAN UP FUND - CASE CLOSURE REVIEW SUMMARY REPORT (RSR) **Submitted:**
Title: 7562 FIRST RSR ADDL WORK APRIL 2019
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0603702871&enforcement_id=6399536

Document Type: Site Documents **Size :** 32 KB
Document Date: 3/22/2019* **Submitted By:** ARCADIS (CONTRACTOR)
Type: CORRESPONDENCE **Submitted:**
Title: NOTICE TO AGENCY OF CHANGE IN CONTACT INFORMATION
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3254379510/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 7,824 KB
Document Date: 1/11/2019* **Submitted By:** ARCADIS (CONTRACTOR)
Type: MONITORING REPORT - SEMI-ANNUALLY **Submitted:**
Title: 351816 4Q18 GWMR
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3132210791/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 5,864 KB
Document Date: 7/11/2018* **Submitted By:** ARCADIS (CONTRACTOR)
Type: MONITORING REPORT - SEMI-ANNUALLY **Submitted:**
Title: 2Q18 SEMI ANNUAL STATUS REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2294447481/T0603702871.PDF

Document Type: Monitoring Reports | **Size :** 6,556 KB
Document Date: 1/9/2018* | **Submitted By:** ARCADIS (CONTRACTOR)
Type: MONITORING REPORT - SEMI-ANNUALLY | **Submitted:**
Title: 4Q2017 SEMI-ANNUAL STATUS REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2892956674/T0603702871.PDF

Document Type: Site Documents | **Size :** 7,351 KB
Document Date: 1/9/2018* | **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: STATUS / PROGRESS REPORTS | **Submitted:**
Title: 2018-01-09 SEMI-ANNUAL STATUS REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2002920329/T0603702871.PDF

Document Type: Monitoring Reports | **Size :** 6,745 KB
Document Date: 7/13/2017* | **Submitted By:** ARCADIS (CONTRACTOR)
Type: MONITORING REPORT - SEMI-ANNUALLY | **Submitted:**
Title: 2Q17 SEMI-ANNUAL STATUS REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5876413702/T0603702871.PDF

Document Type: Monitoring Reports | **Size :** 7,969 KB
Document Date: 1/9/2017 | **Submitted By:** ARCADIS (CONTRACTOR)
Type: MONITORING REPORT - SEMI-ANNUALLY | **Submitted:**
Title: 351816 SEMI-ANNUAL STATUS REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5181939899/T0603702871.PDF

Document Type: Site Documents | **Size :** 24 KB
Document Date: 7/15/2016* | **Submitted By:** ARCADIS (CONTRACTOR)
Type: CORRESPONDENCE | **Submitted:**
Title: CHANGE IN PROJECT MANAGER NOTIFICATION
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8066389620/T0603702871.PDF

Document Type: Monitoring Reports | **Size :** 5,301 KB
Document Date: 7/15/2016* | **Submitted By:** ARCADIS (CONTRACTOR)
Type: MONITORING REPORT - SEMI-ANNUALLY | **Submitted:**
Title: 351816 2Q16 GWMR FNL ALL
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8069307327/T0603702871.PDF

Document Type: Site Documents | **Size :**
Document Date: 6/29/2016 | **Submitted By:** JIMMIE WOO (REGULATOR)
Type: STAFF LETTER | **Submitted:**
Title: APPROVE FEASIBILITY REMEDIAL PLAN
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0603702871&enforcement_id=6290065

Document Type: Site Documents | **Size :** 9,268 KB
Document Date: 5/26/2016* | **Submitted By:** AECOM (CONTRACTOR)
Type: OTHER REPORT / DOCUMENT | **Submitted:**
Title: REMEDIAL ACTION PLAN
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4965647101/T0603702871.PDF

Document Type: Site Documents | **Size :**
Document Date: 5/26/2016 | **Submitted By:** JIMMIE WOO (REGULATOR)
Type: PILOT STUDY / TREATABILITY WORKPLAN | **Submitted:**
Title: UNKNOWN - REGULATOR RESPONSE
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0603702871&document_id=5886090

Document Type: Site Documents | **Size :** 8,642 KB
Document Date: 5/26/2016* | **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: REMEDIAL INVESTIGATION WORKPLAN | **Submitted:**
Title: 2016-05-26 REMEDIAL ACTION PLAN
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9769326269/T0603702871.PDF

Document Type: Site Documents | **Size :**
Document Date: 4/7/2016 | **Submitted By:** JIMMIE WOO (REGULATOR)
Type: STAFF LETTER | **Submitted:**
Title: REQUIRE REMEDIAL ACTION PLAN
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0603702871&enforcement_id=6281765

Document Type: Monitoring Reports **Size :** 5,043 KB
Document Date: 1/15/2016 **Submitted By:** AECOM (CONTRACTOR)
Type: MONITORING REPORT - SEMI-ANNUALLY **Submitted:**
Title: 4Q15 GWM REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6883306920/T0603702871.PDF

Document Type: Site Documents **Size :** 20 KB
Document Date: 7/16/2015* **Submitted By:** AECOM (CONTRACTOR)
Type: CORRESPONDENCE **Submitted:**
Title: 351816 NOTIF CONSULTANT CHANGE_07152015
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8131583929/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 6,674 KB
Document Date: 7/10/2015 **Submitted By:** ARCADIS (CONTRACTOR)
Type: MONITORING REPORT - SEMI-ANNUALLY **Submitted:**
Title: 2Q2015 SEMI-ANNUAL STATUS REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7597971320/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 6,334 KB
Document Date: 1/15/2015* **Submitted By:** ARCADIS (CONTRACTOR)
Type: MONITORING REPORT - SEMI-ANNUALLY **Submitted:**
Title: 4Q2014 SEMI-ANNUAL STATUS REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9146409511/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,561 KB
Document Date: 1/15/2015* **Submitted By:** ARCADIS (CONTRACTOR)
Type: MONITORING REPORT - SEMI-ANNUALLY **Submitted:**
Title: 4Q2014 SEMI-ANNUAL IWP REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2830955266/T0603702871.PDF

Document Type: Site Documents **Size :** 36 KB
Document Date: 7/28/2014 **Submitted By:** ARCADIS (CONTRACTOR)
Type: NOTICE OF INTENT **Submitted:**
Title: IWP NOTICE OF INTENT TO TERMINATE
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8415818691/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 5,164 KB
Document Date: 7/14/2014* **Submitted By:** ARCADIS (CONTRACTOR)
Type: MONITORING REPORT - SEMI-ANNUALLY **Submitted:**
Title: 2Q2014 SEMI-ANNUAL STATUS REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3850324511/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,845 KB
Document Date: 7/8/2014* **Submitted By:** ARCADIS (CONTRACTOR)
Type: MONITORING REPORT - SEMI-ANNUALLY **Submitted:**
Title: SEMI-ANNUAL INDUSTRIAL WASTEWATER SELF-MONITORING REPORT, FIRST AND SECOND QUARTERS 2014
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9003503024/T0603702871.PDF

Document Type: Site Documents **Size :** 35 KB
Document Date: 7/1/2014 **Submitted By:** ARCADIS (CONTRACTOR)
Type: CORRESPONDENCE **Submitted:**
Title: PROJECT MANAGEMENT OF CHANGE NOTICE
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1604941666/T0603702871.PDF

Document Type: Site Documents **Size :** 20 KB
Document Date: 3/7/2014* **Submitted By:** ARCADIS (CONTRACTOR)
Type: CORRESPONDENCE **Submitted:**
Title: PROJECT MANAGEMENT OF CHANGE NOTICE
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6311577975/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 480 KB
Document Date: 1/15/2014 **Submitted By:** ARCADIS (CONTRACTOR)
Type: MONITORING REPORT - SEMI-ANNUALLY **Submitted:**
Title: 4Q2013 SEMI-ANNUAL IWP REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4703042209/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 6,344 KB
Document Date: 1/13/2014 **Submitted By:** ARCADIS (CONTRACTOR)

Type: MONITORING REPORT - SEMI-ANNUALLY **Submitted:**
Title: 4Q2013 SEMI-ANNUAL STATUS REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2713808178/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 7,222 KB
Document Date: 7/12/2013* **Submitted By:** ARCADIS (CONTRACTOR)
Type: MONITORING REPORT - SEMI-ANNUALLY **Submitted:**
Title: 2Q2013 SEMI-ANNUAL STATUS REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1378623306/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,829 KB
Document Date: 7/9/2013* **Submitted By:** ARCADIS (CONTRACTOR)
Type: MONITORING REPORT - SEMI-ANNUALLY **Submitted:**
Title: 2Q2013 SEMI-ANNUAL IWP REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4594224452/T0603702871.PDF

Document Type: Site Documents **Size :** 32 KB
Document Date: 2/15/2013* **Submitted By:** ARCADIS (CONTRACTOR)
Type: CORRESPONDENCE **Submitted:**
Title: CHANGE OF CONSULTANT NOTIFICATION
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7183582365/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 6,626 KB
Document Date: 1/8/2013* **Submitted By:** NATASHA STORNI (CONTRACTOR)
Type: MONITORING REPORT - SEMI-ANNUALLY **Submitted:**
Title: 2012 4TH QTR GWMR
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4751203417/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 6,626 KB
Document Date: 1/8/2013* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2013-01-08 SEMI-ANNUAL GROUNDWATER MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5817217350/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 13,814 KB
Document Date: 1/7/2013* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2013-01-07 SEMI-ANNUAL INDUSTRIAL WASTEWATER SELF MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1936789393/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 3,524 KB
Document Date: 1/2/2013* **Submitted By:** NATASHA STORNI (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 351816_SITE 6082 4Q12 O&M RPT_01022013
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2167774260/T0603702871.PDF

Document Type: Site Documents **Size :** 165 KB
Document Date: 12/17/2012* **Submitted By:** NATASHA STORNI (CONTRACTOR)
Type: CORRESPONDENCE **Submitted:**
Title: 351816_SITE 6082 HFA PM CHANGE_12172012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7415805876/T0603702871.PDF

Document Type: Site Documents **Size :** 318 KB
Document Date: 10/29/2012* **Submitted By:** NATASHA STORNI (CONTRACTOR)
Type: CORRESPONDENCE **Submitted:**
Title: 351816_SITE 6082 SYSTEM SHUTDOWN_10292012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1367420256/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 5,371 KB
Document Date: 10/12/2012* **Submitted By:** NATASHA STORNI (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 351816_SITE 6082 3Q12 OANDM RPT_10122012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9484250903/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 5,301 KB
Document Date: 9/18/2012* **Submitted By:** ES ENGINEERING SERVICES, LLC (CONTRACTOR)

Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 351816 O&M-6082-3Q-12 09.18.2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1844756364/T0603702871.PDF

Document Type: Site Documents **Size :** 1,484 KB
Document Date: 8/6/2012* **Submitted By:** NATASHA STORNI (CONTRACTOR)
Type: CORRESPONDENCE **Submitted:**
Title: 351816_SITE 6082 FY 2011-2012 SURCHARGE STATEMENT_08062012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3355376482/T0603702871.PDF

Document Type: Site Documents **Size :** 498 KB
Document Date: 7/25/2012* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OTHER REPORT / DOCUMENT **Submitted:**
Title: 2012-07-25 EFFLUENT FLOW METER CALIBRATION REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2676363468/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 4,808 KB
Document Date: 7/5/2012* **Submitted By:** NATASHA STORNI (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 351816_SITE 6082 2Q12 O&M RPT_07052012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4078002214/T0603702871.PDF

Document Type: Site Documents **Size :** 713 KB
Document Date: 4/27/2012 **Submitted By:** NATASHA STORNI (CONTRACTOR)
Type: CORRESPONDENCE **Submitted:**
Title: 351816_SITE 6082 SCAQMD OPERATOR CHANGE_04272012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7302876293/T0603702871.PDF

Document Type: Site Documents **Size :** 785 KB
Document Date: 4/27/2012 **Submitted By:** NATASHA STORNI (CONTRACTOR)
Type: CORRESPONDENCE **Submitted:**
Title: 351816_SITE 6082 RP AND CONSULTANT CHANGE NOTIF_04272012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5498685717/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 4,833 KB
Document Date: 4/23/2012 **Submitted By:** STEVEN COLE (CONTRACTOR)
Type: MONITORING REPORT - SEMI-ANNUALLY **Submitted:**
Title: 2012 FIRST SEMI-ANNUAL GROUNDWATER MONITORING REPORT: JAN. THROUGH JUNE 2012
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7133274853/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 2,389 KB
Document Date: 4/3/2012* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2012-04-03 1Q12 INDUSTRIAL WASTEWATER SELF MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3800909638/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 4,133 KB
Document Date: 3/15/2012 **Submitted By:** ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1Q12 O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3327252984/T0603702871.PDF

Document Type: Site Documents **Size :** 7,571 KB
Document Date: 2/10/2012* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OTHER REPORT / DOCUMENT **Submitted:**
Title: 2012-02-10 RENEWAL APPLICATION FOR INDUSTRIAL WASTEWATER PERMIT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6851538300/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 6,757 KB
Document Date: 1/5/2012* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2012-01-05 4Q11 INDUSTRIAL WASTEWATER SELF MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1081935048/T0603702871.PDF

Document Type: Site Documents | **Size :** 8,309 KB
Document Date: 12/15/2011 | **Submitted By:** STEVEN COLE (CONTRACTOR)
Type: OPERATION AND MAINTENANCE PLAN/MONITORING REPORT | **Submitted:**
Title: 20101223 - CONTR GOV - REG - 4Q10 O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5259684264/T0603702871.PDF

Document Type: Monitoring Reports | **Size :** 1,712 KB
Document Date: 10/6/2011* | **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY | **Submitted:**
Title: 2011-10-06 3Q11 INDUSTRIAL WASTEWATER SELF MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8117067813/T0603702871.PDF

Document Type: Site Documents | **Size :** 7,382 KB
Document Date: 9/15/2011* | **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OPERATION AND MAINTENANCE PLAN/MONITORING REPORT | **Submitted:**
Title: 2011-09-15 3Q11 VAPOR AND GW EXTRACTION AND TREATMENT SYSTEM O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1902045130/T0603702871.PDF

Document Type: Site Documents | **Size :** 7,975 KB
Document Date: 9/15/2011 | **Submitted By:** STEVEN COLE (CONTRACTOR)
Type: OPERATION AND MAINTENANCE PLAN/MONITORING REPORT | **Submitted:**
Title: 20100929 - CONTR GOV - REG - 3Q10 O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4659394621/T0603702871.PDF

Document Type: Site Documents | **Size :**
Document Date: 8/25/2011 | **Submitted By:** GREG BISHOP (REGULATOR)
Type: PREPARATION OF RECORD FOR APPEAL/REFERRAL/PETITION | **Submitted:**
Title: RESPONSE TO OCC REQUEST FOR INFORMATION
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0603702871&enforcement_id=6097251

Document Type: Site Documents | **Size :**
Document Date: 7/21/2011 | **Submitted By:** JIMMIE WOO (REGULATOR)
Type: 13267 REQUIREMENT | **Submitted:**
Title: WORKPLAN APPROVAL
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0603702871&enforcement_id=6093331

Document Type: Monitoring Reports | **Size :** 32 KB
Document Date: 7/12/2011 | **Submitted By:** STEVEN COLE (CONTRACTOR)
Type: MONITORING REPORT - SEMI-ANNUALLY | **Submitted:**
Title: SEMI-ANNUAL STATUS REPORT - FIRST SEMESTER 2011
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6303723931/T0603702871.PDF

Document Type: Monitoring Reports | **Size :** 2,053 KB
Document Date: 7/6/2011* | **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY | **Submitted:**
Title: 2011-07-06 2Q11 INDUSTRIAL WASTEWATER SELF MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4509863078/T0603702871.PDF

Document Type: Site Documents | **Size :** 7,250 KB
Document Date: 6/20/2011* | **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OPERATION AND MAINTENANCE PLAN/MONITORING REPORT | **Submitted:**
Title: 2011-06-20 2Q11 VAPOR AND GW EXTRACTION AND TREATMENT SYSTEM O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1717171728/T0603702871.PDF

Document Type: Site Documents | **Size :** 7,250 KB
Document Date: 6/20/2011 | **Submitted By:** STEVEN COLE (CONTRACTOR)
Type: OPERATION AND MAINTENANCE PLAN/MONITORING REPORT | **Submitted:**
Title: 2ND QUARTER 2011 VAPOR AND GROUNDWATER EXTRACTION AND TREATMENT SYSTEM O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3519724547/T0603702871.PDF

Document Type: Monitoring Reports
Size : 3,956 KB
Document Date: 6/17/2011
Submitted By: STEVEN COLE (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: GROUNDWATER MONITORING REPORT APRIL THROUGH JUNE 2011
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2988260924/T0603702871.PDF

Document Type: Site Documents
Size : 5,874 KB
Document Date: 6/10/2011*
Submitted By: NATASHA STORNI (CONTRACTOR)
Type: SITE INVESTIGATION WORKPLAN
Submitted:
Title: 351816_WORK PLAN_FNL_06092011
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3185804009/T0603702871.PDF

Document Type: Site Documents
Size :
Document Date: 6/8/2011
Submitted By: JIMMIE WOO (REGULATOR)
Type: 13267 REQUIREMENT
Submitted:
Title: EXTENSION
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0603702871&enforcement_id=6089041

Document Type: Site Documents
Size : 51 KB
Document Date: 6/3/2011*
Submitted By: TRC IRVINE (CONTRACTOR)
Type: CORRESPONDENCE
Submitted:
Title: NOTICE OF CHANGE IN ENVIRONMENTAL MANAGEMENT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5927651941/T0603702871.PDF

Document Type: Site Documents
Size : 1,208 KB
Document Date: 5/23/2011
Submitted By: STEVEN COLE (CONTRACTOR)
Type: OTHER REPORT / DOCUMENT
Submitted:
Title: 2011-05-19 DPE SUMMARY REPORT AOC 1536
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1285664379/T0603702871.PDF

Document Type: Site Documents
Size : 1,208 KB
Document Date: 5/19/2011*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: SITE INVESTIGATION
Submitted:
Title: 2011-05-19 DUAL PHASE EXTRACTION EVENT SUMMARY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5872475683/T0603702871.PDF

Document Type: Site Documents
Size :
Document Date: 4/26/2011
Submitted By: JIMMIE WOO (REGULATOR)
Type: 13267 REQUIREMENT
Submitted:
Title: DOMINGUEZ CHANNEL 13267 ORDER
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0603702871&enforcement_id=6085254

Document Type: Monitoring Reports
Size : 7,039 KB
Document Date: 4/7/2011*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 2011-04-07 1Q11 INDUSTRIAL WASTEWATER SELF MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3572845697/T0603702871.PDF

Document Type: Monitoring Reports
Size : 8,268 KB
Document Date: 3/15/2011
Submitted By: ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 1Q11 O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7459897637/T0603702871.PDF

Document Type: Site Documents
Size : 8,268 KB
Document Date: 3/15/2011
Submitted By: STEVEN COLE (CONTRACTOR)
Type: OPERATION AND MAINTENANCE PLAN/MONITORING REPORT
Submitted:
Title: FIRST QUARTER 2011 VAPOR AND GROUNDWATER EXTRACTION AND TREATMENT SYSTEM O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9588361382/T0603702871.PDF

Document Type: Monitoring Reports
Size : 7,397 KB
Document Date: 2/18/2011*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)

Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2011-02-18 4Q10 INDUSTRIAL WASTEWATER SELF MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9342829823/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 98 KB
Document Date: 1/15/2011 **Submitted By:** STEVEN COLE (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2011-01-15 4TH QUARTER 2010 QSR AOC 1536
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3647439539/T0603702871.PDF

Document Type: Site Documents **Size :** 98 KB
Document Date: 1/15/2011* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: STATUS / PROGRESS REPORTS **Submitted:**
Title: 2011-01-15 SEMI-ANNUAL STATUS REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9827004492/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 6,895 KB
Document Date: 1/5/2011* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2011-01-05 4Q10 INDUSTRIAL WASTEWATER SELF MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9604422450/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 9,452 KB
Document Date: 1/4/2011 **Submitted By:** STEVEN COLE (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 20110104 MNTRG-TRC-6082 4Q10 QMR
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1264161109/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 8,309 KB
Document Date: 12/15/2010* **Submitted By:** ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 4Q10 O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2813577234/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 6,797 KB
Document Date: 10/6/2010* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2010-10-06 3Q10 INDUSTRIAL WASTEWATER SELF MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8225145816/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 7,975 KB
Document Date: 9/15/2010* **Submitted By:** ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 3Q10 O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9975015223/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 91 KB
Document Date: 7/13/2010* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - SEMI-ANNUALLY **Submitted:**
Title: 2010-07-13 SEMI-ANNUAL STATUS REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4230048060/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 91 KB
Document Date: 7/13/2010* **Submitted By:** STEVEN COLE (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2010-07-13 2ND QUARTER 2010 QSR AOC 1536
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5438050627/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 20,156 KB
Document Date: 7/7/2010* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2010-07-07 2Q10 INDUSTRIAL WASTEWATER SELF MONITORING REPORT

Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8254671573/T0603702871.PDF

Document Type: Site Documents
Size : 21,652 KB
Document Date: 6/15/2010*
Submitted By: STEVEN COLE (CONTRACTOR)
Type: OPERATION AND MAINTENANCE PLAN/MONITORING REPORT
Submitted:
Title: 20100629 - CONTR GOV -REG - 2Q10 O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7087393522/T0603702871.PDF

Document Type: Monitoring Reports
Size : 21,652 KB
Document Date: 6/15/2010*
Submitted By: ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 2Q10 O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3154084205/T0603702871.PDF

Document Type: Monitoring Reports
Size : 4,042 KB
Document Date: 6/14/2010*
Submitted By: STEVEN COLE (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 20100614 MNTRG-TRC-6082 2Q10 QMR
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2989355802/T0603702871.PDF

Document Type: Monitoring Reports
Size : 4,042 KB
Document Date: 6/14/2010*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - SEMI-ANNUALLY
Submitted:
Title: 2010-06-14 SEMI-ANNUAL MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5840918421/T0603702871.PDF

Document Type: Monitoring Reports
Size : 15,854 KB
Document Date: 4/5/2010*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 2010-04-05 1Q10 INDUSTRIAL WASTEWATER SELF MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8956612646/T0603702871.PDF

Document Type: Monitoring Reports
Size : 20,518 KB
Document Date: 3/15/2010*
Submitted By: ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 1Q10 O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2089143157/T0603702871.PDF

Document Type: Site Documents
Size : 20,518 KB
Document Date: 3/15/2010*
Submitted By: STEVEN COLE (CONTRACTOR)
Type: OPERATION AND MAINTENANCE PLAN/MONITORING REPORT
Submitted:
Title: 20100323 - CONTR GOV - REG - 1Q10 O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6505396544/T0603702871.PDF

Document Type: Monitoring Reports
Size : 86 KB
Document Date: 1/15/2010*
Submitted By: STEVEN COLE (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 4TH QUARTER 2009 QSR AOC 1536
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1987344205/T0603702871.PDF

Document Type: Monitoring Reports
Size : 86 KB
Document Date: 1/15/2010*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - SEMI-ANNUALLY
Submitted:
Title: 2010-01-15 4Q10 SEMI-ANNUAL STATUS REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4106096744/T0603702871.PDF

Document Type: Monitoring Reports
Size : 5,988 KB
Document Date: 12/23/2009*
Submitted By: ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 4Q09 O&M REPORT PART 1 OF 2
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3682946622/T0603702871.PDF

Document Type: Monitoring Reports
Size : 15,320 KB
Document Date: 12/23/2009*
Submitted By: ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 4Q09 O&M REPORT PART 2 OF 2
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4268777012/T0603702871.PDF

Document Type: Site Documents
Size : 21,308 KB
Document Date: 12/15/2009*
Submitted By: STEVEN COLE (CONTRACTOR)
Type: OPERATION AND MAINTENANCE PLAN/MONITORING REPORT
Submitted:
Title: 4Q09 O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4841650724/T0603702871.PDF

Document Type: Site Documents
Size : 21,308 KB
Document Date: 12/15/2009*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OPERATION AND MAINTENANCE PLAN/MONITORING REPORT
Submitted:
Title: 2009-12-15 4Q09 VAPOR AND GW EXTRACTION AND TREATMENT SYSTEM O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4824209392/T0603702871.PDF

Document Type: Monitoring Reports
Size : 5,521 KB
Document Date: 12/1/2009*
Submitted By: STEVEN COLE (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 6082 4Q09 QMR-TRC
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5674989998/T0603702871.PDF

Document Type: Monitoring Reports
Size : 20,438 KB
Document Date: 10/2/2009*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 2009-10-02 3Q09 INDUSTRIAL WASTEWATER SELF MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8674898624/T0603702871.PDF

Document Type: Monitoring Reports
Size : 14,526 KB
Document Date: 10/1/2009*
Submitted By: ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 3Q09 O&M REPORT PT 2
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8987066984/T0603702871.PDF

Document Type: Monitoring Reports
Size : 7,121 KB
Document Date: 10/1/2009*
Submitted By: ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 3Q09 O&M REPORT PT 1
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3543230354/T0603702871.PDF

Document Type: Site Documents
Size : 21,648 KB
Document Date: 9/15/2009*
Submitted By: STEVEN COLE (CONTRACTOR)
Type: OPERATION AND MAINTENANCE PLAN/MONITORING REPORT
Submitted:
Title: 6082 THIRD QUARTER O&M 09
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7605103850/T0603702871.PDF

Document Type: Site Documents
Size : 5,122 KB
Document Date: 7/23/2009*
Submitted By: STEVEN COLE (CONTRACTOR)
Type: WELL INSTALLATION REPORT
Submitted:
Title: 2009-02-23 GROUNDWATER WELL INSTALL REPORT AOC 1536
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5592043220/T0603702871.PDF

Document Type: Monitoring Reports
Size : 6,102 KB
Document Date: 7/14/2009*
Submitted By: ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 2Q09 O&M REPORT PART 1 OF 2
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3799386143/T0603702871.PDF

Document Type: Monitoring Reports
Document Date: 7/14/2009*
Size : 13,168 KB
Submitted By: ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 2Q09 O&M REPORT PART 2 OF 2
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7275173366/T0603702871.PDF

Document Type: Monitoring Reports
Document Date: 7/13/2009*
Size : 86 KB
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 2009-07-13 2Q09 QUARTERLY STATUS REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8550915658/T0603702871.PDF

Document Type: Monitoring Reports
Document Date: 7/6/2009*
Size : 17,299 KB
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 2009-07-06 2Q09 INDUSTRIAL WASTEWATER SELF MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9536499261/T0603702871.PDF

Document Type: Monitoring Reports
Document Date: 6/17/2009*
Size : 5,831 KB
Submitted By: TRC IRVINE (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 2Q09 QMR
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7519018888/T0603702871.PDF

Document Type: Site Documents
Document Date: 6/15/2009
Size :
Submitted By: (REGULATOR)
Type: STAFF LETTER
Submitted:
Title: UNKNOWN
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0603702871&enforcement_id=6022211

Document Type: Monitoring Reports
Document Date: 5/12/2009*
Size : 8,615 KB
Submitted By: ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 1Q SMR 09 (PART B)
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6184592008/T0603702871.PDF

Document Type: Monitoring Reports
Document Date: 5/12/2009*
Size : 8,802 KB
Submitted By: ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 1Q SMR 09 (PART A)
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7137287974/T0603702871.PDF

Document Type: Monitoring Reports
Document Date: 4/15/2009*
Size : 7,847 KB
Submitted By: ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 4Q08 SMR PT 2 OF 2
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9324173450/T0603702871.PDF

Document Type: Monitoring Reports
Document Date: 4/15/2009*
Size : 8,903 KB
Submitted By: ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 4Q08 SMR PT 1 OF 2
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1682713389/T0603702871.PDF

Document Type: Monitoring Reports
Document Date: 4/15/2009*
Size : 3,640 KB
Submitted By: ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 1Q O&M 09
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5839922249/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 85 KB
Document Date: 4/13/2009* **Submitted By:** STEVEN COLE (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1Q09 QSR CARSON 6082
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3885803699/T0603702871.PDF

Document Type: Site Documents **Size :** 3,718 KB
Document Date: 4/13/2009* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OTHER REPORT / DOCUMENT **Submitted:**
Title: 2009-04-13 OFF-SITE SOURCE INFORMATION SUMMARY
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5832605183/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 17,413 KB
Document Date: 4/7/2009* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2009-04-07 1Q09 INDUSTRIAL WASTEWATER SELF MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7162649333/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 4,888 KB
Document Date: 4/2/2009* **Submitted By:** TRC IRVINE (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1Q09 QMR
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7164324104/T0603702871.PDF

Document Type: Site Documents **Size :** 3,334 KB
Document Date: 3/23/2009* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OTHER REPORT / DOCUMENT **Submitted:**
Title: 2009-03-23 TECHNICAL SITE EVALUATION
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6280096888/T0603702871.PDF

Document Type: Site Documents **Size :** 5,122 KB
Document Date: 2/23/2009* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: WELL INSTALLATION REPORT **Submitted:**
Title: 2009-02-23 GROUNDWATER WELL INSTALLATION REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7375453114/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 85 KB
Document Date: 1/14/2009* **Submitted By:** STEVEN COLE (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 4Q08 QSR CARSON 6082
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4107452869/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 16,752 KB
Document Date: 1/5/2009* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2009-01-05 4Q08 INDUSTRIAL WATERWATER SELF MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9435479223/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 3,472 KB
Document Date: 12/30/2008 **Submitted By:** ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 4Q08 O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3526550769/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 6,360 KB
Document Date: 12/2/2008 **Submitted By:** TRC IRVINE (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 4Q08 QMR
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5045647740/T0603702871.PDF

Document Type: Site Documents **Size :**
Document Date: 10/29/2008 **Submitted By:** (REGULATOR)
Type: STAFF LETTER **Submitted:**

Title: WORKPLAN APPROVAL
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T0603702871&enforcement_id=5992198

Document Type: Site Documents **Size :** 12,174 KB
Document Date: 10/15/2008 **Submitted By:** STEVEN COLE (CONTRACTOR)
Type: SITE CONCEPTUAL MODEL **Submitted:**
Title: 3Q08 SCMU CARSON 5378
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4828106105/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 10,062 KB
Document Date: 10/14/2008 **Submitted By:** ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 3Q08 IWW SMR PART 1 OF 2
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7413044810/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 9,123 KB
Document Date: 10/14/2008 **Submitted By:** ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 3Q08 IWW SMR PART 2 OF 2
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9349666774/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 84 KB
Document Date: 10/13/2008 **Submitted By:** STEVEN COLE (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 3Q08 QSR CARSON 6082
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3936615467/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 3,313 KB
Document Date: 9/29/2008 **Submitted By:** ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 3Q08 O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4703548610/T0603702871.PDF

Document Type: Site Documents **Size :** 3,313 KB
Document Date: 9/15/2008* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OPERATION AND MAINTENANCE PLAN/MONITORING REPORT **Submitted:**
Title: 2008-09-15 2Q08 VAPOR EXTRACTION AND GW TREATMENT SYSTEM O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1641825795/T0603702871.PDF

Document Type: Site Documents **Size :** 2,591 KB
Document Date: 9/12/2008 **Submitted By:** STEVEN COLE (CONTRACTOR)
Type: SOIL AND WATER INVESTIGATION REPORT **Submitted:**
Title: 20080912 CARSON FORENSIC DISSOLVED GASOLINE STUDY RPT 6082
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6661771476/T0603702871.PDF

Document Type: Site Documents **Size :** 2,591 KB
Document Date: 9/12/2008* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OTHER REPORT / DOCUMENT **Submitted:**
Title: 2008-09-12 SUMMARY REPORT OF FORENSIC DISSOLVED GASOLINE STUDY IN GW
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4772744238/T0603702871.PDF

Document Type: Site Documents **Size :** 578 KB
Document Date: 9/8/2008* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OTHER REPORT / DOCUMENT **Submitted:**
Title: 2008-09-08 FLOW METER CALIBRATION REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5403444766/T0603702871.PDF

Document Type: Site Documents **Size :** 768 KB
Document Date: 9/3/2008* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: WELL INSTALLATION WORKPLAN **Submitted:**

Title: 2008-09-03 WORK PLAN FOR OFFSITE MONITORING WELL RE-INSTALLATION
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1491019129/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 6,531 KB
Document Date: 8/26/2008 **Submitted By:** TRC IRVINE (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 3Q08 QMR
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1183941066/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 6,484 KB
Document Date: 8/26/2008* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2008-08-26 2Q08 QUARTERLY MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4566229701/T0603702871.PDF

Document Type: Site Documents **Size :** 1,670 KB
Document Date: 7/16/2008* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OTHER REPORT / DOCUMENT **Submitted:**
Title: 2008-07-16 WASTEWATER TREATMENT SURCHARGE STATEMENT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6507843255/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 9,103 KB
Document Date: 7/15/2008 **Submitted By:** ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2Q08 IWW SMR
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7115355551/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 76 KB
Document Date: 7/15/2008 **Submitted By:** STEVEN COLE (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2Q08 QSR CARSON 6082
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1529646158/T0603702871.PDF

Document Type: Site Documents **Size :** 2,470 KB
Document Date: 6/30/2008* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OPERATION AND MAINTENANCE PLAN/MONITORING REPORT **Submitted:**
Title: 2008-06-30 2Q08 VAPOR EXTRACTION GW TREATMENT SYSTEM O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1724148690/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 5,511 KB
Document Date: 6/30/2008 **Submitted By:** TRC IRVINE (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2Q08 QMR
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7549452841/T0603702871.PDF

Document Type: Site Documents **Size :** 2,470 KB
Document Date: 6/30/2008 **Submitted By:** ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: REPORTS - QUARTERLY STATUS REPORT **Submitted:**
Title: 2Q08 O&M RPT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7666611194/T0603702871.PDF

Document Type: Site Documents **Size :** 61 KB
Document Date: 5/5/2008 **Submitted By:** STEVEN COLE (CONTRACTOR)
Type: REPORTS - QUARTERLY STATUS REPORT **Submitted:**
Title: 1Q08 QSR CARSON 6082
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3611239373/T0603702871.PDF

Document Type: Site Documents **Size :** 9,555 KB
Document Date: 4/15/2008 **Submitted By:** ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: REPORTS - OTHER **Submitted:**
Title: 1Q08 INDUSTRIAL WASTEWATER SELF MONITORING REPORT PART 1 OF 2
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8939635336/T0603702871.PDF

Document Type: Site Documents
Size : 9,380 KB
Document Date: 4/15/2008
Submitted By: ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: REPORTS - OTHER
Submitted:
Title: 1Q08 INDUSTRIAL WASTEWATER SELF MONITORING REPORT PART 2 OF 2
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1695774674/T0603702871.PDF

Document Type: Site Documents
Size : 61 KB
Document Date: 4/10/2008*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: STATUS / PROGRESS REPORTS
Submitted:
Title: 2008-04-101Q08 QUARTERLY STATUS REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7484667301/T0603702871.PDF

Document Type: Site Documents
Size : 3,349 KB
Document Date: 3/20/2008
Submitted By: ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: REPORTS - QUARTERLY STATUS REPORT
Submitted:
Title: FIRST QTR.2008 O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9439623773/T0603702871.PDF

Document Type: Site Documents
Size : 3,349 KB
Document Date: 3/15/2008*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OPERATION AND MAINTENANCE PLAN/MONITORING REPORT
Submitted:
Title: 2008-03-15 1Q08 VAPOR EXTRACTION AND GW TREATMENT SYSTEM O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1209276676/T0603702871.PDF

Document Type: Monitoring Reports
Size : 5,163 KB
Document Date: 3/6/2008*
Submitted By: TRC IRVINE (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: FORMER 76, 1ST Q, 2008, GMR
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6889465808/T0603702871.PDF

Document Type: Site Documents
Size : 59 KB
Document Date: 2/6/2008*
Submitted By: STEVEN COLE (CONTRACTOR)
Type: REPORTS - QUARTERLY STATUS REPORT
Submitted:
Title: 2008 0115 REMED URS 4TH Q 2007 QSR
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3515795648/T0603702871.PDF

Document Type: Monitoring Reports
Size : 59 KB
Document Date: 1/15/2008*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 2008-01-15 4Q07 SITE QUARTERLY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7557037591/T0603702871.PDF

Document Type: Site Documents
Size : 6,322 KB
Document Date: 1/7/2008*
Submitted By: ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: REPORTS - QUARTERLY STATUS REPORT
Submitted:
Title: FOURTH QTR.2007 O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6178044199/T0603702871.PDF

Document Type: Monitoring Reports
Size : 7,346 KB
Document Date: 1/2/2008*
Submitted By: TRC IRVINE (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 76 STATION, 4TH Q, 2007, GMR
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9058672845/T0603702871.PDF

Document Type: Site Documents
Size : 6,322 KB
Document Date: 12/21/2007*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OPERATION AND MAINTENANCE PLAN/MONITORING REPORT
Submitted:
Title: 2007-12-21 4Q07 VAPOR EXTRACTION AND GW TREATMENT SYSTEM O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3798422694/T0603702871.PDF

Document Type: Site Documents **Size :** 283 KB
Document Date: 10/31/2007* **Submitted By:** TRC IRVINE (CONTRACTOR)
Type: REPORTS - QUARTERLY STATUS REPORT **Submitted:**
Title: 76 STATION, 3RD Q 2007, QSR
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8466124594/T0603702871.PDF

Document Type: Site Documents **Size :** 7,362 KB
Document Date: 10/26/2007* **Submitted By:** ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: REPORTS - OTHER **Submitted:**
Title: THIRD QTR.2007 INDUSTRIAL WASTEWATER SELF MONITORING RPT.
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5769269645/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 283 KB
Document Date: 10/15/2007* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2007-10-15 3Q07 SITE QUARTERLY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6389548182/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 4,040 KB
Document Date: 10/10/2007* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2007-10-10 INDUSTRIAL WASTEWATER SELF MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3184121191/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 4,758 KB
Document Date: 9/29/2007* **Submitted By:** TRC IRVINE (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 76 STATION, 3RD Q, 2007, GMR
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5316770255/T0603702871.PDF

Document Type: Site Documents **Size :** 3,331 KB
Document Date: 9/25/2007* **Submitted By:** ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: REPORTS - QUARTERLY STATUS REPORT **Submitted:**
Title: THIRD QTR.2007 O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7518664300/T0603702871.PDF

Document Type: Site Documents **Size :** 3,331 KB
Document Date: 9/14/2007* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OPERATION AND MAINTENANCE PLAN/MONITORING REPORT **Submitted:**
Title: 2007-09-14 3Q07 VAPOR EXTRACTION AND GW TREATMENT SYSTEM O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5889040470/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 110 KB
Document Date: 8/23/2007* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2007-08-23 LA COUNTY CALIBRATION REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8432650089/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 110 KB
Document Date: 8/23/2007* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2007-08-23 LA COUNTY CALIBRATION REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3177254736/T0603702871.PDF

Document Type: Site Documents **Size :** 613 KB
Document Date: 7/23/2007 **Submitted By:** ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: REPORTS - QUARTERLY STATUS REPORT **Submitted:**
Title: 2Q07 INDUSTRIAL WASTEWATER SELF MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5250426352/T0603702871.PDF

Document Type: Site Documents **Size :** 180 KB
Document Date: 7/20/2007 **Submitted By:** TRC IRVINE (CONTRACTOR)
Type: REPORTS - QUARTERLY STATUS REPORT **Submitted:**
Title: 76 STATION, 2ND Q 2007, QSR
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7910505533/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 4,493 KB
Document Date: 7/16/2007 **Submitted By:** TRC IRVINE (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 76 STATION, 2ND Q, 2007, GMR
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9849139153/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 180 KB
Document Date: 7/13/2007* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2007-07-13 2Q07 SITE QUARTERLY REPORT (2)
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2008735358/T0603702871.PDF

Document Type: Site Documents **Size :** 3,612 KB
Document Date: 7/13/2007 **Submitted By:** ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: REPORTS - QUARTERLY STATUS REPORT **Submitted:**
Title: SECOND QTR.2007 O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7877779901/T0603702871.PDF

Document Type: Site Documents **Size :** 1,973 KB
Document Date: 4/30/2007 **Submitted By:** ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: REPORTS - OTHER **Submitted:**
Title: START UP REPORT WITH MONITORING DATA
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6436277627/T0603702871.PDF

Document Type: Site Documents **Size :** 177 KB
Document Date: 4/27/2007 **Submitted By:** TRC IRVINE (CONTRACTOR)
Type: REPORTS - QUARTERLY STATUS REPORT **Submitted:**
Title: 76 STATION, 1ST Q 2007, QSR
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4221923649/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 4,535 KB
Document Date: 4/27/2007 **Submitted By:** TRC IRVINE (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 76 STATION, 1ST Q, 2007, GMR
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1300169229/T0603702871.PDF

Document Type: Site Documents **Size :** 7,691 KB
Document Date: 4/24/2007 **Submitted By:** ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: REPORTS - OTHER **Submitted:**
Title: FIRST QTR.2007 INDUSTRIAL WASTEWATER SELF MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3693128287/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 177 KB
Document Date: 4/16/2007* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2007-04-16 1Q07 SITE QUARTERLY REPORT (2)
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2788476049/T0603702871.PDF

Document Type: Site Documents **Size :** 1,973 KB
Document Date: 4/12/2007* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OTHER REPORT / DOCUMENT **Submitted:**
Title: 2007-04-12 START-UP REPORT WITH MONITORING DATA
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5407699823/T0603702871.PDF

Document Type: Site Documents **Size :** 1,458 KB
Document Date: 4/4/2007 **Submitted By:** ES ENGINEERING SERVICES, LLC

(CONTRACTOR)

Type: REPORTS - QUARTERLY STATUS REPORT ***Submitted:***
Title: FIRST QTR.2007 O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2255938470/T0603702871.PDF

Document Type: Monitoring Reports ***Size :*** 4,490 KB
Document Date: 4/4/2007* ***Submitted By:*** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY ***Submitted:***
Title: 2007-04-04 1Q07 QUARTERLY MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5888079166/T0603702871.PDF

Document Type: Monitoring Reports ***Size :*** 1,458 KB
Document Date: 3/23/2007* ***Submitted By:*** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY ***Submitted:***
Title: 2007-03-23 1Q07 VAPOR EXTRATION AND GW TREATMENT SYSTEM O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5530062198/T0603702871.PDF

Document Type: Monitoring Reports ***Size :*** 4,468 KB
Document Date: 1/25/2007 ***Submitted By:*** TRC IRVINE (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY ***Submitted:***
Title: 76 STATION, 4TH Q, 2006, GMR
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1833376824/T0603702871.PDF

Document Type: Site Documents ***Size :*** 170 KB
Document Date: 1/22/2007 ***Submitted By:*** TRC IRVINE (CONTRACTOR)
Type: REPORTS - QUARTERLY STATUS REPORT ***Submitted:***
Title: 76 STATION, 4TH Q 2006, QSR
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6432569742/T0603702871.PDF

Document Type: Monitoring Reports ***Size :*** 170 KB
Document Date: 1/15/2007* ***Submitted By:*** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY ***Submitted:***
Title: 2007-01-15 4Q06 SITE QUARTERLY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2170873820/T0603702871.PDF

Document Type: Site Documents ***Size :*** 612 KB
Document Date: 1/15/2007 ***Submitted By:*** ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: REPORTS - OTHER ***Submitted:***
Title: FOURTH QTR.2006 INDUSTRIAL WASTEWATER SELF MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7582151114/T0603702871.PDF

Document Type: Site Documents ***Size :*** 165 KB
Document Date: 10/20/2006 ***Submitted By:*** TRC IRVINE (CONTRACTOR)
Type: REPORTS - QUARTERLY STATUS REPORT ***Submitted:***
Title: 76 STATION, 3RD Q 2006, QSR
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3736936807/T0603702871.PDF

Document Type: Monitoring Reports ***Size :*** 165 KB
Document Date: 10/16/2006* ***Submitted By:*** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY ***Submitted:***
Title: 2006-10-16 3Q09 SITE QUARTERLY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9048983097/T0603702871.PDF

Document Type: Site Documents ***Size :*** 464 KB
Document Date: 10/10/2006 ***Submitted By:*** ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: REPORTS - OTHER ***Submitted:***
Title: THIRD QTR.2006 INDUSTRIAL WASTEWATER SELF MONITORING RPT.
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8419996500/T0603702871.PDF

Document Type: Monitoring Reports ***Size :*** 4,136 KB
Document Date: 10/3/2006 ***Submitted By:*** TRC IRVINE (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY ***Submitted:***
Title: 76 STATION, 3RD Q, 2006, GMR

Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1333265006/T0603702871.PDF

Document Type: Site Documents
Size : 682 KB
Document Date: 8/11/2006*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: WELL INSTALLATION WORKPLAN
Submitted:
Title: 2006-08-11 WORK PLAN FOR MONITORING WELL INSTALLATION
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8673550546/T0603702871.PDF

Document Type: Site Documents
Size : 156 KB
Document Date: 7/24/2006
Submitted By: TRC IRVINE (CONTRACTOR)
Type: REPORTS - QUARTERLY STATUS REPORT
Submitted:
Title: 76 STATION, 2ND Q 2006, QSR
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4649488151/T0603702871.PDF

Document Type: Site Documents
Size : 520 KB
Document Date: 7/19/2006
Submitted By: ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: REPORTS - OTHER
Submitted:
Title: SECOND QTR.2006 INDUSTRIAL WASTEWATER SELF MONITORING RPT.
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4393644571/T0603702871.PDF

Document Type: Monitoring Reports
Size : 156 KB
Document Date: 7/14/2006*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 2006-07-14 2Q06 SITE QUARTERLY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8857049047/T0603702871.PDF

Document Type: Monitoring Reports
Size : 4,087 KB
Document Date: 7/10/2006
Submitted By: TRC IRVINE (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 76 STATION, 2ND Q, 2006, GMR
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8822041392/T0603702871.PDF

Document Type: Site Documents
Size : 760 KB
Document Date: 7/6/2006
Submitted By: ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: REPORTS - QUARTERLY STATUS REPORT
Submitted:
Title: SECOND QTR. 2006 O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3168668448/T0603702871.PDF

Document Type: Site Documents
Size : 760 KB
Document Date: 6/15/2006*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OPERATION AND MAINTENANCE PLAN/MONITORING REPORT
Submitted:
Title: 2006-06-15 2Q06 VAPOR EXTRACTION AND GW TREATMENT SYSTEM O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5516603946/T0603702871.PDF

Document Type: Monitoring Reports
Size : 558 KB
Document Date: 4/24/2006*
Submitted By: ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 1ST QTR.06 WASTEWATER SELF MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3508558511/T0603702871.PDF

Document Type: Site Documents
Size : 259 KB
Document Date: 4/21/2006
Submitted By: TRC IRVINE (CONTRACTOR)
Type: REPORTS - QUARTERLY STATUS REPORT
Submitted:
Title: 76 STATION, 1ST Q, 2006, SITE QUARTERLY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3345273673/T0603702871.PDF

Document Type: Monitoring Reports
Size : 259 KB
Document Date: 4/15/2006*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 2006-04-15 1Q06 SITE QUARTERLY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5452490031/T0603702871.PDF

Document Type: Site Documents **Size :** 759 KB
Document Date: 3/30/2006 **Submitted By:** ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: REPORTS - QUARTERLY STATUS REPORT **Submitted:**
Title: FIRST QUARTER 2006 O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3559370279/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 3,769 KB
Document Date: 3/20/2006 **Submitted By:** TRC IRVINE (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 76 STATION, 1ST Q, 2006, GMR
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7830305337/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 3,764 KB
Document Date: 3/17/2006* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2006-03-17 1Q06 QUARTERLY MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5391961157/T0603702871.PDF

Document Type: Site Documents **Size :** 759 KB
Document Date: 3/15/2006* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OPERATION AND MAINTENANCE PLAN/MONITORING REPORT **Submitted:**
Title: 2006-03-15 1Q06 VAPOR EXTRACTION AND GW TREATMENT SYSTEM O&M REPORT (2)
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6382269740/T0603702871.PDF

Document Type: Site Documents **Size :** 145 KB
Document Date: 2/10/2006 **Submitted By:** TRC IRVINE (CONTRACTOR)
Type: REPORTS - QUARTERLY STATUS REPORT **Submitted:**
Title: 76 STATION, 1-15-2006, 4TH Q QSR
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3050428092/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 145 KB
Document Date: 1/15/2006* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2006-01-15 4Q05 SITE QUARTERLY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7502325892/T0603702871.PDF

Document Type: Site Documents **Size :** 1,297 KB
Document Date: 12/15/2005* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OPERATION AND MAINTENANCE PLAN/MONITORING REPORT **Submitted:**
Title: 2005-12-15 VAPOR EXTRACTION AND GW TREATMENT SYSTEM O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4410498499/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 3,744 KB
Document Date: 12/7/2005 **Submitted By:** TRC IRVINE (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 76 STATION, 4TH Q, 2005, GMR
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3810091912/T0603702871.PDF

Document Type: Site Documents **Size :** 135 KB
Document Date: 11/4/2005 **Submitted By:** TRC IRVINE (CONTRACTOR)
Type: REPORTS - QUARTERLY STATUS REPORT **Submitted:**
Title: 76 STATION, 3RD Q 2005, SITE QUARTERY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1467435538/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 135 KB
Document Date: 10/15/2005* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2005-10-15 3Q05 SITE QUARTERLY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6145926356/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,484 KB
Document Date: 9/20/2005* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2005-09-20 3Q05 VAPOR EXTRACTION AND GW TREATMENT SYSTEM O&M REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2661962687/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 3,700 KB
Document Date: 8/30/2005 **Submitted By:** TRC IRVINE (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 76 STATION, 3RD Q, 2005, GMR
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7480625748/T0603702871.PDF

Document Type: Site Documents **Size :** 133 KB
Document Date: 8/24/2005 **Submitted By:** TRC IRVINE (CONTRACTOR)
Type: REPORTS - QUARTERLY STATUS REPORT **Submitted:**
Title: 76 STATION, 1ST Q 2005, SITE QUARTERY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3868772208/T0603702871.PDF

Document Type: Site Documents **Size :** 134 KB
Document Date: 8/24/2005 **Submitted By:** TRC IRVINE (CONTRACTOR)
Type: REPORTS - QUARTERLY STATUS REPORT **Submitted:**
Title: 76 STATION, 4TH Q 2004, SITE QUARTERY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8030903458/T0603702871.PDF

Document Type: Site Documents **Size :** 130 KB
Document Date: 8/23/2005 **Submitted By:** TRC IRVINE (CONTRACTOR)
Type: REPORTS - OTHER **Submitted:**
Title: 76 STATION, 2ND Q 2005, SITE QUARTERLY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7871601700/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,319 KB
Document Date: 8/19/2005 **Submitted By:** ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2ND QTR'05 VPR EXTRTN O&M RPT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3615341007/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 3,501 KB
Document Date: 8/16/2005 **Submitted By:** ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2ND QTR'05 INDUSTRL WSTWTR SLF MNTRG RPT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6390958487/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 100 KB
Document Date: 8/11/2005* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2005-08-11 WASTEWATER TREATMENT SURCHARGE STATEMENT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6173330485/T0603702871.TIF

Document Type: Monitoring Reports **Size :** 4,358 KB
Document Date: 8/5/2005 **Submitted By:** TRC IRVINE (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 76 STATION, 1ST Q. 2005, QMR
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8462430655/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 3,542 KB
Document Date: 8/5/2005 **Submitted By:** TRC IRVINE (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 76 STATION, 2ND Q, 2005
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3300229728/T0603702871.PDF

Document Type: Site Documents **Size :** 3,501 KB
Document Date: 7/22/2005 **Submitted By:** ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: REPORTS - OTHER **Submitted:**
Title: 2ND QTR'05 INDUSTRL WSTWTR SLF MNTRG RPT

Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6479810416/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 130 KB
Document Date: 7/15/2005* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2005-07-15 2Q05 SITE QUARTERLY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9395071208/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,319 KB
Document Date: 6/30/2005 **Submitted By:** ES ENGINEERING SERVICES, LLC (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2ND QTR'05 VPR EXTRTN O&M RPT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8512830436/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 133 KB
Document Date: 4/15/2005* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2005-04-15 1Q05 SITE QUARTERLY REPORT (2)
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7717989444/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 84 KB
Document Date: 3/29/2005* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2005-03-29 FLOW MONITORING SYSTEM CALIBRATION CHECK RECORD
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1591681361/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 366 KB
Document Date: 1/15/2005* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2005-01-15 4Q04 INDUSTRIAL WASTEWATER SELF MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8061742961/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 134 KB
Document Date: 1/15/2005* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2005-01-15 4Q04 SITE QUARTERLY REPORT (2)
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6070202767/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 4,136 KB
Document Date: 1/8/2004* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2004-01-08 4Q03 QUARTERLY MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2321917057/T0603702871.PDF

Document Type: Site Documents **Size :** 1,452 KB
Document Date: 10/15/2003* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: WELL INSTALLATION REPORT **Submitted:**
Title: 2003-10-15 WELL INSTALLATION REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4964318335/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 2,104 KB
Document Date: 10/15/2003* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2003-10-15 3Q03 SITE QUARTERLY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1277629017/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 2,060 KB
Document Date: 7/15/2003* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2003-07-15 2Q03 SITE QUARTERLY REPORT

Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9826777577/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 2,109 KB
Document Date: 4/15/2003* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2003-04-15 1Q03 SITE QUARTERLY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5376992285/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 102 KB
Document Date: 10/15/2002* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2002-10-15 3Q02 SITE QUARTERLY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9152273356/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,870 KB
Document Date: 7/15/2002* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2002-07-15 2Q02 SITE QUARTERLY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9629525244/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,870 KB
Document Date: 7/15/2002* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2002-07-15 2Q02 SITE QUARTERLY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6386334359/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 103 KB
Document Date: 4/15/2002* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2002-04-15 1Q02 SITE QUARTERLY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3306097865/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,977 KB
Document Date: 2/16/2002* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2002-02-16 1Q02 QUARTERLY MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6654730677/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 106 KB
Document Date: 1/15/2002* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2002-01-15 4Q01 SITE QUARTERLY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4910347998/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,679 KB
Document Date: 1/2/2002* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2002-01-02 4Q01 FLUID LEVEL MONITORING AND GW SAMPLING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4928560733/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,679 KB
Document Date: 1/2/2002* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2002-01-02 4Q01 FLUID LEVEL MONITORING AND GW SAMPLING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6031228125/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 107 KB
Document Date: 10/15/2001* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2001-10-15 3Q01 SITE QUARTERLY REPORT

Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2197548925/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,525 KB
Document Date: 10/15/2001* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2001-10-15 3Q01 FLUID LEVEL MONITORING AND GW SAMPLING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1644903361/T0603702871.PDF

Document Type: Site Documents **Size :** 59 KB
Document Date: 9/6/2001* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OTHER REPORT / DOCUMENT **Submitted:**
Title: 2001-09-06 CERTIFICATION OF RECYCLED MATERIALS
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7143456518/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,652 KB
Document Date: 7/27/2001* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2001-07-27 2Q01 SITE QUARTERLY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2770211279/T0603702871.PDF

Document Type: Site Documents **Size :** 2,310 KB
Document Date: 7/12/2001* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: FEASIBILITY STUDY REPORT **Submitted:**
Title: 2001-07-12 FEASIBILITY TESTING REPORT AND REMEDIAL ACTION PLAN
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5926034033/T0603702871.PDF

Document Type: Site Documents **Size :** 695 KB
Document Date: 7/5/2001* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: WELL INSTALLATION REPORT **Submitted:**
Title: 2001-07-05 WELL INSTALLATION REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6235796451/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 104 KB
Document Date: 4/15/2001* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2001-04-15 1Q01 SITE QUARTERLY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9217125952/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,655 KB
Document Date: 3/31/2001* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2001-03-31 1Q01 FLUID LEVEL MONITORING AND GW SAMPLING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5931389868/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 102 KB
Document Date: 1/15/2001* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2001-01-15 4Q00 SITE QUARTERLY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3852337777/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,719 KB
Document Date: 12/31/2000* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2000-12-31 4Q00 FLUID LEVEL MONITORING AND GW SAMPLING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5150759220/T0603702871.PDF

Document Type: Site Documents **Size :** 1,211 KB
Document Date: 10/23/2000 **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: SITE INVESTIGATION WORKPLAN **Submitted:**
Title: 2000-10-23 RESPONSE TO RWQCB LETTER AND SUPPLEMENTARY OFFSITE ASSESSMENT WORK PLAN

Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4536400854/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 97 KB
Document Date: 10/15/2000* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2000-10-15 3Q00 SITE QUARTERLY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1232073307/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,166 KB
Document Date: 9/30/2000* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2000-09-30 3Q00 FLUID LEVEL MONITORING AND GW SAMPLING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4887305140/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 96 KB
Document Date: 7/15/2000* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2000-07-15 2Q00 SITE QUARTERLY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6203661441/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,014 KB
Document Date: 6/30/2000* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2000-06-30 2Q00 FLUID LEVEL MONITORING AND GW SAMPLING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4481881201/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 99 KB
Document Date: 4/15/2000* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2000-04-15 1Q00 SITE QUARTERLY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7351064860/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,064 KB
Document Date: 3/31/2000* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2000-03-31 1Q00 FLUID LEVEL MONITORING AND GW SAMPLING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4126227259/T0603702871.PDF

Document Type: Site Documents **Size :** 376 KB
Document Date: 2/17/2000* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: FEASIBILITY STUDY REPORT **Submitted:**
Title: 2000-02-17 FEASIBILITY TESTING WORK PLAN
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8269005835/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 100 KB
Document Date: 1/15/2000* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 2000-01-15 4Q99 SITE QUARTERLY REPORT ALTON
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1296341180/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 951 KB
Document Date: 12/31/1999* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1999-12-31 4Q99 FLUID LEVEL MONITORING AND GW SAMPLING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8295126795/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 95 KB
Document Date: 10/15/1999* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1999-10-15 3Q99 SITE QUARTERLY REPORT ALTON

Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5556042611/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 95 KB
Document Date: 10/15/1999* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1999-10-15 3Q99 SITE QUARTERLY REPORT ALTON
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4236010074/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 917 KB
Document Date: 9/30/1999* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1999-09-30 3Q99 FLUID LEVEL MONITORING AND GW SAMPLING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7317556560/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 94 KB
Document Date: 7/15/1999* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1999-07-15 2Q99 SITE QUARTERLY REPORT ALTON
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5384100139/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 902 KB
Document Date: 6/30/1999* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1999-06-30 2Q99 FLUID LEVEL MONITORING AND GW SAMPLING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1865734994/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 97 KB
Document Date: 4/15/1999* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1999-04-15 1Q99 SITE QUARTERLY REPORT ALTON
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4518377482/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 898 KB
Document Date: 3/31/1999* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1999-03-31 1Q99 FLUID LEVEL MONITORING AND GW SAMPLING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6717736303/T0603702871.PDF

Document Type: Site Documents **Size :** 323 KB
Document Date: 3/27/1999* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: INTERIM REMEDIAL ACTION PLAN **Submitted:**
Title: 1999-03-27 REMEDIAL WORK PLAN
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5905401408/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 98 KB
Document Date: 1/25/1999* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1999-01-25 4Q98 SITE QUARTERLY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5649756312/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 98 KB
Document Date: 1/25/1999* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1999-01-25 4Q98 SITE QUARTERLY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4901421606/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 900 KB
Document Date: 12/31/1998* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1998-12-31 4Q98 FLUID LEVEL MONITORING AND GW SAMPLING REPORT

Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9190294742/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 129 KB
Document Date: 10/15/1998* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1998-10-15 3Q98 SITE QUARTERLY REPORT ALTON
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5624184668/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 896 KB
Document Date: 9/30/1998* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1998-09-30 3Q98 FLUID LEVEL MONITORING AND GW SAMPLING REPORT ALTON
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4702242374/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 133 KB
Document Date: 7/20/1998* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1998-07-20 2Q98 SITE QUARTERLY REPORT ALTON
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8372381389/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 775 KB
Document Date: 6/30/1998* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1998-06-30 2Q98 FLUID LEVEL MONITORING AND GW SAMPLING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2365205764/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 949 KB
Document Date: 3/31/1998* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1998-03-31 1Q98 FLUID LEVEL MONITORING AND GW SAMPLING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5194015741/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 127 KB
Document Date: 1/30/1998* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1998-01-30 4Q97 SITE QUARTERLY REPORT ALTON
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9577288150/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 918 KB
Document Date: 12/31/1997* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1997-12-31 4Q97 FLUID LEVEL MONITORING AND GW SAMPLING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5131064295/T0603702871.PDF

Document Type: Site Documents **Size :** 462 KB
Document Date: 10/31/1997* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: INTERIM REMEDIAL ACTION PLAN **Submitted:**
Title: 1997-10-31 REVISED REMEDIAL ACTION PLAN
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9494341373/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 135 KB
Document Date: 10/24/1997* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1997-10-24 3Q97 SITE QUARTERLY REPORT ALTON
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1844504237/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 837 KB
Document Date: 9/30/1997* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1997-09-30 3Q97 FLUID LEVEL MONITORING AND GW SAMPLING REPORT ALTON

Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7725561320/T0603702871.PDF

Document Type: Site Documents
Size : 6,675 KB
Document Date: 9/6/1997*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: INTERIM REMEDIAL ACTION PLAN
Submitted:
Title: 1997-09-06 REMEDIAL ACTION PLAN
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7359640955/T0603702871.PDF

Document Type: Site Documents
Size : 327 KB
Document Date: 9/6/1997*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OTHER REPORT / DOCUMENT
Submitted:
Title: 1997-09-06 HISTORICAL SOIL ANALYTICAL DATA
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6100271403/T0603702871.PDF

Document Type: Site Documents
Size : 1,022 KB
Document Date: 7/30/1997*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: INTERIM REMEDIAL ACTION PLAN
Submitted:
Title: 1997-07-30 UST PROGRAM - REMEDIAL ACTION PLAN
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7946831762/T0603702871.PDF

Document Type: Monitoring Reports
Size : 849 KB
Document Date: 6/30/1997*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 1997-06-30 3Q97 FLUID LEVEL MONITORING AND GW SAMPLING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1107259929/T0603702871.PDF

Document Type: Monitoring Reports
Size : 911 KB
Document Date: 6/30/1997*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 1997-06-30 2Q97 QUARTERLY MONITORING REPORT ALTON
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9296312808/T0603702871.PDF

Document Type: Monitoring Reports
Size : 157 KB
Document Date: 4/28/1997*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 1997-04-28 1Q97 SITE QUARTERLY REPORT ALTON
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2502556860/T0603702871.PDF

Document Type: Monitoring Reports
Size : 1,071 KB
Document Date: 3/31/1997*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 1997-03-31 1Q97 QUARTERLY MONITORING REPORT ALTON
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6208685755/T0603702871.PDF

Document Type: Site Documents
Size : 304 KB
Document Date: 3/27/1997*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: INTERIM REMEDIAL ACTION PLAN
Submitted:
Title: 1997-03-27 REMEDIAL WORK PLAN ALTON
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3856594979/T0603702871.PDF

Document Type: Monitoring Reports
Size : 1,011 KB
Document Date: 12/31/1996*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 1996-12-31 QUARTERLY MONITORING REPORT ALTON
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6062037587/T0603702871.PDF

Document Type: Monitoring Reports
Size : 137 KB
Document Date: 11/6/1996*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 1996-11-06 3Q96 SITE QUARTERLY REPORT MBE

Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3418129980/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,079 KB
Document Date: 9/30/1996* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1996-09-30 3Q96 QUARTERLY MONITORING REPORT ALTON
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6270483851/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 139 KB
Document Date: 8/9/1996* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1996-08-09 2Q96 SITE QUARTERLY REPORT MBE
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6509630680/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,047 KB
Document Date: 6/30/1996* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1996-06-30 2Q96 QUARTERLY MONITORING REPORT ALTON
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1807288050/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 150 KB
Document Date: 4/25/1996* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1996-04-25 1Q96 SITE QUARTERLY REPORT MBE
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6114724218/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,037 KB
Document Date: 3/31/1996* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1996-03-31 1Q96 QUARTERLY MONITORING REPORT ALTON
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3585507333/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 174 KB
Document Date: 2/7/1996* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1996-02-07 4Q95 SITE QUARTERLY REPORT MBE (2)
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1670096278/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,243 KB
Document Date: 12/30/1995* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1995-12-30 4Q95 QUARTERLY MONITORING REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4089669287/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 167 KB
Document Date: 11/9/1995* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1995-11-09 3Q95 SITE QUARTERLY REPORT MBE (2)
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9401284277/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,783 KB
Document Date: 10/20/1995* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1995-10-20 3Q95 GWM REPORT UNIPURE
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4867586612/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,633 KB
Document Date: 8/8/1995* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1995-08-08 2Q95 GWM REPORT UNIPURE

Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7113629281/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 153 KB
Document Date: 8/7/1995* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1995-08-07 2Q95 SITE QUARTERLY REPORT MBE
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9369665324/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,336 KB
Document Date: 5/1/1995* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1995-05-01 1Q95 GWM REPORT UNIPURE
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9353185832/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 149 KB
Document Date: 4/21/1995* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1995-04-21 1Q95 SITE QUARTERLY REPORT MBE
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2494223237/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,798 KB
Document Date: 1/30/1995* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1995-01-30 QUARTERLY GWM REPORT BBC
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7557503759/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 111 KB
Document Date: 1/9/1995* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1995-01-09 4Q94 SITE QUARTERLY REPORT (2)
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7966417789/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,433 KB
Document Date: 11/22/1994* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1994-11-22 QUARTERLY GWM REPORT BBC
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9732605218/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 108 KB
Document Date: 10/28/1994* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1994-10-28 3Q94 SITE QUARTERLY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3243216156/T0603702871.PDF

Document Type: Site Documents **Size :** 994 KB
Document Date: 9/14/1994* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: SITE ASSESSMENT REPORT **Submitted:**
Title: 1994-09-14 SITE ASSESSMENT REPORT RMC
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3521017909/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 106 KB
Document Date: 7/29/1994* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1994-07-29 2Q94 SITE QUARTERLY REPORT (2)
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9361349940/T0603702871.PDF

Document Type: Site Documents **Size :** 874 KB
Document Date: 7/27/1994* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OTHER REPORT / DOCUMENT **Submitted:**
Title: 1994-07-27 EXECUTIVE SUMMARY

Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7932222843/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,200 KB
Document Date: 6/16/1994* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1994-06-16 QUARTERLY GWM REPORT BBC
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9053102970/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 110 KB
Document Date: 4/29/1994* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1994-04-29 1Q94 SITE QUARTERLY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2842669010/T0603702871.PDF

Document Type: Site Documents **Size :** 468 KB
Document Date: 4/25/1994* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OTHER REPORT / DOCUMENT **Submitted:**
Title: 1994-04-25 AIR MONITORING AND SOIL SAMPLING REPORT BBC
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5100641071/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,332 KB
Document Date: 3/9/1994* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1994-03-09 QUARTLER GWM REPORT BBC
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2919488012/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 147 KB
Document Date: 1/28/1994* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1994-01-28 4Q93 SITE QUARTERLY REPORT (2)
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6066213786/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,308 KB
Document Date: 11/22/1993* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1993-11-22 QUARTERLY GWM REPORT BBC
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2611624598/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 168 KB
Document Date: 10/29/1993* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1993-10-29 3Q93 SITE QUARTERLY REPORT (2)
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8258267343/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,117 KB
Document Date: 8/23/1993* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1993-08-23 QUARTERLY GWM REPORT BBC
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3647881567/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,117 KB
Document Date: 8/23/1993* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1993-08-23 QUARTERLY GWM REPORT BBC
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9207100927/T0603702871.PDF

Document Type: Site Documents **Size :** 779 KB
Document Date: 8/18/1993* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OTHER REPORT / DOCUMENT **Submitted:**
Title: 1993-08-18 EXECUTIVE SUMMARY

Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8336022436/T0603702871.PDF

Document Type: Site Documents **Size :** 237 KB
Document Date: 8/18/1993* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: SITE ASSESSMENT REPORT **Submitted:**
Title: 1993-08-18 SITE ASSESSMENT REPORT RMC
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6185036718/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 155 KB
Document Date: 7/30/1993* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1993-07-30 2Q93 SITE QUARTERLY REPORT RMC
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6813146770/T0603702871.PDF

Document Type: Site Documents **Size :** 74 KB
Document Date: 7/27/1993* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OTHER REPORT / DOCUMENT **Submitted:**
Title: 1993-07-27 EXECUTIVE SUMMARY
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7459038794/T0603702871.PDF

Document Type: Site Documents **Size :** 155 KB
Document Date: 7/27/1993* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OTHER REPORT / DOCUMENT **Submitted:**
Title: 1993-07-27 HEALTH AND SAFETY PLAN
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1354622900/T0603702871.PDF

Document Type: Site Documents **Size :** 941 KB
Document Date: 7/27/1993* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: SITE ASSESSMENT REPORT **Submitted:**
Title: 1993-07-27 SITE ASSESSMENT REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9154394984/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 1,031 KB
Document Date: 6/1/1993* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1993-06-01 QUARTERLY GWM REPORT BBC
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/2205487191/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 266 KB
Document Date: 4/30/1993* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1993-04-30 1Q93 SITE QUARTERLY REPORT RMC
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1961920619/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 937 KB
Document Date: 2/26/1993* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1993-02-26 QUARTERLY QWM REPORT BBC
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3726874232/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 270 KB
Document Date: 1/29/1993* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1993-01-29 4Q92 SITE QUARTERLY REPORT RMC
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7760421991/T0603702871.PDF

Document Type: Site Documents **Size :** 405 KB
Document Date: 1/14/1993* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: SITE INVESTIGATION WORKPLAN **Submitted:**
Title: 1993-01-14 SITE ASSESSMENT WORK PLAN RMC

Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1634603679/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 845 KB
Document Date: 1/7/1993* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1993-01-07 QUARTERLY GWM REPORT BBC
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/4837729334/T0603702871.PDF

Document Type: Site Documents **Size :** 400 KB
Document Date: 12/23/1992* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: SITE INVESTIGATION WORKPLAN **Submitted:**
Title: 1992-12-23 SITE ASSESSMENT WORK PLAN
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7392571508/T0603702871.PDF

Document Type: Site Documents **Size :** 4,197 KB
Document Date: 11/24/1992* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: CLOSURE REPORT **Submitted:**
Title: 1992-11-24 CESSPOOL REMOVAL AND CLOSURE
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5279161930/T0603702871.PDF

Document Type: Site Documents **Size :** 16 KB
Document Date: 10/30/1992* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OTHER REPORT / DOCUMENT **Submitted:**
Title: 1992-10-30 MONTHLY PROJECT STATUS
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3531838476/T0603702871.PDF

Document Type: Monitoring Reports **Size :** 234 KB
Document Date: 10/30/1992* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY **Submitted:**
Title: 1992-10-30 3Q92 SITE QUARTERLY REPORT RMC
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3161599218/T0603702871.PDF

Document Type: Site Documents **Size :** 44 KB
Document Date: 9/25/1992* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OTHER REPORT / DOCUMENT **Submitted:**
Title: 1992-09-25 EXECUTIVE SUMMARY AND RECOMMENDATIONS
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8945517420/T0603702871.PDF

Document Type: Site Documents **Size :** 811 KB
Document Date: 9/25/1992* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OTHER REPORT / DOCUMENT **Submitted:**
Title: 1992-09-25 VAPOR EXTRACTION TEST REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1493959903/T0603702871.PDF

Document Type: Site Documents **Size :** 225 KB
Document Date: 9/15/1992* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: CLOSURE REPORT **Submitted:**
Title: 1992-09-15 CLOSURE OF SHALLOW INJECTION WELL
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3112383365/T0603702871.PDF

Document Type: Site Documents **Size :** 117 KB
Document Date: 9/14/1992* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OTHER REPORT / DOCUMENT **Submitted:**
Title: 1992-09-14 INJECTION WELL SETTLEMENT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1099026620/T0603702871.PDF

Document Type: Site Documents **Size :** 1,044 KB
Document Date: 9/11/1992* **Submitted By:** ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OTHER REPORT / DOCUMENT **Submitted:**
Title: 1992-09-11 ASSOC. LAB REPORT

Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7430748999/T0603702871.PDF

Document Type: Site Documents
Size : 71 KB
Document Date: 9/4/1992*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OTHER REPORT / DOCUMENT
Submitted:
Title: 1992-09-04 SOIL DISPOSAL PROFILE
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9260057926/T0603702871.PDF

Document Type: Site Documents
Size : 2,821 KB
Document Date: 9/3/1992*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OTHER REPORT / DOCUMENT
Submitted:
Title: 1992-09-03 GEOTEST LAB REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3456307470/T0603702871.PDF

Document Type: Site Documents
Size : 2,904 KB
Document Date: 8/28/1992*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: SITE ASSESSMENT REPORT
Submitted:
Title: 1992-08-28 SITE ASSESSMENT REPORT RMC
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9189489543/T0603702871.PDF

Document Type: Site Documents
Size : 182 KB
Document Date: 8/3/1992*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: REQUEST FOR CLOSURE
Submitted:
Title: 1992-08-03 APPLICATION FOR CLOSURE PERMIT OF CESSPOOL
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/3918523967/T0603702871.PDF

Document Type: Monitoring Reports
Size : 153 KB
Document Date: 7/30/1992*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 1992-07-30 2Q92 SITE QUARTERLY REPORT (2)
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9517327368/T0603702871.PDF

Document Type: Site Documents
Size : 29 KB
Document Date: 7/8/1992*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: STATUS / PROGRESS REPORTS
Submitted:
Title: 1992-07-08 UIC PROJECT STATUS REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/9100973963/T0603702871.PDF

Document Type: Site Documents
Size : 378 KB
Document Date: 7/7/1992*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: CLOSURE REPORT
Submitted:
Title: 1992-07-07 CLOSURE REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7733644962/T0603702871.PDF

Document Type: Monitoring Reports
Size : 159 KB
Document Date: 4/20/1992*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: MONITORING REPORT - QUARTERLY
Submitted:
Title: 1992-04-20 1Q92 SITE QUARTERLY REPORT
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8054995059/T0603702871.PDF

Document Type: Site Documents
Size : 528 KB
Document Date: 4/6/1992*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OTHER WORKPLAN
Submitted:
Title: 1992-04-06 WORK PLAN RMC
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6297646582/T0603702871.PDF

Document Type: Site Documents
Size : 474 KB
Document Date: 3/27/1992*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OTHER WORKPLAN
Submitted:
Title: 1992-03-27 DRAFT OF WORK PLAN

Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/7468268275/T0603702871.PDF

Document Type: Site Documents
Size : 1,220 KB
Document Date: 12/18/1991*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: SITE ASSESSMENT REPORT
Submitted:
Title: 1991-12-18 SITE ASSESSMENT UNITECH
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/6559488117/T0603702871.PDF

Document Type: Site Documents
Size : 371 KB
Document Date: 7/12/1991*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: PRELIMINARY SITE ASSESSMENT WORKPLAN
Submitted:
Title: 1991-07-12 PRELIMINARY SITE ASSESSMENT WORKPLAN
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8950262248/T0603702871.PDF

Document Type: Site Documents
Size : 126 KB
Document Date: 9/20/1990*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: OTHER REPORT / DOCUMENT
Submitted:
Title: 1990-09-20 CERTIFICATION OF TIGHTNESS
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/8097756445/T0603702871.PDF

Document Type: Site Documents
Size : 299 KB
Document Date: 8/22/1990*
Submitted By: ANTEA GROUP REIMBURSEMENT (CONTRACTOR)
Type: UNAUTHORIZED RELEASE FORM
Submitted:
Title: 1990-08-22 UST UNAUTHORIZED RELEASE
Title Link: http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/1345147192/T0603702871.PDF

LUST Sites from GeoTracker Search - Related Cases (as of Oct 06, 2020)

Identifier: T10000003007
Address: Carson Street
Project Name: Shell Pipeline 0367 - Dominguez Channel @ Carson
City: CARSON
Status: COMPLETED - CASE CLOSED
Association: Related Global ID
Description:
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000003007

35	3 of 12	W	0.15 / 785.39	21.23 / 4	1025 E CARSON ST CARSON CA 907453415	LA HMS

Site No: 002811
Area: 22

Detail Info

Permit No: 000021076
Permit Status Code: CLOS
Permit Cat Desc: Industrial Waste Permit
Permit Category: I
Status Code: CLOS
File No: 056674
Status Desc: Permit Closed
File Name: 76 STATION #6082
Permit Status Desc: Permit Closed
Permit Type: 01
Permit Type Desc: Operating Industrial Waste Permit - Local Sewer

Detail Info

Permit No: 000190171
Permit Status Code: CLOS
Permit Cat Desc: Underground Storage Tank
Permit Category: T
Status Code: CLOS
File No: 024785
Status Desc: Permit Closed
File Name: TOSCO/UNOCAL #31088
Permit Status Desc: Permit Closed
Permit Type: 0

Permit Type Desc: Underground Storage Tank Operating Permit

Detail Info

Permit No: 000002154
Permit Cat Desc: Industrial Waste Permit
Status Code: CLOS
Status Desc: Permit Closed
Permit Status Desc: Permit Closed
Permit Type: 01
Permit Type Desc: Operating Industrial Waste Permit - Local Sewer
Permit Status Code: CLOS
Permit Category: I
File No: I02903
File Name: UNOCAL CORP SS 6082

Detail Info

Permit No: 000368546
Permit Cat Desc: Underground Storage Tank
Status Code: CLOS
Status Desc: Permit Closed
Permit Status Desc: Permit Closed
Permit Type: 0
Permit Type Desc: Underground Storage Tank Operating Permit
Permit Status Code: CLOS
Permit Category: T
File No: 038298
File Name: CONOCOPHILLIPS CO #256082

Detail Info

Permit No: 000004274
Permit Cat Desc: Industrial Waste Permit
Status Code: CLOS
Status Desc: Permit Closed
Permit Status Desc: Permit Closed
Permit Type: 05
Permit Type Desc: Operating Industrial Waste Permit - Onsite
Permit Status Code: CLOS
Permit Category: I
File No: I02903
File Name: UNOCAL CORP SS 6082

Detail Info

Permit No: 000552453
Permit Cat Desc: Underground Storage Tank
Status Code: PERM
Status Desc: Equipment Permitted
Permit Status Desc: Equipment Permitted
Permit Type: 0
Permit Type Desc: Underground Storage Tank Operating Permit
Permit Status Code: PERM
Permit Category: T
File No: 050609
File Name: CARSON UNOCAL #6082

Detail Info

Permit No: 00004194T
Permit Cat Desc: Underground Storage Tank
Status Code: CLOS
Status Desc: Permit Closed
Permit Status Desc: Permit Closed
Permit Type: 0
Permit Type Desc: Underground Storage Tank Operating Permit
Permit Status Code: CLOS
Permit Category: T
File No: 002903
File Name: UNOCAL CORP SS 6082

Detail Info

Permit No: 00016475J
Permit Cat Desc: Industrial Waste Permit
Status Code: CLOS
Status Desc: Permit Closed
Permit Status Desc: Permit Closed
Permit Type: 01
Permit Type Desc: Operating Industrial Waste Permit - Local Sewer
Permit Status Code: CLOS
Permit Category: I
File No: 031509
File Name: CONOCOPHILLIPS CO #256082

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
35	4 of 12	W	0.15 / 785.39	21.23 / 4	UNION OIL SERVICE STATION 6082 1025 EAST CARSON CARSON CA 90745	HHSS

County: Los Angeles
Pdf File Url: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/000281d4.pdf

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
35	5 of 12	W	0.15 / 785.39	21.23 / 4	SERVICE STATION 6082 1025 E CARSON CARSON CA 93745	HHSS

County:
Pdf File Url: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002902d.pdf

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
35	6 of 12	W	0.15 / 785.39	21.23 / 4	CARSON UNION 76 1025 E CARSON ST CARSON CA 90745	UST

Facility ID: LACoFA0006700
CERS ID: 10264276
County: Los Angeles
Latitude: 33.832
Longitude: -118.25697
Permitting Agency: Los Angeles County Fire Department
Note: Information related to facilities can be searched on Geo Tracker Website: https://geotracker.waterboards.ca.gov/search
Site Facility Type: PERMITTED UNDERGROUND STORAGE TANK (UST)
Source: Permitted Underground Storage Tank (UST) Data Download

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
35	7 of 12	W	0.15 / 785.39	21.23 / 4	CARSON UNION 76, KAMBIZ KATIRAI 1025 E CARSON CARSON CA 90745	EMISSIONS

2015 Toxic Data

Facility ID: 153969
Facility SIC Code: 5541
CO: 19
Air Basin: SC
District: SC
TS:
Health Risk Asmt:
Non-Cancer Chronic Haz Ind:
Non-Cancer Acute Haz Ind:
COID: LA
DISN: SOUTH COAST AQMD
CHAPIS:
CERR Code:

2016 Toxic Data

Facility ID: 153969
Facility SIC Code: 5541
CERR CODE:
COID: LA
CO: 19
DISN: SOUTH COAST AQMD
CHAPIS:
TS:
HRA:
CH Index:
AH Index:
Air Basin: SC
District: SC

2017 Toxic Data

Facility ID: 153969
COID: LA

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Facility SIC Code: 5541
CO: 19
Air Basin: SC
District: SC
TS:
Health Risk Asmt:
Non-Cancer Chronic Haz Ind:
Non-Cancer Acute Haz Ind:
DISN: SOUTH COAST AQMD
CHAPIS:
CERR Code:

2018 Toxic Data

Facility ID: 153969
Facility SIC Code: 5541
CO: 19
Air Basin: SC
District: SC
TS:
Health Risk Asmt:
Non-Cancer Chronic Haz Ind:
Non-Cancer Acute Haz Ind:
COID: LA
DISN: SOUTH COAST AQMD
CHAPIS:
CERR Code:

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35 | ***8 of 12*** | ***W*** | ***0.15 / 785.39*** | ***21.23 / 4*** | ***CARSON UNION 76 1025 E CARSON ST CARSON CA 90745*** | ***CERS TANK***

Site ID: 103403
County: Los Angeles County
Latitude: 33.832005
Longitude: -118.256973

Regulated Programs

EI ID: 10264276
EI Description: Hazardous Waste Generator

EI ID: 10264276
EI Description: Chemical Storage Facilities

EI ID: 10264276
EI Description: Underground Storage Tank

Violations

Violation Date: 05/05/2015
Violation Program: UST
Violation Source: CERS
Violation Division: Los Angeles County Department of Public Works
Citation: 23 CCR 16 2712(i) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2712(i)
Violation Notes:

Returned to compliance on 05/04/2016.

Violation Description:

Failure to maintain on site an approved monitoring plan.

Violations

Violation Date: 05/05/2015
Violation Program: UST
Violation Source: CERS
Violation Division: Los Angeles County Department of Public Works
Citation: 23 CCR 16 2711(a)(8) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2711(a)(8)
Violation Notes:

Returned to compliance on 05/04/2016.

Violation Description:

Failure to submit, obtain approval, or maintain a complete/accurate plot plan.

Violations

Violation Date: 05/05/2015 ***Violation Source:*** CERS
Violation Program: UST ***Violation Division:*** Los Angeles County Department of Public Works
Citation: 23 CCR 16 2712(i) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2712(i)
Violation Notes:

Returned to compliance on 05/04/2016.

Violation Description:

Failure to submit, obtain approval, or maintain a complete/accurate response plan.

Violations

Violation Date: 05/02/2019 ***Violation Source:*** CERS
Violation Program: UST ***Violation Division:*** Los Angeles County Department of Public Works
Citation: 23 CCR 16 2637(f) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2637(f)
Violation Notes:

Returned to compliance on 05/27/2020. CTLS, OVFL, SCTR, AB2481 WERE RECEIVED LATE. OVFL TEST REJECTED MISSING TECH SIGNATURE. UDC 1/2/AND 5/6 FLOAT CHAIN ASSEMBLY.

Violation Description:

Failure to submit a copy of the secondary containment test results on the "Secondary Containment Testing report Form" to the UPA within 30 days after the test.

Violations

Violation Date: 05/02/2019 ***Violation Source:*** CERS
Violation Program: UST ***Violation Division:*** Los Angeles County Department of Public Works
Citation: 23 CCR 16 2637.1(e) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2637.1(e)
Violation Notes:

Returned to compliance on 05/27/2020. CTLS, OVFL, SCTR, AB2481 WERE RECEIVED LATE. OVFL TEST REJECTED MISSING TECH SIGNATURE. UDC 1/2/AND 5/6 FLOAT CHAIN ASSEMBLY.

Violation Description:

Failure to submit a copy of the spill containment test results on the "Spill Container Testing Report Form" to the UPA within 30 days after the test.

Violations

Violation Date: 05/05/2015 ***Violation Source:*** CERS
Violation Program: UST ***Violation Division:*** Los Angeles County Department of Public Works
Citation: HSC 6.7 25286(a) - California Health and Safety Code, Chapter 6.7, Section(s) 25286(a)
Violation Notes:

Returned to compliance on 05/04/2016.

Violation Description:

Failure to submit an complete and accurate application for a permit to operate an underground storage tank, or for renewal of the permit.

Violations

Violation Date: 05/27/2020 ***Violation Source:*** CERS
Violation Program: UST ***Violation Division:*** Los Angeles County Department of Public Works
Citation: HSC 6.7 25284, 25286 - California Health and Safety Code, Chapter 6.7, Section(s) 25284, 25286
Violation Notes:

CERS CORRECTIONS REQUIRED TO UPDATE NEW UDCS/SENSORS(NEW UDCS & SEN- SORS INSTALLED ON 2/4/2020).

Violation Description:

Failure to submit a complete and accurate application for a permit to operate a UST, or for renewal of the permit.

Violations

Violation Date: 10/19/2018 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** Los Angeles County Fire Department
Citation: HSC 6.95 25508.2 - California Health and Safety Code, Chapter 6.95, Section(s) 25508.2
Violation Notes:

Returned to compliance on 11/11/2018. OBSERVATION: The business failed to electronically submit and certify that the business plan is complete, accurate, and in compliance with EPCRA on or before the annual due date. 2018 California Environmental Reporting System (CERS) submittal was missing/incomplete; Reviewed CERS submittals submitted on 5/31/18 and found the following to be updated; - Not using the most up-to-date form to complete facility's Consolidated Emergency Response / Contingency Plan (CER/CP); Old CER/CP form was used - please use attached Rev. 03/07/17 CER/CP form; - The local unified program agency (UPA/CUPA) phone number should be 310-890-4317 and not 213-978-3680 on the CER/CP; - Missing required contents (indication of "North," locations and names of adjacent streets and alleys, storm and sewer drains, and emergency shutoffs (e. g. water, gas, electricity shutoffs) on facility's site map; CORRECTIVE ACTION: Electronically submit and certify that the business plan is complete, [Truncated]

Violation Description:

Failure to annually review and electronically certify that the business plan is complete and accurate on or before the annual due date.

Violations

Violation Date: 05/02/2019 ***Violation Source:*** CERS
Violation Program: UST ***Violation Division:*** Los Angeles County Department of Public Works
Citation: 23 CCR 16 2638(d) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2638(d)
Violation Notes:

Returned to compliance on 05/27/2020. CTLS, OVFL, SCTR, AB2481 WERE RECEIVED LATE. OVFL TEST REJECTED MISSING TECH SIGNATURE. UDC 1/2/AND 5/6 FLOAT CHAIN ASSEMBLY.

Violation Description:

Failure to submit the "Monitoring System Certification Form" to the UPA within 30 days of completion of the test.

Violations

Violation Date: 05/02/2019 ***Violation Source:*** CERS
Violation Program: UST ***Violation Division:*** Los Angeles County Department of Public Works
Citation: 23 CCR 16 2712(b)(1)(G) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2712(b)(1)(G)
Violation Notes:

Returned to compliance on 05/27/2020. CTLS, OVFL, SCTR, AB2481 WERE RECEIVED LATE. OVFL TEST REJECTED MISSING TECH SIGNATURE. UDC 1/2/AND 5/6 FLOAT CHAIN ASSEMBLY.

Violation Description:

Failure to comply with one or more of the following overfill prevention equipment requirements:
Alert the transfer operator when the tank is 90 percent full by restricting the flow into the tank or triggering an audible and visual alarm; or
Restrict delivery of flow to the tank at least 30 minutes before the tank overfills, provided the restriction occurs when the tank is filled to no more than 95 percent of capacity; and activate an audible alarm at least five minutes before the tank overfills; or
Provide positive shut-off of flow to the tank when the tank is filled to no more than 95 percent of capacity; or
Provide positive shut-off of flow to the tank so that none of the fittings located on the top of the tank are exposed to product due to overfilling.

Install/retrofit overfill prevention equipment that does not use flow restrictors on vent piping to meet overfill prevention equipment requirements when the overfill prevention equipment is installed, repaired, or replaced on and after October 1, 2018.

For USTs installed before October 1, 2018, perform an inspection by October 13, 2018 and every 36 months thereafter.

For USTs installed on and after October 1, 2018, perform an inspection at installation and every 36 months thereafter.

Inspected within 30 days after a repair to the overfill prevention equipment.

Inspected using an applicable manufacturer guidelines, industry codes, engineering standards, or a method approved by a professional engineer.

Inspected by a certified UST service technician.

Maintain records of overfill prevention equipment inspection for 36 months.

Violations

Violation Date: 05/05/2015
Violation Source: CERS
Violation Program: UST
Violation Division: Los Angeles County Department of Public Works
Citation: HSC 6.7 25284.2 - California Health and Safety Code, Chapter 6.7, Section(s) 25284.2
Violation Notes:

Returned to compliance on 05/04/2016.

Violation Description:

Failure to test the spill bucket annually.

Evaluations

Eval Date: 05/02/2019
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Los Angeles County Department of Public Works
Eval Program: UST
Eval Source: CERS
Eval Notes:

CTLS, OVFL, SCTR, AB2481 WERE RECEIVED LATE. OVFL TEST REJECTED MISS ING TECH SIGNATURE. UDC 1/2/AND 5/6 FLOAT CHAIN ASSEMBLY.; Note: data in [EVAL Notes] field for some records is truncated from the source.

Eval Date: 05/05/2015
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Los Angeles County Department of Public Works
Eval Program: UST
Eval Source: CERS
Eval Notes:

PANEL[VR TLS350];SMPS[205];ANN[420];DIRECT BURY SPBK;LLD[87-FE PETRO ,91-LD2000];DW PIPES[AO SMITH];W.O. FILL SMP W/ 205 SNSR; Note: data in [EVAL Notes] field for some records is truncated from the source.

Eval Date: 11/13/2018
Violations Found: No

Eval General Type: Other/Unknown
Eval Type: Other, not routine, done by local agency
Eval Division: Los Angeles County Fire Department
Eval Program: HMRRP
Eval Source: CERS
Eval Notes:

Eval Date: 02/07/2020
Violations Found: No
Eval General Type: Other/Unknown
Eval Type: Other, not routine, done by local agency
Eval Division: Los Angeles County Department of Public Works
Eval Program: UST
Eval Source: CERS
Eval Notes:

PLANS ON SITE.NEW BRAVO UDCS IN PLACE ON 1/2,5/6,7/8.CONVRSION PLATE NOT YET INSTALLED ON 3/4.SB989 TESTING DONE.; Note: data in [EVAL Notes] field for some records is truncated from the source.

Eval Date: 05/04/2016
Violations Found: No
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Los Angeles County Department of Public Works
Eval Program: UST
Eval Source: CERS
Eval Notes:

CTLS 5/5/15 PROVIDED AT SITE.SB989 RETEST 6/5/13 AFTER REPAIRS UNDER A729412 & SB989 5/27/15;BOTH RESULTS PROVIDED.CERS 2/1/16 MINOR CORR; Note: data in [EVAL Notes] field for some records is truncated from the source.

Eval Date: 05/04/2017
Violations Found: No
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Los Angeles County Department of Public Works
Eval Program: UST
Eval Source: CERS
Eval Notes:

TESTS CERTS,DO REPORTS,TRAINING RECORDS ON-SITE &/OR IN CERS.ALL FAC,TANK INFO,MON.PLAN & SUPPORTING DOCS UPLOADED TO CERSCORRECTLY; Note: data in [EVAL Notes] field for some records is truncated from the source.

Eval Date: 05/27/2020
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Los Angeles County Department of Public Works
Eval Program: UST
Eval Source: CERS
Eval Notes:

GOUGLE DOU ACCESS;PHOTOS TAKEN PRIOR TO SUMPS/UDCS BEING FILLED W/ WATER FOR SB989 TESTING.NEW UDCS W/ 208. ANNLR 420.CERS CORRS REQD.; Note: data in [EVAL Notes] field for some records is truncated from the source.

Eval Date: 07/29/2015
Violations Found: No
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Los Angeles County Fire Department
Eval Program: HMRRP
Eval Source: CERS
Eval Notes:

Kambiz Katirai - Store manager, gave consent for the inspection. No violations observed.; Note: data in [EVAL Notes] field for some records is truncated

from the source.

Eval Date: 10/19/2018
Violations Found: No
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Los Angeles County Fire Department
Eval Program: HW
Eval Source: CERS
Eval Notes:

Kambiz Katirai, owner; Note: data in [EVAL Notes] field for some records is truncated from the source.

Eval Date: 10/19/2018
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Los Angeles County Fire Department
Eval Program: HMRRP
Eval Source: CERS
Eval Notes:

Kambiz Katirai, owner ; Note: data in [EVAL Notes] field for some records is truncated from the source.

Eval Date: 02/05/2020
Violations Found: No
Eval General Type: Other/Unknown
Eval Type: Other, not routine, done by local agency
Eval Division: Los Angeles County Department of Public Works
Eval Program: UST
Eval Source: CERS
Eval Notes:

UDC 1/2,5/6,7/8 WILL BE REPLACED.ONE SAMPLE TAKEN 2-4 FT BELOW EACH UDC.; Note: data in [EVAL Notes] field for some records is truncated from the source.

Eval Date: 07/29/2015
Violations Found: No
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Los Angeles County Fire Department
Eval Program: HW
Eval Source: CERS
Eval Notes:

Kambiz Katirai - Store manager, gave consent for the inspection. No violations observed. ; Note: data in [EVAL Notes] field for some records is truncated from the source.

Eval Date: 11/04/2015
Violations Found: No
Eval General Type: Other/Unknown
Eval Type: Other, not routine, done by local agency
Eval Division: Los Angeles County Department of Public Works
Eval Program: UST
Eval Source: CERS
Eval Notes:

UST RMVD DURING INSP;NO INITIAL SIGNS OF CONTAMINATION;2 SMPLS TAKEN ,1 @ TANK & 1 UNDER ABANDONED REMOTE FILL LINE; Note: data in [EVAL Notes] field for some records is truncated from the source.

Eval Date: 05/02/2018
Violations Found: No
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency

Eval Division: Los Angeles County Department of Public Works
Eval Program: UST
Eval Source: CERS
Eval Notes:

CTLS 050218 CONDUCTED;VR001UDC 3/4&1-2&5-8 FLOAT&CHAIN;VR205FILL/STP SUMPS;VR420 ANNULAR;CERS ACCEPTED.; Note: data in [EVAL Notes] field for some records is truncated from the source.

Affiliations

Affil Type Desc: Parent Corporation
Entity Name: CARSON UNION 76
Entity Title:
Address:
City:
State:
Country:
Zip Code:
Phone:

Affil Type Desc: CUPA District
Entity Name: Los Angeles County Fire
Entity Title:
Address: 5825 Rickenbacker Road
City: Commerce
State: CA
Country:
Zip Code: 90040-3027
Phone: (323) 890-4000

Affil Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title:
Address: 1025 E CARSON ST
City: CARSON
State: CA
Country:
Zip Code: 90745
Phone:

Affil Type Desc: Property Owner
Entity Name: KAMBIZ KATIRAI
Entity Title:
Address: 1025 E CARSON ST
City: CARSON
State: CA
Country: United States
Zip Code: 90745
Phone: (310) 549-3379

Affil Type Desc: Document Preparer
Entity Name: KAMBIZ KATIRAI
Entity Title:
Address:
City:
State:
Country:
Zip Code:
Phone:

Affil Type Desc: Environmental Contact
Entity Name: KAMBIZ KATIRAI
Entity Title:
Address: 1025 e carson st
City: carson
State: CA
Country:

Zip Code: 90745
Phone:

Affil Type Desc: Legal Owner
Entity Name: KAMBIZ KATIRAI
Entity Title:
Address: 1025 E CARSON ST
City: CARSON
State: CA
Country: United States
Zip Code: 90745
Phone: (310) 283-4948

Affil Type Desc: UST Permit Applicant
Entity Name: kambiz katirai
Entity Title: owner
Address:
City:
State:
Country:
Zip Code:
Phone: (310) 549-3379

Affil Type Desc: Operator
Entity Name: KAMBIZ KATIRAI
Entity Title:
Address:
City:
State:
Country:
Zip Code:
Phone: (310) 549-3379

Affil Type Desc: UST Tank Operator
Entity Name: KAMBIZ KATIRAI
Entity Title:
Address: 1025 e carson st
City: carson
State: ca
Country: United States
Zip Code: 90745
Phone: (310) 549-3379

Affil Type Desc: Identification Signer
Entity Name: KAMBIZ KATIRAI
Entity Title: OWNER
Address:
City:
State:
Country:
Zip Code:
Phone:

Affil Type Desc: UST Tank Owner
Entity Name: KAMBIZ KATIRAI
Entity Title:
Address: 1025 e carson st
City: carson
State: ca
Country: United States
Zip Code: 90745
Phone: (310) 549-3379

Affil Type Desc: UST Property Owner Name
Entity Name: KAMBIZ KATIRAI
Entity Title:
Address: 1025 e carson st
City: carson
State: ca

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Country: United States
Zip Code: 90745
Phone: (310) 549-3379

Coordinates

Env Int Type Code: HWG
Program ID: 10264276
Latitude: 33.832000
Longitude: -118.256970
Coord Name:
Ref Point Type Desc: Center of a facility or station.

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
35	9 of 12	W	0.15 / 785.39	21.23 / 4	UNION OIL SERVICE STATION 6082 1025 EAST CARSON CARSON CA	HIST TANK

Owner Name: UNION OIL COMPANY OF CALIFORNI
Owner Street: 3701 WILSHIRE BOULEVARD-SUITE
Owner City: LOS ANGELES
Owner State: CA
Owner Zip: 90010
No of Containers: 1
County: LOS ANGELES
Facility State: CA
Facility Zip: 90745

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
35	10 of 12	W	0.15 / 785.39	21.23 / 4	SERVICE STATION 6082 1025 E CARSON CARSON CA	HIST TANK

Owner Name: UNION OIL COMPANY OF CALIFORNI
Owner Street: 3701 WILSHIRE BOULEVARD-SUITE
Owner City: LOS ANGELES
Owner State: CA
Owner Zip: 90010
No of Containers: 3
County: LOS ANGELES
Facility State: CA
Facility Zip: 93745

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
35	11 of 12	W	0.15 / 785.39	21.23 / 4	FORMER UNOCAL 351816 1025 E CARSON ST CARSON CA 90745-3415	RCRA NON GEN

EPA Handler ID: CAL000408019
Gen Status Universe: No Report
Contact Name: JOCKO RODRIGUEZ
Contact Address: PO BOX 6004, , SAN RAMON, CA, 94583-0000,
Contact Phone No and Ext: 877-386-6044
Contact Email: NAWTDESK@CHEVRON.COM
Contact Country:
County Name: LOS ANGELES
EPA Region: 09
Land Type:
Receive Date: 20150625

Violation/Evaluation Summary

Note: NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No
Furnace Exemption: No
Underground Injection Activity: No

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 20150625
Handler Name: FORMER UNOCAL 351816
Source Type: Implementer
Federal Waste Generator Code: N
Generator Code Description: Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind: Current Owner
Type: Other
Name: CHEVRON CAL REG RAIL AUTH
Date Became Current:
Date Ended Current:
Phone: 877-386-6044
Source Type: Implementer
Street No:
Street 1: PO BOX 6004
Street 2:
City: SAN RAMON
State: CA
Country:
Zip Code: 94583-0000

Owner/Operator Ind: Current Operator
Type: Other
Name: JOCKO RODRIGUEZ
Date Became Current:
Date Ended Current:
Phone: 877-386-6044
Source Type: Implementer
Street No:
Street 1: PO BOX 6004
Street 2:
City: SAN RAMON
State: CA
Country:
Zip Code: 94583-0000

35	12 of 12	W	0.15 / 785.39	21.23 / 4	CARSON UNION 76 1025 E CARSON ST CARSON CA 90745	LA COUNTY CUPA

Facility ID: FA0006700
CERS ID: 10264276

Active Facility Details

PE: 3002

PE: 7124

Inactive Facility Details

PE: 7124

PE: 1001

36	1 of 1	WSW	0.16 / 834.05	20.32 / 3	REPUBLIC MACHINERY CO INC 1000 E CARSON DR CARSON CA 90745	LA COUNTY CUPA

Facility ID: FA0006658
CERS ID: 10795972

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Inactive Facility Details

PE: 1003

PE: 3001

37	1 of 1	S	0.16 / 839.13	20.92 / 3	VILLAGE RV 21910 RECREATION RD CARSON CA 90745	LA COUNTY CUPA

Facility ID: FA0021685
CERS ID: 0

Inactive Facility Details

PE: 3001

38	1 of 1	ENE	0.16 / 840.41	22.53 / 5	TERESITA PUREZA 21534 WEISER AVE CARSON CA 90745	RCRA NON GEN

EPA Handler ID: CAC002985252
Gen Status Universe: No Report
Contact Name: TERESITA PUREZA
Contact Address: 21534 WEISER AVE, , CARSON, CA, 90745,
Contact Phone No and Ext: 310-265-3224
Contact Email: MANIFEST.SIRRIS@GMAIL.COM
Contact Country:
County Name: LOS ANGELES
EPA Region: 09
Land Type:
Receive Date: 20181017

Violation/Evaluation Summary

Note: NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No
Furnace Exemption: No
Underground Injection Activity: No
Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 20181017
Handler Name: TERESITA PUREZA
Source Type: Implementer

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Federal Waste Generator Code: N
Generator Code Description: Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind:	Current Operator	**Street No:**	
Type:	Other	**Street 1:**	21534 WEISER AVE
Name:	TERESITA PUREZA	**Street 2:**	
Date Became Current:		**City:**	CARSON
Date Ended Current:		**State:**	CA
Phone:	310-265-3224	**Country:**	
Source Type:	Implementer	**Zip Code:**	90745

Owner/Operator Ind:	Current Owner	**Street No:**	
Type:	Other	**Street 1:**	21534 WEISER AVE
Name:	TERESITA PUREZA	**Street 2:**	
Date Became Current:		**City:**	CARSON
Date Ended Current:		**State:**	CA
Phone:	310-265-3224	**Country:**	
Source Type:	Implementer	**Zip Code:**	90745

39	1 of 1	WSW	0.16 / 849.49	20.32 / 3	**1010 E CARSON ST** **CARSON CA 90745**	LA HMS

Site No: 022462
Area: 22

Detail Info

Permit No:		**Permit Status Code:**	
Permit Cat Desc:		**Permit Category:**	
Status Code:	OPEN	**File No:**	031508
Status Desc:	File Opened, no permit exists	**File Name:**	REPUBLIC-LAGUN MACHINE TOOL CO
Permit Status Desc:			
Permit Type:			
Permit Type Desc:			

40	1 of 1	NW	0.16 / 860.28	33.32 / 16	**BENJAMIN CASTELLANOS** **21317 S TROYTON LN** **CARSON CA 90745-1601**	RCRA NON GEN

EPA Handler ID: CAC003033484
Gen Status Universe: No Report
Contact Name: BENJAMIN CASTELLANOS
Contact Address: 21317 S TROYTON LN, , CARSON, CA, 90745-1601,
Contact Phone No and Ext: 424-215-5095
Contact Email: ANAB@PWSEI.COM
Contact Country:
County Name: LOS ANGELES
EPA Region: 09
Land Type:
Receive Date: 20190911

Violation/Evaluation Summary

Note: NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No
Mixed Waste Generator: No

Transporter Activity:	No
Transfer Facility:	No
Onsite Burner Exemption:	No
Furnace Exemption:	No
Underground Injection Activity:	No
Commercial TSD:	No
Used Oil Transporter:	No
Used Oil Transfer Facility:	No
Used Oil Processor:	No
Used Oil Refiner:	No
Used Oil Burner:	No
Used Oil Market Burner:	No
Used Oil Spec Marketer:	No

Hazardous Waste Handler Details

Sequence No:	1
Receive Date:	20190911
Handler Name:	BENJAMIN CASTELLANOS
Source Type:	Implementer
Federal Waste Generator Code:	N
Generator Code Description:	Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind:	Current Operator	***Street No:***	
Type:	Other	***Street 1:***	21317 S TROYTON LN
Name:	BENJAMIN CASTELLANOS	***Street 2:***	
Date Became Current:		***City:***	CARSON
Date Ended Current:		***State:***	CA
Phone:	424-215-5095	***Country:***	
Source Type:	Implementer	***Zip Code:***	90745-1601

Owner/Operator Ind:	Current Owner	***Street No:***	
Type:	Other	***Street 1:***	21317 S TROYTON LN
Name:	BENJAMIN CASTELLANOS	***Street 2:***	
Date Became Current:		***City:***	CARSON
Date Ended Current:		***State:***	CA
Phone:	424-215-5095	***Country:***	
Source Type:	Implementer	***Zip Code:***	90745-1601

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
41	*1 of 6*	*E*	*0.17 / 901.99*	*22.53 / 5*	***J CS CLEANERS*** ***1331 E CARSON ST*** ***CARSON CA 90745***	***RCRA SQG***

EPA Handler ID:	CAD981625429
Gen Status Universe:	Small Quantity Generator
Contact Name:	JAE KIM
Contact Address:	1331 E CARSON ST, , CARSON, CA, 90745, US
Contact Phone No and Ext:	310-518-1064
Contact Email:	
Contact Country:	US
County Name:	LOS ANGELES
EPA Region:	09
Land Type:	Private
Receive Date:	19940309

Violation/Evaluation Summary

Note:	NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No
Furnace Exemption: No
Underground Injection Activity: No
Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 19940309
Handler Name: J CS CLEANERS
Federal Waste Generator Code: 2
Generator Code Description: Small Quantity Generator
Source Type: Notification

Owner/Operator Details

Owner/Operator Ind: Current Owner
Type: Private
Name: JAE Y KIM
Date Became Current:
Date Ended Current:
Phone: 310-518-1064
Source Type: Notification
Street No:
Street 1: 1331 E CARSON ST
Street 2:
City: CARSON
State: CA
Country:
Zip Code: 90745

Owner/Operator Ind: Current Operator
Type: Private
Name: NOT REQUIRED
Date Became Current:
Date Ended Current:
Phone: 415-555-1212
Source Type: Notification
Street No:
Street 1: NOT REQUIRED
Street 2:
City: NOT REQUIRED
State: ME
Country:
Zip Code: 99999

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
41	2 of 6	E	0.17 / 901.99	22.53 / 5	JC CLEANERS 1331 E CARSON ST CARSON CA 907451631	DRYCLEANERS

EPA ID: CAL000309788
Create Date: 8/3/2006 8:53:45 AM
Facility Act Ind: No
Inact Date: 6/30/2007
Reason: Cleaners
Region Code: 3
DD Latitude: 33.831756
DD Longitude: -118.250271
Facility County Code: 19
Mail Name:
Owner Name: BRIAN YU
Owner Street 1: 1331 E CARSON ST
Owner Street 2:
Owner City: CARSON
Owner State: CA
Owner Zip: 907451631
Owner Phone: 3105181064
Owner Fax:
Contact Name: BRIAN YU
Contact Street 1: 1331 E CARSON ST
Contact Street 2:
Contact City: CARSON
Contact State: CA
Contact Zip: 907451631
Contact Phone: 3105181064
Contact Fax:

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
41	3 of 6	E	0.17 / 901.99	22.53 / 5	J C CLEANERS 1331 E CARSON ST CARSON CA 907450000	DRYCLEANERS

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

EPA ID:	CAD981625429	**Owner City:**	CARSON
Create Date:	4/10/1987	**Owner State:**	CA
Facility Act Ind:	No	**Owner Zip:**	907450000
Inact Date:	6/30/2004	**Owner Phone:**	0
Reason:	Cleaners	**Owner Fax:**	
Region Code:	3	**Contact Name:**	JAE Y. KIM
DD Latitude:	33.831756	**Contact Street 1:**	1331 E. CARSON ST.
DD Longitude:	-118.250271	**Contact Street 2:**	
Facility County Code:	19	**Contact City:**	CARSON
Mail Name:		**Contact State:**	CA
Owner Name:	JAE Y. KIM	**Contact Zip:**	907450000
Owner Street 1:	1331 E CARSON ST	**Contact Phone:**	3105181064
Owner Street 2:		**Contact Fax:**	

41	4 of 6	E	0.17 / 901.99	22.53 / 5	J.C. CLEANERS, JUANITA CLARK D 1331 E. CARSON CARSON CA 90745	EMISSIONS

1987 Criteria Data

Facility ID:	44402	**CERR Code:**	
Facility SIC Code:	7216	**TOGT:**	.8
CO:	19	**ROGT:**	0
Air Basin:	SC	**COT:**	
District:	SC	**NOXT:**	
COID:	LA	**SOXT:**	
DISN:	SOUTH COAST AQMD	**PMT:**	
CHAPIS:		**PM10T:**	

1987 Toxic Data

Facility ID:	44402	**COID:**	LA
Facility SIC Code:	7216	**DISN:**	SOUTH COAST AQMD
CO:	19	**CHAPIS:**	
Air Basin:	SC	**CERR Code:**	
District:	SC		
TS:			
Health Risk Asmt:			
Non-Cancer Chronic Haz Ind:			
Non-Cancer Acute Haz Ind:			

1990 Criteria Data

Facility ID:	44402	**CERR Code:**	
Facility SIC Code:	7216	**TOGT:**	.8
CO:	19	**ROGT:**	0
Air Basin:	SC	**COT:**	
District:	SC	**NOXT:**	
COID:	LA	**SOXT:**	
DISN:	SOUTH COAST AQMD	**PMT:**	
CHAPIS:		**PM10T:**	

1990 Toxic Data

Facility ID:	44402	**COID:**	LA
Facility SIC Code:	7216	**DISN:**	SOUTH COAST AQMD
CO:	19	**CHAPIS:**	
Air Basin:	SC	**CERR Code:**	
District:	SC		
TS:			
Health Risk Asmt:			

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
Non-Cancer Chronic Haz Ind:						
Non-Cancer Acute Haz Ind:						
41	5 of 6	E	0.17 / 901.99	22.53 / 5	JC's Cleaners 1331 E Carson St Carson CA 90745-1631	DRYC GRANT

Grant Year: 2008
Technology: Water-Based Cleaning
Phone No: 714-926-2175
Districts: South Coast AQMD
Exec Full: Brain W Yu

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
41	6 of 6	E	0.17 / 901.99	22.53 / 5	JC'S CLEANERS 1331 E CARSON ST CARSON CA 90745	LA COUNTY CUPA

Facility ID: FA0006672
CERS ID: 10795987

Inactive Facility Details

PE: 1001

PE: 3001

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
42	1 of 2	SSE	0.17 / 910.35	21.23 / 4	21830 RECREATION RD CARSON CA 907452381	LA HMS

Site No: 033233
Area: 22

Detail Info

Permit No:
Permit Cat Desc:
Status Code: OPEN
Status Desc: File Opened, no permit exists
Permit Status Desc:
Permit Type:
Permit Type Desc:
Permit Status Code:
Permit Category:
File No: 055412
File Name: GO CART WORLD

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
42	2 of 2	SSE	0.17 / 910.35	21.23 / 4	GO KART WORLD 21830 RECREATION RD CARSON CA 90745	LA COUNTY CUPA

Facility ID: FA0044020
CERS ID: 10272352

Active Facility Details

PE: 1001

PE: 3001

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
43	1 of 1	E	0.17 / 918.40	22.55 / 5	BURKLAND VINCE 1324 E 216TH ST CARSON CA 90745	RCRA NON GEN

EPA Handler ID: CAC003078664
Gen Status Universe: No Report

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Contact Name: BURKLAND VINCE
Contact Address: 1324 E 216TH ST, , CARSON, CA, 90745,
Contact Phone No and Ext: 310-549-7419
Contact Email: KYLE@FORTEENVIRONMENTAL.COM
Contact Country:
County Name: LOS ANGELES
EPA Region: 09
Land Type:
Receive Date: 20200811

Violation/Evaluation Summary

Note: NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No
Furnace Exemption: No
Underground Injection Activity: No
Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 20200811
Handler Name: BURKLAND VINCE
Source Type: Implementer
Federal Waste Generator Code: N
Generator Code Description: Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind: Current Operator
Type: Other
Name: BURKLAND VINCE
Date Became Current:
Date Ended Current:
Phone: 310-549-7419
Source Type: Implementer
Street No:
Street 1: 1324 E 216TH ST
Street 2:
City: CARSON
State: CA
Country:
Zip Code: 90745

Owner/Operator Ind: Current Owner
Type: Other
Name: BURKLAND VINCE
Date Became Current:
Date Ended Current:
Phone: 310-549-7419
Source Type: Implementer
Street No:
Street 1: 1324 E 216TH ST
Street 2:
City: CARSON
State: CA
Country:
Zip Code: 90745

44	1 of 2	SE	0.18 / 929.14	23.62 / 6	OPRAH YELP 21901 ACARUS AVE CARSON CA 90745	RCRA TSD

EPA Handler ID:	CAC003006981
Gen Status Universe:	No Report
Contact Name:	OPRAH YELP
Contact Address:	21901 ACARUS AVE, , CARSON, CA, 90745,
Contact Phone No and Ext:	310-817-3002
Contact Email:	MICAELAB@JCENVIRONMENTALINC.COM
Contact Country:	
Land Type:	
County Name:	LOS ANGELES
EPA Region:	09
Receive Date:	20190322

Violation/Evaluation Summary

Note:	NO RECORDS: As of May 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility:	No
Onsite Burner Exemption:	No
Smelting, Melting and Refining:	No
Underground Injection Control:	No
Commercial TSD:	No
Used Oil Transporter:	No
Used Oil Transfer Facility:	No
Used Oil Processor:	No
Used Oil Refiner:	No
Used Oil Burner:	No
Used Oil Market Burner:	No
Used Oil Spec Marketer:	No

Hazardous Waste Handler Details

Sequence No:	1
Receive Date:	20190322
Handler Name:	OPRAH YELP
Federal Waste Generator Code:	N
Generator Code Description:	Not a Generator, Verified
Source Type:	Implementer

Owner/Operator Details

Owner/Operator Ind:	Current Owner	**Street No:**	
Type:	Other	**Street 1:**	21901 ACARUS AVE
Name:	OPRAH YELP	**Street 2:**	
Date Became Current:		**City:**	CARSON
Date Ended Current:		**State:**	CA
Phone:	310-817-3002	**Country:**	
Source Type:	Implementer	**Zip Code:**	90745
Owner/Operator Ind:	Current Operator	**Street No:**	
Type:	Other	**Street 1:**	21901 ACARUS AVE
Name:	OPRAH YELP	**Street 2:**	
Date Became Current:		**City:**	CARSON
Date Ended Current:		**State:**	CA
Phone:	310-817-3002	**Country:**	
Source Type:	Implementer	**Zip Code:**	90745

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
44	2 of 2	SE	0.18 / 929.14	23.62 / 6	OPRAH YELP 21901 ACARUS AVE CARSON CA 90745	RCRA NON GEN

EPA Handler ID: CAC003006981
Gen Status Universe: No Report
Contact Name: OPRAH YELP
Contact Address: 21901 ACARUS AVE, , CARSON, CA, 90745,
Contact Phone No and Ext: 310-817-3002
Contact Email: MICAELAB@JCENVIRONMENTALINC.COM
Contact Country:
County Name: LOS ANGELES
EPA Region: 09
Land Type:
Receive Date: 20190322

Violation/Evaluation Summary

Note: NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No
Furnace Exemption: No
Underground Injection Activity: No
Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 20190322
Handler Name: OPRAH YELP
Source Type: Implementer
Federal Waste Generator Code: N
Generator Code Description: Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind: Current Operator
Type: Other
Name: OPRAH YELP
Date Became Current:
Date Ended Current:
Phone: 310-817-3002
Source Type: Implementer
Street No:
Street 1: 21901 ACARUS AVE
Street 2:
City: CARSON
State: CA
Country:
Zip Code: 90745

Owner/Operator Ind: Current Owner
Type: Other
Name: OPRAH YELP
Date Became Current:
Date Ended Current:
Phone: 310-817-3002
Street No:
Street 1: 21901 ACARUS AVE
Street 2:
City: CARSON
State: CA
Country:

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Source Type: Implementer **Zip Code:** 90745

45 **1 of 5** **WSW** **0.18 / 936.15** **17.43 / 0** **1000 E CARSON ST CARSON CA 90745** **LA HMS**

Site No: 022461
Area: 22

Detail Info

Permit No: 000636254
Permit Cat Desc: Stormwater Permit
Status Code: CLOS
Status Desc: Permit Closed
Permit Status Desc: Permit Closed
Permit Type: S5
Permit Type Desc: Stormwater Certificate Facility
Permit Status Code: CLOS
Permit Category: S
File No: 031507
File Name: REPUBLIC-LAGUN MACHINE TOOL CO

45 **2 of 5** **WSW** **0.18 / 936.15** **17.43 / 0** **MOUNTUNE LLC 1000 E CARSON STREET CARSON CA 90745** **RCRA NON GEN**

EPA Handler ID: CAC002981901
Gen Status Universe: No Report
Contact Name: JUSTIN RITACCO
Contact Address: 1000 E CARSON STREET, , CARSON, CA, 90745,
Contact Phone No and Ext: 424-368-6039
Contact Email: JUSTIN.RITACCO@MOUNTUNE.COM
Contact Country:
County Name: LOS ANGELES
EPA Region: 09
Land Type:
Receive Date: 20180925

Violation/Evaluation Summary

Note: NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No
Furnace Exemption: No
Underground Injection Activity: No
Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 20180925
Handler Name: MOUNTUNE LLC

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Source Type: Implementer
Federal Waste Generator Code: N
Generator Code Description: Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind:	Current Owner	**Street No:**	
Type:	Other	**Street 1:**	1000 E CARSON STREET
Name:	KENNETH ANDERSON	**Street 2:**	
Date Became Current:		**City:**	CARSON
Date Ended Current:		**State:**	CA
Phone:	424-368-6039	**Country:**	
Source Type:	Implementer	**Zip Code:**	90745

Owner/Operator Ind:	Current Operator	**Street No:**	
Type:	Other	**Street 1:**	1000 E CARSON STREET
Name:	JUSTIN RITACCO	**Street 2:**	
Date Became Current:		**City:**	CARSON
Date Ended Current:		**State:**	CA
Phone:	424-368-6039	**Country:**	
Source Type:	Implementer	**Zip Code:**	90745

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
45	3 of 5	WSW	0.18 / 936.15	17.43 / 0	MOUNTUNE LLC 1000 E CARSON STREET CARSON CA 90745	RCRA TSD

EPA Handler ID: CAC003008213
Gen Status Universe: No Report
Contact Name: JUSTIN RITACCO
Contact Address: 1000 E CARSON ST, , CARSON, CA, 90745,
Contact Phone No and Ext: 424-368-6039
Contact Email: JUSTIN.RITACCO@MOUNTUNE.COM
Contact Country:
Land Type:
County Name: LOS ANGELES
EPA Region: 09
Receive Date: 20190402

Violation/Evaluation Summary

Note: NO RECORDS: As of May 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No
Smelting, Melting and Refining: No
Underground Injection Control: No
Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Sequence No: 1
Receive Date: 20190402
Handler Name: MOUNTUNE LLC
Federal Waste Generator Code: N
Generator Code Description: Not a Generator, Verified
Source Type: Implementer

Owner/Operator Details

Owner/Operator Ind:	Current Owner	**Street No:**	
Type:	Other	**Street 1:**	1000 E CARSON ST
Name:	KENNETH ANDERSON	**Street 2:**	
Date Became Current:		**City:**	CARSON
Date Ended Current:		**State:**	CA
Phone:	424-368-6039	**Country:**	
Source Type:	Implementer	**Zip Code:**	90745

Owner/Operator Ind:	Current Operator	**Street No:**	
Type:	Other	**Street 1:**	1000 E CARSON ST
Name:	JUSTIN RITACCO	**Street 2:**	
Date Became Current:		**City:**	CARSON
Date Ended Current:		**State:**	CA
Phone:	424-368-6039	**Country:**	
Source Type:	Implementer	**Zip Code:**	90745

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
45	4 of 5	WSW	0.18 / 936.15	17.43 / 0	MOUNTUNE LLC 1000 E CARSON STREET CARSON CA 90745	RCRA NON GEN

EPA Handler ID: CAC003008213
Gen Status Universe: No Report
Contact Name: JUSTIN RITACCO
Contact Address: 1000 E CARSON ST, , CARSON, CA, 90745,
Contact Phone No and Ext: 424-368-6039
Contact Email: JUSTIN.RITACCO@MOUNTUNE.COM
Contact Country:
County Name: LOS ANGELES
EPA Region: 09
Land Type:
Receive Date: 20190402

Violation/Evaluation Summary

Note: NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No
Furnace Exemption: No
Underground Injection Activity: No
Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Hazardous Waste Handler Details

Sequence No:	1
Receive Date:	20190402
Handler Name:	MOUNTUNE LLC
Source Type:	Implementer
Federal Waste Generator Code:	N
Generator Code Description:	Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind:	Current Operator	***Street No:***	
Type:	Other	***Street 1:***	1000 E CARSON ST
Name:	JUSTIN RITACCO	***Street 2:***	
Date Became Current:		***City:***	CARSON
Date Ended Current:		***State:***	CA
Phone:	424-368-6039	***Country:***	
Source Type:	Implementer	***Zip Code:***	90745
Owner/Operator Ind:	Current Owner	***Street No:***	
Type:	Other	***Street 1:***	1000 E CARSON ST
Name:	KENNETH ANDERSON	***Street 2:***	
Date Became Current:		***City:***	CARSON
Date Ended Current:		***State:***	CA
Phone:	424-368-6039	***Country:***	
Source Type:	Implementer	***Zip Code:***	90745

45	***5 of 5***	***WSW***	***0.18 / 936.15***	***17.43 / 0***	***MOUNTUNE LLC 1000 E CARSON STREET CARSON CA 90745***	***RCRA NON GEN***

EPA Handler ID:	CAL000452496
Gen Status Universe:	No Report
Contact Name:	KENNETH ANDERSON
Contact Address:	1000 E CARSON ST, , CARSON, CA, 90745,
Contact Phone No and Ext:	424-368-6034
Contact Email:	JUSTIN.RITACCO@MOUNTUNE.COM
Contact Country:	
County Name:	LOS ANGELES
EPA Region:	09
Land Type:	
Receive Date:	20200204

Violation/Evaluation Summary

Note:	NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility:	No
Onsite Burner Exemption:	No
Furnace Exemption:	No
Underground Injection Activity:	No
Commercial TSD:	No
Used Oil Transporter:	No
Used Oil Transfer Facility:	No
Used Oil Processor:	No
Used Oil Refiner:	No
Used Oil Burner:	No
Used Oil Market Burner:	No

Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 20200204
Handler Name: MOUNTUNE LLC
Source Type: Implementer
Federal Waste Generator Code: N
Generator Code Description: Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind: Current Operator
Type: Other
Name: KENNETH ANDERSON
Date Became Current:
Date Ended Current:
Phone: 424-368-6034
Source Type: Implementer
Street No:
Street 1: 1000 E CARSON ST
Street 2:
City: CARSON
State: CA
Country:
Zip Code: 90745

Owner/Operator Ind: Current Owner
Type: Other
Name: KENNETH ANDERSON
Date Became Current:
Date Ended Current:
Phone: 310-944-5134
Source Type: Implementer
Street No:
Street 1: 19407 CROSSDALE AVE
Street 2:
City: CERRITOS
State: CA
Country:
Zip Code: 90703

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46 | **1 of 1** | **WSW** | **0.18 / 966.45** | **18.48 / 1** | **SHELL PIPELINE CORRIDOR - W/O DOMINGUEZ CHANNEL @ CARSON**
CARSON STREET
CARSON CA 90745 | **CLEANUP SITES**

Global ID: T10000003008
Status: COMPLETED - CASE CLOSED
Status Date: 3/11/2016
Longitude: -118.257458209991
Site Facility Type: CLEANUP PROGRAM SITE
County: LOS ANGELES
Latitude: 33.8314602169759
Data Source: Cleanup Program Sites from GeoTracker Search; Cleanup Sites from GeoTracker Cleanup Sites Data Download

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail(as Nov 16 2020)

RB Case No: 1261B
Local Case No:
Begin Date: 4/26/2011
Stop Method:
Lead Agency: LOS ANGELES RWQCB (REGION 4)
Local Agency:
Potential COC:
Potential Media of Concern:
How Discovered:
How Discovered Description:
Stop Description:
Calwater Watershed Name: Dominguez Channel (411.01)
DWR GW Subbasin Name: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Disadvantaged Community:
Site History:
CUF Case: NO
Case Worker: PC
File Location:

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Activity(as Nov 16 2020)

Action Type: ENFORCEMENT
Date : 2016-02-03 00:00:00

Action: File Review - Closure

Action Type: RESPONSE
Date : 2011-06-08 00:00:00
Action: Site Investigation Workplan

Action Type: ENFORCEMENT
Date : 2011-04-26 00:00:00
Action: 13267 Requirement

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History(as Nov 16 2020)

Status: Completed - Case Closed
Status Date: 2016-03-11 00:00:00

Status: Open - Inactive
Status Date: 2016-03-01 00:00:00

Status: Open - Inactive
Status Date: 2016-02-04 00:00:00

Status: Open - Site Assessment
Status Date: 2016-02-04 00:00:00

Status: Open - Site Assessment
Status Date: 2011-05-03 00:00:00

Status: Open - Case Begin Date
Status Date: 2011-04-26 00:00:00

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Contacts(as Nov 16 2020)

Contact Type: Regional Board Caseworker
Contact Name: PAUL CHO
Phone No:
Organization Name: LOS ANGELES RWQCB (REGION 4)
Email: pcho@waterboards.ca.gov
Address: 320 W. 4TH ST., SUITE 200
City: LOS ANGELES

Cleanup Program Sites from GeoTracker Search - Regulatory Profile (as of Oct 06, 2020)

Project Status:
CUF Claim:
CUF Priority Assign:
CUF Amount Paid:
Facility Type:
User Defined Beneficial Use:
Designated Beneficial Use: MUN, AGR, IND, PROC
Designated Beneficl Use Desc: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, Industrial Process Supply
Project Oversight Agencies:
Report Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000003008
Cleanup Status Detail: COMPLETED - CASE CLOSED AS OF 3/11/2016
Cleanup History Link: https://geotracker.waterboards.ca.gov/profile_report_include?global_id=T10000003008&tabname=regulatoryhistory
Potential COC: NONE SPECIFIED
Potential Media of Concern: NONE SPECIFIED
GW Monitoring Freq:
DWR GW Sub Basin: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Calwater Watershed Name: Dominguez Channel (411.01)
Post Closure Site Management:
Future Land Use:
Cleanup Oversight Agencies: LOS ANGELES RWQCB (REGION 4) (LEAD) - CASE #: 1261B
CASEWORKER: PAUL CHO
WDR Place Type:
WDR File:
WDR Order:
File Location:
Composting Method:
Site History:

No site history available

Sites from GeoTracker Search - Regulatory Activities (as of Oct 06, 2020)

Action Type: Other Regulatory Actions
Action Date: 2/3/2016
Received Issue Date: 2/3/2016
Action: File Review - Closure
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003008&enforcement_id=6275375&temptable=ENFORCEMENT
Title Description Comments:

Merger of Cases into SCP Case No. 1264

Action Type: Response Requested - Workplans
Action Date: 6/8/2011
Received Issue Date:
Action: Site Investigation Workplan
Doc Link:
Title Description Comments:

Site Investigation Work Plan

Action Type: Enforcement/Orders
Action Date: 4/26/2011
Received Issue Date: 4/26/2011
Action: 13267 Requirement
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003008&enforcement_id=6085579&temptable=ENFORCEMENT
Title Description Comments:

Requirement for Technical Report

Sites from GeoTracker Search - Documents (as of Oct 06, 2020)

Document Type: Site Documents
Document Date: 2/3/2016
Size :
Submitted:
Submitted By: GREG BISHOP (REGULATOR)
Title: MERGER OF CASES INTO SCP CASE NO. 1264
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003008&enforcement_id=6275375
Type: FILE REVIEW - CLOSURE

Document Type: Site Documents
Document Date: 4/26/2011
Size :
Submitted:
Submitted By: GREG BISHOP (REGULATOR)
Title: REQUIREMENT FOR TECHNICAL REPORT
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000003008&enforcement_id=6085579
Type: 13267 REQUIREMENT

Sites from GeoTracker Search - Cleanup Status History (as of Oct 06, 2020)

Status: Completed - Case Closed
Date : 3/11/2016

Status: Open - Inactive
Date : 3/1/2016

Status: Open - Inactive
Date : 2/4/2016

Status: Open - Site Assessment
Date : 2/4/2016

Status: Open - Site Assessment

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Date : 5/3/2011

Status: Open - Case Begin Date
Date : 4/26/2011

Sites from GeoTracker Search - Related Cases (as of Oct 06, 2020)

Identifier: T10000003007
Status: COMPLETED - CASE CLOSED
Association: Related Global ID
Description:
Project Name: Shell Pipeline 0367 - Dominguez Channel @ Carson
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000003007
Address: Carson Street
City: CARSON

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
47	1 of 1	E	0.20 / 1,051.98	22.53 / 5	1347 E CARSON ST CARSON CA 90745	LA HMS

Site No: 035215
Area: 22

Detail Info

Permit No:
Permit Cat Desc:
Status Code: OPEN
Status Desc: File Opened, no permit exists
Permit Status Desc:
Permit Type:
Permit Type Desc:
Permit Status Code:
Permit Category:
File No: 063365
File Name: LIQUOR STORE

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
48	1 of 1	ENE	0.20 / 1,052.76	22.51 / 5	ROY BROWN 1316 E 215TH PL CARSON CA 90745-1622	RCRA NON GEN

EPA Handler ID: CAC003066057
Gen Status Universe: No Report
Contact Name: ROY BROWN
Contact Address: 1316 E 215TH PL, , CARSON, CA, 90745-1622,
Contact Phone No and Ext: 310-780-3443
Contact Email: MANIFEST.SIRRIS@GMAIL.COM
Contact Country:
County Name: LOS ANGELES
EPA Region: 09
Land Type:
Receive Date: 20200508

Violation/Evaluation Summary

Note: NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No
Furnace Exemption: No
Underground Injection Activity: No
Commercial TSD: No
Used Oil Transporter: No

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 20200508
Handler Name: ROY BROWN
Source Type: Implementer
Federal Waste Generator Code: N
Generator Code Description: Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind: Current Owner
Type: Other
Name: ROY BROWN
Date Became Current:
Date Ended Current:
Phone: 310-780-3443
Source Type: Implementer
Street No:
Street 1: 1316 E 215TH PL
Street 2:
City: CARSON
State: CA
Country:
Zip Code: 90745-1622

Owner/Operator Ind: Current Operator
Type: Other
Name: ROY BROWN
Date Became Current:
Date Ended Current:
Phone: 310-780-3443
Source Type: Implementer
Street No:
Street 1: 1316 E 215TH PL
Street 2:
City: CARSON
State: CA
Country:
Zip Code: 90745-1622

49	1 of 3	W	0.20 / 1,066.28	17.48 / 0	939 E CARSON ST CARSON CA 907453413	LA HMS

Site No: 020505
Area: 22

Detail Info

Permit No: 000272598
Permit Cat Desc: Industrial Waste Permit
Status Code: CLOS
Status Desc: Permit Closed
Permit Status Desc: Permit Closed
Permit Type: 01
Permit Type Desc: Operating Industrial Waste Permit - Local Sewer
Permit Status Code: CLOS
Permit Category: I
File No: 029140
File Name: JACK-IN-THE-BOX #03525

Detail Info

Permit No: 000569591
Permit Cat Desc: Industrial Waste Permit
Status Code: PERM
Status Desc: Equipment Permitted
Permit Status Desc: Equipment Permitted
Permit Type: 01
Permit Type Desc: Operating Industrial Waste Permit - Local Sewer
Permit Status Code: PERM
Permit Category: I
File No: 051134
File Name: JVS FOODS INC(JACK-IN-THE-BOX)

49	2 of 3	W	0.20 /	17.48 /	JACK IN THE BOX #3525	LA COUNTY CUPA

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
			1,066.28	0	939 E CARSON ST CARSON CA 90745	

Facility ID: FA0044846
CERS ID: 10300819

Inactive Facility Details

PE: 3000

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
49	3 of 3	W	0.20 / 1,066.28	17.48 / 0	SHELL PIPELINE COMPANY LP - CARSON VAULT SIT 939 EAST CARSON STREET CARSON CA 90745	RCRA LQG

EPA Handler ID: CAP000185280
Gen Status Universe: Large Quantity Generator
Contact Name: SONDRA E BIENVENU
Contact Address: US
Contact Phone No and Ext: 713-241-5036
Contact Email: SONDRA.BIENVENU@SHELL.COM
Contact Country: US
County Name: LOS ANGELES
EPA Region: 09
Land Type: Private
Receive Date: 20080218

Violation/Evaluation Summary

Note: NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No
Furnace Exemption: No
Underground Injection Activity: No
Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 20070622
Handler Name: SHELL PIPELINE CO LP CARSON VAULT SITE
Federal Waste Generator Code: 1
Generator Code Description: Large Quantity Generator
Source Type: Temporary

Waste Code Details

Hazardous Waste Code: 611

Waste Code Description: Contaminated soil from site clean-ups

Hazardous Waste Code: D008
Waste Code Description: LEAD

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 20071007
Handler Name: SHELL PIPELINE CO LP CARSON VAULT SITE
Federal Waste Generator Code: N
Generator Code Description: Not a Generator, Verified
Source Type: Notification

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 20080218
Handler Name: SHELL PIPELINE COMPANY LP - CARSON VAULT SIT
Federal Waste Generator Code: 1
Generator Code Description: Large Quantity Generator
Source Type: Annual/Biennial Report

Waste Code Details

Hazardous Waste Code: D008
Waste Code Description: LEAD

Owner/Operator Details

Owner/Operator Ind:	Current Owner	***Street No:***	
Type:	Private	***Street 1:***	PO BOX 2648
Name:	SHELL PIPELINE COMPANY LP	***Street 2:***	
Date Became Current:	20020501	***City:***	HOUSTON
Date Ended Current:		***State:***	TX
Phone:		***Country:***	US
Source Type:	Notification	***Zip Code:***	77252-2648

Owner/Operator Ind:	Current Operator	***Street No:***	
Type:	Private	***Street 1:***	
Name:	SHELL PIPELINE COMPANY LP	***Street 2:***	
Date Became Current:	20020501	***City:***	
Date Ended Current:		***State:***	
Phone:		***Country:***	
Source Type:	Notification	***Zip Code:***	

Owner/Operator Ind:	Current Owner	***Street No:***	
Type:	Private	***Street 1:***	P. O. BOX 2648
Name:	SHELL PIPELINE COMPANY LP	***Street 2:***	
Date Became Current:	20020501	***City:***	HOUSTON
Date Ended Current:		***State:***	TX
Phone:		***Country:***	US
Source Type:	Annual/Biennial Report	***Zip Code:***	77252

Owner/Operator Ind:	Current Operator	***Street No:***	
Type:	Private	***Street 1:***	
Name:	SHELL PIPELINE COMPANY LP	***Street 2:***	
Date Became Current:	20020501	***City:***	
Date Ended Current:		***State:***	
Phone:		***Country:***	US
Source Type:	Annual/Biennial Report	***Zip Code:***	

Owner/Operator Ind:	Current Operator	***Street No:***	
Type:	Private	***Street 1:***	

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Name:	SHELL PIPELINE COMPANY LP	**Street 2:**	
Date Became Current:	20020501	**City:**	
Date Ended Current:		**State:**	
Phone:		**Country:**	
Source Type:	Temporary	**Zip Code:**	
Owner/Operator Ind:	Current Owner	**Street No:**	
Type:	Private	**Street 1:**	PO BOX 2648
Name:	SHELL PIPELINE COMPANY LP	**Street 2:**	
Date Became Current:	20020501	**City:**	HOUSTON
Date Ended Current:		**State:**	TX
Phone:		**Country:**	US
Source Type:	Temporary	**Zip Code:**	77252-2648

Historical Handler Details

Receive Dt:	20071007
Generator Code Description:	Not a Generator, Verified
Handler Name:	SHELL PIPELINE CO LP CARSON VAULT SITE
Receive Dt:	20070622
Generator Code Description:	Large Quantity Generator
Handler Name:	SHELL PIPELINE CO LP CARSON VAULT SITE

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
50	1 of 1	SW	0.21 / 1,084.14	18.47 / 1	CARRILLO, MARIA 21826 FOLEY AVENUE CARSON CA 90745	RCRA NON GEN

EPA Handler ID:	CAC002995487
Gen Status Universe:	No Report
Contact Name:	CARRILLO, MARIA
Contact Address:	21826 FOLEY AVENUE, , CARSON, CA, 90745,
Contact Phone No and Ext:	310-283-9912
Contact Email:	ANDREWC@PWSEI.COM
Contact Country:	
County Name:	LOS ANGELES
EPA Region:	09
Land Type:	
Receive Date:	20190107

Violation/Evaluation Summary

Note:	NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility:	No
Onsite Burner Exemption:	No
Furnace Exemption:	No
Underground Injection Activity:	No
Commercial TSD:	No
Used Oil Transporter:	No
Used Oil Transfer Facility:	No
Used Oil Processor:	No
Used Oil Refiner:	No
Used Oil Burner:	No
Used Oil Market Burner:	No
Used Oil Spec Marketer:	No

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Hazardous Waste Handler Details

Sequence No:	1
Receive Date:	20190107
Handler Name:	CARRILLO, MARIA
Source Type:	Implementer
Federal Waste Generator Code:	N
Generator Code Description:	Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind:	Current Operator	***Street No:***	
Type:	Other	***Street 1:***	21826 FOLEY AVENUE
Name:	CARRILLO, MARIA	***Street 2:***	
Date Became Current:		***City:***	CARSON
Date Ended Current:		***State:***	CA
Phone:	310-283-9912	***Country:***	
Source Type:	Implementer	***Zip Code:***	90745
Owner/Operator Ind:	Current Owner	***Street No:***	
Type:	Other	***Street 1:***	21826 FOLEY AVENUE
Name:	CARRILLO, MARIA	***Street 2:***	
Date Became Current:		***City:***	CARSON
Date Ended Current:		***State:***	CA
Phone:	310-283-9912	***Country:***	
Source Type:	Implementer	***Zip Code:***	90745

51	***1 of 1***	***SE***	***0.21 / 1,104.04***	***22.56 / 5***	***HELEN MITCHELL 21917 ACARUS AVE CARSON CA 90745-2311***	***RCRA NON GEN***

EPA Handler ID:	CAC003041253
Gen Status Universe:	No Report
Contact Name:	HELEN MITCHELL
Contact Address:	21917 ACARUS AVE, , CARSON, CA, 90745-2311,
Contact Phone No and Ext:	310-579-3015
Contact Email:	KARLA@SUPERIORENV.COM
Contact Country:	
County Name:	LOS ANGELES
EPA Region:	09
Land Type:	
Receive Date:	20191031

Violation/Evaluation Summary

Note:	NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility:	No
Onsite Burner Exemption:	No
Furnace Exemption:	No
Underground Injection Activity:	No
Commercial TSD:	No
Used Oil Transporter:	No
Used Oil Transfer Facility:	No
Used Oil Processor:	No
Used Oil Refiner:	No
Used Oil Burner:	No
Used Oil Market Burner:	No

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 20191031
Handler Name: HELEN MITCHELL
Source Type: Implementer
Federal Waste Generator Code: N
Generator Code Description: Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind: Current Operator
Type: Other
Name: HELEN MITCHELL
Date Became Current:
Date Ended Current:
Phone: 310-579-3015
Source Type: Implementer
Street No:
Street 1: 21917 ACARUS AVE
Street 2:
City: CARSON
State: CA
Country:
Zip Code: 90745-2311

Owner/Operator Ind: Current Owner
Type: Other
Name: HELEN MITCHELL
Date Became Current:
Date Ended Current:
Phone: 310-579-3015
Source Type: Implementer
Street No:
Street 1: 21917 ACARUS AVE
Street 2:
City: CARSON
State: CA
Country:
Zip Code: 90745-2311

52	1 of 1	NE	0.22 / 1,147.76	22.13 / 5	THERESA AGUAYO 21315 WEISER AVE CARSON CA 90745	RCRA NON GEN

EPA Handler ID: CAC003083637
Gen Status Universe: No Report
Contact Name: THERESA AGUAYO
Contact Address: 21315 WEISER AVE, , CARSON, CA, 90745,
Contact Phone No and Ext: 310-271-2065
Contact Email: KARLA@SUPERIORENV.COM
Contact Country:
County Name: LOS ANGELES
EPA Region: 09
Land Type:
Receive Date: 20200914

Violation/Evaluation Summary

Note: NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No
Furnace Exemption: No
Underground Injection Activity: No
Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 20200914
Handler Name: THERESA AGUAYO
Source Type: Implementer
Federal Waste Generator Code: N
Generator Code Description: Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind: Current Owner
Type: Other
Name: THERESA AGUAYO
Date Became Current:
Date Ended Current:
Phone: 310-271-2065
Source Type: Implementer
Street No:
Street 1: 21315 WEISER AVE
Street 2:
City: CARSON
State: CA
Country:
Zip Code: 90745

Owner/Operator Ind: Current Operator
Type: Other
Name: THERESA AGUAYO
Date Became Current:
Date Ended Current:
Phone: 310-271-2065
Source Type: Implementer
Street No:
Street 1: 21315 WEISER AVE
Street 2:
City: CARSON
State: CA
Country:
Zip Code: 90745

53	1 of 1	SSW	0.22 / 1,155.19	18.38 / 1	ESTER DEGUZMAN 1050 EAST 219 THE STREET CARSON CA 90745	RCRA NON GEN

EPA Handler ID: CAC002967399
Gen Status Universe: No Report
Contact Name: ESTER DEGUZMAN
Contact Address: 1050 EAST 219 THE STREET, , CARSON, CA, 90745,
Contact Phone No and Ext: 310-549-7497
Contact Email: RUTHSAMANO@ALLIANCE-ENVIRO.COM
Contact Country:
County Name: LOS ANGELES
EPA Region: 09
Land Type:
Receive Date: 20180620

Violation/Evaluation Summary

Note: NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No
Furnace Exemption: No
Underground Injection Activity: No
Commercial TSD: No

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 20180620
Handler Name: ESTER DEGUZMAN
Source Type: Implementer
Federal Waste Generator Code: N
Generator Code Description: Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind: Current Owner
Type: Other
Name: ESTER DEGUZMAN
Date Became Current:
Date Ended Current:
Phone: 310-549-7497
Source Type: Implementer
Street No:
Street 1: 1050 EAST 219 THE STREET
Street 2:
City: CARSON
State: CA
Country:
Zip Code: 90745

Owner/Operator Ind: Current Operator
Type: Other
Name: ESTER DEGUZMAN
Date Became Current:
Date Ended Current:
Phone: 310-549-7497
Source Type: Implementer
Street No:
Street 1: 1050 EAST 219 THE STREET
Street 2:
City: CARSON
State: CA
Country:
Zip Code: 90745

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
54	1 of 1	W	0.24 / 1,271.79	18.48 / 1	ACTA SOUTH - PARCEL SE-334 E. CARSON ST. CARSON CA 90810	CLEANUP SITES

Global ID: SL0603782894
Status: COMPLETED - CASE CLOSED
Status Date: 3/27/2003
Longitude: -118.258626
Site Facility Type: CLEANUP PROGRAM SITE
County: LOS ANGELES
Latitude: 33.831626
Data Source: Cleanup Program Sites from GeoTracker Search; Cleanup Sites from GeoTracker Cleanup Sites Data Download

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail(as Nov 16 2020)

RB Case No: 0747G5
Local Case No:
Begin Date: 3/27/2003
Stop Method:
Lead Agency: LOS ANGELES RWQCB (REGION 4)
Local Agency:
Potential COC:
Potential Media of Concern:
How Discovered:
How Discovered Description:
Stop Description:
Calwater Watershed Name: Dominguez Channel (411.01)
DWR GW Subbasin Name: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Disadvantaged Community:
Site History:
CUF Case: NO
Case Worker: SH
File Location:

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Activity(as Nov 16 2020)

Action Type: ENFORCEMENT
Date : 2003-03-27 00:00:00
Action: Closure/No Further Action Letter

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History(as Nov 16 2020)

Status: Completed - Case Closed
Status Date: 2003-03-27 00:00:00

Status: Open - Case Begin Date
Status Date: 2003-03-27 00:00:00

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Contacts(as Nov 16 2020)

Contact Type: Regional Board Caseworker
Contact Name: SU HAN
Phone No: 2135766735
Organization Name: LOS ANGELES RWQCB (REGION 4)
Email: su.han@waterboards.ca.gov
Address: 320 W. 4TH STREET, SUITE 200
City: LOS ANGELES

Cleanup Program Sites from GeoTracker Search - Regulatory Profile (as of Oct 06, 2020)

Project Status:
CUF Claim:
CUF Priority Assign:
CUF Amount Paid:
Facility Type:
User Defined Beneficial Use:
Designated Beneficial Use: MUN, AGR, IND, PROC
Designated Beneficl Use Desc: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, Industrial Process Supply
Project Oversight Agencies:
Report Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=SL0603782894
Cleanup Status Detail: COMPLETED - CASE CLOSED AS OF 3/27/2003
Cleanup History Link: https://geotracker.waterboards.ca.gov/profile_report_include?global_id=SL0603782894&tabname=regulatoryhistory
Potential COC: NONE SPECIFIED
Potential Media of Concern: NONE SPECIFIED
GW Monitoring Freq:
DWR GW Sub Basin: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Calwater Watershed Name: Dominguez Channel (411.01)
Post Closure Site Management:
Future Land Use:
Cleanup Oversight Agencies: LOS ANGELES RWQCB (REGION 4) (LEAD) - CASE #: 0747G5
CASEWORKER: SU HAN
WDR Place Type:
WDR File:
WDR Order:
File Location:
Composting Method:
Site History:

No site history available

Sites from GeoTracker Search - Regulatory Activities (as of Oct 06, 2020)

Action Type: Other Regulatory Actions
Action Date: 3/27/2003
Received Issue Date: 3/27/2003
Action: Closure/No Further Action Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SL0603782894&enforcement_id=6157023&temptable=ENFORCEMENT
Title Description Comments:

No Further Action

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Sites from GeoTracker Search - Documents (as of Oct 06, 2020)

Document Type:	Site Documents	**Submitted:**	
Document Date:	3/27/2003	**Submitted By:**	ASHEEKA PRASAD (REGULATOR)
Size :			
Title:	NO FURTHER ACTION		
Title Link:	https://geotracker.waterboards.ca.gov/view_documents?global_id=SL0603782894&enforcement_id=6157023		
Type:	CLOSURE/NO FURTHER ACTION LETTER		

Sites from GeoTracker Search - Cleanup Status History (as of Oct 06, 2020)

Status:	Open - Case Begin Date
Date :	3/27/2003
Status:	Completed - Case Closed
Date :	3/27/2003

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55 | **1 of 1** | **ESE** | **0.27 / 1,442.50** | **22.53 / 5** | **VERA LANE**
21801 VERA ST
CARSON CA 90745 | **LA SML**

Site ID:	SD0000687
Case ID:	RO0001685
Status:	

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56 | **1 of 1** | **W** | **0.28 / 1,471.63** | **19.56 / 2** | **Blocker Dump**
21600 Bonita St
Carson CA 99999 | **SWF/LF**

SWIS No:	19-AQ-5033	**Latitude:**	33.83333
EPA Fed Registry ID:		**Longitude:**	-118.28333
Operational Status:	Closed	**County:**	Los Angeles
Regulatory Status:	Unpermitted	**Site ZIP:**	99999
Site is Archived:	Yes	**ARB District:**	South Coast
Absorbed on:		**SWRCB Region:**	Los Angeles
Absorbed by:		**Site Point of Contact:**	Dawn Liang
Site Inert Debris Eng Fill:	No		
Closed Illegal Aband:	Yes		
Closed Illegal Aband Cat:	NS		
Finance Assuran Responsible:	No		
Incorporated City:	Carson		
Local Government:	Carson		
Reporting Agency Legal Name:	County of Los Angeles		
Reporting Agency Department:	Department of Public Health		
Enforcing Agency Legal Name:	County of Los Angeles		
Enforcing Agency Department:	Department of Public Health		

Site Operators

Site Type:	Disposal Only	**Is Archived:**	Yes
Operator Name:	Yang, Ya Chien	**Contact Name:**	Ya Chien Yang
Operator Address:	27963 Farm Hill Dr	**Contact First Name:**	Ya Chien
Operator City:	Hayward	**Contact Last Name:**	Yang
Operator State:	CA	**Contact Title:**	Owner/Operator
Operator ZIP Code:	94542	**Contact Email:**	
Operator Phone:		**Started on:**	2/24/1998

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57 | **1 of 1** | **NE** | **0.37 / 1,944.67** | **23.53 / 6** | **Shell Oil CO.**
21200 Vera Street, Carson, CA
Carson CA | **LA SWF**

Site ID:	2021	**Disposal Area Acre:**	
Site SWIS No:	19-AQ-5030	**Max Depth of Fill Ft:**	20

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Status: Closed
Site Type: Unknown
Present Use: Vacant
Permitted Capacity:
Beginning Oper Dt:
Ending Oper Dt:
Alt Site Name: Wilmington Manufacturing Complex; Dominguez Section
Alt Address:
Hours of Operation:
Local Enforcement Agency:
Site Mailing Address:
Site Website:
Waste Accepted: Commercial; Industrial; Inert; Organics (pertroleum hydrocarbons)
Remaining Cap Mln:
Site Contact:
Site Contact Phone:
Site Email:
District: 2

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
58	1 of 1	NW	0.37 / 1,956.17	22.48 / 5	Gardena Valley No. 6 213th Street (21001 Chico Street) Carson CA 90745	LDS

Global ID: T10000004415
County: Los Angeles
Latitude: 33.8371923204323
Longitude: -118.258150852917

LDS Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail(as Nov 16 2020)

RB Case No: 62-143
Loc Case No:
Status: Completed - Case Closed
Status Date: 5/26/2016
Begin Date: 5/24/1980
Case Type: Land Disposal Site
Potential COC:
Potential Media of Concern:
How Discovered:
How Discovered Description:
Stop Method:
Stop Description:
Calwater Watershed Name: Dominguez Channel (411.01)
DWR GW Subbasin Name: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Disadvantaged Community:
Site History:
CUF Case: NO
Lead Agency: DEPARTMENT OF TOXIC SUBSTANCES CONTROL
Caseworker:
Local Agency:
File Location: Regional Board

LDS Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Acitivity(as Nov 16 2020)

Action: File review
Date: 1987-06-30 00:00:00
Action Type: ENFORCEMENT

LDS Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Contacts(as Nov 16 2020)

Contact Type: Regional Board Caseworker
Contact Name: Wen Yang
City: LOS ANGELES
Organization Name: LOS ANGELES RWQCB (REGION 4)
Address: 320 W. 4TH ST., SUITE 200
Email: wyang@waterboards.ca.gov
Phone No: 2136202253

LDS Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History(as Nov 16 2020)

Status: Completed - Case Closed
Status Date: 2016-05-26 00:00:00

Status: Open - Inactive
Status Date: 2015-09-04 00:00:00

Status: Open - Inactive
Status Date: 2012-11-02 00:00:00

Status: Open - Case Begin Date
Status Date: 1980-05-24 00:00:00

LDS Sites from GeoTracker Search - Regulatory Profile(as of Oct 06, 2020)

Site Facility Name: GARDENA VALLEY NO. 6
Site Facility Type: LAND DISPOSAL SITE
Cleanup Status: COMPLETED - CASE CLOSED
Project Status:
Potential COC: NONE SPECIFIED
WDR Place Type:
WDR File:
WDR Order:
Address: 213TH STREET (21001 CHICO STREET)
City: CARSON
Zip: 90745
County: LOS ANGELES
CUF Claim:
CUF Priority Assig:
CUF Amount Paid:
Designated Beneficial Use: MUN, AGR, IND, PROC
Designated Beneficl Use Desc: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, Industrial Process Supply
Project Oversight Agencies:
Report Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000004415
Cleanup Status Detail: COMPLETED - CASE CLOSED AS OF 5/26/2016
Cleanup History Link: https://geotracker.waterboards.ca.gov/profile_report_include?global_id=T10000004415&tabname=regulatoryhistory
Potential Media of Concern: NONE SPECIFIED
User Defined Beneficial Use:
DWR GW Sub Basin: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Calwater Watershed Name: Dominguez Channel (411.01)
Post Closure Site Management:
Future Land Use:
Facility Type: PRE-TITLE 27 - CAI
Composting Method:
Gndwater Monitoring Freque:
Cleanup Oversight Agencies: DEPARTMENT OF TOXIC SUBSTANCES CONTROL (LEAD)
LOS ANGELES RWQCB (REGION 4) - CASE #: 62-143
CASEWORKER: Wen Yang
File Location: REGIONAL BOARD
Site History:

No site history available

LDS Sites from GeoTracker Search - Cleanup Status History History(as of Oct 06, 2020)

Status: Completed - Case Closed
Date: 5/26/2016

Status: Open - Inactive
Date: 9/4/2015

Status: Open - Inactive
Date: 11/2/2012

Status: Open - Case Begin Date
Date: 5/24/1980

LDS Sites from GeoTracker Search - Regulatory Activities(as of Oct 06, 2020)

Action Type: Notices
Action Date: 9/4/2015
Received Issue Date: 9/4/2015
Action: Letter - Notice
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=T10000004415&enforcement_id=6259494&temptable=ENFORCEMENT
Title Description Comment: Gardena Valley No. 6 Reading File

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

LDS Sites from GeoTracker Search - Documents(as of Oct 06, 2020)

Document Type: Site Documents
Document Date: 9/4/2015
Type: LETTER - NOTICE
Title: GARDENA VALLEY NO. 6 READING FILE
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=T10000004415&enforcement_id=6259494
Size:
Submitted By: ENRIQUE CASAS (REGULATOR)
Submitted:

59	1 of 1	W	0.38 / 2,029.26	21.48 / 4	**Carson City Hall Renovation** **701 to 801 E Carson St** **Carson CA 90745**	***FED BROWNFIELDS***

Acres Property ID: 197861
Prprty Size(Acres): 19.82
Type of Funding: N/A
Local Property No: 7337-005-903, 7337-005-927, 7337-006-919/920, 7337-006-921, 7337-006-922
Ownership Entity: Government
Current Owner: City of Carson
DID Ownrshp Chng: N
Cleanup Required: N
Cntmnt Fnd Ctrl Sbstncs:
Cntmnt Fnd Petroleum: Y
Cntmnt Fnd Asbestos:
Cntmnt Fnd Lead:
Cntmnt Fnd Pahs:
Cntmnt Fnd Pcbs: Yes
Cntmnt Fnd Vocs: Yes
Cntmnt Fnd Selenium:
Cntmnt Fnd Iron:
Cntmnt Fnd Arsenic: Yes
Cntmnt Fnd Cadmium:
Cntmnt Fnd Chromium:
Cntmnt Fnd Copper:
Cntmnt Fnd Mercury:
Cntmnt Fnd Nickel:
Cntmnt Fnd Pesticides:
Cntmnt Fnd Svocs: Yes
Cntmnt Fnd Other Metals: Y
Cntmnt Fnd Other:
Cntmnt Fnd Other Descr :
Cntmnt Fnd Unknown:
Cntmnt Fnd None:
Cntmnt Clnd Up Ctl Sbst:
Cntmnt Clnd Up Petroleum:
Cntmnt Clnd Up Asbestos:
Cntmnt Clnd Up Lead:
Cntmnt Clnd Up PAHs:
Cntmnt Clnd Up PCBs:
Cntmnt Clnd Up VOCs:
Cntmnt Clnd Up Selenium:
Cntmnt Clnd Up Iron:
Cntmnt Clnd Up Arsenic:
Cntmnt Clnd Up Cadmium:
Cntmnt Clnd Up Chromium:
Cntmnt Clnd Up Copper:
Cntmnt Clnd Up Mercury:
Cntmnt Clnd Up Nickel:
Cntmnt Clnd Up Pesticides:
Cntmnt Clnd Up Svocs:
Cntmnt Clnd Oth Metals:
Cntmnt Clnd Up Other:
Cntmnt Clnd Up Oth Desc:
Cntmnt Clnd Up Unknown:
Cntmnt Clnd Up None:
Media Affected Air:
Media Affected Sediments:
Media Affected Soil: Y
SFLLP Fact Owship:
Hrzntl Collct Mthd: Address Matching-House Number
Source Map Scale:
Reference Point: Entrance Point of a Facility or Station
Horiz Refer Datum: North American Datum of 1983
Latitude: 33.8330911
Longitude: -118.2617068

Media Affect Drnking Wtr:
Media Affected Grnd Wtr:
Media Affctd Surf Wtr:
Media Affctd Bldg Matrls:
Media Affected Indoor Air:
Media Affected None:
Media Affected Unknown:
Media Clnd Up Air:
Media Clnd Up Sediments:
Media Clnd Up Soil:
Media Clnd Up Drnk Wtr:
Media Clnd Up Grnd Wtr:
Media Clnd Up Surf Wtr:
Media Clnd Up Bldg Mats:
Media Clnd Up Indoor Air:
Media Clnd Up Unknown:
St Tribal Prg ID No:
Further Action Cleanup:
Enrollment St Tribal Prg:
Institutional Ctrl ICs Req: U
IC Catgry Proprietary Ctrls:
IC Catgry Informational Dev:
IC Catgry Govmntal Ctrls:
IC Catgry Enfrc Prmt Tls:
ICs in Place: N
Date ICs in Place:
Photographs are Available: Y
Video is Available: N
Description History: The site was purchased by the City in 1970/1971. Prior to 1970/1971, auto dismantling and salvage operations occurred throughout the site area. The site was undeveloped in 1928 and agricultural land in 1947.

Detail Information

Grant Recipient Nme:	California Department of Toxic Substances Control	***Acre/Grnspc Create:***	
Accmplshmnt Count:	1	***Redev Funding Src:***	
Coop Agreement No:	00T13901	***Redev Funding Amt:***	
Brwnfld Grant Type:	Section 128(a) State/Tribal	***Highlights:***	
Assessment Phase:	Phase II Environmental Assessment	***IC Data Address:***	
Assmnt Start Date:	01/22/2015 00:00:00	***Redev Complete Dt:***	
Assmnt Complete Dt:	03/31/2015 00:00:00	***2010 No Blw Pvrty:***	592
Assmnt Funding Amt:	60000	***2010 Below Poverty:***	9.9%
Cleanup Start Date:		***2010 Median Income:***	7774
Clnup Complete Dt:		***2010 No Low Income:***	1987
Acres Cleaned Up:		***2010 Low Income:***	33.2%
Cleanup Fnding Src:		***2010 No Vcnt Housng:***	126
Cleanup Fnding Amt:		***2010 Vacnt Housng:***	7.0%
Redevmnt Start Dt:		***2010 No Unemployed:***	393
Clnup / Redev Jobs:		***2010 Unemployed:***	6.6%

Assmnt Funding Src: US EPA - State & Tribal Section 128(a) Funding
Entity Prvde Assmnt Fnds: EPA
Enty Prvdng Clnup Fnd:
Entity Prvding Redev Funds:
Past Use Grnspace Arces:
Past Use Residential Arces:
Past Use Commercial Arces:
Past Use Industrial Arces:
Past Use Multistory Arces:
Future Use Multistory Arces:
Future Use Greenspace:
Future Use Residential:
Future Use Commercial:
Future Use Industrial:

60	*1 of 1*	*W*	*0.40 / 2,109.34*	*20.99 / 4*	***CARSON CITY HALL RENOVATION 701 TO 801 E CARSON ST.***	***ENVIROSTOR***

CARSON CA 90745

Estor/EPA ID:	60002140	***Assembly District:***	64
Site Code:	401709	***Senate District:***	35
Nat Priority List:	NO	***Permit Renewal Lead:***	
APN:	7337-006-921, 7337-006-922	***Public Partici Spclst:***	
Census Tract:	6037543903	***Project Manager:***	MARYAM TASNIF-ABBASI
Site Type:	EVALUATION	***County:***	LOS ANGELES
Address Description:	701 TO 801 E CARSON ST.	***Latitude:***	33.832002189632
Office:	SOUTHERN CALIFORNIA SCHOOLS & BROWNFIELDS OUTREACH	***Longitude:***	-118.261533457672
Special Program:	EPA - TARGET SITE INVESTIGATION	***Acres:***	17 ACRES
Funding:	EPA GRANT	***Supervisor:***	EMAD YEMUT

Cleanup Status: INACTIVE - NEEDS EVALUATION AS OF 12/14/2015
Cleanup Oversight Agencies: DTSC - SITE CLEANUP PROGRAM - LEAD AGENCY
School District:
Past Use that Caused Contam: NONE SPECIFIED
Potential Media Affected: NONE SPECIFIED
Potential Contamin of Concern:

NONE SPECIFIED

Site History:

The project is being implemented on behalf of the City of Carson (City). The approximate 10.0 acre site (APN 7337-006-921 & 922) is used as Carson's City Hall and Community Center. Reportedly, there have not been any previous assessment activities conducted at the site.

The site is being assessed for environmental conditions to achieve a greater understanding of the issues that may be encountered during the renovation process. The purpose of the TSI is to provide specific information on potential environmental hazards that may need to be further investigated, addressed or cleaned up in order for the City to develop a mixed use project that houses a new and revitalized City Hall. Renovation plans may include retail and other commercial uses to contribute to the City's economic development efforts.

Status: INACTIVE - NEEDS EVALUATION
A2 Program Type: EVALUATION
CalEnviroScreen Score: 91-95%
Summary Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=60002140

Completed Activities

Title: TSI Report
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60002140&doc_id=60388988
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Site Characterization Report
Date Completed: 9/10/2015
Comments:

Title: TSI Application
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60002140&doc_id=60388992
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Application
Date Completed: 2/6/2015
Comments: TSI Application

Title: Carson City Hall TSI Contract #14-T3934 Work Order No.1
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60002140&enforcement_id=60388660
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: State/Federal Funded Site Work Order
Date Completed: 1/22/2015

Comments: Work Order issued.

Title: TSI Work Plan - Phase 1 Report and Sampling & Analysis Plan
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60002140&doc_id=60388986
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Phase 1
Date Completed: 3/31/2015
Comments:

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
61	1 of 1	ENE	0.42 / 2,233.24	23.53 / 6	TONI ONTIVEROS 21315 LOSTINE AVENUE CARSON CA 90745-1715	RCRA TSD

EPA Handler ID: CAC003010707
Gen Status Universe: No Report
Contact Name: TONI ONTIVEROS
Contact Address: 21315 LOSTINE AVENUE, , CARSON, CA, 90745-1715,
Contact Phone No and Ext: 310-503-8588
Contact Email: TAMMYHURLEY@ALLIANCE-ENVIRO.COM
Contact Country:
Land Type:
County Name: LOS ANGELES
EPA Region: 09
Receive Date: 20190417

Violation/Evaluation Summary

Note: NO RECORDS: As of May 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No
Smelting, Melting and Refining: No
Underground Injection Control: No
Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 20190417
Handler Name: TONI ONTIVEROS
Federal Waste Generator Code: N
Generator Code Description: Not a Generator, Verified
Source Type: Implementer

Owner/Operator Details

Owner/Operator Ind: Current Owner **Street No:**

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Type:	Other	**Street 1:**	21315 LOSTINE AVENUE
Name:	TONI ONTIVEROS	**Street 2:**	
Date Became Current:		**City:**	CARSON
Date Ended Current:		**State:**	CA
Phone:	310-503-8588	**Country:**	
Source Type:	Implementer	**Zip Code:**	90745-1715
Owner/Operator Ind:	Current Operator	**Street No:**	
Type:	Other	**Street 1:**	21315 LOSTINE AVENUE
Name:	TONI ONTIVEROS	**Street 2:**	
Date Became Current:		**City:**	CARSON
Date Ended Current:		**State:**	CA
Phone:	310-503-8588	**Country:**	
Source Type:	Implementer	**Zip Code:**	90745-1715

62	1 of 1	ESE	0.46 / 2,438.14	23.53 / 6	ELIZABETH CORDOVA 1525 EAST 218TH STREET CARSON CA 90745	RCRA TSD

EPA Handler ID:	CAC003016476
Gen Status Universe:	No Report
Contact Name:	ELIZABETH CORDOVA
Contact Address:	1525 EAST 218TH STREET, , CARSON, CA, 90745,
Contact Phone No and Ext:	310-830-4429
Contact Email:	NANCYRUIZ@ALLIANCE-ENVIRO.COM
Contact Country:	
Land Type:	
County Name:	LOS ANGELES
EPA Region:	09
Receive Date:	20190523

Violation/Evaluation Summary

Note:	NO RECORDS: As of May 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility:	No
Onsite Burner Exemption:	No
Smelting, Melting and Refining:	No
Underground Injection Control:	No
Commercial TSD:	No
Used Oil Transporter:	No
Used Oil Transfer Facility:	No
Used Oil Processor:	No
Used Oil Refiner:	No
Used Oil Burner:	No
Used Oil Market Burner:	No
Used Oil Spec Marketer:	No

Hazardous Waste Handler Details

Sequence No:	1
Receive Date:	20190523
Handler Name:	ELIZABETH CORDOVA
Federal Waste Generator Code:	N
Generator Code Description:	Not a Generator, Verified
Source Type:	Implementer

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Owner/Operator Details

Owner/Operator Ind:	Current Operator	***Street No:***	
Type:	Other	***Street 1:***	1525 EAST 218TH STREET
Name:	ELIZABETH CORDOVA	***Street 2:***	
Date Became Current:		***City:***	CARSON
Date Ended Current:		***State:***	CA
Phone:	310-830-4429	***Country:***	
Source Type:	Implementer	***Zip Code:***	90745

Owner/Operator Ind:	Current Owner	***Street No:***	
Type:	Other	***Street 1:***	1525 EAST 218TH STREET
Name:	ELIZABETH CORDOVA	***Street 2:***	
Date Became Current:		***City:***	CARSON
Date Ended Current:		***State:***	CA
Phone:	310-830-4429	***Country:***	
Source Type:	Implementer	***Zip Code:***	90745

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
63	1 of 2	NNW	0.47 / 2,478.62	21.53 / 4	Gardena Valley #6 (Ford Center) 21007 Chico St Carson CA 90745	SWF/LF

SWIS No:	19-AQ-0016	***Latitude:***	33.839
EPA Fed Registry ID:		***Longitude:***	-118.2572
Operational Status:	Closed	***County:***	Los Angeles
Regulatory Status:	Pre-regulation	***Site ZIP:***	90745
Site is Archived:	No	***ARB District:***	South Coast
Absorbed on:		***SWRCB Region:***	Los Angeles
Absorbed by:		***Site Point of Contact:***	Dawn Liang
Site Inert Debris Eng Fill:	No		
Closed Illegal Aband:	Yes		
Closed Illegal Aband Cat:	B1		
Finance Assuran Responsible:	No		
Incorporated City:	Carson		
Local Government:	Carson		
Reporting Agency Legal Name:	County of Los Angeles		
Reporting Agency Department:	Department of Public Health		
Enforcing Agency Legal Name:	County of Los Angeles		
Enforcing Agency Department:	Department of Public Health		

Site Owners

Site Type:	Disposal Only	***Contact Name:***	Bert Martin
Owner Name:	Don Knott Ford	***Contact First Name:***	Bert Martin
Owner Address:	21001 Chico St.	***Contact Last Name:***	
Owner City:	Carson	***Contact Title:***	Site Operator
Owner State:		***Contact Email:***	
Owner ZIP Code:		***Started On:***	10/23/1996
Owner Phone:			

Site Activities

Waste Disch Req No:		***Throughput UOM:***	
Site Regulatory Stat:	Pre-regulation	***Remaining Capacity:***	0
Act Opl Status:	Closed	***Remaining Cap Date:***	
Act Regulatory Stat:	Pre-regulations	***Max Permit Capacity:***	0
Activity Category:	Disposal	***Capacity UOM:***	
Act Classification:	Solid Waste Disposal Site	***Total Acreage:***	0
Activity is Archived:	No	***Disposal Acreage:***	0
WDR Landfill Class:		***Permitted Elevation:***	0
Cease Operation:		***Permitted Elev Type:***	
Cease Oper Type:		***Permitted Depth:***	0
Inspection Frequency:	Quarterly	***Permitted Depth Type:***	
Site Name:	Gardena Valley #6 (Ford Center)		

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Activity: Solid Waste Disposal Site
Max Permitted Throughput: 0
Inert Debris Engineered Fill: No

Site Operators

Site Type: Disposal Only
Operator Name: N/A
Operator Address:
Operator City:
Operator State:
Operator ZIP Code:
Operator Phone:
Is Archived: No
Contact Name:
Contact First Name:
Contact Last Name:
Contact Title:
Contact Email:
Started on: 1/14/1998

Extra Details

Enforcement Agency (LEA/EA): Los Angeles County

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63 | ***2 of 2*** | ***NNW*** | ***0.47 / 2,478.62*** | ***21.53 / 4*** | ***Gardena Valley #6 (Ford Center)***
21007 Chico Street, Carson, CA 90745
Carson CA | ***LA SWF***

Site ID: 1943
Site SWIS No: 19-AQ-0016
Status: Closed
Site Type: Municipal Solid Waste Landfill
Present Use: Vacant; Commercial
Permitted Capacity:
Beginning Oper Dt: November 1962
Ending Oper Dt: April 1965
Disposal Area Acre: 7.7
Max Depth of Fill Ft: 40
Remaining Cap Mln:
Site Contact:
Site Contact Phone:
Site Email:
District: 2
Alt Site Name: Gardena Valley Dump No 6; Berada Corporation; Bert Martin Dump
Alt Address: 21001 Chico Street, Carson, CA; 21107 Chico Street, Carson, CA 90745
Hours of Operation:
Local Enforcement Agency: County Public Health
Site Mailing Address:
Site Website:
Waste Accepted:

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64 | ***1 of 8*** | ***NW*** | ***0.47 / 2,481.80*** | ***16.50 / -1*** | ***ETHYL CORP.***
1201 E. LOMITA BLVD
CARSON CA 90745 | ***CLEANUP SITES***

Global ID: SLT4302624
Status: COMPLETED - CASE CLOSED
Status Date: 6/16/1965
Longitude: -118.260290211125
Site Facility Type: CLEANUP PROGRAM SITE
County: LOS ANGELES
Latitude: 33.8376121118986
Data Source: Cleanup Program Sites from GeoTracker Search; Cleanup Sites from GeoTracker Cleanup Sites Data Download

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail(as Nov 16 2020)

RB Case No: 0044
Local Case No:
Begin Date:
Stop Method:
Lead Agency: LOS ANGELES RWQCB (REGION 4)
Local Agency:
Potential COC:
Potential Media of Concern:
How Discovered:
How Discovered Description:
Stop Description:
Calwater Watershed Name: Dominguez Channel (411.01)
CUF Case: NO
Case Worker:
File Location:

DWR GW Subbasin Name: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Disadvantaged Community: Disadvantaged Community
Site History:

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History(as Nov 16 2020)

Status: Completed - Case Closed
Status Date: 1965-06-16 00:00:00

Status: Open - Case Begin Date
Status Date: 1965-06-15 00:00:00

Cleanup Program Sites from GeoTracker Search - Regulatory Profile (as of Oct 06, 2020)

Project Status:
CUF Claim:
CUF Priority Assign:
CUF Amount Paid:
Facility Type:
WDR Place Type:
WDR File:
WDR Order:
File Location:
Composting Method:
User Defined Beneficial Use:
Designated Beneficial Use: MUN, AGR, IND, PROC
Designated Beneficl Use Desc: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, Industrial Process Supply
Project Oversight Agencies:
Report Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=SLT4302624
Cleanup Status Detail: COMPLETED - CASE CLOSED AS OF 6/16/1965
Cleanup History Link: https://geotracker.waterboards.ca.gov/profile_report_include?global_id=SLT4302624&tabname=regulatoryhistory
Potential COC: NONE SPECIFIED
Potential Media of Concern: NONE SPECIFIED
GW Monitoring Freq:
DWR GW Sub Basin: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Calwater Watershed Name: Dominguez Channel (411.01)
Post Closure Site Management:
Future Land Use:
Cleanup Oversight Agencies: LOS ANGELES RWQCB (REGION 4) (LEAD) - CASE #: 0044
Site History:

No site history available

Sites from GeoTracker Search - Documents (as of Oct 06, 2020)

Document Type: Site Documents
Document Date: 7/27/2006
Size : 2,838 KB
Submitted:
Submitted By: (REGULATOR)
Title: SITE ASSESSMENT AND MITIGATION PLAN 120987
Title Link: http://geotracker.waterboards.ca.gov/site_documents/5212910294/Site%20Assessment%20and%20Mitigation%20Plan%20120987%2Epdf
Type: LETTER

Document Type: Site Documents
Document Date: 7/27/2006
Size : 2,098 KB
Submitted:
Submitted By: (REGULATOR)
Title: SITE ASSESSMENT INVESTIGATION AUGUST 1986 081586
Title Link: http://geotracker.waterboards.ca.gov/site_documents/3383961319/Site%20Assessment%20Investigation%20August%201986%20081586%2Epdf
Type: LETTER

Document Type: Site Documents
Document Date: 7/27/2006
Size : 1,639 KB
Submitted:
Submitted By: (REGULATOR)
Title: ASSESSMENT OF CONTAMINATION 031687
Title Link: http://geotracker.waterboards.ca.gov/site_documents/3020039200/Assessment%20of%20Contamination%20031687%2Epdf
Type: LETTER

Document Type: Site Documents
Submitted:
Document Date: 7/27/2006
Submitted By: (REGULATOR)
Size : 312 KB
Title: SOIL CONTAMINATION INVESTIGATION 120187
Title Link: http://geotracker.waterboards.ca.gov/site_documents/6627812027/Soil%20Contamination%20Investigation%20120187%2Epdf
Type: LETTER

Document Type: Site Documents
Submitted:
Document Date: 7/27/2006
Submitted By: (REGULATOR)
Size : 1,418 KB
Title: ENVIRONMENTAL SITE ASSESSMENT FEBRUARY 1987
Title Link: http://geotracker.waterboards.ca.gov/site_documents/1987873673/Environmental%20Site%20Assessment%20February%201987%2Epdf
Type: LETTER

Document Type: Site Documents
Submitted:
Document Date: 7/27/2006
Submitted By: (REGULATOR)
Size : 1,770 KB
Title: DISMANTLE TEL STORAGE FACILITY 022886
Title Link: http://geotracker.waterboards.ca.gov/site_documents/7416081070/Dismantle%20Tel%20Storage%20Facility%20022886%2Epdf
Type: LETTER

Document Type: Site Documents
Submitted:
Document Date: 7/27/2006
Submitted By: (REGULATOR)
Size : 386 KB
Title: ASSESSMENT OF WELL GAS COMPOSITION 093087
Title Link: http://geotracker.waterboards.ca.gov/site_documents/3021961808/Assessment%20of%20Well%20Gas%20Composition%20093087%2Epdf
Type: LETTER

Sites from GeoTracker Search - Cleanup Status History (as of Oct 06, 2020)

Status: Completed - Case Closed
Date : 6/16/1965

Status: Open - Case Begin Date
Date : 6/15/1965

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
64	2 of 8	NW	0.47 / 2,481.80	16.50 / -1	SOMERSET DISTRIBUTORS 20499 S. REEVES AVE CARSON CA 90810	CLEANUP SITES

Global ID: SLT43718716
Site Facility Type: CLEANUP PROGRAM SITE
Status: COMPLETED - CASE CLOSED
County: LOS ANGELES
Status Date: 5/7/2002
Latitude: 33.8376121118986
Longitude: -118.260290211125
Data Source: Cleanup Program Sites from GeoTracker Search; Cleanup Sites from GeoTracker Cleanup Sites Data Download

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail(as Nov 16 2020)

RB Case No: 1086
CUF Case: NO
Local Case No:
Case Worker:
Begin Date: 1/1/2002
File Location:
Stop Method:
Lead Agency: LOS ANGELES RWQCB (REGION 4)
Local Agency:
Potential COC:
Potential Media of Concern:
How Discovered:
How Discovered Description:
Stop Description:
Calwater Watershed Name: Dominguez Channel (411.01)
DWR GW Subbasin Name: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Disadvantaged Community: Disadvantaged Community

Site History:

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Activity(as Nov 16 2020)

Action Type: ENFORCEMENT
Date : 2002-05-07 00:00:00
Action: Closure/No Further Action Letter

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History(as Nov 16 2020)

Status: Completed - Case Closed
Status Date: 2002-05-07 00:00:00

Status: Open - Case Begin Date
Status Date: 2002-01-01 00:00:00

Cleanup Program Sites from GeoTracker Search - Regulatory Profile (as of Oct 06, 2020)

Project Status:
CUF Claim:
CUF Priority Assign:
CUF Amount Paid:
Facility Type:
User Defined Beneficial Use:
Designated Beneficial Use: MUN, AGR, IND, PROC
Designated Beneficl Use Desc: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, Industrial Process Supply
Project Oversight Agencies:
Report Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=SLT43718716
Cleanup Status Detail: COMPLETED - CASE CLOSED AS OF 5/7/2002
Cleanup History Link: https://geotracker.waterboards.ca.gov/profile_report_include?global_id=SLT43718716&tabname=regulatoryhistory
Potential COC: NONE SPECIFIED
Potential Media of Concern: NONE SPECIFIED
GW Monitoring Freq:
DWR GW Sub Basin: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Calwater Watershed Name: Dominguez Channel (411.01)
Post Closure Site Management:
Future Land Use:
Cleanup Oversight Agencies: LOS ANGELES RWQCB (REGION 4) (LEAD) - CASE #: 1086
Site History:

WDR Place Type:
WDR File:
WDR Order:
File Location:
Composting Method:

No site history available

Sites from GeoTracker Search - Regulatory Activities (as of Oct 06, 2020)

Action Type: Other Regulatory Actions
Action Date: 5/7/2002
Received Issue Date: 5/7/2002
Action: Closure/No Further Action Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43718716&enforcement_id=6156062&temptable=ENFORCEMENT
Title Description Comments:

No Further Action

Sites from GeoTracker Search - Documents (as of Oct 06, 2020)

Document Type: Site Documents
Document Date: 12/22/2005
Size : 310 KB
Title: 1086 COST RECOVERY AGREEMENT 120805
Title Link: http://geotracker.waterboards.ca.gov/site_documents/5177342057/1086%20Cost%20Recovery%20Agreement%
Submitted:
Submitted By: ADRIANA RODRIGUEZ (REGULATOR)

20120805%2Epdf

Type:

Document Type: Site Documents
Submitted:
Document Date: 5/7/2002
Submitted By: ASHEEKA PRASAD (REGULATOR)
Size :
Title: NO FURTHER ACTION
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43718716&enforcement_id=6156062
Type: CLOSURE/NO FURTHER ACTION LETTER

Sites from GeoTracker Search - Cleanup Status History (as of Oct 06, 2020)

Status: Completed - Case Closed
Date : 5/7/2002

Status: Open - Case Begin Date
Date : 1/1/2002

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64 | 3 of 8 | NW | 0.47 / 2,481.80 | 16.50 / -1 | **CITY OF CARSON - L & M FRANKLIN INV.**
2035 E. 223RD ST
CARSON CA 90745 | CLEANUP SITES

Global ID: SLT43301299
Site Facility Type: CLEANUP PROGRAM SITE
Status: OPEN - INACTIVE
County: LOS ANGELES
Status Date: 1/21/2015
Latitude: 33.8376121118986
Longitude: -118.260290211125
Data Source: Cleanup Program Sites from GeoTracker Search; Cleanup Sites from GeoTracker Cleanup Sites Data Download

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail(as Nov 16 2020)

RB Case No: 0496B9
CUF Case: NO
Local Case No:
Case Worker: AGH
Begin Date: 3/20/1996
File Location:
Stop Method:
Lead Agency: LOS ANGELES RWQCB (REGION 4)
Local Agency:
Potential COC:
Potential Media of Concern:
How Discovered:
How Discovered Description:
Stop Description:
Calwater Watershed Name: Dominguez Channel (411.01)
DWR GW Subbasin Name: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Disadvantaged Community:
Site History:

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History(as Nov 16 2020)

Status: Open - Inactive
Status Date: 2015-01-21 00:00:00

Status: Open - Site Assessment
Status Date: 2002-01-10 00:00:00

Status: Open - Case Begin Date
Status Date: 1996-03-20 00:00:00

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Contacts(as Nov 16 2020)

Contact Type: Regional Board Caseworker
Address: 320 W. 4th Street, Suite
Contact Name: ARTHUR G. HEATH
City: Los Angeles
Phone No: 2135766725

Organization Name: LOS ANGELES RWQCB (REGION 4)
Email: aheath@waterboards.ca.gov

Cleanup Program Sites from GeoTracker Search - Regulatory Profile (as of Oct 06, 2020)

Project Status:
CUF Claim:
CUF Priority Assign:
CUF Amount Paid:
Facility Type:
User Defined Beneficial Use:
Designated Beneficial Use: MUN, AGR, IND, PROC
Designated Beneficl Use Desc: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, Industrial Process Supply
Project Oversight Agencies:
Report Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=SLT43301299
Cleanup Status Detail: OPEN - INACTIVE AS OF 1/21/2015
Cleanup History Link: https://geotracker.waterboards.ca.gov/profile_report_include?global_id=SLT43301299&tabname=regulatoryhistory
Potential COC: NONE SPECIFIED
Potential Media of Concern: NONE SPECIFIED
GW Monitoring Freq:
DWR GW Sub Basin: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Calwater Watershed Name: Dominguez Channel (411.01)
Post Closure Site Management:
Future Land Use:
Cleanup Oversight Agencies: LOS ANGELES RWQCB (REGION 4) (LEAD) - CASE #: 0496B9
CASEWORKER: ARTHUR G. HEATH
Site History:

WDR Place Type:
WDR File:
WDR Order:
File Location:
Composting Method:

No site history available

Sites from GeoTracker Search - Cleanup Status History (as of Oct 06, 2020)

Status: Open - Inactive
Date : 1/21/2015

Status: Open - Site Assessment
Date : 1/10/2002

Status: Open - Case Begin Date
Date : 3/20/1996

64	4 of 8	NW	0.47 / 2,481.80	16.50 / -1	MONSATO CARSON PLANT 2100 E. 223RD ST CARSON CA 90810	CLEANUP SITES

Global ID: SLT43131129
Status: OPEN - INACTIVE
Status Date: 2/2/2015
Longitude: -118.260290211125
Data Source: Cleanup Program Sites from GeoTracker Search; Cleanup Sites from GeoTracker Cleanup Sites Data Download
Site Facility Type: CLEANUP PROGRAM SITE
County: LOS ANGELES
Latitude: 33.8376121118986

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail(as Nov 16 2020)

RB Case No: 0228
Local Case No: 19281200
Begin Date:
Stop Method:
Lead Agency: DEPARTMENT OF TOXIC SUBSTANCES CONTROL
Local Agency:
Potential COC:
Potential Media of Concern:
How Discovered:
How Discovered Description:
Stop Description:
CUF Case: NO
Case Worker:
File Location:

Calwater Watershed Name: Dominguez Channel (411.01)
DWR GW Subbasin Name: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Disadvantaged Community:
Site History:

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History(as Nov 16 2020)

Status: Open - Inactive
Status Date: 2015-02-02 00:00:00

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Contacts(as Nov 16 2020)

Contact Type: Regional Board Caseworker
Contact Name: DTSC
Phone No:
Organization Name: LOS ANGELES RWQCB (REGION 4)
Email:
Address: 1011 N. GRANDVIEW AVE.
City: LOS ANGELES

Cleanup Program Sites from GeoTracker Search - Regulatory Profile (as of Oct 06, 2020)

Project Status:
CUF Claim:
CUF Priority Assign:
CUF Amount Paid:
Facility Type:
User Defined Beneficial Use:
Designated Beneficial Use: MUN, AGR, IND, PROC
Designated Beneficl Use Desc: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, Industrial Process Supply
Project Oversight Agencies:
Report Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=SLT43131129
Cleanup Status Detail: OPEN - INACTIVE AS OF 2/2/2015
Cleanup History Link: https://geotracker.waterboards.ca.gov/profile_report_include?global_id=SLT43131129&tabname=regulatoryhistory
Potential COC: NONE SPECIFIED
Potential Media of Concern: NONE SPECIFIED
GW Monitoring Freq:
DWR GW Sub Basin: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Calwater Watershed Name: Dominguez Channel (411.01)
Post Closure Site Management:
Future Land Use:
Cleanup Oversight Agencies: DEPARTMENT OF TOXIC SUBSTANCES CONTROL (LEAD) - CASE #: 19281200
LOS ANGELES RWQCB (REGION 4) - CASE #: 0228
CASEWORKER: DTSC
WDR Place Type:
WDR File:
WDR Order:
File Location:
Composting Method:
Site History:

No site history available

Sites from GeoTracker Search - Cleanup Status History (as of Oct 06, 2020)

Status: Open - Inactive
Date : 2/2/2015

Sites from GeoTracker Search - Related Cases (as of Oct 06, 2020)

Identifier: WDR100014643
Status: ACTIVE - WDR
Association: Related Global ID
Description: Auto-Entered via Standardized Address Match
Project Name: Solutia, Inc
Project Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=WDR100014643
Address: 2100 East 223rd Street
City: CARSON

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
64	5 of 8	NW	0.47 / 2,481.80	16.50 / -1	K AND T LOGISTIC CENTER 2417 E. CARSON AVE CARSON CA 90810	CLEANUP SITES

Global ID: SLT4309795
Status: COMPLETED - CASE CLOSED
Status Date: 6/16/1965
Longitude: -118.260290211125
Data Source: Cleanup Program Sites from GeoTracker Search; Cleanup Sites from GeoTracker Cleanup Sites Data Download
Site Facility Type: CLEANUP PROGRAM SITE
County: LOS ANGELES
Latitude: 33.8376121118986

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail(as Nov 16 2020)

RB Case No: 0166
Local Case No:
Begin Date:
Stop Method:
Lead Agency: LOS ANGELES RWQCB (REGION 4)
Local Agency:
Potential COC:
Potential Media of Concern:
How Discovered:
How Discovered Description:
Stop Description:
Calwater Watershed Name: Dominguez Channel (411.01)
DWR GW Subbasin Name: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Disadvantaged Community: Disadvantaged Community
Site History:
CUF Case: NO
Case Worker:
File Location:

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History(as Nov 16 2020)

Status: Completed - Case Closed
Status Date: 1965-06-16 00:00:00

Status: Open - Case Begin Date
Status Date: 1965-06-15 00:00:00

Cleanup Program Sites from GeoTracker Search - Regulatory Profile (as of Oct 06, 2020)

Project Status:
CUF Claim:
CUF Priority Assign:
CUF Amount Paid:
Facility Type:
User Defined Beneficial Use:
Designated Beneficial Use: MUN, AGR, IND, PROC
Designated Beneficl Use Desc: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, Industrial Process Supply
Project Oversight Agencies:
Report Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=SLT4309795
Cleanup Status Detail: COMPLETED - CASE CLOSED AS OF 6/16/1965
Cleanup History Link: https://geotracker.waterboards.ca.gov/profile_report_include?global_id=SLT4309795&tabname=regulatoryhistory
Potential COC: NONE SPECIFIED
Potential Media of Concern: NONE SPECIFIED
GW Monitoring Freq:
DWR GW Sub Basin: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Calwater Watershed Name: Dominguez Channel (411.01)
Post Closure Site Management:
Future Land Use:
Cleanup Oversight Agencies: LOS ANGELES RWQCB (REGION 4) (LEAD) - CASE #: 0166
Site History:
WDR Place Type:
WDR File:
WDR Order:
File Location:
Composting Method:

No site history available

Sites from GeoTracker Search - Documents (as of Oct 06, 2020)

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Document Type: Site Documents
Document Date: 11/3/2006
Size : 398 KB
Title: REPORTS OF ANALYTICAL RESULTS 050190
Title Link: http://geotracker.waterboards.ca.gov/site_documents/8303913712/Reports%20of%20Analytical%20Results%20050190%2Epdf
Type: LETTER
Submitted:
Submitted By: (REGULATOR)

Document Type: Site Documents
Document Date: 11/3/2006
Size : 513 KB
Title: PRELIMINARY SOUTHERN BOUNDARY CONTAMINANT ASSESSMENT 081489
Title Link: http://geotracker.waterboards.ca.gov/site_documents/7687031388/Preliminary%20Southern%20Boundary%20Contaminant%20Assessment%20081489%2Epdf
Type: LETTER
Submitted:
Submitted By: (REGULATOR)

Sites from GeoTracker Search - Cleanup Status History (as of Oct 06, 2020)

Status: Completed - Case Closed
Date : 6/16/1965

Status: Open - Case Begin Date
Date : 6/15/1965

64	6 of 8	NW	0.47 / 2,481.80	16.50 / -1	CITY OF CARSON - PEPSI BOTTLING GROUP 19700 S. FIGUROA ST CARSON CA 90745	CLEANUP SITES

Global ID: SLT43308306
Status: OPEN - INACTIVE
Status Date: 1/21/2015
Longitude: -118.260290211125
Data Source: Cleanup Program Sites from GeoTracker Search; Cleanup Sites from GeoTracker Cleanup Sites Data Download
Site Facility Type: CLEANUP PROGRAM SITE
County: LOS ANGELES
Latitude: 33.8376121118986

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail(as Nov 16 2020)

RB Case No: 0496D3
Local Case No:
Begin Date: 3/20/1996
Stop Method:
Lead Agency: LOS ANGELES RWQCB (REGION 4)
Local Agency:
Potential COC:
Potential Media of Concern:
How Discovered:
How Discovered Description:
Stop Description:
Calwater Watershed Name: Dominguez Channel (411.01)
DWR GW Subbasin Name: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Disadvantaged Community:
Site History:
CUF Case: NO
Case Worker: AGH
File Location:

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History(as Nov 16 2020)

Status: Open - Inactive
Status Date: 2015-01-21 00:00:00

Status: Open - Site Assessment
Status Date: 2002-01-10 00:00:00

Status: Open - Case Begin Date
Status Date: 1996-03-20 00:00:00

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Contacts(as Nov 16 2020)

Contact Type: Regional Board Caseworker
Contact Name: ARTHUR G. HEATH
Phone No: 2135766725
Organization Name: LOS ANGELES RWQCB (REGION 4)
Email: aheath@waterboards.ca.gov
Address: 320 W. 4th Street, Suite
City: Los Angeles

Cleanup Program Sites from GeoTracker Search - Regulatory Profile (as of Oct 06, 2020)

Project Status:
CUF Claim:
CUF Priority Assign:
CUF Amount Paid:
Facility Type:
User Defined Beneficial Use:
Designated Beneficial Use: MUN, AGR, IND, PROC
Designated Beneficl Use Desc: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, Industrial Process Supply
Project Oversight Agencies:
Report Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=SLT43308306
Cleanup Status Detail: OPEN - INACTIVE AS OF 1/21/2015
Cleanup History Link: https://geotracker.waterboards.ca.gov/profile_report_include?global_id=SLT43308306&tabname=regulatoryhistory
Potential COC: NONE SPECIFIED
Potential Media of Concern: NONE SPECIFIED
GW Monitoring Freq:
DWR GW Sub Basin: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Calwater Watershed Name: Dominguez Channel (411.01)
Post Closure Site Management:
Future Land Use:
Cleanup Oversight Agencies: LOS ANGELES RWQCB (REGION 4) (LEAD) - CASE #: 0496D3
CASEWORKER: ARTHUR G. HEATH
WDR Place Type:
WDR File:
WDR Order:
File Location:
Composting Method:
Site History:

No site history available

Sites from GeoTracker Search - Cleanup Status History (as of Oct 06, 2020)

Status: Open - Inactive
Date : 1/21/2015

Status: Open - Site Assessment
Date : 1/10/2002

Status: Open - Case Begin Date
Date : 3/20/1996

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
64	7 of 8	NW	0.47 / 2,481.80	16.50 / -1	VICTORIA INDUSTRIAL PARK 331-401 W. VICTORIA ST CARSON CA 90220	CLEANUP SITES

Global ID: SLT43253251
Status: COMPLETED - CASE CLOSED
Status Date: 2/16/1995
Longitude: -118.260290211125
Data Source: Cleanup Program Sites from GeoTracker Search; Cleanup Sites from GeoTracker Cleanup Sites Data Download
Site Facility Type: CLEANUP PROGRAM SITE
County: LOS ANGELES
Latitude: 33.8376121118986

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail(as Nov 16 2020)

RB Case No: 0426
Local Case No:
Begin Date: 2/15/1995
Stop Method:
CUF Case: NO
Case Worker: DH
File Location:

Lead Agency: LOS ANGELES RWQCB (REGION 4)
Local Agency:
Potential COC:
Potential Media of Concern:
How Discovered:
How Discovered Description:
Stop Description:
Calwater Watershed Name: Dominguez Channel (411.01)
DWR GW Subbasin Name: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Disadvantaged Community: Disadvantaged Community
Site History:

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History(as Nov 16 2020)

Status: Completed - Case Closed
Status Date: 1995-02-16 00:00:00

Status: Open - Case Begin Date
Status Date: 1995-02-15 00:00:00

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Contacts(as Nov 16 2020)

Contact Type: Regional Board Caseworker
Contact Name: DAVID HUNG
Phone No:
Organization Name: LOS ANGELES RWQCB (REGION 4)
Email: dhung@waterboards.ca.gov
Address: 320 W. 4TH ST., SUITE 200
City: LOS ANGELES

Cleanup Program Sites from GeoTracker Search - Regulatory Profile (as of Oct 06, 2020)

Project Status:
CUF Claim:
CUF Priority Assign:
CUF Amount Paid:
Facility Type:
User Defined Beneficial Use:
Designated Beneficial Use: MUN, AGR, IND, PROC
Designated Beneficl Use Desc: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, Industrial Process Supply
Project Oversight Agencies:
Report Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=SLT43253251
Cleanup Status Detail: COMPLETED - CASE CLOSED AS OF 2/16/1995
Cleanup History Link: https://geotracker.waterboards.ca.gov/profile_report_include?global_id=SLT43253251&tabname=regulatoryhistory
Potential COC: NONE SPECIFIED
Potential Media of Concern: NONE SPECIFIED
GW Monitoring Freq:
DWR GW Sub Basin: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Calwater Watershed Name: Dominguez Channel (411.01)
Post Closure Site Management:
Future Land Use:
Cleanup Oversight Agencies: LOS ANGELES RWQCB (REGION 4) (LEAD) - CASE #: 0426
CASEWORKER: DAVID HUNG
WDR Place Type:
WDR File:
WDR Order:
File Location:
Composting Method:
Site History:

No site history available

Sites from GeoTracker Search - Cleanup Status History (as of Oct 06, 2020)

Status: Completed - Case Closed
Date : 2/16/1995

Status: Open - Case Begin Date
Date : 2/15/1995

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
64	8 of 8	NW	0.47 / 2,481.80	16.50 / -1	DOMINGUEZ HILLS / CALLENDER PROPERTY 17809 PALM CRT CARSON CA 90746	CLEANUP SITES

Global ID: SLT43700698
Status: COMPLETED - CASE CLOSED
Status Date: 1/16/2004
Longitude: -118.260290211125
Site Facility Type: CLEANUP PROGRAM SITE
County: LOS ANGELES
Latitude: 33.8376121118986
Data Source: Cleanup Program Sites from GeoTracker Search; Cleanup Sites from GeoTracker Cleanup Sites Data Download

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Facilities Detail(as Nov 16 2020)

RB Case No: 1068
Local Case No:
Begin Date: 12/1/2001
Stop Method:
Lead Agency: LOS ANGELES RWQCB (REGION 4)
Local Agency:
Potential COC: Other Petroleum
Potential Media of Concern: Soil
How Discovered:
How Discovered Description:
Stop Description:
Calwater Watershed Name: Dominguez Channel (411.01)
DWR GW Subbasin Name: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Disadvantaged Community: Disadvantaged Community
Site History:
CUF Case: NO
Case Worker:
File Location: Regional Board

RP proposed to close portions of previous Brea Canon oil fields site. Investigation and remediation for closure were performed as needed for RP's property transaction. All Brea Canon oil field sites are combined into BCO Hellman/Callendar Lease under SLIC No. 468.

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Regulatory Activity(as Nov 16 2020)

Action Type: ENFORCEMENT
Date : 2008-08-13 00:00:00
Action: Closure/No Further Action Letter

Action Type: REMEDIATION
Date : 2007-01-21 00:00:00
Action: Excavation

Action Type: RESPONSE
Date : 2003-05-30 00:00:00
Action: Monitoring Report - Quarterly

Action Type: ENFORCEMENT
Date : 2003-05-30 00:00:00
Action: * No Action

Cleanup Sites from GeoTracker Cleanup Sites Data Download - Status History(as Nov 16 2020)

Status: Completed - Case Closed
Status Date: 2004-01-16 00:00:00

Status: Open - Remediation
Status Date: 2002-06-30 00:00:00

Status: Open - Case Begin Date
Status Date: 2001-12-01 00:00:00

Cleanup Program Sites from GeoTracker Search - Regulatory Profile (as of Oct 06, 2020)

Project Status:
CUF Claim:
CUF Priority Assign:
CUF Amount Paid:
Facility Type:
User Defined Beneficial Use:
Designated Beneficial Use: MUN, AGR, IND, PROC
Designated Beneficl Use Desc: Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, Industrial Process Supply
Project Oversight Agencies:
Report Link: https://geotracker.waterboards.ca.gov/profile_report?global_id=SLT43700698
Cleanup Status Detail: COMPLETED - CASE CLOSED AS OF 1/16/2004
Cleanup History Link: https://geotracker.waterboards.ca.gov/profile_report_include?global_id=SLT43700698&tabname=regulatoryhistory
Potential COC: OTHER PETROLEUM
Potential Media of Concern: SOIL
GW Monitoring Freq:
DWR GW Sub Basin: Coastal Plain Of Los Angeles - West Coast (4-011.03)
Calwater Watershed Name: Dominguez Channel (411.01)
Post Closure Site Management:
Future Land Use:
Cleanup Oversight Agencies: LOS ANGELES RWQCB (REGION 4) (LEAD) - CASE #: 1068
Site History:

WDR Place Type:
WDR File:
WDR Order:
File Location: REGIONAL BOARD
Composting Method:

RP proposed to close portions of previous Brea Canon oil fields site. Investigation and remediation for closure were performed as needed for RP's property transaction. All Brea Canon oil field sites are combined into BCO Hellman/Callendar Lease under SLIC No. 468.

Sites from GeoTracker Search - Cleanup Action Report (as of Oct 06, 2020)

Action Type: EXCAVATION
Phase: Soil
Description:
Contaminant Mass Removed:

Begin Date: 1/21/2007
End Date: 8/13/2008

Sites from GeoTracker Search - Regulatory Activities (as of Oct 06, 2020)

Action Type: Other Regulatory Actions
Action Date: 8/13/2008
Received Issue Date: 8/13/2008
Action: Closure/No Further Action Letter
Doc Link: http://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43700698&enforcement_id=6044846&temptable=ENFORCEMENT
Title Description Comments:

No Further Action - The Estate of Albert Levinson dba Brea Canon Oil Company

Action Type: Cleanup Action
Action Date: 1/21/2007
Received Issue Date:
Action: Excavation
Doc Link:
Title Description Comments:

Action Type: Enforcement - Other
Action Date: 5/30/2003
Received Issue Date: 5/30/2003
Action: * No Action
Doc Link:
Title Description Comments:

Action Type: Response Requested - Reports
Action Date: 5/30/2003
Received Issue Date: 5/30/2003
Action: Monitoring Report - Quarterly
Doc Link:

Title Description Comments:

Monitoring Report - Quarterly - Work plan for Groundwater Monitoring and sampling

Sites from GeoTracker Search - Documents (as of Oct 06, 2020)

Document Type: Site Documents
Document Date: 8/13/2008
Size :
Submitted:
Submitted By: PAUL CHO (REGULATOR)
Title: NO FURTHER ACTION - THE ESTATE OF ALBERT LEVINSON DBA BREA CANON OIL COMPANY
Title Link: https://geotracker.waterboards.ca.gov/view_documents?global_id=SLT43700698&enforcement_id=6044846
Type: CLOSURE/NO FURTHER ACTION LETTER

Sites from GeoTracker Search - Cleanup Status History (as of Oct 06, 2020)

Status: Completed - Case Closed
Date : 1/16/2004

Status: Open - Remediation
Date : 6/30/2002

Status: Open - Case Begin Date
Date : 12/1/2001

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65 | ***1 of 1*** | ***NNW*** | ***0.56 / 2,968.66*** | ***17.48 / 0*** | ***GARDENA VALLEY LANDFILL NO. 6***
CHICO AND DOMINGUEZ STREET
CARSON CA 90746 | ***ENVIROSTOR***

Estor/EPA ID: 19490105
Site Code: 401269, 300069, 400069
Nat Priority List: NO
APN: NONE SPECIFIED
Census Tract: 6037543306
Site Type: VOLUNTARY CLEANUP
Address Description: CHICO AND DOMINGUEZ STREET
Office: SOUTHERN CALIFORNIA SCHOOLS & BROWNFIELDS OUTREACH
Special Program: VOLUNTARY CLEANUP PROGRAM
Funding: SITE PROPONENT
Assembly District: 64
Senate District: 35
Permit Renewal Lead:
Public Partici Spclst:
Project Manager: DANIEL ZOGAIB
County: LOS ANGELES
Latitude: 33.8405555555556
Longitude: -118.257222222222
Acres: 16 ACRES
Supervisor: EMAD YEMUT
Cleanup Status: INACTIVE - NEEDS EVALUATION AS OF 8/3/2020
Cleanup Oversight Agencies: DTSC - SITE CLEANUP PROGRAM - LEAD AGENCY
School District:
Past Use that Caused Contam: LANDFILL - DOMESTIC
Potential Media Affected: OTHER GROUNDWATER AFFECTED (USES OTHER THAN DRINKING WATER), SOIL
Site History:

No evidence of release to groundwater. The owner of the southern half of the landfill will not enter into a VCA. No OLC support for letter to have boundary subsurface landfill gas probes installed on adjacent properties to the north of the northern half of the landfill due to refusal of owners of adjacent properties to allow probe installation. Probes can't be installed onsite because the waste goes to the property line on the north side of the landfill. Without the probes, there is no way to know if there is any subsurface migration of landfill gas and COCs from the landfill and potentially under the buildings on the adjacent properties to the north. Therefore, the project is no longer active.

Potential Contamin of Concern:

CHROMIUM VI, LEAD

Status: INACTIVE - NEEDS EVALUATION
A2 Program Type: VOLUNTARY CLEANUP
CalEnviroScreen Score: 91-95%
Summary Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=19490105

Completed Activities

Title: FY 18/19 Annual Oversight Cost Estimate
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=19490105&enforcement_id=60446064
Area Name: PROJECT WIDE
Area Link:
Sub Area:
Sub Area Link:
Document Type: Annual Oversight Cost Estimate
Date Completed: 8/24/2018
Comments: FY 1819 Estimate: $57,150

Title: Ambient Air Monitoring Plan
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=19490105&doc_id=60263764
Area Name: Operable Unit 2 (OU2)
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=19490105&ou_id=1971058&hideside=True&printerfriendly=True
Sub Area:
Sub Area Link:
Document Type: Monitoring Plan
Date Completed: 7/25/2011
Comments: Approved

Title: FY 1516 Annual Oversight Cost Estimate
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=19490105&enforcement_id=60399778
Area Name: PROJECT WIDE
Area Link:
Sub Area:
Sub Area Link:
Document Type: Annual Oversight Cost Estimate
Date Completed: 11/30/2015
Comments:

Title: Annual Oversight Cost Estimate FY 14/15
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=19490105&enforcement_id=60381260
Area Name: Operable Unit 2 (OU2)
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=19490105&ou_id=1971058&hideside=True&printerfriendly=True
Sub Area:
Sub Area Link:
Document Type: Annual Oversight Cost Estimate
Date Completed: 9/9/2014
Comments: Cost estimate letter mailed to RP on 09/10/14.

Title: Annual Oversight Cost Estimate Letter
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=19490105&enforcement_id=60343652
Area Name: Operable Unit 2 (OU2)
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=19490105&ou_id=1971058&hideside=True&printerfriendly=True
Sub Area:
Sub Area Link:
Document Type: Annual Oversight Cost Estimate
Date Completed: 11/25/2013
Comments: Completed

Title: Gardena Valley Landfill #6 VCA 2008 Cost Estimation Letter
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=19490105&enforcement_id=6011816
Area Name: Operable Unit 2 (OU2)
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=19490105&ou_id=1971058&hideside=True&printerfriendly=True
Sub Area:
Sub Area Link:
Document Type: Annual Oversight Cost Estimate
Date Completed: 11/15/2007
Comments: Sent letter to RP's lawyer on November 15, 2007 via both email and US Mail.

Title: Workplan for Cover Soils and Refuse Investigation and Well Decommissioning
Title Link:
Area Name: Operable Unit 2 (OU2)
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?

global_id=19490105&ou_id=1971058&hideside=True&printerfriendly=True
Sub Area:
Sub Area Link:
Document Type: Technical Workplan
Date Completed: 3/29/2005
Comments: Workplan was found to be acceptable. we are now waiting for them to implement it.

Title: GV6 Revised LFG System and Boundary Monitoring Probe Design
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=19490105&doc_id=60403327
Area Name: PROJECT WIDE
Area Link:
Sub Area:
Sub Area Link:
Document Type: Removal Action Design
Date Completed: 6/23/2016
Comments: Approved

Title: Construction Quality Assurance Plan - Gardena Valley Landfill #6
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=19490105&doc_id=60382166
Area Name: Operable Unit 2 (OU2)
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=19490105&ou_id=1971058&hideside=True&printerfriendly=True
Sub Area:
Sub Area Link:
Document Type: Quality Assurance Workplan
Date Completed: 3/19/2015
Comments: Approved

Title: Email Requesting Clarification Regarding Well Abandonment Backfill Requirements
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=19490105&doc_id=60356026
Area Name: Operable Unit 2 (OU2)
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=19490105&ou_id=1971058&hideside=True&printerfriendly=True
Sub Area:
Sub Area Link:
Document Type: Well Decommissioning Workplan
Date Completed: 3/28/2014
Comments: Completed

Title: Discovery
Title Link:
Area Name: PROJECT WIDE
Area Link:
Sub Area:
Sub Area Link:
Document Type: * Discovery
Date Completed: 4/15/1982
Comments: FACILITY IDENTIFIED LA CO 630 SERIES BASE COORD MAP (1973)

Title: Annual Oversight Cost Estimate for FY 17/18
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=19490105&enforcement_id=60430236
Area Name: PROJECT WIDE
Area Link:
Sub Area:
Sub Area Link:
Document Type: Annual Oversight Cost Estimate
Date Completed: 9/29/2017
Comments:

Title: Construction Quality Assurance Report - Cap Regrading Activities
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=19490105&doc_id=60404327
Area Name: Operable Unit 1 (OU1)
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=19490105&ou_id=1971057&hideside=True&printerfriendly=True
Sub Area:
Sub Area Link:
Document Type: Removal Action Completion Report
Date Completed: 2/26/2016
Comments: Completed. No letter required as CQA Report will be part of landfill cap RACR.

Title: Gardena Valley Landfill #6 Landfill CEQA Initial Study
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=19490105&enforcement_id=60194263
Area Name: Operable Unit 2 (OU2)
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=19490105&ou_id=1971058&hideside=True&printerfriendly=True
Sub Area:
Sub Area Link:
Document Type: CEQA - Initial Study/ Neg. Declaration
Date Completed: 3/2/2011
Comments:

Title: Removal Action Work Plan for Cover Soil and Refuse Evaluation, Well Decommissioning, Cap Grading, and Gas Collection and Control System Design - Gardena Valley Landfill #6
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=19490105&doc_id=6020899
Area Name: Operable Unit 2 (OU2)
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=19490105&ou_id=1971058&hideside=True&printerfriendly=True
Sub Area:
Sub Area Link:
Document Type: Removal Action Workplan
Date Completed: 3/2/2011
Comments:

Title: Perimeter Gas Migration Monitoring Well Installation Workplan
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=19490105&doc_id=60455449
Area Name: Operable Unit 1 (OU1)
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=19490105&ou_id=1971057&hideside=True&printerfriendly=True
Sub Area:
Sub Area Link:
Document Type: Monitoring Plan
Date Completed: 3/21/2019
Comments: Approved

Title: Invoice Dispute Letter for Invoice #16SM3160
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=19490105&doc_id=60428387
Area Name: PROJECT WIDE
Area Link:
Sub Area:
Sub Area Link:
Document Type: Other Report
Date Completed: 11/17/2017
Comments:

Title: FY 16/17 Annual Oversight Cost Estimate
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=19490105&enforcement_id=60414243
Area Name: PROJECT WIDE
Area Link:
Sub Area:
Sub Area Link:
Document Type: Annual Oversight Cost Estimate
Date Completed: 11/17/2016
Comments: Annual Cost Estimate sent to RP.

Title: Landfill Gas Extraction and Treatment System Preliminary Design Documents
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=19490105&doc_id=6018356
Area Name: Operable Unit 2 (OU2)
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=19490105&ou_id=1971058&hideside=True&printerfriendly=True
Sub Area:
Sub Area Link:
Document Type: Remedial Design - Preliminary/Intermediate
Date Completed: 6/2/2008
Comments: Approved

Title: Voluntary Cleanup Program Application sent to Terminal Car Leasing, Inc.
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=19490105&doc_id=60443313
Area Name: PROJECT WIDE

Area Link:
Sub Area:
Sub Area Link:
Document Type: Application
Date Completed: 12/28/2017
Comments: VCA Application sent to Margaret Kott, CEO of Terminal Car Leasing, 21107 Chico Street, Carson.

Title: INT ERIM REMOVAL ACT ION COMP L E T ION RE PORT FORMER GARDENA VALLEY LANDFILL NO.6 GROUNDWATER WELL DECOMMISSIONING AND CAP REGRADING
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=19490105&doc_id=60408060
Area Name: PROJECT WIDE
Area Link:
Sub Area:
Sub Area Link:
Document Type: Removal Action Completion Report
Date Completed: 5/31/2016
Comments: Approved

Title: Air Quality Monitoring Summary for Gardena Valley No. 6 Landfill
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=19490105&doc_id=60401143
Area Name: PROJECT WIDE
Area Link:
Sub Area:
Sub Area Link:
Document Type: Monitoring Report
Date Completed: 11/30/2015
Comments: Approved

Title: Revised Landfill Cap Grading Plans
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=19490105&doc_id=60367208
Area Name: Operable Unit 2 (OU2)
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=19490105&ou_id=1971058&hideside=True&printerfriendly=True
Sub Area:
Sub Area Link:
Document Type: Removal Action Design
Date Completed: 7/28/2014
Comments: Approved

Title: Annual Cost Estimation letter 2010
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=19490105&enforcement_id=6017314
Area Name: Operable Unit 2 (OU2)
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=19490105&ou_id=1971058&hideside=True&printerfriendly=True
Sub Area:
Sub Area Link:
Document Type: Annual Oversight Cost Estimate
Date Completed: 10/1/2009
Comments: Annual Cost Estimation letter sent.

Title: Voluntary Cleanup Agreement
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=19490105&enforcement_id=5008719
Area Name: Operable Unit 2 (OU2)
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=19490105&ou_id=1971058&hideside=True&printerfriendly=True
Sub Area:
Sub Area Link:
Document Type: Standard Voluntary Agreement
Date Completed: 11/1/2004
Comments: DTSC entered into a Voluntary Cleanup Agreement with Inter Group Investment, LLC to provide oversight for a limited Removal Action at the northern 9-acre portion of the Fomer Landfill.

Title: Final Design Report Landfill Gas Collection and Control System and Cap Grading Design
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=19490105&doc_id=60263763
Area Name: Operable Unit 2 (OU2)
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=19490105&ou_id=1971058&hideside=True&printerfriendly=True
Sub Area:
Sub Area Link:

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Document Type: Removal Action Design
Date Completed: 5/19/2011
Comments: Approved

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66 | 1 of 1 | N | 0.64 / 3,374.63 | 17.48 / 0 | GOLDEN WEST CIRCUITS, INC. - CARSON
1139 E. DOMINGUEZ STREET #A
CARSON CA 90746 | ENVIROSTOR

Estor/EPA ID: 71002805
Site Code:
Nat Priority List: NO
APN: NONE SPECIFIED
Census Tract: 6037543306
Site Type: TIERED PERMIT
Address Description: 1139 E. DOMINGUEZ STREET #A
Office: CLEANUP CHATSWORTH
Special Program:
Funding:
Cleanup Status: REFER: OTHER AGENCY AS OF
Cleanup Oversight Agencies: NONE SPECIFIED
School District:
Past Use that Caused Contam: NONE SPECIFIED
Potential Media Affected: NONE SPECIFIED
Potential Contamin of Concern:

NONE SPECIFIED

Site History:

Assembly District:
Senate District:
Permit Renewal Lead:
Public Partici Spclst:
Project Manager:
County: LOS ANGELES
Latitude: 33.8419672
Longitude: -118.253889
Acres: NONE SPECIFIED
Supervisor:

Status: REFER: OTHER AGENCY
A2 Program Type: TIERED PERMIT
CalEnviroScreen Score: 91-95%
Summary Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=71002805

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67 | 1 of 1 | WNW | 0.65 / 3,435.69 | 17.48 / 0 | OLD QUAKER PAINT CO
21243 SOUTH AVALON BOULEVARD
CARSON CA 90745 | ENVIROSTOR

Estor/EPA ID: 19280371
Site Code:
Nat Priority List: NO
APN: NONE SPECIFIED
Census Tract: 6037543801
Site Type: EVALUATION
Address Description: 21243 SOUTH AVALON BOULEVARD
Office: CLEANUP CYPRESS
Special Program: EPA - PASI
Funding:
Cleanup Status: REFER: EPA AS OF 8/24/2007
Cleanup Oversight Agencies: NONE SPECIFIED
School District:
Past Use that Caused Contam: NONE SPECIFIED
Potential Media Affected: NONE SPECIFIED
Potential Contamin of Concern:

SLUDGE - PAINT, UNSPECIFIED AQUEOUS SOLUTION

Site History:

Assembly District: 64
Senate District: 35
Permit Renewal Lead:
Public Partici Spclst:
Project Manager:
County: LOS ANGELES
Latitude: 33.8355924140301
Longitude: -118.265401714604
Acres: 1 ACRES
Supervisor:

Status: REFER: EPA
A2 Program Type: EVALUATION
CalEnviroScreen Score: 96-100%
Summary Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=19280371

Completed Activities

Title: Site Screening
Title Link:
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Site Screening
Date Completed: 3/1/1988
Comments: SITE SCREENING DONE PA HIGH RECOM. DUE TO DOCUMENTED ON-SITE WASTE DISPOSAL OF PAINTS.

Title: Discovery
Title Link:
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: * Discovery
Date Completed: 3/26/1980
Comments: FACILITY IDENTIFIED IW SURVEY QUESTIONNAIRE 12580 QUESTIONNAIRE RECEIVED

Title: Site Screening
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=19280371&doc_id=6014873
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Site Screening
Date Completed: 6/16/2006
Comments: Site Screening has been completed.

Title: Site Screening
Title Link:
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Site Screening
Date Completed: 12/7/1994
Comments: IN 1985 PA RECOMMENDED NFA UNDER CERCLA AND REFERRED THE SITE TO L.A. COUNTY. THE SITE IS LISTED ON SWAT WHICH IS DUE IN 1997.

68	1 of 1	ESE	0.76 / 4,024.36	25.53 / 8	ALPERT & ALPERT IRON & METAL 21930 S. WILMINGTON AVE. CARSON CA 90810	ENVIROSTOR

Estor/EPA ID:	19990052	***Assembly District:***	64
Site Code:		***Senate District:***	35
Nat Priority List:	NO	***Permit Renewal Lead:***	
APN:	7316025062, 7316025097	***Public Partici Spclst:***	
Census Tract:	6037543306	***Project Manager:***	
Site Type:	EVALUATION	***County:***	LOS ANGELES
Address Description:	21930 S. WILMINGTON AVE.	***Latitude:***	33.8288934597639
Office:	CLEANUP CYPRESS	***Longitude:***	-118.240141868591
Special Program:		***Acres:***	0 ACRES
Funding:	NOT APPLICABLE	***Supervisor:***	
Cleanup Status:	REFER: 1248 LOCAL AGENCY AS OF 1/15/2004		
Cleanup Oversight Agencies:	LOS ANGELES COUNTY - LEAD AGENCY		
School District:			
Past Use that Caused Contam:	NONE SPECIFIED		
Potential Media Affected:	NONE SPECIFIED		
Potential Contamin of Concern:			

NONE SPECIFIED

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Site History:

Status: REFER: 1248 LOCAL AGENCY
A2 Program Type: EVALUATION
CalEnviroScreen Score: 91-95%
Summary Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=19990052

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69 | ***1 of 1*** | ***ENE*** | ***0.77 / 4,059.24*** | ***25.53 / 8*** | ***DEL AMO ELEMENTARY SCHOOL***
21228 WATER STREET
CARSON CA 90745 | ***ENVIROSTOR***

Estor/EPA ID: 60000406
Site Code: 304537
Nat Priority List: NO
APN: 7326006900
Census Tract: 6037543306
Site Type: SCHOOL
Address Description: 21228 WATER STREET
Office: SOUTHERN CALIFORNIA SCHOOLS & BROWNFIELDS OUTREACH
Special Program:
Funding: RESPONSIBLE PARTY
Assembly District: 64
Senate District: 35
Permit Renewal Lead:
Public Partici Spclst:
Project Manager:
County: LOS ANGELES
Latitude: 33.8363814015165
Longitude: -118.240288498651
Acres: 9.2 ACRES
Supervisor: SHAHIR HADDAD
Cleanup Status: NO FURTHER ACTION AS OF 9/11/2008
Cleanup Oversight Agencies: DTSC - SITE CLEANUP PROGRAM - LEAD AGENCY
School District: LOS ANGELES UNIFIED SCHOOL DISTRICT
Past Use that Caused Contam: SCHOOL - ELEMENTARY
Potential Media Affected: OTHER GROUNDWATER AFFECTED (USES OTHER THAN DRINKING WATER), SOIL, SOIL VAPOR
Potential Contamin of Concern:

METHANE, TETRACHLOROETHYLENE (PCE), TRICHLOROETHYLENE (TCE), UNDER INVESTIGATION

Site History:

The Site has been the existing Del Amo Elementary School since 1959. Prior to 1959, the Site was used for agricultural purposes. As illustrated in Figure 1, the Site is bounded by Water Street to the West, 213th Street to the South, residential homes to the East, and Rainbow Transport Tank Cleaners (Rainbow Facility) to the North and Northeast. To determine if contaminants have migrated onto the Site from the adjacent Rainbow facility, DTSC collected soil, soil gas and groundwater samples at the boundary of the Site. Elevated concentrations of Rainbow related contaminants were not found. Elevated levels of methane were detected, and LAUSD implemented 3 vapor extraction systems to remove elevated methane originating from a broken natural gas pipeline. Methane levels have been reduced non detect levels or negligible (very low) detections. Ongoing monitoring for VOCs will be conducted at the boundary between Del Amo and Rainbow during remedial activities associated with the adjacent Rainbow Trucking.

Status: NO FURTHER ACTION
A2 Program Type: SCHOOL CLEANUP
CalEnviroScreen Score: 91-95%
Summary Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=60000406

Completed Activities

Title: LAUSD Site Investigation Report
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000406&doc_id=6014705
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Other Report
Date Completed: 6/4/2007
Comments: Document accepted.

Title: Sampling Activities and Screening Evaluation of Health Risk Report
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000406&doc_id=6013847
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Other Report

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Date Completed: 11/6/2006
Comments: DTSC accepted the Report prepared by its contractor as complete. Monitoring along site boundary will continue as part of the work on adjacent property.

Title: Sampling Workplan
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=60000406&doc_id=6012895
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Technical Workplan
Date Completed: 11/6/2006
Comments: PEA Workplan Completed/Accepted.

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
70	1 of 1	SSW	0.86 / 4,554.59	34.48 / 17	HUCK INTERNATIONAL INC 900 EAST WATSON CENTER ROAD CARSON CA 90745-0000	RCRA CORRACTS

EPA Handler ID: CAD044429884
Gen Status Universe: Large Quantity Generator
Contact Name: SANDRA M PEREZ
Contact Address: 900, EAST WATSON CENTER ROAD, , CARSON, CA, 90745-0000, US
Contact Phone No and Ext: 310-513-8338
Contact Email: SANDRA.PEREZ@HOWMET.COM
Contact Country: US
County Name: LOS ANGELES
EPA Region: 09
Land Type: Private
Receive Date: 20200228

Event/Area Details

Area Name: ENTIRE FACILITY
Event Code: CA725YE
Corrective Action Event Descri: HUMAN EXPOSURES CONTROLLED DETERMINATION-YES, APPLICABLE AS OF THIS DATE
Actual Date of Event: 20100805
Orig Sched Event Date: 20100805
New Sched Event Date:
Best Date: 20100805
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: ENTIRE FACILITY
Event Code: CA050
Corrective Action Event Descri: RFA COMPLETED
Actual Date of Event: 19951229
Orig Sched Event Date: 19951229
New Sched Event Date:
Best Date: 19951229
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: ENTIRE FACILITY
Event Code: CA070YE
Corrective Action Event Descri: DETERMINATION OF NEED FOR AN INVESTIGATION-INVESTIGATION IS NECESSARY
Actual Date of Event: 19951229
Orig Sched Event Date: 19951229
New Sched Event Date:
Best Date: 19951229
Groundwater Release Indicator:

Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: ENTIRE FACILITY
Event Code: CA750YE
Corrective Action Event Descri: RELEASE TO GW CONTROLLED DETERMINATION-YES, APPLICABLE AS OF THIS DATE
Actual Date of Event: 20101208
Orig Sched Event Date: 20101208
New Sched Event Date:
Best Date: 20101208
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: ENTIRE FACILITY
Event Code: CA999NF
Corrective Action Event Descri: CA PROCESS IS TERMINATED-NO FURTHER ACTION
Actual Date of Event: 19990511
Orig Sched Event Date: 19990710
New Sched Event Date:
Best Date: 19990511
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: ENTIRE FACILITY
Event Code: CA550RC
Corrective Action Event Descri: REMEDY CONSTRUCTION-REMEDY CONSTRUCTED
Actual Date of Event: 20101208
Orig Sched Event Date: 20101208
New Sched Event Date:
Best Date: 20101208
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: ENTIRE FACILITY
Event Code: CA800YE
Corrective Action Event Descri: READY FOR ANTICIPATED USE DETERMINATION - READY FOR ANTICIPATED USE
Actual Date of Event: 20200512
Orig Sched Event Date: 20200605
New Sched Event Date:
Best Date: 20200512
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind:
Event Responsible Agency: S

Violation/Evaluation Summary

Note: VIOLATION or UNDETERMINED: There are VIOLATION or UNDETERMINED details or records associated with this facility (EPA ID) in the Compliance Monitoring and Enforcement table dated May, 2020.

Violation Details

Citation:
Violation Short Description: Generators - Records/Reporting
Violation Type: 262.D

Violation Determined Date: 20190906
Scheduled Compliance Date:
Return to Compliance: Documented
Actual Return to Compl: 20190927
Violation Responsible Agency: State

Violation Details

Citation: FR - 262.30-34.C
Violation Short Description: Generators - General
Violation Type: 262.A
Violation Determined Date: 19950329
Scheduled Compliance Date:
Return to Compliance: Observed
Actual Return to Compl: 19950329
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 19950329
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Citation: FR - 264.170-177.I
Violation Short Description: TSD - General
Violation Type: 264.A
Violation Determined Date: 19950329
Scheduled Compliance Date:
Return to Compliance: Observed
Actual Return to Compl: 19950329
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 19950329
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Citation: F - 264.30-37.C
Violation Short Description: TSD - General
Violation Type: 264.A
Violation Determined Date: 19921208
Scheduled Compliance Date: 19930108
Return to Compliance: Observed
Actual Return to Compl: 19930312
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 19921208
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Citation: F - 264.10-18.B
Violation Short Description: TSD - General
Violation Type: 264.A
Violation Determined Date: 19921208
Scheduled Compliance Date: 19930108
Return to Compliance: Observed
Actual Return to Compl: 19930312
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 19921208
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Citation: F - 264.50-56.D
Violation Short Description: TSD - General
Violation Type: 264.A
Violation Determined Date: 19921208
Scheduled Compliance Date: 19930108
Return to Compliance: Observed
Actual Return to Compl: 19930312
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 19921208
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Citation: F - 264.10-18.B
Violation Short Description: TSD - General

Violation Type: 264.A
Violation Determined Date: 19921208
Scheduled Compliance Date:
Return to Compliance: Observed
Actual Return to Compl: 19930312
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 210
Enforcement Type Description: INITIAL 3008(A) COMPLIANCE
Enforcement Action Date: 19930224
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount: 1100
Final Amount: 1100
Paid Amount: 1100

Violation Details

Citation: F - 264.50-56.D
Violation Short Description: TSD - General
Violation Type: 264.A
Violation Determined Date: 19921208
Scheduled Compliance Date:
Return to Compliance: Observed
Actual Return to Compl: 19930312
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 210
Enforcement Type Description: INITIAL 3008(A) COMPLIANCE
Enforcement Action Date: 19930224
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount: 1100
Final Amount: 1100
Paid Amount: 1100

Violation Details

Citation: FR - 270
Violation Short Description: TSD - General
Violation Type: 264.A
Violation Determined Date: 19880523
Scheduled Compliance Date: 19880720
Return to Compliance: Observed
Actual Return to Compl: 19880809
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 19880630
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:

Paid Amount:

Violation Details

Citation: F - 268 ALL
Violation Short Description: LDR - General
Violation Type: 268.A
Violation Determined Date: 19880523
Scheduled Compliance Date:
Return to Compliance: Observed
Actual Return to Compl: 19880809
Violation Responsible Agency: State

Violation Details

Citation: F - 268.7
Violation Short Description: LDR - General
Violation Type: 268.A
Violation Determined Date: 19880523
Scheduled Compliance Date:
Return to Compliance: Observed
Actual Return to Compl: 19880809
Violation Responsible Agency: State

Violation Details

Citation: FR - 264.140-150.H
Violation Short Description: TSD - Financial Requirements
Violation Type: 264.H
Violation Determined Date: 19880519
Scheduled Compliance Date: 19880626
Return to Compliance: Observed
Actual Return to Compl: 19900525
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 19880526
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Evaluation Details

Evaluation Start Date: 20190906
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description: Generators - Records/Reporting
Return to Compliance Date: 20190927
Evaluation Agency: State

Evaluation Start Date: 20160721
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description:
Return to Compliance Date:
Evaluation Agency: State

Evaluation Start Date: 20130923
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE

Violation Short Description:
Return to Compliance Date:
Evaluation Agency: State

Evaluation Start Date: 20100707
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description:
Return to Compliance Date:
Evaluation Agency: State

Evaluation Start Date: 20050907
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description:
Return to Compliance Date:
Evaluation Agency: Local

Evaluation Start Date: 19950329
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description: Generators - General
Return to Compliance Date: 19950329
Evaluation Agency: State

Evaluation Start Date: 19950329
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description: TSD - General
Return to Compliance Date: 19950329
Evaluation Agency: State

Evaluation Start Date: 19930706
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description:
Return to Compliance Date:
Evaluation Agency: State Contractor/Grantee

Evaluation Start Date: 19921027
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description: TSD - General
Return to Compliance Date: 19930312
Evaluation Agency: State

Evaluation Start Date: 19921005
Evaluation Type Description: FINANCIAL RECORD REVIEW
Violation Short Description:
Return to Compliance Date:
Evaluation Agency: State

Evaluation Start Date: 19880523
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description: TSD - General
Return to Compliance Date: 19880809
Evaluation Agency: State

Evaluation Start Date: 19880523
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description: LDR - General
Return to Compliance Date: 19880809
Evaluation Agency: State

Evaluation Start Date: 19880519
Evaluation Type Description: FINANCIAL RECORD REVIEW
Violation Short Description: TSD - Financial Requirements
Return to Compliance Date: 19900525
Evaluation Agency: State

Handler Summary

Importer Activity: No
Mixed Waste Generator: No

Transporter Activity:	No
Transfer Facility:	No
Onsite Burner:	No
Smelting, Melting and Refining:	No
Underground Injection Control:	No
Commercial TSD:	No
Used Oil Transporter:	No
Used Oil Transfer Facility:	No
Used Oil Processor:	No
Used Oil Refiner:	No
Used Oil Burner:	No
Used Oil Market Burner:	No
Used Oil Spec Marketer:	No

Hazardous Waste Handler Details

Sequence No:	1
Receive Date:	19900404
Handler Name:	HUCK MFG CO
Federal Waste Generator Code:	1
Generator Code Description:	Large Quantity Generator
Source Type:	Annual/Biennial Report

Hazardous Waste Handler Details

Sequence No:	2
Receive Date:	19920225
Handler Name:	HUCK INTERNATIONAL, INC.
Federal Waste Generator Code:	1
Generator Code Description:	Large Quantity Generator
Source Type:	Annual/Biennial Report

Hazardous Waste Handler Details

Sequence No:	3
Receive Date:	19940330
Handler Name:	HUCK INTERNATIONAL, INC
Federal Waste Generator Code:	1
Generator Code Description:	Large Quantity Generator
Source Type:	Annual/Biennial Report

Hazardous Waste Handler Details

Sequence No:	4
Receive Date:	19960227
Handler Name:	HUCK INTERNATIONAL, INC.
Federal Waste Generator Code:	1
Generator Code Description:	Large Quantity Generator
Source Type:	Annual/Biennial Report

Hazardous Waste Handler Details

Sequence No:	1
Receive Date:	19960901
Handler Name:	HUCK INTERNATIONAL INC
Federal Waste Generator Code:	1
Generator Code Description:	Large Quantity Generator
Source Type:	Implementer

Hazardous Waste Handler Details

Sequence No:	5

Receive Date: 19990304
Handler Name: HUCK INTERNATIONAL, INC.
Federal Waste Generator Code: 1
Generator Code Description: Large Quantity Generator
Source Type: Annual/Biennial Report

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 20000919
Handler Name: HUCK INTERNATIONAL INC
Federal Waste Generator Code: 1
Generator Code Description: Large Quantity Generator
Source Type: Notification

Waste Code Details

Hazardous Waste Code: D001
Waste Code Description: IGNITABLE WASTE

Hazardous Waste Code: D002
Waste Code Description: CORROSIVE WASTE

Hazardous Waste Code: D003
Waste Code Description: REACTIVE WASTE

Hazardous Waste Code: D004
Waste Code Description: ARSENIC

Hazardous Waste Code: D006
Waste Code Description: CADMIUM

Hazardous Waste Code: D007
Waste Code Description: CHROMIUM

Hazardous Waste Code: D008
Waste Code Description: LEAD

Hazardous Waste Code: F006
Waste Code Description: WASTEWATER TREATMENT SLUDGES FROM ELECTROPLATING OPERATIONS, EXCEPT FROM THE FOLLOWING PROCESSES: (1) SULFURIC ACID ANODIZING OF ALUMINUM; (2) TIN PLATING ON CARBON STEEL; (3) ZINC PLATING (SEGREGATED BASIS) ON CARBON STEEL; (4) ALUMINUM OR ZINC-ALUMINUM PLATING ON CARBON STEEL; (5) CLEANING/STRIPPING ASSOCIATED WITH TIN, ZINC, AND ALUMINUM PLATING ON CARBON STEEL; AND (6) CHEMICAL ETCHING AND MILLING OF ALUMINUM.

Hazardous Waste Code: F008
Waste Code Description: PLATING BATH RESIDUES FROM THE BOTTOM OF PLATING BATHS FROM ELECTROPLATING OPERATIONS IN WHICH CYANIDES ARE USED IN THE PROCESS.

Hazardous Waste Code: F009
Waste Code Description: SPENT STRIPPING AND CLEANING BATH SOLUTIONS FROM ELECTROPLATING OPERATIONS IN WHICH CYANIDES ARE USED IN THE PROCESS.

Hazardous Waste Handler Details

Sequence No: 6
Receive Date: 20001012
Handler Name: HUCK INTERNATIONAL, INC.
Federal Waste Generator Code: 1
Generator Code Description: Large Quantity Generator
Source Type: Annual/Biennial Report

Hazardous Waste Handler Details

Sequence No: 7

Receive Date: 20020226
Handler Name: HUCK INTERNATIONAL INC.
Federal Waste Generator Code: 1
Generator Code Description: Large Quantity Generator
Source Type: Annual/Biennial Report

Waste Code Details

Hazardous Waste Code: 121
Waste Code Description: Alkaline solution (pH >12.5) with metals (antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc)

Hazardous Waste Code: 131
Waste Code Description: Aqueous solution (2 < pH < 12.5) containing reactive anions (azide, bromate, chlorate, cyanide, fluoride, hypochlorite, nitrite, perchlorate, and sulfide anions)

Hazardous Waste Code: 132
Waste Code Description: Aqueous solution w/metals (< restricted levels and see waste code 121 for a list of metals)

Hazardous Waste Code: 141
Waste Code Description: Off-specification, aged, or surplus inorganics

Hazardous Waste Code: 171
Waste Code Description: Metal sludge (see 121)

Hazardous Waste Code: 181
Waste Code Description: Other inorganic solid waste

Hazardous Waste Code: 214
Waste Code Description: Unspecified solvent mixture

Hazardous Waste Code: 711
Waste Code Description: Liquids with cyanides > 1000 mg/l

Hazardous Waste Code: 723
Waste Code Description: Liquids with chromium (VI) > 500 mg/l

Hazardous Waste Code: D001
Waste Code Description: IGNITABLE WASTE

Hazardous Waste Code: D002
Waste Code Description: CORROSIVE WASTE

Hazardous Waste Code: D006
Waste Code Description: CADMIUM

Hazardous Waste Code: D007
Waste Code Description: CHROMIUM

Hazardous Waste Code: D008
Waste Code Description: LEAD

Hazardous Waste Code: F008
Waste Code Description: PLATING BATH RESIDUES FROM THE BOTTOM OF PLATING BATHS FROM ELECTROPLATING OPERATIONS IN WHICH CYANIDES ARE USED IN THE PROCESS.

Hazardous Waste Code: F009
Waste Code Description: SPENT STRIPPING AND CLEANING BATH SOLUTIONS FROM ELECTROPLATING OPERATIONS IN WHICH CYANIDES ARE USED IN THE PROCESS.

Hazardous Waste Handler Details

Sequence No: 8
Receive Date: 20040227
Handler Name: HUCK INTL INC.
Federal Waste Generator Code: 1
Generator Code Description: Large Quantity Generator

Source Type: Annual/Biennial Report

Waste Code Details

Hazardous Waste Code: D001
Waste Code Description: IGNITABLE WASTE

Hazardous Waste Code: D002
Waste Code Description: CORROSIVE WASTE

Hazardous Waste Code: D006
Waste Code Description: CADMIUM

Hazardous Waste Code: D007
Waste Code Description: CHROMIUM

Hazardous Waste Code: D008
Waste Code Description: LEAD

Hazardous Waste Code: D009
Waste Code Description: MERCURY

Hazardous Waste Code: F006
Waste Code Description: WASTEWATER TREATMENT SLUDGES FROM ELECTROPLATING OPERATIONS, EXCEPT FROM THE FOLLOWING PROCESSES: (1) SULFURIC ACID ANODIZING OF ALUMINUM; (2) TIN PLATING ON CARBON STEEL; (3) ZINC PLATING (SEGREGATED BASIS) ON CARBON STEEL; (4) ALUMINUM OR ZINC-ALUMINUM PLATING ON CARBON STEEL; (5) CLEANING/STRIPPING ASSOCIATED WITH TIN, ZINC, AND ALUMINUM PLATING ON CARBON STEEL; AND (6) CHEMICAL ETCHING AND MILLING OF ALUMINUM.

Hazardous Waste Code: F007
Waste Code Description: SPENT CYANIDE PLATING BATH SOLUTIONS FROM ELECTROPLATING OPERATIONS.

Hazardous Waste Code: F008
Waste Code Description: PLATING BATH RESIDUES FROM THE BOTTOM OF PLATING BATHS FROM ELECTROPLATING OPERATIONS IN WHICH CYANIDES ARE USED IN THE PROCESS.

Hazardous Waste Code: F009
Waste Code Description: SPENT STRIPPING AND CLEANING BATH SOLUTIONS FROM ELECTROPLATING OPERATIONS IN WHICH CYANIDES ARE USED IN THE PROCESS.

Hazardous Waste Handler Details

Sequence No: 9
Receive Date: 20060227
Handler Name: HUCK INTERNATIONAL INC.
Federal Waste Generator Code: 1
Generator Code Description: Large Quantity Generator
Source Type: Annual/Biennial Report

Waste Code Details

Hazardous Waste Code: 121
Waste Code Description: Alkaline solution (pH >12.5) with metals (antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc)

Hazardous Waste Code: 122
Waste Code Description: Alkaline solution without metals (pH > 12.5)

Hazardous Waste Code: 131
Waste Code Description: Aqueous solution (2 < pH < 12.5) containing reactive anions (azide, bromate, chlorate, cyanide, fluoride, hypochlorite, nitrite, perchlorate, and sulfide anions)

Hazardous Waste Code: 132
Waste Code Description: Aqueous solution w/metals (< restricted levels and see waste code 121 for a list of metals)

Hazardous Waste Code: 141

Waste Code Description: Off-specification, aged, or surplus inorganics

Hazardous Waste Code: 171
Waste Code Description: Metal sludge (see 121)

Hazardous Waste Code: 181
Waste Code Description: Other inorganic solid waste

Hazardous Waste Code: 214
Waste Code Description: Unspecified solvent mixture

Hazardous Waste Code: 331
Waste Code Description: Off-specification, aged, or surplus organics

Hazardous Waste Code: 711
Waste Code Description: Liquids with cyanides > 1000 mg/l

Hazardous Waste Code: 723
Waste Code Description: Liquids with chromium (VI) > 500 mg/l

Hazardous Waste Code: D001
Waste Code Description: IGNITABLE WASTE

Hazardous Waste Code: D002
Waste Code Description: CORROSIVE WASTE

Hazardous Waste Code: D003
Waste Code Description: REACTIVE WASTE

Hazardous Waste Code: D006
Waste Code Description: CADMIUM

Hazardous Waste Code: D007
Waste Code Description: CHROMIUM

Hazardous Waste Code: D008
Waste Code Description: LEAD

Hazardous Waste Code: D010
Waste Code Description: SELENIUM

Hazardous Waste Code: F006
Waste Code Description: WASTEWATER TREATMENT SLUDGES FROM ELECTROPLATING OPERATIONS, EXCEPT FROM THE FOLLOWING PROCESSES: (1) SULFURIC ACID ANODIZING OF ALUMINUM; (2) TIN PLATING ON CARBON STEEL; (3) ZINC PLATING (SEGREGATED BASIS) ON CARBON STEEL; (4) ALUMINUM OR ZINC-ALUMINUM PLATING ON CARBON STEEL; (5) CLEANING/STRIPPING ASSOCIATED WITH TIN, ZINC, AND ALUMINUM PLATING ON CARBON STEEL; AND (6) CHEMICAL ETCHING AND MILLING OF ALUMINUM.

Hazardous Waste Code: F008
Waste Code Description: PLATING BATH RESIDUES FROM THE BOTTOM OF PLATING BATHS FROM ELECTROPLATING OPERATIONS IN WHICH CYANIDES ARE USED IN THE PROCESS.

Hazardous Waste Code: F009
Waste Code Description: SPENT STRIPPING AND CLEANING BATH SOLUTIONS FROM ELECTROPLATING OPERATIONS IN WHICH CYANIDES ARE USED IN THE PROCESS.

Hazardous Waste Handler Details

Sequence No: 10
Receive Date: 20080227
Handler Name: HUCK INTERNATIONAL INC DBA ALCOA FASTENING SYSTEMS
Federal Waste Generator Code: 1
Generator Code Description: Large Quantity Generator
Source Type: Annual/Biennial Report

Waste Code Details

Hazardous Waste Code: D001
Waste Code Description: IGNITABLE WASTE

Hazardous Waste Code: D002
Waste Code Description: CORROSIVE WASTE

Hazardous Waste Code: D006
Waste Code Description: CADMIUM

Hazardous Waste Code: D007
Waste Code Description: CHROMIUM

Hazardous Waste Code: D010
Waste Code Description: SELENIUM

Hazardous Waste Code: F006
Waste Code Description: WASTEWATER TREATMENT SLUDGES FROM ELECTROPLATING OPERATIONS, EXCEPT FROM THE FOLLOWING PROCESSES: (1) SULFURIC ACID ANODIZING OF ALUMINUM; (2) TIN PLATING ON CARBON STEEL; (3) ZINC PLATING (SEGREGATED BASIS) ON CARBON STEEL; (4) ALUMINUM OR ZINC-ALUMINUM PLATING ON CARBON STEEL; (5) CLEANING/STRIPPING ASSOCIATED WITH TIN, ZINC, AND ALUMINUM PLATING ON CARBON STEEL; AND (6) CHEMICAL ETCHING AND MILLING OF ALUMINUM.

Hazardous Waste Code: F009
Waste Code Description: SPENT STRIPPING AND CLEANING BATH SOLUTIONS FROM ELECTROPLATING OPERATIONS IN WHICH CYANIDES ARE USED IN THE PROCESS.

Hazardous Waste Handler Details

Sequence No: 2
Receive Date: 20080410
Handler Name: HUCK INTERNATIONAL INC DBA ALCOA FASTENING SYSTEMS
Federal Waste Generator Code: 1
Generator Code Description: Large Quantity Generator
Source Type: Notification

Waste Code Details

Hazardous Waste Code: D001
Waste Code Description: IGNITABLE WASTE

Hazardous Waste Code: D002
Waste Code Description: CORROSIVE WASTE

Hazardous Waste Code: D003
Waste Code Description: REACTIVE WASTE

Hazardous Waste Code: D005
Waste Code Description: BARIUM

Hazardous Waste Code: D006
Waste Code Description: CADMIUM

Hazardous Waste Code: D007
Waste Code Description: CHROMIUM

Hazardous Waste Code: D010
Waste Code Description: SELENIUM

Hazardous Waste Code: F003
Waste Code Description: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Hazardous Waste Code: F006
Waste Code Description: WASTEWATER TREATMENT SLUDGES FROM ELECTROPLATING OPERATIONS, EXCEPT FROM THE FOLLOWING PROCESSES: (1) SULFURIC ACID ANODIZING OF ALUMINUM; (2) TIN PLATING ON CARBON STEEL; (3) ZINC PLATING (SEGREGATED BASIS) ON CARBON STEEL; (4) ALUMINUM OR ZINC-ALUMINUM PLATING ON CARBON STEEL; (5) CLEANING/STRIPPING ASSOCIATED WITH TIN, ZINC, AND ALUMINUM PLATING ON CARBON STEEL; AND (6) CHEMICAL ETCHING AND MILLING OF ALUMINUM.

Hazardous Waste Code: F009
Waste Code Description: SPENT STRIPPING AND CLEANING BATH SOLUTIONS FROM ELECTROPLATING OPERATIONS IN WHICH CYANIDES ARE USED IN THE PROCESS.

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 20100916
Handler Name: HUCK INTERNATIONAL INC DBA ALCOA FASTENING SYSTEMS
Federal Waste Generator Code: 1
Generator Code Description: Large Quantity Generator
Source Type: Annual/Biennial Report update with Notification

Waste Code Details

Hazardous Waste Code: 121
Waste Code Description: Alkaline solution (pH >12.5) with metals (antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc)

Hazardous Waste Code: 171
Waste Code Description: Metal sludge (see 121)

Hazardous Waste Code: 181
Waste Code Description: Other inorganic solid waste

Hazardous Waste Code: 331
Waste Code Description: Off-specification, aged, or surplus organics

Hazardous Waste Code: 352
Waste Code Description: Other organic solids

Hazardous Waste Code: 551
Waste Code Description: Laboratory waste chemicals

Hazardous Waste Code: 711
Waste Code Description: Liquids with cyanides > 1000 mg/l

Hazardous Waste Code: 723
Waste Code Description: Liquids with chromium (VI) > 500 mg/l

Hazardous Waste Code: 791
Waste Code Description: Liquids with pH < 2

Hazardous Waste Code: D001
Waste Code Description: IGNITABLE WASTE

Hazardous Waste Code: D002
Waste Code Description: CORROSIVE WASTE

Hazardous Waste Code: D006
Waste Code Description: CADMIUM

Hazardous Waste Code: D007
Waste Code Description: CHROMIUM

Hazardous Waste Code: D010
Waste Code Description: SELENIUM

Hazardous Waste Code: D035

Waste Code Description: METHYL ETHYL KETONE

Hazardous Waste Code: F006
Waste Code Description: WASTEWATER TREATMENT SLUDGES FROM ELECTROPLATING OPERATIONS, EXCEPT FROM THE FOLLOWING PROCESSES: (1) SULFURIC ACID ANODIZING OF ALUMINUM; (2) TIN PLATING ON CARBON STEEL; (3) ZINC PLATING (SEGREGATED BASIS) ON CARBON STEEL; (4) ALUMINUM OR ZINC-ALUMINUM PLATING ON CARBON STEEL; (5) CLEANING/STRIPPING ASSOCIATED WITH TIN, ZINC, AND ALUMINUM PLATING ON CARBON STEEL; AND (6) CHEMICAL ETCHING AND MILLING OF ALUMINUM.

Hazardous Waste Code: F009
Waste Code Description: SPENT STRIPPING AND CLEANING BATH SOLUTIONS FROM ELECTROPLATING OPERATIONS IN WHICH CYANIDES ARE USED IN THE PROCESS.

Hazardous Waste Handler Details

Sequence No: 2
Receive Date: 20120301
Handler Name: HUCK INTERNATIONAL INC. D.B.A. ALCOA FASTENING SYSTEMS
Federal Waste Generator Code: 1
Generator Code Description: Large Quantity Generator
Source Type: Annual/Biennial Report update with Notification

Waste Code Details

Hazardous Waste Code: D001
Waste Code Description: IGNITABLE WASTE

Hazardous Waste Code: D002
Waste Code Description: CORROSIVE WASTE

Hazardous Waste Code: D003
Waste Code Description: REACTIVE WASTE

Hazardous Waste Code: D006
Waste Code Description: CADMIUM

Hazardous Waste Code: D007
Waste Code Description: CHROMIUM

Hazardous Waste Code: D009
Waste Code Description: MERCURY

Hazardous Waste Code: D010
Waste Code Description: SELENIUM

Hazardous Waste Code: D035
Waste Code Description: METHYL ETHYL KETONE

Hazardous Waste Code: F006
Waste Code Description: WASTEWATER TREATMENT SLUDGES FROM ELECTROPLATING OPERATIONS, EXCEPT FROM THE FOLLOWING PROCESSES: (1) SULFURIC ACID ANODIZING OF ALUMINUM; (2) TIN PLATING ON CARBON STEEL; (3) ZINC PLATING (SEGREGATED BASIS) ON CARBON STEEL; (4) ALUMINUM OR ZINC-ALUMINUM PLATING ON CARBON STEEL; (5) CLEANING/STRIPPING ASSOCIATED WITH TIN, ZINC, AND ALUMINUM PLATING ON CARBON STEEL; AND (6) CHEMICAL ETCHING AND MILLING OF ALUMINUM.

Hazardous Waste Code: F009
Waste Code Description: SPENT STRIPPING AND CLEANING BATH SOLUTIONS FROM ELECTROPLATING OPERATIONS IN WHICH CYANIDES ARE USED IN THE PROCESS.

Hazardous Waste Handler Details

Sequence No: 3
Receive Date: 20140301
Handler Name: HUCK INTERNATIONAL INC DBA ALCOA FASTENING SYSTEMS
Federal Waste Generator Code: 1
Generator Code Description: Large Quantity Generator

Source Type: Annual/Biennial Report update with Notification

Waste Code Details

Hazardous Waste Code: D001
Waste Code Description: IGNITABLE WASTE

Hazardous Waste Code: D002
Waste Code Description: CORROSIVE WASTE

Hazardous Waste Code: D003
Waste Code Description: REACTIVE WASTE

Hazardous Waste Code: D006
Waste Code Description: CADMIUM

Hazardous Waste Code: D007
Waste Code Description: CHROMIUM

Hazardous Waste Code: D008
Waste Code Description: LEAD

Hazardous Waste Code: D009
Waste Code Description: MERCURY

Hazardous Waste Code: D010
Waste Code Description: SELENIUM

Hazardous Waste Code: D035
Waste Code Description: METHYL ETHYL KETONE

Hazardous Waste Code: F006
Waste Code Description: WASTEWATER TREATMENT SLUDGES FROM ELECTROPLATING OPERATIONS, EXCEPT FROM THE FOLLOWING PROCESSES: (1) SULFURIC ACID ANODIZING OF ALUMINUM; (2) TIN PLATING ON CARBON STEEL; (3) ZINC PLATING (SEGREGATED BASIS) ON CARBON STEEL; (4) ALUMINUM OR ZINC-ALUMINUM PLATING ON CARBON STEEL; (5) CLEANING/STRIPPING ASSOCIATED WITH TIN, ZINC, AND ALUMINUM PLATING ON CARBON STEEL; AND (6) CHEMICAL ETCHING AND MILLING OF ALUMINUM.

Hazardous Waste Code: F009
Waste Code Description: SPENT STRIPPING AND CLEANING BATH SOLUTIONS FROM ELECTROPLATING OPERATIONS IN WHICH CYANIDES ARE USED IN THE PROCESS.

Hazardous Waste Code: U002
Waste Code Description: 2-PROPANONE (I) (OR) ACETONE (I)

Hazardous Waste Code: U220
Waste Code Description: BENZENE, METHYL- (OR) TOLUENE

Hazardous Waste Handler Details

Sequence No: 3
Receive Date: 20140617
Handler Name: HUCK INTL INC DBA ALCOA FASTENING SYSTEMS
Federal Waste Generator Code: 1
Generator Code Description: Large Quantity Generator
Source Type: Notification

Waste Code Details

Hazardous Waste Code: 121
Waste Code Description: Alkaline solution (pH >12.5) with metals (antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc)

Hazardous Waste Code: 122
Waste Code Description: Alkaline solution without metals (pH > 12.5)

Hazardous Waste Code:	132
Waste Code Description:	Aqueous solution w/metals (< restricted levels and see waste code 121 for a list of metals)
Hazardous Waste Code:	134
Waste Code Description:	Aqueous solution with <10% total organic residues
Hazardous Waste Code:	141
Waste Code Description:	Off-specification, aged, or surplus inorganics
Hazardous Waste Code:	171
Waste Code Description:	Metal sludge (see 121)
Hazardous Waste Code:	181
Waste Code Description:	Other inorganic solid waste
Hazardous Waste Code:	331
Waste Code Description:	Off-specification, aged, or surplus organics
Hazardous Waste Code:	352
Waste Code Description:	Other organic solids
Hazardous Waste Code:	513
Waste Code Description:	Empty containers less than 30 gallons
Hazardous Waste Code:	711
Waste Code Description:	Liquids with cyanides > 1000 mg/l
Hazardous Waste Code:	723
Waste Code Description:	Liquids with chromium (VI) > 500 mg/l
Hazardous Waste Code:	791
Waste Code Description:	Liquids with pH < 2
Hazardous Waste Code:	792
Waste Code Description:	Liquids with pH < 2 with metals
Hazardous Waste Code:	D001
Waste Code Description:	IGNITABLE WASTE
Hazardous Waste Code:	D002
Waste Code Description:	CORROSIVE WASTE
Hazardous Waste Code:	D006
Waste Code Description:	CADMIUM
Hazardous Waste Code:	D007
Waste Code Description:	CHROMIUM
Hazardous Waste Code:	D008
Waste Code Description:	LEAD
Hazardous Waste Code:	D009
Waste Code Description:	MERCURY
Hazardous Waste Code:	D010
Waste Code Description:	SELENIUM
Hazardous Waste Code:	D035
Waste Code Description:	METHYL ETHYL KETONE
Hazardous Waste Code:	F006
Waste Code Description:	WASTEWATER TREATMENT SLUDGES FROM ELECTROPLATING OPERATIONS, EXCEPT FROM THE FOLLOWING PROCESSES: (1) SULFURIC ACID ANODIZING OF ALUMINUM; (2) TIN PLATING ON CARBON STEEL; (3) ZINC PLATING (SEGREGATED BASIS) ON CARBON STEEL; (4) ALUMINUM OR ZINC-ALUMINUM PLATING ON CARBON STEEL; (5) CLEANING/STRIPPING ASSOCIATED WITH TIN, ZINC, AND ALUMINUM PLATING ON CARBON STEEL; AND (6) CHEMICAL ETCHING AND MILLING OF ALUMINUM.
Hazardous Waste Code:	F009
Waste Code Description:	SPENT STRIPPING AND CLEANING BATH SOLUTIONS FROM ELECTROPLATING OPERATIONS IN WHICH

CYANIDES ARE USED IN THE PROCESS.

Hazardous Waste Code: U002
Waste Code Description: 2-PROPANONE (I) (OR) ACETONE (I)

Hazardous Waste Code: U220
Waste Code Description: BENZENE, METHYL- (OR) TOLUENE

Hazardous Waste Handler Details

Sequence No: 4
Receive Date: 20160308
Handler Name: HUCK INTL INC DBA ALCOA FASTENING SYSTEMS & RINGS
Federal Waste Generator Code: 1
Generator Code Description: Large Quantity Generator
Source Type: Notification

Waste Code Details

Hazardous Waste Code: 121
Waste Code Description: Alkaline solution (pH >12.5) with metals (antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc)

Hazardous Waste Code: 122
Waste Code Description: Alkaline solution without metals (pH > 12.5)

Hazardous Waste Code: 132
Waste Code Description: Aqueous solution w/metals (< restricted levels and see waste code 121 for a list of metals)

Hazardous Waste Code: 134
Waste Code Description: Aqueous solution with <10% total organic residues

Hazardous Waste Code: 141
Waste Code Description: Off-specification, aged, or surplus inorganics

Hazardous Waste Code: 151
Waste Code Description: Asbestos-containing waste

Hazardous Waste Code: 171
Waste Code Description: Metal sludge (see 121)

Hazardous Waste Code: 172
Waste Code Description: Metal dust (see 121) and machining waste

Hazardous Waste Code: 181
Waste Code Description: Other inorganic solid waste

Hazardous Waste Code: 221
Waste Code Description: Waste oil and mixed oil

Hazardous Waste Code: 223
Waste Code Description: Unspecified oil-containing waste

Hazardous Waste Code: 331
Waste Code Description: Off-specification, aged, or surplus organics

Hazardous Waste Code: 352
Waste Code Description: Other organic solids

Hazardous Waste Code: 491
Waste Code Description: Unspecified sludge waste

Hazardous Waste Code: 512
Waste Code Description: Other empty containers 30 gallons or more

Hazardous Waste Code: 513
Waste Code Description: Empty containers less than 30 gallons

Hazardous Waste Code: 711
Waste Code Description: Liquids with cyanides > 1000 mg/l

Hazardous Waste Code: 723
Waste Code Description: Liquids with chromium (VI) > 500 mg/l

Hazardous Waste Code: 791
Waste Code Description: Liquids with pH < 2

Hazardous Waste Code: 792
Waste Code Description: Liquids with pH < 2 with metals

Hazardous Waste Code: D001
Waste Code Description: IGNITABLE WASTE

Hazardous Waste Code: D002
Waste Code Description: CORROSIVE WASTE

Hazardous Waste Code: D003
Waste Code Description: REACTIVE WASTE

Hazardous Waste Code: D006
Waste Code Description: CADMIUM

Hazardous Waste Code: D007
Waste Code Description: CHROMIUM

Hazardous Waste Code: D008
Waste Code Description: LEAD

Hazardous Waste Code: D009
Waste Code Description: MERCURY

Hazardous Waste Code: D010
Waste Code Description: SELENIUM

Hazardous Waste Code: D035
Waste Code Description: METHYL ETHYL KETONE

Hazardous Waste Code: F006
Waste Code Description: WASTEWATER TREATMENT SLUDGES FROM ELECTROPLATING OPERATIONS, EXCEPT FROM THE FOLLOWING PROCESSES: (1) SULFURIC ACID ANODIZING OF ALUMINUM; (2) TIN PLATING ON CARBON STEEL; (3) ZINC PLATING (SEGREGATED BASIS) ON CARBON STEEL; (4) ALUMINUM OR ZINC-ALUMINUM PLATING ON CARBON STEEL; (5) CLEANING/STRIPPING ASSOCIATED WITH TIN, ZINC, AND ALUMINUM PLATING ON CARBON STEEL; AND (6) CHEMICAL ETCHING AND MILLING OF ALUMINUM.

Hazardous Waste Code: F009
Waste Code Description: SPENT STRIPPING AND CLEANING BATH SOLUTIONS FROM ELECTROPLATING OPERATIONS IN WHICH CYANIDES ARE USED IN THE PROCESS.

Hazardous Waste Code: P106
Waste Code Description: SODIUM CYANIDE (OR) SODIUM CYANIDE NA(CN)

Hazardous Waste Code: U002
Waste Code Description: 2-PROPANONE (I) (OR) ACETONE (I)

Hazardous Waste Code: U220
Waste Code Description: BENZENE, METHYL- (OR) TOLUENE

Hazardous Waste Handler Details

Sequence No: 4
Receive Date: 20160517
Handler Name: HUCK INTERNATIONAL INC. DBA ALCOA FASTENING SYSTEMS & RINGS; AFSR CARSON
Federal Waste Generator Code: 1
Generator Code Description: Large Quantity Generator
Source Type: Annual/Biennial Report update with Notification

Waste Code Details

Hazardous Waste Code: 121
Waste Code Description: Alkaline solution (pH >12.5) with metals (antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc)

Hazardous Waste Code: 122
Waste Code Description: Alkaline solution without metals (pH > 12.5)

Hazardous Waste Code: 132
Waste Code Description: Aqueous solution w/metals (< restricted levels and see waste code 121 for a list of metals)

Hazardous Waste Code: 134
Waste Code Description: Aqueous solution with <10% total organic residues

Hazardous Waste Code: 141
Waste Code Description: Off-specification, aged, or surplus inorganics

Hazardous Waste Code: 171
Waste Code Description: Metal sludge (see 121)

Hazardous Waste Code: 172
Waste Code Description: Metal dust (see 121) and machining waste

Hazardous Waste Code: 331
Waste Code Description: Off-specification, aged, or surplus organics

Hazardous Waste Code: 352
Waste Code Description: Other organic solids

Hazardous Waste Code: 512
Waste Code Description: Other empty containers 30 gallons or more

Hazardous Waste Code: 711
Waste Code Description: Liquids with cyanides > 1000 mg/l

Hazardous Waste Code: 723
Waste Code Description: Liquids with chromium (VI) > 500 mg/l

Hazardous Waste Code: 791
Waste Code Description: Liquids with pH < 2

Hazardous Waste Code: 792
Waste Code Description: Liquids with pH < 2 with metals

Hazardous Waste Code: D001
Waste Code Description: IGNITABLE WASTE

Hazardous Waste Code: D002
Waste Code Description: CORROSIVE WASTE

Hazardous Waste Code: D003
Waste Code Description: REACTIVE WASTE

Hazardous Waste Code: D006
Waste Code Description: CADMIUM

Hazardous Waste Code: D007
Waste Code Description: CHROMIUM

Hazardous Waste Code: D008
Waste Code Description: LEAD

Hazardous Waste Code: D009
Waste Code Description: MERCURY

Hazardous Waste Code: D010

Waste Code Description: SELENIUM

Hazardous Waste Code: D035
Waste Code Description: METHYL ETHYL KETONE

Hazardous Waste Code: F006
Waste Code Description: WASTEWATER TREATMENT SLUDGES FROM ELECTROPLATING OPERATIONS, EXCEPT FROM THE FOLLOWING PROCESSES: (1) SULFURIC ACID ANODIZING OF ALUMINUM; (2) TIN PLATING ON CARBON STEEL; (3) ZINC PLATING (SEGREGATED BASIS) ON CARBON STEEL; (4) ALUMINUM OR ZINC-ALUMINUM PLATING ON CARBON STEEL; (5) CLEANING/STRIPPING ASSOCIATED WITH TIN, ZINC, AND ALUMINUM PLATING ON CARBON STEEL; AND (6) CHEMICAL ETCHING AND MILLING OF ALUMINUM.

Hazardous Waste Code: F009
Waste Code Description: SPENT STRIPPING AND CLEANING BATH SOLUTIONS FROM ELECTROPLATING OPERATIONS IN WHICH CYANIDES ARE USED IN THE PROCESS.

Hazardous Waste Code: P106
Waste Code Description: SODIUM CYANIDE (OR) SODIUM CYANIDE NA(CN)

Hazardous Waste Handler Details

Sequence No: 5
Receive Date: 20161114
Handler Name: HUCK INTERNATIONAL INC
Federal Waste Generator Code: 1
Generator Code Description: Large Quantity Generator
Source Type: Notification

Waste Code Details

Hazardous Waste Code: 121
Waste Code Description: Alkaline solution (pH >12.5) with metals (antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc)

Hazardous Waste Code: 122
Waste Code Description: Alkaline solution without metals (pH > 12.5)

Hazardous Waste Code: 132
Waste Code Description: Aqueous solution w/metals (< restricted levels and see waste code 121 for a list of metals)

Hazardous Waste Code: 134
Waste Code Description: Aqueous solution with <10% total organic residues

Hazardous Waste Code: 141
Waste Code Description: Off-specification, aged, or surplus inorganics

Hazardous Waste Code: 151
Waste Code Description: Asbestos-containing waste

Hazardous Waste Code: 171
Waste Code Description: Metal sludge (see 121)

Hazardous Waste Code: 172
Waste Code Description: Metal dust (see 121) and machining waste

Hazardous Waste Code: 181
Waste Code Description: Other inorganic solid waste

Hazardous Waste Code: 221
Waste Code Description: Waste oil and mixed oil

Hazardous Waste Code: 223
Waste Code Description: Unspecified oil-containing waste

Hazardous Waste Code: 331
Waste Code Description: Off-specification, aged, or surplus organics

Hazardous Waste Code:	352
Waste Code Description:	Other organic solids
Hazardous Waste Code:	491
Waste Code Description:	Unspecified sludge waste
Hazardous Waste Code:	512
Waste Code Description:	Other empty containers 30 gallons or more
Hazardous Waste Code:	513
Waste Code Description:	Empty containers less than 30 gallons
Hazardous Waste Code:	711
Waste Code Description:	Liquids with cyanides > 1000 mg/l
Hazardous Waste Code:	723
Waste Code Description:	Liquids with chromium (VI) > 500 mg/l
Hazardous Waste Code:	791
Waste Code Description:	Liquids with pH < 2
Hazardous Waste Code:	792
Waste Code Description:	Liquids with pH < 2 with metals
Hazardous Waste Code:	D001
Waste Code Description:	IGNITABLE WASTE
Hazardous Waste Code:	D002
Waste Code Description:	CORROSIVE WASTE
Hazardous Waste Code:	D003
Waste Code Description:	REACTIVE WASTE
Hazardous Waste Code:	D006
Waste Code Description:	CADMIUM
Hazardous Waste Code:	D007
Waste Code Description:	CHROMIUM
Hazardous Waste Code:	D008
Waste Code Description:	LEAD
Hazardous Waste Code:	D009
Waste Code Description:	MERCURY
Hazardous Waste Code:	D010
Waste Code Description:	SELENIUM
Hazardous Waste Code:	D035
Waste Code Description:	METHYL ETHYL KETONE
Hazardous Waste Code:	F006
Waste Code Description:	WASTEWATER TREATMENT SLUDGES FROM ELECTROPLATING OPERATIONS, EXCEPT FROM THE FOLLOWING PROCESSES: (1) SULFURIC ACID ANODIZING OF ALUMINUM; (2) TIN PLATING ON CARBON STEEL; (3) ZINC PLATING (SEGREGATED BASIS) ON CARBON STEEL; (4) ALUMINUM OR ZINC-ALUMINUM PLATING ON CARBON STEEL; (5) CLEANING/STRIPPING ASSOCIATED WITH TIN, ZINC, AND ALUMINUM PLATING ON CARBON STEEL; AND (6) CHEMICAL ETCHING AND MILLING OF ALUMINUM.
Hazardous Waste Code:	F009
Waste Code Description:	SPENT STRIPPING AND CLEANING BATH SOLUTIONS FROM ELECTROPLATING OPERATIONS IN WHICH CYANIDES ARE USED IN THE PROCESS.
Hazardous Waste Code:	P106
Waste Code Description:	SODIUM CYANIDE (OR) SODIUM CYANIDE NA(CN)
Hazardous Waste Code:	U002
Waste Code Description:	2-PROPANONE (I) (OR) ACETONE (I)
Hazardous Waste Code:	U220

Waste Code Description: BENZENE, METHYL- (OR) TOLUENE

Hazardous Waste Handler Details

Sequence No: 5
Receive Date: 20180301
Handler Name: HUCK INTERNATIONAL INC
Federal Waste Generator Code: 1
Generator Code Description: Large Quantity Generator
Source Type: Annual/Biennial Report update with Notification

Waste Code Details

Hazardous Waste Code: 121
Waste Code Description: Alkaline solution (pH >12.5) with metals (antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc)

Hazardous Waste Code: 122
Waste Code Description: Alkaline solution without metals (pH > 12.5)

Hazardous Waste Code: 132
Waste Code Description: Aqueous solution w/metals (< restricted levels and see waste code 121 for a list of metals)

Hazardous Waste Code: 134
Waste Code Description: Aqueous solution with <10% total organic residues

Hazardous Waste Code: 141
Waste Code Description: Off-specification, aged, or surplus inorganics

Hazardous Waste Code: 171
Waste Code Description: Metal sludge (see 121)

Hazardous Waste Code: 172
Waste Code Description: Metal dust (see 121) and machining waste

Hazardous Waste Code: 181
Waste Code Description: Other inorganic solid waste

Hazardous Waste Code: 331
Waste Code Description: Off-specification, aged, or surplus organics

Hazardous Waste Code: 352
Waste Code Description: Other organic solids

Hazardous Waste Code: 512
Waste Code Description: Other empty containers 30 gallons or more

Hazardous Waste Code: 513
Waste Code Description: Empty containers less than 30 gallons

Hazardous Waste Code: 711
Waste Code Description: Liquids with cyanides > 1000 mg/l

Hazardous Waste Code: 723
Waste Code Description: Liquids with chromium (VI) > 500 mg/l

Hazardous Waste Code: 791
Waste Code Description: Liquids with pH < 2

Hazardous Waste Code: 792
Waste Code Description: Liquids with pH < 2 with metals

Hazardous Waste Code: D001
Waste Code Description: IGNITABLE WASTE

Hazardous Waste Code: D002
Waste Code Description: CORROSIVE WASTE

Hazardous Waste Code: D003
Waste Code Description: REACTIVE WASTE

Hazardous Waste Code: D006
Waste Code Description: CADMIUM

Hazardous Waste Code: D007
Waste Code Description: CHROMIUM

Hazardous Waste Code: D010
Waste Code Description: SELENIUM

Hazardous Waste Code: D011
Waste Code Description: SILVER

Hazardous Waste Code: D035
Waste Code Description: METHYL ETHYL KETONE

Hazardous Waste Code: F006
Waste Code Description: WASTEWATER TREATMENT SLUDGES FROM ELECTROPLATING OPERATIONS, EXCEPT FROM THE FOLLOWING PROCESSES: (1) SULFURIC ACID ANODIZING OF ALUMINUM; (2) TIN PLATING ON CARBON STEEL; (3) ZINC PLATING (SEGREGATED BASIS) ON CARBON STEEL; (4) ALUMINUM OR ZINC-ALUMINUM PLATING ON CARBON STEEL; (5) CLEANING/STRIPPING ASSOCIATED WITH TIN, ZINC, AND ALUMINUM PLATING ON CARBON STEEL; AND (6) CHEMICAL ETCHING AND MILLING OF ALUMINUM.

Hazardous Waste Code: F007
Waste Code Description: SPENT CYANIDE PLATING BATH SOLUTIONS FROM ELECTROPLATING OPERATIONS.

Hazardous Waste Code: F009
Waste Code Description: SPENT STRIPPING AND CLEANING BATH SOLUTIONS FROM ELECTROPLATING OPERATIONS IN WHICH CYANIDES ARE USED IN THE PROCESS.

Hazardous Waste Code: P106
Waste Code Description: SODIUM CYANIDE (OR) SODIUM CYANIDE NA(CN)

Hazardous Waste Handler Details

Sequence No: 6
Receive Date: 20200228
Handler Name: HUCK INTERNATIONAL INC
Federal Waste Generator Code: 1
Generator Code Description: Large Quantity Generator
Source Type: Annual/Biennial Report update with Notification

Waste Code Details

Hazardous Waste Code: 121
Waste Code Description: Alkaline solution (pH >12.5) with metals (antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc)

Hazardous Waste Code: 122
Waste Code Description: Alkaline solution without metals (pH > 12.5)

Hazardous Waste Code: 132
Waste Code Description: Aqueous solution w/metals (< restricted levels and see waste code 121 for a list of metals)

Hazardous Waste Code: 134
Waste Code Description: Aqueous solution with <10% total organic residues

Hazardous Waste Code: 141
Waste Code Description: Off-specification, aged, or surplus inorganics

Hazardous Waste Code: 171
Waste Code Description: Metal sludge (see 121)

Hazardous Waste Code: 172

Waste Code Description:	Metal dust (see 121) and machining waste
Hazardous Waste Code:	181
Waste Code Description:	Other inorganic solid waste
Hazardous Waste Code:	331
Waste Code Description:	Off-specification, aged, or surplus organics
Hazardous Waste Code:	352
Waste Code Description:	Other organic solids
Hazardous Waste Code:	512
Waste Code Description:	Other empty containers 30 gallons or more
Hazardous Waste Code:	711
Waste Code Description:	Liquids with cyanides > 1000 mg/l
Hazardous Waste Code:	723
Waste Code Description:	Liquids with chromium (VI) > 500 mg/l
Hazardous Waste Code:	791
Waste Code Description:	Liquids with pH < 2
Hazardous Waste Code:	792
Waste Code Description:	Liquids with pH < 2 with metals
Hazardous Waste Code:	D001
Waste Code Description:	IGNITABLE WASTE
Hazardous Waste Code:	D002
Waste Code Description:	CORROSIVE WASTE
Hazardous Waste Code:	D003
Waste Code Description:	REACTIVE WASTE
Hazardous Waste Code:	D006
Waste Code Description:	CADMIUM
Hazardous Waste Code:	D007
Waste Code Description:	CHROMIUM
Hazardous Waste Code:	D009
Waste Code Description:	MERCURY
Hazardous Waste Code:	D010
Waste Code Description:	SELENIUM
Hazardous Waste Code:	D011
Waste Code Description:	SILVER
Hazardous Waste Code:	D035
Waste Code Description:	METHYL ETHYL KETONE
Hazardous Waste Code:	F006
Waste Code Description:	WASTEWATER TREATMENT SLUDGES FROM ELECTROPLATING OPERATIONS, EXCEPT FROM THE FOLLOWING PROCESSES: (1) SULFURIC ACID ANODIZING OF ALUMINUM; (2) TIN PLATING ON CARBON STEEL; (3) ZINC PLATING (SEGREGATED BASIS) ON CARBON STEEL; (4) ALUMINUM OR ZINC-ALUMINUM PLATING ON CARBON STEEL; (5) CLEANING/STRIPPING ASSOCIATED WITH TIN, ZINC, AND ALUMINUM PLATING ON CARBON STEEL; AND (6) CHEMICAL ETCHING AND MILLING OF ALUMINUM.
Hazardous Waste Code:	F007
Waste Code Description:	SPENT CYANIDE PLATING BATH SOLUTIONS FROM ELECTROPLATING OPERATIONS.
Hazardous Waste Code:	F009
Waste Code Description:	SPENT STRIPPING AND CLEANING BATH SOLUTIONS FROM ELECTROPLATING OPERATIONS IN WHICH CYANIDES ARE USED IN THE PROCESS.
Hazardous Waste Code:	P106
Waste Code Description:	SODIUM CYANIDE (OR) SODIUM CYANIDE NA(CN)

Owner/Operator Details

Owner/Operator Ind:	Current Owner	***Street No:***	
Type:	Private	***Street 1:***	201 ISABELLA ST.
Name:	ALCOA INC.	***Street 2:***	
Date Became Current:	19990401	***City:***	PITTTSBURGH,
Date Ended Current:		***State:***	PA
Phone:		***Country:***	
Source Type:	Annual/Biennial Report update with Notification	***Zip Code:***	15212

Owner/Operator Ind:	Current Operator	***Street No:***	
Type:	Private	***Street 1:***	
Name:	HUCK INTL INC.	***Street 2:***	
Date Became Current:	19650322	***City:***	
Date Ended Current:		***State:***	
Phone:		***Country:***	US
Source Type:	Annual/Biennial Report	***Zip Code:***	

Owner/Operator Ind:	Current Operator	***Street No:***	
Type:	Private	***Street 1:***	201 ISABELA ST
Name:	HUCK INTERNATIONAL INC DBA ALCOA FASTEN	***Street 2:***	ALCOA CORPORATE CENTER
Date Became Current:	19911101	***City:***	PITTSBURGH
Date Ended Current:		***State:***	PA
Phone:		***Country:***	US
Source Type:	Notification	***Zip Code:***	15212-5858

Owner/Operator Ind:	Current Owner	***Street No:***	201
Type:	Private	***Street 1:***	ISABBELA ST
Name:	ALCOA INC	***Street 2:***	
Date Became Current:	20000519	***City:***	PITTSBURGH
Date Ended Current:		***State:***	PA
Phone:	412-553-2918	***Country:***	US
Source Type:	Notification	***Zip Code:***	15212

Owner/Operator Ind:	Current Owner	***Street No:***	22010
Type:	Private	***Street 1:***	WILMINGTON AVE
Name:	WATSON LAND COMPANY	***Street 2:***	
Date Became Current:	19600101	***City:***	CARSON
Date Ended Current:		***State:***	CA
Phone:	310-952-6400	***Country:***	US
Source Type:	Notification	***Zip Code:***	90745

Owner/Operator Ind:	Current Operator	***Street No:***	900
Type:	Private	***Street 1:***	E WATSON CENTER RD
Name:	HUCK INTERNATIONAL INC DBA ALC FA SYS	***Street 2:***	
Date Became Current:	19650322	***City:***	CARSON
Date Ended Current:		***State:***	CA
Phone:	310-847-8130	***Country:***	US
Source Type:	Annual/Biennial Report update with Notification	***Zip Code:***	90745

Owner/Operator Ind:	Current Operator	***Street No:***	
Type:	Private	***Street 1:***	
Name:	HUCK INTERNATIONAL INC	***Street 2:***	
Date Became Current:	19911028	***City:***	
Date Ended Current:		***State:***	
Phone:		***Country:***	US
Source Type:	Notification	***Zip Code:***	

Owner/Operator Ind:	Current Owner	***Street No:***	900
Type:	Private	***Street 1:***	E WATSON CENTER RD
Name:	HUCK INTERNATIONAL INC	***Street 2:***	
Date Became Current:	19650322	***City:***	CARSON
Date Ended Current:		***State:***	CA
Phone:	310-847-8130	***Country:***	
Source Type:	Annual/Biennial Report update with Notification	***Zip Code:***	90745

Owner/Operator Ind:	Current Operator	**Street No:**	
Type:	Private	**Street 1:**	
Name:	HUCK INTERNATIONAL INC. DBA	**Street 2:**	
Date Became Current:	19650322	**City:**	
Date Ended Current:		**State:**	
Phone:		**Country:**	
Source Type:	Annual/Biennial Report update with Notification	**Zip Code:**	

Owner/Operator Ind:	Current Owner	**Street No:**	
Type:	Private	**Street 1:**	
Name:	ALCOA INC	**Street 2:**	
Date Became Current:	20000519	**City:**	
Date Ended Current:		**State:**	
Phone:		**Country:**	
Source Type:	Notification	**Zip Code:**	

Owner/Operator Ind:	Current Owner	**Street No:**	
Type:	Private	**Street 1:**	201 ISABBELA ST
Name:	ALCOA INC	**Street 2:**	
Date Became Current:	20000601	**City:**	PITTSBURGH
Date Ended Current:		**State:**	PA
Phone:	412-553-2918	**Country:**	US
Source Type:	Notification	**Zip Code:**	15212

Owner/Operator Ind:	Current Operator	**Street No:**	900
Type:	Private	**Street 1:**	EAST WATSON CENTER ROAD
Name:	HUCK INTERNATIONAL INC.	**Street 2:**	
Date Became Current:	19650322	**City:**	CARSON
Date Ended Current:		**State:**	CA
Phone:	310-847-8130	**Country:**	US
Source Type:	Annual/Biennial Report update with Notification	**Zip Code:**	90745-0000

Owner/Operator Ind:	Current Owner	**Street No:**	
Type:	Private	**Street 1:**	900 WATSON CTR RD.
Name:	ALCOA INC.	**Street 2:**	
Date Became Current:	19990401	**City:**	CARSON
Date Ended Current:		**State:**	CA
Phone:		**Country:**	US
Source Type:	Annual/Biennial Report	**Zip Code:**	90745

Owner/Operator Ind:	Current Owner	**Street No:**	
Type:	Private	**Street 1:**	201 ISABELLA ST.
Name:	ALCOA INC.	**Street 2:**	
Date Became Current:	19990401	**City:**	PITTTSBURGH,
Date Ended Current:		**State:**	PA
Phone:		**Country:**	US
Source Type:	Annual/Biennial Report	**Zip Code:**	15212

Owner/Operator Ind:	Current Owner	**Street No:**	900
Type:	Private	**Street 1:**	EAST WATSON CENTER ROAD
Name:	HUCK INTERNATIONAL INC.	**Street 2:**	
Date Became Current:	19650322	**City:**	CARSON
Date Ended Current:		**State:**	CA
Phone:	310-847-8130	**Country:**	US
Source Type:	Annual/Biennial Report update with Notification	**Zip Code:**	90745-0000

Owner/Operator Ind:	Current Owner	**Street No:**	900
Type:	Private	**Street 1:**	EAST WATSON CENTER ROAD
Name:	HUCK INTERNATIONAL INC.	**Street 2:**	
Date Became Current:	19650322	**City:**	CARSON
Date Ended Current:		**State:**	CA
Phone:		**Country:**	
Source Type:	Annual/Biennial Report update with Notification	**Zip Code:**	90745

Owner/Operator Ind:	Current Owner	**Street No:**	900
Type:	Private	**Street 1:**	EAST WATSON CENTER RD
Name:	HUCK INTERNATIONAL INC.	**Street 2:**	
Date Became Current:	19650322	**City:**	CARSON

Date Ended Current:		**State:**	CA
Phone:	310-847-8130	**Country:**	US
Source Type:	Annual/Biennial Report update with Notification	**Zip Code:**	90745
Owner/Operator Ind:	Current Owner	**Street No:**	
Type:	Private	**Street 1:**	
Name:	ALCOA INC.	**Street 2:**	
Date Became Current:	19990401	**City:**	
Date Ended Current:		**State:**	
Phone:		**Country:**	US
Source Type:	Annual/Biennial Report	**Zip Code:**	
Owner/Operator Ind:	Current Owner	**Street No:**	
Type:	Private	**Street 1:**	ALCOA CORP CTR 201 ISABELLA ST
Name:	ALCOA INC	**Street 2:**	
Date Became Current:		**City:**	PITTSBURGH
Date Ended Current:		**State:**	PA
Phone:	412-553-2918	**Country:**	
Source Type:	Notification	**Zip Code:**	15212-5858
Owner/Operator Ind:	Current Operator	**Street No:**	
Type:	Private	**Street 1:**	
Name:	HUCK INTERNATIONAL INC.	**Street 2:**	
Date Became Current:	19650322	**City:**	
Date Ended Current:		**State:**	
Phone:		**Country:**	US
Source Type:	Annual/Biennial Report	**Zip Code:**	
Owner/Operator Ind:	Current Operator	**Street No:**	
Type:	Private	**Street 1:**	
Name:	HUCK INTERNATIONAL INC.	**Street 2:**	
Date Became Current:	19650322	**City:**	
Date Ended Current:		**State:**	
Phone:		**Country:**	
Source Type:	Annual/Biennial Report update with Notification	**Zip Code:**	
Owner/Operator Ind:	Current Operator	**Street No:**	
Type:	Private	**Street 1:**	
Name:	HUCK INTL INC DBA ALCOA FASTEN	**Street 2:**	
Date Became Current:	19911101	**City:**	
Date Ended Current:		**State:**	
Phone:		**Country:**	US
Source Type:	Notification	**Zip Code:**	
Owner/Operator Ind:	Current Operator	**Street No:**	
Type:	Private	**Street 1:**	900 WATSONCENTER RD
Name:	HUCK MFG	**Street 2:**	
Date Became Current:		**City:**	CARSON
Date Ended Current:		**State:**	CA
Phone:	213-830-8200	**Country:**	
Source Type:	Implementer	**Zip Code:**	90745
Owner/Operator Ind:	Current Operator	**Street No:**	900
Type:	Private	**Street 1:**	EAST WATSON CENTER ROAD
Name:	HUCK INTERNATIONAL INC.	**Street 2:**	
Date Became Current:	19650322	**City:**	CARSON
Date Ended Current:		**State:**	CA
Phone:		**Country:**	
Source Type:	Annual/Biennial Report update with Notification	**Zip Code:**	90745

Historical Handler Details

Receive Dt:	20180301
Generator Code Description:	Large Quantity Generator
Handler Name:	HUCK INTERNATIONAL INC
Receive Dt:	20161114
Generator Code Description:	Large Quantity Generator

Handler Name: HUCK INTERNATIONAL INC

Receive Dt: 20160517
Generator Code Description: Large Quantity Generator
Handler Name: HUCK INTERNATIONAL INC. DBA ALCOA FASTENING SYSTEMS & RINGS; AFSR CARSON

Receive Dt: 20160308
Generator Code Description: Large Quantity Generator
Handler Name: HUCK INTL INC DBA ALCOA FASTENING SYSTEMS & RINGS

Receive Dt: 20140617
Generator Code Description: Large Quantity Generator
Handler Name: HUCK INTL INC DBA ALCOA FASTENING SYSTEMS

Receive Dt: 20140301
Generator Code Description: Large Quantity Generator
Handler Name: HUCK INTERNATIONAL INC DBA ALCOA FASTENING SYSTEMS

Receive Dt: 20120301
Generator Code Description: Large Quantity Generator
Handler Name: HUCK INTERNATIONAL INC. D.B.A. ALCOA FASTENING SYSTEMS

Receive Dt: 20100916
Generator Code Description: Large Quantity Generator
Handler Name: HUCK INTERNATIONAL INC DBA ALCOA FASTENING SYSTEMS

Receive Dt: 20080410
Generator Code Description: Large Quantity Generator
Handler Name: HUCK INTERNATIONAL INC DBA ALCOA FASTENING SYSTEMS

Receive Dt: 20080227
Generator Code Description: Large Quantity Generator
Handler Name: HUCK INTERNATIONAL INC DBA ALCOA FASTENING SYSTEMS

Receive Dt: 20060227
Generator Code Description: Large Quantity Generator
Handler Name: HUCK INTERNATIONAL INC.

Receive Dt: 20040227
Generator Code Description: Large Quantity Generator
Handler Name: HUCK INTL INC.

Receive Dt: 20020226
Generator Code Description: Large Quantity Generator
Handler Name: HUCK INTERNATIONAL INC.

Receive Dt: 20001012
Generator Code Description: Large Quantity Generator
Handler Name: HUCK INTERNATIONAL, INC.

Receive Dt: 20000919
Generator Code Description: Large Quantity Generator
Handler Name: HUCK INTERNATIONAL INC

Receive Dt: 19990304
Generator Code Description: Large Quantity Generator
Handler Name: HUCK INTERNATIONAL, INC.

Receive Dt: 19960901
Generator Code Description: Large Quantity Generator
Handler Name: HUCK INTERNATIONAL INC

Receive Dt: 19960227
Generator Code Description: Large Quantity Generator
Handler Name: HUCK INTERNATIONAL, INC.

Receive Dt: 19940330
Generator Code Description: Large Quantity Generator
Handler Name: HUCK INTERNATIONAL, INC

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Receive Dt: 19920225
Generator Code Description: Large Quantity Generator
Handler Name: HUCK INTERNATIONAL, INC.

Receive Dt: 19900404
Generator Code Description: Large Quantity Generator
Handler Name: HUCK MFG CO

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71 | **1 of 1** | **ESE** | **0.86 / 4,565.63** | **25.53 / 8** | **CLEAN STEEL INC.**
2061 E. 220TH STREET
CARSON CA 90810 | **ENVIROSTOR**

Estor/EPA ID: 70000130
Site Code:
Nat Priority List: NO
APN: NONE SPECIFIED
Census Tract: 6037543306
Site Type: EVALUATION
Address Description: 2061 E. 220TH STREET
Office: CLEANUP CYPRESS
Special Program:
Funding: NOT APPLICABLE
Assembly District: 64
Senate District: 35
Permit Renewal Lead:
Public Partici Spclst:
Project Manager:
County: LOS ANGELES
Latitude: 33.8284504412098
Longitude: -118.238439416633
Acres: NONE SPECIFIED
Supervisor:
Cleanup Status: REFER: 1248 LOCAL AGENCY AS OF 9/7/2005
Cleanup Oversight Agencies: LA CNTY FIRE DEPT. (BILLING AND UST);LOS ANGELES COUNTY
School District:
Past Use that Caused Contam: NONE SPECIFIED
Potential Media Affected: NONE SPECIFIED
Potential Contamin of Concern:

NONE SPECIFIED

Site History:

DTSC received an SB 1248 Notification for a local oversight by the LA County Fire Department - Site Mitigation Unit.

Status: REFER: 1248 LOCAL AGENCY
A2 Program Type: EVALUATION
CalEnviroScreen Score: 91-95%
Summary Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=70000130

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72 | **1 of 1** | **ENE** | **0.90 / 4,763.54** | **26.53 / 9** | **RAINBOW TANK CLEANERS**
21119 WILMINGTON AVENUE
LONG BEACH CA 90810 | **ENVIROSTOR**

Estor/EPA ID: 71002321
Site Code:
Nat Priority List: NO
APN: NONE SPECIFIED
Census Tract: 6037543306
Site Type: TIERED PERMIT
Address Description: 21119 WILMINGTON AVENUE
Office: CLEANUP CHATSWORTH
Special Program:
Funding:
Assembly District: 64
Senate District: 35
Permit Renewal Lead:
Public Partici Spclst:
Project Manager:
County: LOS ANGELES
Latitude: 33.837497
Longitude: -118.238311
Acres: NONE SPECIFIED
Supervisor:
Cleanup Status: REFER: OTHER AGENCY AS OF
Cleanup Oversight Agencies: NONE SPECIFIED
School District:
Past Use that Caused Contam: NONE SPECIFIED
Potential Media Affected: NONE SPECIFIED
Potential Contamin of Concern:

NONE SPECIFIED

Site History:

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Status: REFER: OTHER AGENCY
A2 Program Type: TIERED PERMIT
CalEnviroScreen Score: 91-95%
Summary Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=71002321

73	1 of 3	SSW	0.90 / 4,766.40	35.48 / 18	HUCK INTERNATIONAL INC 900 E WATSON CENTER RD CARSON CA 907450000	ENVIROSTOR

Estor/EPA ID: CAD044429884
Site Code:
Nat Priority List:
APN:
Census Tract:
Site Type: CLOSED
Address Description: 900 E WATSON CENTER RD
Office:
Special Program:
Funding:
Cleanup Status:
Cleanup Oversight Agencies:
School District:
Past Use that Caused Contam:
Potential Media Affected:
Potential Contamin of Concern:

Assembly District: 64
Senate District: 35
Permit Renewal Lead:
Public Partici Spclst:
Project Manager:
County: LOS ANGELES
Latitude: 33.819433
Longitude: -118.258833
Acres:
Supervisor:

Site History:

In 2000, the facility had officially closed their two tanker units. These tanks were thoroughly cleaned and covered. The soil around the units were sampled/analyzed and were proven to have no heavy metals, volatile organic compounds, or petroleum hydrocarbons contaminants.

This facility is also known as Huck Manufacturing. This facility submitted a Part A application for one storage and two treatment units (wastewater treatment plant).

After submitting Part A and obtaining ISD, Huck determined that treatment units were exempt from Permitting requirements. On 6/20/88, EPA concurred treatment units were exempt from Permitting requirements. DHS did not exempt the treatment units but rather granted the treatment units a variance from permitting requirements on 6/20/90.

In 1992, DTSC implemented PBR program which regulated the toperation of the reatment units since 1993.

A remaining storage unit never received a Part B permit but went to closure and was verified closed on 6/3/95. The closure plan was public noticed twice due to the amendment.

A PA conducted by USEPA and multiple soil investigation conducted during 98-99.

Status: CLOSED
A2 Program Type: HAZ WASTE - RCRA
CalEnviroScreen Score: 86-90%
Summary Link: http://www.envirostor.dtsc.ca.gov/public/hwmp_profile_report?global_id=CAD044429884

Permit Units - Completed Activities

Unit: CONTAIN1
Event Description: NEW OPERATING PERMIT - APPLICATION PART A RECEIVED
Date: 11/19/1980
Doc Link:

Unit: CONTAIN1
Event Description: NEW OPERATING PERMIT - APPLICATION PART B RECEIVED
Date: 4/8/1983
Doc Link:

Unit: CONTAIN1
Event Description: NEW OPERATING PERMIT - FINAL PERMIT - WITHDRAWAL REQUEST RECEIVED
Date: 9/16/1988
Doc Link:

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Units Undergoing Closure

Unit: CONTAIN1
Event Description: CLOSURE - ISSUE CLOSURE VERIFICATION
Date: 6/30/1995
Doc Link:

Unit: CONTAIN1
Event Description: CLOSURE - 1ST NOTICE OF DEFICIENCY ISSUED
Date: 1/29/1992
Doc Link:

Unit: CONTAIN1
Event Description: CLOSURE - CLOSURE PLAN RECEIVED
Date: 1/18/1991
Doc Link:

Unit: MULTIPLE UNITS
Event Description: CLOSURE ADMINISTRATIVE - ISSUE CLOSURE VERIFICATION
Date: 2/28/2000
Doc Link: http://www.envirostor.dtsc.ca.gov/public/hwmp_final_documents?global_id=CAD044429884&link_key=1182&document_category=CLOSURE+VERIFICATION&event_description=Closure+Administrative+%2D+ISSUE+CLOSURE+VERIFICATION+&mytype=pa

Unit: CONTAIN1
Event Description: CLOSURE - RECEIVE CLOSURE CERTIFICATION
Date: 5/26/1994
Doc Link:

Unit: CONTAIN1
Event Description: CLOSURE - CLOSURE PLAN REQUESTED
Date: 12/23/1992
Doc Link:

Unit: CONTAIN1
Event Description: CLOSURE - CLOSURE PLAN APPROVED
Date: 6/30/1995
Doc Link:

73	2 of 3	SSW	0.90 / 4,766.40	35.48 / 18	HUCK INTERNATIONAL INC DBA ALCOA FASTENING SYSTEMS 900 E WATSON CENTER RD CARSON CA 907450000	ENVIROSTOR

Estor/EPA ID: 80001388
Site Code:
Nat Priority List: NO
APN: 7315033039
Census Tract: 6037543905
Site Type: CORRECTIVE ACTION
Address Description: 900 E WATSON CENTER RD
Office: CLEANUP CHATSWORTH
Special Program:
Funding:
Assembly District: 64
Senate District: 35
Permit Renewal Lead:
Public Partici Spclst:
Project Manager:
County: LOS ANGELES
Latitude: 33.819433
Longitude: -118.258833
Acres: 8.6 ACRES
Supervisor: PHILIP CHANDLER
Cleanup Status: NO FURTHER ACTION AS OF 4/7/2011
Cleanup Oversight Agencies: DTSC - SITE CLEANUP PROGRAM
School District:
Past Use that Caused Contam: AEROSPACE MANUFACTURING/MAINTENANCE
Potential Media Affected: NO MEDIA AFFECTED
Potential Contamin of Concern:

1,1,1-TRICHLOROETHANE (TCA), CYANIDE (FREE), METALS

Site History:

This facility is also known as Huck Manufacturing. This facility submitted a Part A application for one storage and two treatment units (wastewater treatment plant).

After submitting Part A and obtaining ISD, Huck determined that treatment units were exempt from Permitting requirements. On 6/20/88, EPA concurred treatment units were exempt from Permitting requirements. DHS did not exempt the treatment units but rather granted the treatment units a variance from permitting requirements on 6/20/90.

In 1992, DTSC implemented PBR program which regulated the operation of the reatment units since 1993.

A remaining storage unit never received a Part B permit but went to closure and was verified closed on 6/3/95. The closure plan was public noticed twice due to the amendment.

A Corrective Action Concent Agreement for two(2) areas [Small spill behind the Drum Storage Area, and Area below the Bulk Oil Strorage Tanks (hydraulic oil)] was appealed by the Facility. DTSC agreed to facility-proposed sampling activities at the two areas to determine if corrective action was warranted. The results indicated that there was no contamination at the site. A No Further Action determination was approved by DTSC.

A PA conducted by USEPA and multiple soil investigation conducted during 98-99.

Status: NO FURTHER ACTION
A2 Program Type: CORRECTIVE ACTION
CalEnviroScreen Score: 86-90%
Summary Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001388

Completed Activities

Title: RFI WORKPLAN APPROVED (CA150)
Title Link:
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: RFI Workplan
Date Completed: 11/10/1998
Comments:

Title: Consent Order
Title Link:
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Consent Order
Date Completed: 5/30/1996
Comments:

Title: Human Exposure Controlled
Title Link:
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Human Exposure Controlled
Date Completed: 8/5/2010
Comments:

Title: RFA COMPLETED-ASSESSMENT WAS A RFA (CA050RF)
Title Link:
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: RCRA Facility Assessment Report
Date Completed: 12/29/1995
Comments: RFA completed by DTSC. Identifies two AOC 1) Rail spur 2) bulk oil storage

Title: Groundwater Migration Controlled
Title Link:
Area Name:
Area Link:
Sub Area:

Sub Area Link:
Document Type: Groundwater Migration Controlled
Date Completed: 12/8/2010
Comments:

Title: RFA COMPLETED (CA050PA)
Title Link:
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: RCRA Facility Assessment Report
Date Completed: 8/1/1990
Comments:

Title: Remedy Constructed
Title Link:
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Remedy Construction Complete
Date Completed: 12/8/2010
Comments:

Title: STABILIZATION MEASURES EVALUATION-FACILITY NOT AMENABLE TO STABILIZATION (CA225NR)
Title Link:
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Interim Measures Questionnaire
Date Completed: 9/19/1994
Comments:

Title: Voluntary C A
Title Link:
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Consent Order
Date Completed: 8/1/1990
Comments:

Title: No Further Action Letter
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001388&enforcement_id=60270667
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: No Further Action Letter
Date Completed: 5/11/1999
Comments:

Title: RFA COMPLETED (CA050PA)
Title Link:
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: RCRA Facility Assessment Report
Date Completed: 8/27/1990
Comments:

Title: Ready for Anticipated Use (RAU) - Yes EI Met
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001388&enforcement_id=60478442
Area Name:
Area Link:

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Sub Area:
Sub Area Link:
Document Type: Ready for Anticipated Use
Date Completed: 5/12/2020
Comments:

Title: PA OR CERCLA INSPECTION-NOT A PA PLUS (CA049PA)
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001388&doc_id=6025971
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Preliminary Assessment Report
Date Completed: 10/30/1990
Comments: PA conducted by USEPA

73	3 of 3	SSW	0.90 / 4,766.40	35.48 / 18	**HUCK INTERNATIONAL INC** **900 E WATSON CENTER RD** **CARSON CA 907450000**	HWP

Estor/EPA ID: CAD044429884
Site Code:
Nat Priority List:
Acres:
Special Program:
Funding:
Assembly District: 64
Senate District: 35
School District:
APN:
Cleanup Status:
Cleanup Oversight Agencies:
Site Type: CLOSED
Office:
Past Use that Caused Contam:
Potential Media Affected:
Potential Contamin of Concern:

Permit Renewal Lead:
Project Manager:
Supervisor:
Public Partici Spclst:
Census Tract:
County: LOS ANGELES
Latitude: 33.819433
Longitude: -118.258833

Site History:

In 2000, the facility had officially closed their two tanker units. These tanks were thoroughly cleaned and covered. The soil around the units were sampled/analyzed and were proven to have no heavy metals, volatile organic compounds, or petroleum hydrocarbons contaminants.

This facility is also known as Huck Manufacturing. This facility submitted a Part A application for one storage and two treatment units (wastewater treatment plant).

After submitting Part A and obtaining ISD, Huck determined that treatment units were exempt from Permitting requirements. On 6/20/88, EPA concurred treatment units were exempt from Permitting requirements. DHS did not exempt the treatment units but rather granted the treatment units a variance from permitting requirements on 6/20/90.

In 1992, DTSC implemented PBR program which regulated the toperation of the reatment units since 1993.

A remaining storage unit never received a Part B permit but went to closure and was verified closed on 6/3/95. The closure plan was public noticed twice due to the amendment.

A PA conducted by USEPA and multiple soil investigation conducted during 98-99.

Status: CLOSED
Program Type: HAZ WASTE - RCRA
CalEnviroScreen Score: 86-90%
Summary Link: http://www.envirostor.dtsc.ca.gov/public/hwmp_profile_report?global_id=CAD044429884

Permit Units - Completed Activities

Unit: CONTAIN1
Event Description: NEW OPERATING PERMIT - APPLICATION PART B RECEIVED
Date: 4/8/1983

Doc Link:

Unit: CONTAIN1
Event Description: NEW OPERATING PERMIT - APPLICATION PART A RECEIVED
Date: 11/19/1980
Doc Link:

Unit: CONTAIN1
Event Description: NEW OPERATING PERMIT - FINAL PERMIT - WITHDRAWAL REQUEST RECEIVED
Date: 9/16/1988
Doc Link:

Units Undergoing Closure

Unit: CONTAIN1
Event Description: CLOSURE - RECEIVE CLOSURE CERTIFICATION
Date: 5/26/1994
Doc Link:

Unit: MULTIPLE UNITS
Event Description: CLOSURE ADMINISTRATIVE - ISSUE CLOSURE VERIFICATION
Date: 2/28/2000
Doc Link: http://www.envirostor.dtsc.ca.gov/public/hwmp_final_documents?global_id=CAD044429884&link_key=1182&document_category=CLOSURE+VERIFICATION&event_description=Closure+Administrative+%2D+ISSUE+CLOSURE+VERIFICATION+&mytype=pa

Unit: CONTAIN1
Event Description: CLOSURE - CLOSURE PLAN RECEIVED
Date: 1/18/1991
Doc Link:

Unit: CONTAIN1
Event Description: CLOSURE - CLOSURE PLAN APPROVED
Date: 6/30/1995
Doc Link:

Unit: CONTAIN1
Event Description: CLOSURE - CLOSURE PLAN REQUESTED
Date: 12/23/1992
Doc Link:

Unit: CONTAIN1
Event Description: CLOSURE - 1ST NOTICE OF DEFICIENCY ISSUED
Date: 1/29/1992
Doc Link:

Unit: CONTAIN1
Event Description: CLOSURE - ISSUE CLOSURE VERIFICATION
Date: 6/30/1995
Doc Link:

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
74	1 of 2	SSW	0.91 / 4,800.08	35.48 / 18	HUCK INTERNATIONAL, INC.. 900 WATSON CENTER ROAD CARSON CA 90745	ENVIROSTOR

Estor/EPA ID: 71003679
Site Code:
Nat Priority List: NO
APN: NONE SPECIFIED
Census Tract: 6037543905
Site Type: TIERED PERMIT
Address Description: 900 WATSON CENTER ROAD
Office: CLEANUP CHATSWORTH
Special Program:
Funding:
Cleanup Status: REFER: OTHER AGENCY AS OF
Cleanup Oversight Agencies: NONE SPECIFIED

Assembly District: 64
Senate District: 35
Permit Renewal Lead:
Public Partici Spclst:
Project Manager:
County: LOS ANGELES
Latitude: 33.81936
Longitude: -118.25892
Acres: NONE SPECIFIED
Supervisor:

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

School District:
Past Use that Caused Contam: NONE SPECIFIED
Potential Media Affected: NONE SPECIFIED
Potential Contamin of Concern:

NONE SPECIFIED

Site History:

Status: REFER: OTHER AGENCY
A2 Program Type: TIERED PERMIT
CalEnviroScreen Score: 86-90%
Summary Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=71003679

Completed Activities

Title: Compliance
Title Link:
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Site Inspections/Visit (Non LUR)
Date Completed: 11/29/1999
Comments:

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
74	2 of 2	SSW	0.91 / 4,800.08	35.48 / 18	HUCK INTERNATIONAL, INC.. 900 WATSON CENTER ROAD CARSON CA 90745	ENVIROSTOR

Estor/EPA ID: 71003680
Site Code:
Nat Priority List: NO
APN: NONE SPECIFIED
Census Tract: 6037543905
Site Type: TIERED PERMIT
Address Description: 900 WATSON CENTER ROAD
Office: CLEANUP CHATSWORTH
Special Program:
Funding:
Cleanup Status: REFER: OTHER AGENCY AS OF
Cleanup Oversight Agencies: NONE SPECIFIED
School District:
Past Use that Caused Contam: NONE SPECIFIED
Potential Media Affected: NONE SPECIFIED
Potential Contamin of Concern:

Assembly District: 64
Senate District: 35
Permit Renewal Lead:
Public Partici Spclst:
Project Manager:
County: LOS ANGELES
Latitude: 33.81936
Longitude: -118.25892
Acres: NONE SPECIFIED
Supervisor:

NONE SPECIFIED

Site History:

Status: REFER: OTHER AGENCY
A2 Program Type: TIERED PERMIT
CalEnviroScreen Score: 86-90%
Summary Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=71003680

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
75	1 of 4	ENE	0.94 / 4,971.79	27.53 / 10	CHEMICAL RAINBOW TANK LINES 21119 WILMINGTON AVE LONG BEACH CA 90810	RCRA CORRACTS

EPA Handler ID: CAD009774118
Gen Status Universe: Small Quantity Generator
Contact Name:
Contact Address: US

Contact Phone No and Ext:
Contact Email:
Contact Country: US
County Name: LOS ANGELES
EPA Region: 09
Land Type:
Receive Date: 19960901

Event/Area Details

Area Name: CURRENT WASH RACK, SWMU #3
Event Code: CA110
Corrective Action Event Descri: INVESTIGATION WORKPLAN RECEIVED
Actual Date of Event: 20080923
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20080923
Groundwater Release Indicator: Yes
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind: Yes
Event Responsible Agency: S

Area Name: FORMER WASH RACK - SWMU # 8
Event Code: CA110
Corrective Action Event Descri: INVESTIGATION WORKPLAN RECEIVED
Actual Date of Event: 20081205
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20081205
Groundwater Release Indicator: Yes
Soil Release Indicator: Yes
Air Release Indicator:
Surface Waste Release Ind: Yes
Event Responsible Agency: S

Area Name: ENTIRE FACILITY
Event Code: CA110
Corrective Action Event Descri: INVESTIGATION WORKPLAN RECEIVED
Actual Date of Event: 20040611
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20040611
Groundwater Release Indicator:
Soil Release Indicator: Yes
Air Release Indicator:
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: FORMER WASH RACK - SWMU # 8
Event Code: CA110
Corrective Action Event Descri: INVESTIGATION WORKPLAN RECEIVED
Actual Date of Event: 20040611
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20040611
Groundwater Release Indicator: Yes
Soil Release Indicator: Yes
Air Release Indicator:
Surface Waste Release Ind: Yes
Event Responsible Agency: S

Area Name: ENTIRE FACILITY
Event Code: CA150
Corrective Action Event Descri: INVESTIGATION WORKPLAN APPROVED
Actual Date of Event: 20040915
Orig Sched Event Date:
New Sched Event Date:

Best Date: 20040915
Groundwater Release Indicator:
Soil Release Indicator: Yes
Air Release Indicator:
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: CURRENT WASH RACK, SWMU #3
Event Code: CA150
Corrective Action Event Descri: INVESTIGATION WORKPLAN APPROVED
Actual Date of Event: 20040915
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20040915
Groundwater Release Indicator: Yes
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind: Yes
Event Responsible Agency: S

Area Name: CURRENT WASH RACK, SWMU #3
Event Code: CA120
Corrective Action Event Descri: INVESTIGATION WORKPLAN MODIFICATION REQ BY AGENCY
Actual Date of Event: 20051013
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20051013
Groundwater Release Indicator: Yes
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind: Yes
Event Responsible Agency: S

Area Name: NW CORNER OF FACILITY, AOC #1
Event Code: CA110
Corrective Action Event Descri: INVESTIGATION WORKPLAN RECEIVED
Actual Date of Event: 20081205
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20081205
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator: Yes
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: SWMU # 08, FORMER WASH RACK
Event Code: CA170
Corrective Action Event Descri: INVESTIGATION SUPPLEMENTAL INFO DEEMED SATISFACT
Actual Date of Event: 20110505
Orig Sched Event Date: 20110518
New Sched Event Date:
Best Date: 20110505
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: FORMER WASH RACK - SWMU # 8
Event Code: CA100
Corrective Action Event Descri: INVESTIGATION IMPOSITION
Actual Date of Event: 20051228
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20051228
Groundwater Release Indicator: Yes
Soil Release Indicator: Yes
Air Release Indicator:

Surface Waste Release Ind: Yes
Event Responsible Agency: S

Area Name: PESTICIDE CONTAMINATED SOILS, AOC #2
Event Code: CA120
Corrective Action Event Descri: INVESTIGATION WORKPLAN MODIFICATION REQ BY AGENCY
Actual Date of Event: 20050729
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20050729
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator: Yes
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: CURRENT WASH RACK, SWMU #3
Event Code: CA120
Corrective Action Event Descri: INVESTIGATION WORKPLAN MODIFICATION REQ BY AGENCY
Actual Date of Event: 20050729
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20050729
Groundwater Release Indicator: Yes
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind: Yes
Event Responsible Agency: S

Area Name: CURRENT WASH RACK, SWMU #3
Event Code: CA190
Corrective Action Event Descri: INVESTIGATION REPORT RECEIVED
Actual Date of Event: 20050519
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20050519
Groundwater Release Indicator: Yes
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind: Yes
Event Responsible Agency: S

Area Name: NW CORNER OF FACILITY, AOC #1
Event Code: CA110
Corrective Action Event Descri: INVESTIGATION WORKPLAN RECEIVED
Actual Date of Event: 20080923
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20080923
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator: Yes
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: NW CORNER OF FACILITY, AOC #1
Event Code: CA110
Corrective Action Event Descri: INVESTIGATION WORKPLAN RECEIVED
Actual Date of Event: 20040611
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20040611
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator: Yes
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: PESTICIDE CONTAMINATED SOILS, AOC #2

Event Code:	CA110
Corrective Action Event Descri:	INVESTIGATION WORKPLAN RECEIVED
Actual Date of Event:	20040611
Orig Sched Event Date:	
New Sched Event Date:	
Best Date:	20040611
Groundwater Release Indicator:	
Soil Release Indicator:	
Air Release Indicator:	Yes
Surface Waste Release Ind:	
Event Responsible Agency:	S

Area Name:	PESTICIDE CONTAMINATED SOILS, AOC #2
Event Code:	CA150
Corrective Action Event Descri:	INVESTIGATION WORKPLAN APPROVED
Actual Date of Event:	20040915
Orig Sched Event Date:	
New Sched Event Date:	
Best Date:	20040915
Groundwater Release Indicator:	
Soil Release Indicator:	
Air Release Indicator:	Yes
Surface Waste Release Ind:	
Event Responsible Agency:	S

Area Name:	FORMER WASH RACK - SWMU # 8
Event Code:	CA260
Corrective Action Event Descri:	CMS WORKPLAN RECEIVED
Actual Date of Event:	20060109
Orig Sched Event Date:	
New Sched Event Date:	
Best Date:	20060109
Groundwater Release Indicator:	Yes
Soil Release Indicator:	Yes
Air Release Indicator:	
Surface Waste Release Ind:	Yes
Event Responsible Agency:	S

Area Name:	PESTICIDE CONTAMINATED SOILS, AOC #2
Event Code:	CA110
Corrective Action Event Descri:	INVESTIGATION WORKPLAN RECEIVED
Actual Date of Event:	20081205
Orig Sched Event Date:	
New Sched Event Date:	
Best Date:	20081205
Groundwater Release Indicator:	
Soil Release Indicator:	
Air Release Indicator:	Yes
Surface Waste Release Ind:	
Event Responsible Agency:	S

Area Name:	FORMER WASH RACK - SWMU # 8
Event Code:	CA120
Corrective Action Event Descri:	INVESTIGATION WORKPLAN MODIFICATION REQ BY AGENCY
Actual Date of Event:	20081104
Orig Sched Event Date:	
New Sched Event Date:	
Best Date:	20081104
Groundwater Release Indicator:	Yes
Soil Release Indicator:	Yes
Air Release Indicator:	
Surface Waste Release Ind:	Yes
Event Responsible Agency:	S

Area Name:	PESTICIDE CONTAMINATED SOILS, AOC #2
Event Code:	CA120
Corrective Action Event Descri:	INVESTIGATION WORKPLAN MODIFICATION REQ BY AGENCY
Actual Date of Event:	20081104
Orig Sched Event Date:	

New Sched Event Date:
Best Date: 20081104
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator: Yes
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: ENTIRE FACILITY
Event Code: CA180
Corrective Action Event Descri: INVESTIGATION IMPLEMENTATION BEGUN
Actual Date of Event: 20140606
Orig Sched Event Date: 20140608
New Sched Event Date:
Best Date: 20140606
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: PESTICIDE CONTAMINATED SOILS, AOC #2
Event Code: CA260
Corrective Action Event Descri: CMS WORKPLAN RECEIVED
Actual Date of Event: 20060109
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20060109
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator: Yes
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: NW CORNER OF FACILITY, AOC #1
Event Code: CA120
Corrective Action Event Descri: INVESTIGATION WORKPLAN MODIFICATION REQ BY AGENCY
Actual Date of Event: 20051013
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20051013
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator: Yes
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: NW CORNER OF FACILITY, AOC #1
Event Code: CA150
Corrective Action Event Descri: INVESTIGATION WORKPLAN APPROVED
Actual Date of Event: 20081223
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20081223
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator: Yes
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: CURRENT WASH RACK, SWMU #3
Event Code: CA150
Corrective Action Event Descri: INVESTIGATION WORKPLAN APPROVED
Actual Date of Event: 20081223
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20081223
Groundwater Release Indicator: Yes
Soil Release Indicator:

Air Release Indicator:
Surface Waste Release Ind: Yes
Event Responsible Agency: S

Area Name: NW CORNER OF FACILITY, AOC #1
Event Code: CA100
Corrective Action Event Descri: INVESTIGATION IMPOSITION
Actual Date of Event: 20051228
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20051228
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator: Yes
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: ENTIRE FACILITY
Event Code: CA190
Corrective Action Event Descri: INVESTIGATION REPORT RECEIVED
Actual Date of Event: 20050519
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20050519
Groundwater Release Indicator:
Soil Release Indicator: Yes
Air Release Indicator:
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: FORMER WASH RACK - SWMU # 8
Event Code: CA190
Corrective Action Event Descri: INVESTIGATION REPORT RECEIVED
Actual Date of Event: 20050519
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20050519
Groundwater Release Indicator: Yes
Soil Release Indicator: Yes
Air Release Indicator:
Surface Waste Release Ind: Yes
Event Responsible Agency: S

Area Name: PESTICIDE CONTAMINATED SOILS, AOC #2
Event Code: CA110
Corrective Action Event Descri: INVESTIGATION WORKPLAN RECEIVED
Actual Date of Event: 20080923
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20080923
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator: Yes
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: FORMER WASH RACK - SWMU # 8
Event Code: CA150
Corrective Action Event Descri: INVESTIGATION WORKPLAN APPROVED
Actual Date of Event: 20081223
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20081223
Groundwater Release Indicator: Yes
Soil Release Indicator: Yes
Air Release Indicator:
Surface Waste Release Ind: Yes
Event Responsible Agency: S

Area Name:	CURRENT WASH RACK, SWMU #3
Event Code:	CA120
Corrective Action Event Descri:	INVESTIGATION WORKPLAN MODIFICATION REQ BY AGENCY
Actual Date of Event:	20081104
Orig Sched Event Date:	
New Sched Event Date:	
Best Date:	20081104
Groundwater Release Indicator:	Yes
Soil Release Indicator:	
Air Release Indicator:	
Surface Waste Release Ind:	Yes
Event Responsible Agency:	S

Area Name:	ENTIRE FACILITY
Event Code:	CA110
Corrective Action Event Descri:	INVESTIGATION WORKPLAN RECEIVED
Actual Date of Event:	20121010
Orig Sched Event Date:	20121008
New Sched Event Date:	
Best Date:	20121010
Groundwater Release Indicator:	
Soil Release Indicator:	
Air Release Indicator:	
Surface Waste Release Ind:	
Event Responsible Agency:	S

Area Name:	CURRENT WASH RACK, SWMU #3
Event Code:	CA110
Corrective Action Event Descri:	INVESTIGATION WORKPLAN RECEIVED
Actual Date of Event:	20040611
Orig Sched Event Date:	
New Sched Event Date:	
Best Date:	20040611
Groundwater Release Indicator:	Yes
Soil Release Indicator:	
Air Release Indicator:	
Surface Waste Release Ind:	Yes
Event Responsible Agency:	S

Area Name:	NW CORNER OF FACILITY, AOC #1
Event Code:	CA150
Corrective Action Event Descri:	INVESTIGATION WORKPLAN APPROVED
Actual Date of Event:	20040915
Orig Sched Event Date:	
New Sched Event Date:	
Best Date:	20040915
Groundwater Release Indicator:	
Soil Release Indicator:	
Air Release Indicator:	Yes
Surface Waste Release Ind:	
Event Responsible Agency:	S

Area Name:	SWMU # 08, FORMER WASH RACK
Event Code:	CA650OT
Corrective Action Event Descri:	STABILIZATION CONSTRUCTION COMPLETED - OTHER
Actual Date of Event:	20140725
Orig Sched Event Date:	20140824
New Sched Event Date:	
Best Date:	20140725
Groundwater Release Indicator:	
Soil Release Indicator:	
Air Release Indicator:	
Surface Waste Release Ind:	
Event Responsible Agency:	S

Area Name:	SWMU # 08, FORMER WASH RACK
Event Code:	CA650OT
Corrective Action Event Descri:	STABILIZATION CONSTRUCTION COMPLETED - OTHER
Actual Date of Event:	20191101

Orig Sched Event Date: 20191106
New Sched Event Date:
Best Date: 20191101
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: CURRENT WASH RACK, SWMU #3
Event Code: CA100
Corrective Action Event Descri: INVESTIGATION IMPOSITION
Actual Date of Event: 20051228
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20051228
Groundwater Release Indicator: Yes
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind: Yes
Event Responsible Agency: S

Area Name: NW CORNER OF FACILITY, AOC #1
Event Code: CA120
Corrective Action Event Descri: INVESTIGATION WORKPLAN MODIFICATION REQ BY AGENCY
Actual Date of Event: 20050729
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20050729
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator: Yes
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: PESTICIDE CONTAMINATED SOILS, AOC #2
Event Code: CA190
Corrective Action Event Descri: INVESTIGATION REPORT RECEIVED
Actual Date of Event: 20050519
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20050519
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator: Yes
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: PESTICIDE CONTAMINATED SOILS, AOC #2
Event Code: CA150
Corrective Action Event Descri: INVESTIGATION WORKPLAN APPROVED
Actual Date of Event: 20081223
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20081223
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator: Yes
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: ENTIRE FACILITY
Event Code: CA340
Corrective Action Event Descri: CMS REPORT RECEIVED
Actual Date of Event: 20141020
Orig Sched Event Date: 20140930
New Sched Event Date:
Best Date: 20141020
Groundwater Release Indicator:

Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: PESTICIDE CONTAMINATED SOILS, AOC #2
Event Code: CA120
Corrective Action Event Descri: INVESTIGATION WORKPLAN MODIFICATION REQ BY AGENCY
Actual Date of Event: 20051013
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20051013
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator: Yes
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: ENTIRE FACILITY
Event Code: CA350
Corrective Action Event Descri: CMS COMPLETE
Actual Date of Event: 20160405
Orig Sched Event Date: 20160122
New Sched Event Date:
Best Date: 20160405
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: ENTIRE FACILITY
Event Code: CA150
Corrective Action Event Descri: INVESTIGATION WORKPLAN APPROVED
Actual Date of Event: 20121012
Orig Sched Event Date: 20121111
New Sched Event Date:
Best Date: 20121012
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: NW CORNER OF FACILITY, AOC #1
Event Code: CA260
Corrective Action Event Descri: CMS WORKPLAN RECEIVED
Actual Date of Event: 20060109
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20060109
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator: Yes
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: FORMER WASH RACK - SWMU # 8
Event Code: CA120
Corrective Action Event Descri: INVESTIGATION WORKPLAN MODIFICATION REQ BY AGENCY
Actual Date of Event: 20051013
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20051013
Groundwater Release Indicator: Yes
Soil Release Indicator: Yes
Air Release Indicator:
Surface Waste Release Ind: Yes
Event Responsible Agency: S

Area Name: CURRENT WASH RACK, SWMU #3
Event Code: CA110
Corrective Action Event Descri: INVESTIGATION WORKPLAN RECEIVED
Actual Date of Event: 20081205
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20081205
Groundwater Release Indicator: Yes
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind: Yes
Event Responsible Agency: S

Area Name: FORMER WASH RACK - SWMU # 8
Event Code: CA120
Corrective Action Event Descri: INVESTIGATION WORKPLAN MODIFICATION REQ BY AGENCY
Actual Date of Event: 20050729
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20050729
Groundwater Release Indicator: Yes
Soil Release Indicator: Yes
Air Release Indicator:
Surface Waste Release Ind: Yes
Event Responsible Agency: S

Area Name: FORMER WASH RACK - SWMU # 8
Event Code: CA110
Corrective Action Event Descri: INVESTIGATION WORKPLAN RECEIVED
Actual Date of Event: 20080923
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20080923
Groundwater Release Indicator: Yes
Soil Release Indicator: Yes
Air Release Indicator:
Surface Waste Release Ind: Yes
Event Responsible Agency: S

Area Name: SWMU # 08, FORMER WASH RACK
Event Code: CA160
Corrective Action Event Descri: INVESTIGATION SUPPLEMENTAL INFORMATION RECEIVED
Actual Date of Event: 20110503
Orig Sched Event Date: 20110630
New Sched Event Date:
Best Date: 20110503
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: SWMU # 08, FORMER WASH RACK
Event Code: CA600OT
Corrective Action Event Descri: STABILIZATION/INTERIM MEASURES DECISION-OTHER
Actual Date of Event: 20130814
Orig Sched Event Date: 20130913
New Sched Event Date:
Best Date: 20130814
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: SWMU # 08, FORMER WASH RACK
Event Code: CA650OT
Corrective Action Event Descri: STABILIZATION CONSTRUCTION COMPLETED - OTHER

Actual Date of Event:	20200129
Orig Sched Event Date:	20200203
New Sched Event Date:	
Best Date:	20200129
Groundwater Release Indicator:	
Soil Release Indicator:	
Air Release Indicator:	
Surface Waste Release Ind:	
Event Responsible Agency:	S

Area Name:	PESTICIDE CONTAMINATED SOILS, AOC #2
Event Code:	CA100
Corrective Action Event Descri:	INVESTIGATION IMPOSITION
Actual Date of Event:	20051228
Orig Sched Event Date:	
New Sched Event Date:	
Best Date:	20051228
Groundwater Release Indicator:	
Soil Release Indicator:	
Air Release Indicator:	Yes
Surface Waste Release Ind:	
Event Responsible Agency:	S

Area Name:	NW CORNER OF FACILITY, AOC #1
Event Code:	CA190
Corrective Action Event Descri:	INVESTIGATION REPORT RECEIVED
Actual Date of Event:	20050519
Orig Sched Event Date:	
New Sched Event Date:	
Best Date:	20050519
Groundwater Release Indicator:	
Soil Release Indicator:	
Air Release Indicator:	Yes
Surface Waste Release Ind:	
Event Responsible Agency:	S

Area Name:	NW CORNER OF FACILITY, AOC #1
Event Code:	CA120
Corrective Action Event Descri:	INVESTIGATION WORKPLAN MODIFICATION REQ BY AGENCY
Actual Date of Event:	20081104
Orig Sched Event Date:	
New Sched Event Date:	
Best Date:	20081104
Groundwater Release Indicator:	
Soil Release Indicator:	
Air Release Indicator:	Yes
Surface Waste Release Ind:	
Event Responsible Agency:	S

Area Name:	AOC # 1A, TANK TRUCK STAGING AREA (NW CO
Event Code:	CA600OT
Corrective Action Event Descri:	STABILIZATION/INTERIM MEASURES DECISION-OTHER
Actual Date of Event:	20111020
Orig Sched Event Date:	20111119
New Sched Event Date:	
Best Date:	20111020
Groundwater Release Indicator:	
Soil Release Indicator:	
Air Release Indicator:	
Surface Waste Release Ind:	
Event Responsible Agency:	S

Area Name:	SWMU # 08, FORMER WASH RACK
Event Code:	CA340
Corrective Action Event Descri:	CMS REPORT RECEIVED
Actual Date of Event:	20160408
Orig Sched Event Date:	
New Sched Event Date:	
Best Date:	20160408

Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: FORMER WASH RACK - SWMU # 8
Event Code: CA150
Corrective Action Event Descri: INVESTIGATION WORKPLAN APPROVED
Actual Date of Event: 20040915
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20040915
Groundwater Release Indicator: Yes
Soil Release Indicator: Yes
Air Release Indicator:
Surface Waste Release Ind: Yes
Event Responsible Agency: S

Area Name: AOC # 1A, TANK TRUCK STAGING AREA (NW CO
Event Code: CA600OT
Corrective Action Event Descri: STABILIZATION/INTERIM MEASURES DECISION-OTHER
Actual Date of Event: 20090928
Orig Sched Event Date:
New Sched Event Date:
Best Date: 20090928
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: ENTIRE FACILITY
Event Code: CA380
Corrective Action Event Descri: DATE FOR PUBLIC NOTICE ON PROPOSED REMEDY
Actual Date of Event: 20130814
Orig Sched Event Date: 20130819
New Sched Event Date:
Best Date: 20130814
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: SWMU # 08, FORMER WASH RACK
Event Code: CA650OT
Corrective Action Event Descri: STABILIZATION CONSTRUCTION COMPLETED - OTHER
Actual Date of Event: 20200731
Orig Sched Event Date: 20200805
New Sched Event Date:
Best Date: 20200731
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind:
Event Responsible Agency: S

Violation/Evaluation Summary

Note: VIOLATION or UNDETERMINED: There are VIOLATION or UNDETERMINED details or records associated with this facility (EPA ID) in the Compliance Monitoring and Enforcement table dated May, 2020.

Violation Details

Citation: FR - 262.40-43.D
Violation Short Description: Generators - General

Violation Type: 262.A
Violation Determined Date: 19930804
Scheduled Compliance Date: 19930819
Return to Compliance: Observed
Actual Return to Compl: 19930816
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 19930804
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Citation: FR - 262.50-60
Violation Short Description: Generators - General
Violation Type: 262.A
Violation Determined Date: 19930804
Scheduled Compliance Date: 19930819
Return to Compliance: Observed
Actual Return to Compl: 19930816
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 19930804
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Citation: F - 262.10-12.A
Violation Short Description: Generators - General
Violation Type: 262.A
Violation Determined Date: 19841009
Scheduled Compliance Date: 19841109
Return to Compliance: Observed
Actual Return to Compl: 19841116
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 19841009
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:

Paid Amount:

Evaluation Details

Evaluation Start Date: 19930720
Evaluation Type Description: FINANCIAL RECORD REVIEW
Violation Short Description:
Return to Compliance Date:
Evaluation Agency: State

Evaluation Start Date: 19930621
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description: Generators - General
Return to Compliance Date: 19930816
Evaluation Agency: State

Evaluation Start Date: 19850408
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description:
Return to Compliance Date:
Evaluation Agency: State

Evaluation Start Date: 19850408
Evaluation Type Description: FINANCIAL RECORD REVIEW
Violation Short Description:
Return to Compliance Date:
Evaluation Agency: State

Evaluation Start Date: 19841009
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description:
Return to Compliance Date:
Evaluation Agency: State

Evaluation Start Date: 19841009
Evaluation Type Description: NON-FINANCIAL RECORD REVIEW
Violation Short Description: Generators - General
Return to Compliance Date: 19841116
Evaluation Agency: State

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner: No
Smelting, Melting and Refining: No
Underground Injection Control: No
Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 19900406
Handler Name: CHEMICAL TRANSPORTATION
Federal Waste Generator Code: 1
Generator Code Description: Large Quantity Generator

Source Type: Annual/Biennial Report

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 19920217
Handler Name: CHEMICAL RAINBOW TANK LINES
Federal Waste Generator Code: 1
Generator Code Description: Large Quantity Generator
Source Type: Notification

Hazardous Waste Handler Details

Sequence No: 2
Receive Date: 19920218
Handler Name: CHEMICAL RAINBOW TRANSPORT TANK CLEANERS
Federal Waste Generator Code: 1
Generator Code Description: Large Quantity Generator
Source Type: Annual/Biennial Report

Hazardous Waste Handler Details

Sequence No: 3
Receive Date: 19940207
Handler Name: CHEMICAL RAINBOW TANK LINES
Federal Waste Generator Code: 1
Generator Code Description: Large Quantity Generator
Source Type: Annual/Biennial Report

Hazardous Waste Handler Details

Sequence No: 2
Receive Date: 19960901
Handler Name: CHEMICAL RAINBOW TANK LINES
Federal Waste Generator Code: 2
Generator Code Description: Small Quantity Generator
Source Type: Implementer

Owner/Operator Details

Owner/Operator Ind: Current Operator
Type: Private
Name: C DONALD ALBIN
Date Became Current:
Date Ended Current:
Phone: 213-775-2625
Source Type: Implementer
Street No:
Street 1: 21119 WILMINGTON AVE
Street 2:
City: CITY NOT REPORTED
State: CA
Country:
Zip Code: 99999

Owner/Operator Ind: Current Owner
Type: Private
Name: C DONALD ALBIN
Date Became Current:
Date Ended Current:
Phone: 310-835-0151
Source Type: Notification
Street No:
Street 1: 21119 WILMINGTON AVE
Street 2:
City: LONG BEACH
State: CA
Country:
Zip Code: 90810

Historical Handler Details

Receive Dt: 19940207
Generator Code Description: Large Quantity Generator
Handler Name: CHEMICAL RAINBOW TANK LINES

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Receive Dt: 19920218
Generator Code Description: Large Quantity Generator
Handler Name: CHEMICAL RAINBOW TRANSPORT TANK CLEANERS

Receive Dt: 19920217
Generator Code Description: Large Quantity Generator
Handler Name: CHEMICAL RAINBOW TANK LINES

Receive Dt: 19900406
Generator Code Description: Large Quantity Generator
Handler Name: CHEMICAL TRANSPORTATION

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
75	2 of 4	ENE	0.94 / 4,971.79	27.53 / 10	RAINBOW INC 21119 WILMINGTON AVE LONG BEACH CA 908100000	ENVIROSTOR

Estor/EPA ID: CAD009774118
Site Code: 400398, 400398
Nat Priority List:
APN:
Census Tract:
Site Type: CLOSED
Address Description: 21119 WILMINGTON AVE
Office:
Special Program:
Funding:
Cleanup Status:
Cleanup Oversight Agencies:
School District:
Past Use that Caused Contam:
Potential Media Affected:
Potential Contamin of Concern:

Assembly District: 64
Senate District: 35
Permit Renewal Lead:
Public Partici Spclst:
Project Manager:
County: LOS ANGELES
Latitude: 33.837458
Longitude: -118.238385
Acres:
Supervisor:

Site History:

INTRODUCTION

Rainbow LLC (Rainbow) occupies a 10 acre parcel zoned for light industrial uses. The site is used for the following purposes; tanker truck cleaning under the name "Rainbow Transport Tank Cleaners", truck and trailer parking, containerization, vehicle staging and vehicle maintenance.

PERMITTING

Permitting - Historical
The tanker truck business has operated at the site since the 1960's, formerly under the name "Chemical Rainbow Tank Cleaners". Rainbow applied for RCRA Interim Status on November 18, 1980 and was granted RCRA Interim Status on December 23, 1981. Rainbow subsequently applied for and was granted Standardized Permit Interim Status on June 1, 1993. After receipt of Standardized Permit Interim Status, discussions occured between Rainbow and DTSC regarding the appropriate regulatory status of site operations. In a letter dated July 14, 1994, DTSC determined that the hazardous waste generated from cleaning of trucks that contained hazardous materials was generated on-site. Given that Rainbow had ceased cleaning trucks that contained hazardous waste, and only generated waste on-site, they were eligible for conversion to the tiered permitting program under the Permit-by-rule tier. In a letter dated May 26, 1995, DTSC authorized delayed "limited" closure of the facility until the facility closes or terminates use of the hazardous waste management units for on-site hazardous waste treatment under Permit-by-rule.

CORRECTIVE ACTION

For information regarding the on-going investigation and cleanup of the Rainbow site please refer to the separate EnviroStor page for corrective action.

Status: CLOSED
A2 Program Type: HAZ WASTE - Standardized
CalEnviroScreen Score: 91-95%
Summary Link: http://www.envirostor.dtsc.ca.gov/public/hwmp_profile_report?global_id=CAD009774118

Permit Units - Completed Activities

Unit: NO PERMIT ACTIVITIES HAVE BEEN COMPLETED FOR THIS SITE
Event Description:
Date:
Doc Link:

Units Undergoing Closure

Unit: STTANKTRT1
Event Description: CLOSURE ADMINISTRATIVE - ISSUE CLOSURE VERIFICATION
Date: 5/26/1995
Doc Link:

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75 | ***3 of 4*** | ***ENE*** | ***0.94 / 4,971.79*** | ***27.53 / 10*** | ***RAINBOW LLC***
21119 WILMINGTON AVE
CARSON CA 908100000 | ***ENVIROSTOR***

Estor/EPA ID: 80001649
Site Code: 400398
Nat Priority List: NO
APN: 7326-006-002, 7326-006-006, 7326-006-007, 7326-006-008, 7326-006-009, 7326-006-010, 7326006002, 7326006006, 7326006007, 7326006008, 7326006009, 7326006010
Census Tract: 6037543306
Site Type: CORRECTIVE ACTION
Address Description: 21119 WILMINGTON AVE
Office: CLEANUP CYPRESS
Special Program:
Funding:
Assembly District: 64
Senate District: 35
Permit Renewal Lead:
Public Partici Spclst:
Project Manager: TAMARA ZIELINSKI
County: LOS ANGELES
Latitude: 33.837458
Longitude: -118.238385
Acres: 10 ACRES
Supervisor: AJIT VAIDYA
Cleanup Status: ACTIVE AS OF 1/1/2008
Cleanup Oversight Agencies: DTSC - SITE CLEANUP PROGRAM
School District:
Past Use that Caused Contam: AGRICULTURAL - ROW CROPS, FUEL - VEHICLE STORAGE/ REFUELING, HAZARDOUS MATERIAL - TRANSFER STATION, HAZARDOUS WASTE STORAGE - TANKS/CONTAINERS, HAZARDOUS WASTE TREATMENT, LAND DISPOSAL / FILL, MACHINE SHOP, MAINTENANCE / CLEANING, UNDERGROUND STORAGE TANKS, UNKNOWN, VEHICLE MAINTENANCE, WASTE - INDUSTRIAL TREATMENT FACILITY
Potential Media Affected: OTHER GROUNDWATER AFFECTED (USES OTHER THAN DRINKING WATER), SOIL, SOIL VAPOR
Potential Contamin of Concern:

PETROLEUM, TOXAPHENE, VOLATILE ORGANICS (8260B VOCS)

Site History:

INTRODUCTION

Rainbow LLC (Rainbow) occupies a 10 acre parcel zoned for light industrial uses. The site is used for the following purposes; tanker truck cleaning under the name "Rainbow Transport Tank Cleaners", truck and trailer parking, containerization, vehicle staging and vehicle maintenance.

PERMITTING

Permitting - Historical
The tanker truck business has operated at the site since the 1960's, formerly under the name "Chemical Rainbow Tank Cleaners". In the 1980's Rainbow applied for and was granted Interim Status authority to act as a hazardous waste facility. Rainbow initially intended to apply for a Standardized Permit to treat waste water generated during cleaning of hazardous waste transportation vehicles. However, after considering all options Rainbow elected to limit operations to cleaning hazardous material transportation vehicles and applied for authorization under the Permit by Rule tier to operate a limited waste water treatment plant at the site.

Permitting - Current
Rainbow treats waste water generated during tanker truck cleaning under the authority of a Permit by Rule issued by the Los Angeles County Fire Department Hazardous Material Division, a CUPA agency to the Department of Toxic Substances Control (DTSC).

CORRECTIVE ACTION

Corrective Action – Phase I Environmental Assessment
In early 2004, an Environmental Assessment Preliminary Site Characterization (EAPSC) was prepared by Rainbow. The EAPSC identified a total of eleven (11) solid waste management units (SWMU) and two (2) areas of concern (AOCs) at the site as follows:

SWMU # 1 – Northern Waste and Chemical Storage Area
SWMU # 2 – Former UST K and Containment Area
SWMU # 3 – Current Wash Rack
SWMU # 4 – Former Waste Oil UST Q

SWMU # 5 – Organic Waste Water Treatment Area
SWMU # 6 – Waste and Auto Repair/Storage Area
SWMU # 7 – Former Fuel UST R Area
SWMU # 8 – Former (Old) Wash Rack
SWMU # 9 – Pump Station Sumps
SWMU # 10 – Former Truck Maintenance/Repair Facility
SWMU # 11 – Tank K Over Excavation Stockpile Berm

AOC # 1 – Tank Truck Staging Area (NW Corner of Site)
AOC # 2 – Former Agricultural Roadways Used by Farmer

Corrective Action - Investigation
On December 28, 2004, DTSC and Rainbow entered into a Corrective Action Consent Agreement (Consent Agreement) [Docket HWCA: P1-04/05-005] for the investigation of SWMUs and AOCs at the Site. Based on a review of existing site characterization data, DTSC concluded that additional investigation was warranted at SWMUs 2, 3, 8, 10 & 11, and AOC 2.

Rainbow has implemented several work plans at the site since the Consent Agreement was signed in a bid to fully characterize the site. In 2005, Rainbow began planning an accelerated investigation and cleanup program to possibly allow for future residential development at the site. DTSC is not currently aware of any plans to redevelop the site for residential use.

On September 28, 2009, DTSC approved an Interim Measures Work Plan for a small soil vapor extraction (SVE) system in the north west corner of the site. The SVE system operated from October 2009 to October 2010 and a rebound study was performed.

DTSC approved the RCRA Facility Investigation (RFI) report on May 12, 2010. The RFI report supports the need for a Corrective Measures Study (CMS) at all SWMUs and AOCs but SWMUs # 4, 7, 8 and 11. Rainbow prepared an RFI Summary Fact Sheet that was mailed to the community in June 2010.

On January 11, 2011, DTSC approved the CMS work plan. The CMS work plan outlines the remedies that will be evaluated for the site. The CMS work plan included a proposal to evaluate Ozone Sparing as a groundwater cleanup technology using a pilot study. The Ozone Sparging pilot study was completed at the Old Wash Rack in late 2012. A full scale Ozone Sparging proposal for the Old Wash Rack was prepared dated July 26, 2013. The Ozone Sparging work plan was released for public comment from August 14, 2013 to September 13, 2013. DTSC approved the Ozone Sparging work plan on October 14, 2013.

The soil vapor rebound study completed in the north west corner of the site found that contamination remains and it was decided that the SVE system should be restarted. Rainbow applied for and obtained a permit to operate the SVE system from the South Coast Air Quality Management District. The SVE system was restarted on August 26, 2013.

Construction of the Ozone Sparging system at the Old Wash Rack was completed in February 2014 and startup occurred on March 12, 2014.

On July 10, 2015, DTSC conditionally approved a work plan for soil vapor sampling at Del Amo Elementary School. The work plan was implemented shortly thereafter.

The SVE system in the north west corner of the site was shut down in January 2015 and Rainbow is performing rebound monitoring.

The Ozone Sparging system at the Old Wash Rack continues to operate. The SVE system at the north west corner of the site is currently off and Rainbow is performing rebound monitoring. In addition, Rainbow continues to perform semi-annual groundwater monitoring. The final CMS Report for the site excluding the Old Wash Rack was submitted dated December 23, 2015, and was deemed technically complete by DTSC on April 5, 2016

Corrective Action - Current Status
Rainbow is currently negotiating with the owner of the property located at 21111 Wilmington Ave regarding cleanup of contamination that has crossed the site bounds. Once the negotiations are complete, an addendum to the CMS Report addressing the Old Wash Rack will be prepared.

Corrective Action – Planned Activities
Public notice of the remedy for the entire site is expected in the second half of 2016.

Last Updated 06/13/2016

Status: ACTIVE
A2 Program Type: CORRECTIVE ACTION
CalEnviroScreen Score: 91-95%
Summary Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649

Currently Scheduled Activities

Area Name: PROJECT WIDE
Area Link:
Sub Area:

Sub Area Link:
Document Type: Remedy Selection and Statement of Basis
Due Date: 5/18/2021
Revised Date:

Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: SWMU # 08, Former Wash Rack
Sub Area Link:
Document Type: Interim Measures Implementation Report
Due Date: 9/26/2020
Revised Date:

Completed Activities

Title: WDR Monitorong Report January1, 2020 to March 31, 2020
Title Link:
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: SWMU # 08, Former Wash Rack
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type: Other Report
Date Completed: 7/4/2020
Comments:

Title: OWR OZONE SPARGING INTERIM MEASURES STATUS REPORT FROM JULY 1, 2019 to SEPTEMBER 30, 2019 RAINBOW TRANSPORT TANK CLEANERS
Title Link:
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: SWMU # 08, Former Wash Rack
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type: Interim Measures Implementation Report
Date Completed: 11/1/2019
Comments:

Title: Quarterly Progress Report - Site Wide
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60453409
Area Name: PROJECT WIDE
Area Link:
Sub Area:
Sub Area Link:
Document Type: Other Report
Date Completed: 10/24/2018
Comments:

Title: WDR Monitoring Report
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60453410
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: SWMU # 08, Former Wash Rack
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type: Other Report
Date Completed: 4/16/2018
Comments:

Title: Quarterly Progress Report - Site Wide
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60411888
Area Name: PROJECT WIDE
Area Link:
Sub Area:
Sub Area Link:
Document Type: Other Report
Date Completed: 7/15/2016

Comments:	Approved as submitted
Title:	Rainbow PZ-2B Abandon Letter
Title Link:	http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60409349
Area Name:	PROJECT WIDE
Area Link:	
Sub Area:	
Sub Area Link:	
Document Type:	Technical Workplan
Date Completed:	5/27/2016
Comments:	Conditionally approved
Title:	Rebound Monitoring Report - NW Corner
Title Link:	http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60393212
Area Name:	Area Specific
Area Link:	http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area:	AOC # 1A, Tank Truck Staging Area (NW Corner)
Sub Area Link:	http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008524
Document Type:	Other Report
Date Completed:	6/12/2015
Comments:	Accepted
Title:	Semi-annual Groundwater Monitoring Report
Title Link:	http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60367568
Area Name:	PROJECT WIDE
Area Link:	
Sub Area:	
Sub Area Link:	
Document Type:	Monitoring Report
Date Completed:	10/21/2014
Comments:	Approved with comments
Title:	Semi-annual Groundwater Monitoring Report
Title Link:	http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60327615
Area Name:	PROJECT WIDE
Area Link:	
Sub Area:	
Sub Area Link:	
Document Type:	Monitoring Report
Date Completed:	9/10/2013
Comments:	Acceptable as submitted
Title:	Semi-annual Groundwater Monitoring Report
Title Link:	http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60308572
Area Name:	PROJECT WIDE
Area Link:	
Sub Area:	
Sub Area Link:	
Document Type:	Monitoring Report
Date Completed:	2/12/2013
Comments:	Accepted.
Title:	WDR Monitoring Report
Title Link:	http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60314562
Area Name:	Area Specific
Area Link:	http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area:	SWMU # 08, Former Wash Rack
Sub Area Link:	http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type:	Other Report
Date Completed:	1/15/2013
Comments:	Report not subject to approval by DTSC
Title:	May 2012 Semi-Annual Groundwater Monitoring Results
Title Link:	http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60304067
Area Name:	PROJECT WIDE
Area Link:	
Sub Area:	

Sub Area Link:
Document Type: Monitoring Report
Date Completed: 8/22/2012
Comments: Acceptable as submitted.

Title: RFI Data Transmittal
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=6023194
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area:
Sub Area Link:
Document Type: Technical Report
Date Completed: 5/12/2009
Comments: This is considered a final document. Pending completion of the off-site investigation in the NW corner of Rainbow will prepare and submit the RFI report.

Title: Quarterly Interim Measures Progress Report - OWR
Title Link:
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: SWMU # 08, Former Wash Rack
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type: Other Report
Date Completed: 10/14/2016
Comments:

Title: Quarterly Groundwater Monitoring Report
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60404055
Area Name: PROJECT WIDE
Area Link:
Sub Area:
Sub Area Link:
Document Type: Other Report
Date Completed: 11/2/2015
Comments: Acceptable as submitted

Title: Quarterly Progress Report - Site Wide
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60394159
Area Name: PROJECT WIDE
Area Link:
Sub Area:
Sub Area Link:
Document Type: Other Report
Date Completed: 10/30/2015
Comments: Acceptable as submitted

Title: Semi-annual Groundwater Monitoring Report
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60394152
Area Name: PROJECT WIDE
Area Link:
Sub Area:
Sub Area Link:
Document Type: Monitoring Report
Date Completed: 9/30/2015
Comments: Approving with comments to be address in next report

Title: Quarterly Interim Measures Progress Report - OWR
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60388862
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: SWMU # 08, Former Wash Rack
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type: Other Report
Date Completed: 3/26/2015
Comments: Complete

Title:	Quarterly Interim Measures Progress Report - NW Corner
Title Link:	http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60367557
Area Name:	Area Specific
Area Link:	http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area:	AOC # 1A, Tank Truck Staging Area (NW Corner)
Sub Area Link:	http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008524
Document Type:	Other Report
Date Completed:	9/3/2014
Comments:	Comments provided

Title:	Quarterly Progress Report - Site Wide
Title Link:	http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60359188
Area Name:	PROJECT WIDE
Area Link:	
Sub Area:	
Sub Area Link:	
Document Type:	Other Report
Date Completed:	8/11/2014
Comments:	Approved with a comment

Title:	Quarterly Progress Report
Title Link:	http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60348762
Area Name:	Area Specific
Area Link:	http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area:	AOC # 1A, Tank Truck Staging Area (NW Corner)
Sub Area Link:	http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008524
Document Type:	Other Report
Date Completed:	2/11/2014
Comments:	Responses acceptable.

Title:	Public Notice - OWR Ozone Interim Measure
Title Link:	http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60332868
Area Name:	PROJECT WIDE
Area Link:	
Sub Area:	
Sub Area Link:	
Document Type:	Public Notice
Date Completed:	8/14/2013
Comments:	Published in the Daily Breeze Newspaper

Title:	RFI Report Addendum and Well Decommissioning Work Plan
Title Link:	http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60285689
Area Name:	Entire Facility - MULTIPLE SITES
Area Link:	http://www.envirostor.dtsc.ca.gov/public/multiple_sites?global_id=80001649&ou_id=3000785#ou
Sub Area:	
Sub Area Link:	
Document Type:	Technical Workplan
Date Completed:	2/21/2012
Comments:	Well decomissioning to be completed by 3/30/2012.

Title:	Data Transmittal Interim Measure at AOC-1A: Northwest Area
Title Link:	http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60280167
Area Name:	PROJECT WIDE
Area Link:	
Sub Area:	
Sub Area Link:	
Document Type:	Other Report
Date Completed:	9/21/2011
Comments:	Acceptable as submitted

Title:	Groundwater Report
Title Link:	http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60263102
Area Name:	PROJECT WIDE
Area Link:	
Sub Area:	
Sub Area Link:	
Document Type:	Other Report

Date Completed: 3/22/2011
Comments:

Title: Corrective Measures Study Report Addendum
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60407954
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: SWMU # 08, Former Wash Rack
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type: Corrective Measures Study Report
Date Completed: 1/24/2020
Comments:

Title: WDR Monitorong Report July 1, 2019 to September 30, 2019
Title Link:
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: SWMU # 08, Former Wash Rack
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type: Other Report
Date Completed: 10/16/2019
Comments:

Title: WDR Monitoring Report
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60453398
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: SWMU # 08, Former Wash Rack
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type: Other Report
Date Completed: 7/12/2018
Comments:

Title: Del Amo Elementary Soil Vapor Sampling Work Plan
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60394843
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: AOC # 1B, Tank Truck Staging Area (Del Amo Elementary Boundary)
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2010164
Document Type: Technical Workplan
Date Completed: 7/10/2015
Comments: Conditionally approved

Title: Semi-annual Groundwater Monitoring Report
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60367570
Area Name: PROJECT WIDE
Area Link:
Sub Area:
Sub Area Link:
Document Type: Monitoring Report
Date Completed: 5/7/2015
Comments: Accepted.

Title: Rebound Monitoring Report - NW Corner
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60389683
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: AOC # 1A, Tank Truck Staging Area (NW Corner)
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008524
Document Type: Other Report
Date Completed: 3/26/2015
Comments: Approved with comments.

Title: Quarterly Progress Report - Site Wide

Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60364292
Area Name: PROJECT WIDE
Area Link:
Sub Area:
Sub Area Link:
Document Type: Other Report
Date Completed: 2/3/2015
Comments: Accepted

Title: Quarterly Interim Measures Progress Report - NW Corner
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60367565
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: AOC # 1A, Tank Truck Staging Area (NW Corner)
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008524
Document Type: Other Report
Date Completed: 12/18/2014
Comments: Comments provided verbally during conference call

Title: Financial Assurance Agreement
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60337705
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: SWMU # 08, Former Wash Rack
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type: Financial Assurance Documentation
Date Completed: 10/24/2013
Comments: Completed

Title: Interim Measure Work Notice
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60319101
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: AOC # 1A, Tank Truck Staging Area (NW Corner)
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008524
Document Type: Work Notice
Date Completed: 4/12/2013
Comments: Del Amo Mailing by ENVIRON. Community mailing by DTSC.

Title: Quarterly Progress Report - Site Wide
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60412155
Area Name: PROJECT WIDE
Area Link:
Sub Area:
Sub Area Link:
Document Type: Other Report
Date Completed: 10/24/2018
Comments:

Title: Quarterly Progress Report - Site Wide
Title Link:
Area Name: PROJECT WIDE
Area Link:
Sub Area:
Sub Area Link:
Document Type: Other Report
Date Completed: 10/31/2016
Comments: Acceptable as submitted

Title: CEQA - Notice of Exemption
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&enforcement_id=60300271
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: AOC # 1A, Tank Truck Staging Area (NW Corner)
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008524

Document Type: CEQA - Notice of Exemption
Date Completed: 7/10/2012
Comments: Approved

Title: Interim Measures Work Plan Addendum - AOC 1A NW Area
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60279843
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: AOC # 1A, Tank Truck Staging Area (NW Corner)
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008524
Document Type: Interim Measures Workplan
Date Completed: 10/20/2011
Comments: .

Title: OWR Data Transmittal
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60268639
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: SWMU # 08, Former Wash Rack
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type: Other Report
Date Completed: 8/23/2011
Comments: Closed activity.

Title: OWR Investigation Work Plan
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60260442
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: SWMU # 08, Former Wash Rack
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type: RFI Workplan Addendum
Date Completed: 5/5/2011
Comments: Approved with additional recommendations.

Title: CEQA Notice of Exemption
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&enforcement_id=6017310
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: AOC # 1A, Tank Truck Staging Area (NW Corner)
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008524
Document Type: CEQA - Notice of Exemption
Date Completed: 10/5/2009
Comments:

Title: Quarterly Interim Measures Progress Report - OWR
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60394154
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: SWMU # 08, Former Wash Rack
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type: Other Report
Date Completed: 9/30/2015
Comments: Approved

Title: Del Amo Elementary Soil Vapor Sampling Data Transmittal
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60396413
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: AOC # 1B, Tank Truck Staging Area (Del Amo Elementary Boundary)
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2010164
Document Type: Other Report
Date Completed: 8/3/2015
Comments: Second sampling event not necessary

Title: Work Notice for Soil Vapor Samplng at Del Amo Elementary
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60395072
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: AOC # 1B, Tank Truck Staging Area (Del Amo Elementary Boundary)
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2010164
Document Type: Work Notice
Date Completed: 7/16/2015
Comments: Completed

Title: Quarterly Interim Measures Progress Report - OWR
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60392131
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: SWMU # 08, Former Wash Rack
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type: Other Report
Date Completed: 5/1/2015
Comments: .

Title: Quarterly Progress Report - Site Wide
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60364294
Area Name: PROJECT WIDE
Area Link:
Sub Area:
Sub Area Link:
Document Type: Other Report
Date Completed: 4/30/2015
Comments: Acceptable as submitted

Title: Semi-annual Groundwater Monitoring Report
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60327617
Area Name: PROJECT WIDE
Area Link:
Sub Area:
Sub Area Link:
Document Type: Monitoring Report
Date Completed: 3/13/2014
Comments: Complete

Title: WDR Monitoring Report
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60310934
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: SWMU # 08, Former Wash Rack
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type: Other Report
Date Completed: 10/15/2012
Comments: Acceptable as submitted.

Title: Northwest Area Data Transmittal
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60296407
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: AOC # 1A, Tank Truck Staging Area (NW Corner)
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008524
Document Type: Other Report
Date Completed: 4/25/2012
Comments: Acceptable as submitted.

Title: CEQA Notice of Exemption
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&enforcement_id=60291108
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?

global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: SWMU # 08, Former Wash Rack
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type: CEQA - Notice of Exemption
Date Completed: 3/1/2012
Comments: Completed.

Title: Corrective Measures Study Workplan
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=6026747
Area Name: Entire Facility - MULTIPLE SITES
Area Link: http://www.envirostor.dtsc.ca.gov/public/multiple_sites?global_id=80001649&ou_id=3000785#ou
Sub Area:
Sub Area Link:
Document Type: Corrective Measures Study Workplan
Date Completed: 1/11/2011
Comments: The document was approved as amended by the response to comments document

Title: RCRA Facility Investigation (RFI) Report
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=6022647
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?
global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area:
Sub Area Link:
Document Type: RFI Report
Date Completed: 5/12/2010
Comments:

Title: Corrective Action Consent Agreement
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&enforcement_id=6014024
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?
global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area:
Sub Area Link:
Document Type: Consent Agreement
Date Completed: 12/28/2004
Comments:

Title: OWR OZONE SPARGING INTERIM MEASURES STATUS REPORT FROM OCTOBER 1, 2019 to DECEMBER 31, 2019 RAINBOW TRANSPORT TANK CLEANERS
Title Link:
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?
global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: SWMU # 08, Former Wash Rack
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type: Interim Measures Implementation Report
Date Completed: 1/29/2020
Comments:

Title: Quarterly Interim Measures Progress Report - OWR
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60394169
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?
global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: SWMU # 08, Former Wash Rack
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type: Other Report
Date Completed: 7/6/2016
Comments: Approved as submitted

Title: Quarterly Progress Report - Site Wide
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60394174
Area Name: PROJECT WIDE
Area Link:
Sub Area:
Sub Area Link:
Document Type: Other Report

Date Completed: 4/29/2016
Comments: Accepted as submitted

Title: Quarterly Progress Report - Site Wide
Title Link:
Area Name: PROJECT WIDE
Area Link:
Sub Area:
Sub Area Link:
Document Type: Other Report
Date Completed: 7/28/2015
Comments: Acceptable as submitted

Title: Semi-annual Groundwater Monitoring Report
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60412165
Area Name: PROJECT WIDE
Area Link:
Sub Area:
Sub Area Link:
Document Type: Monitoring Report
Date Completed: 10/12/2016
Comments: Approved

Title: Quarterly Progress Report - Site Wide
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60394165
Area Name: PROJECT WIDE
Area Link:
Sub Area:
Sub Area Link:
Document Type: Other Report
Date Completed: 2/1/2016
Comments: Acceptable as submitted

Title: Additional Off-site Investigation (21111 Wilmngton Ave)
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60403228
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: SWMU # 08, Former Wash Rack
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type: Technical Workplan
Date Completed: 1/4/2016
Comments: Conditionally approved

Title: Quarterly Interim Measures Progress Report - NW Corner
Title Link:
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: AOC # 1A, Tank Truck Staging Area (NW Corner)
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008524
Document Type: Other Report
Date Completed: 11/18/2015
Comments: Accepted with recommendations for future reports

Title: Quarterly Interim Measures Progress Report - NW Corner
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60327619
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: AOC # 1A, Tank Truck Staging Area (NW Corner)
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008524
Document Type: Monitoring Report
Date Completed: 5/22/2014
Comments: Approved

Title: Financial Assurance Documentation (LOC)
Title Link:
Area Name: PROJECT WIDE

Area Link:
Sub Area:
Sub Area Link:
Document Type: Financial Assurance Documentation
Date Completed: 1/14/2014
Comments: Completed

Title: Monitoring Well Abandonment and Installation Report
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60309577
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: SWMU # 08, Former Wash Rack
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type: Other Report
Date Completed: 10/19/2012
Comments: Acceptable as submitted.

Title: Work Plan for Additional Soil and Soil Vapor Sampling
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60310414
Area Name: PROJECT WIDE
Area Link:
Sub Area:
Sub Area Link:
Document Type: RFI Workplan
Date Completed: 10/12/2012
Comments: Approved.

Title: OWR Pilot Study Workplan
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60268640
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: SWMU # 08, Former Wash Rack
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type: Pilot Study/Treatability Workplan
Date Completed: 3/1/2012
Comments: Completed.

Title: Interim Measure Work Plan
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=6027906
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: AOC # 1A, Tank Truck Staging Area (NW Corner)
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008524
Document Type: Interim Measures Workplan
Date Completed: 9/28/2009
Comments: Approval of interim measure work plan consisting of an SVE with GAC treatments installed in the NW corner of the site.

Title: RFI WORKPLAN APPROVED (CA150)
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=6024816
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area:
Sub Area Link:
Document Type: RFI Workplan
Date Completed: 9/15/2004
Comments: The entire facility consists of 4 units. (AOC #1, SWMU #8, AOC #2, SWMU #3).

Title: OWR OZONE SPARGING INTERIM MEASURES STATUS REPORT FROM APRIL 1, 2020 to JUNE 30, 2020 RAINBOW TRANSPORT TANK CLEANERS
Title Link:
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: SWMU # 08, Former Wash Rack

Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type: Interim Measures Implementation Report
Date Completed: 7/31/2020
Comments:

Title: WDR Monitorong Report April 1, 2020 to June 30, 2020
Title Link:
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: SWMU # 08, Former Wash Rack
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type: Other Report
Date Completed: 9/18/2020
Comments:

Title: Semi-annual Groundwater Monitoring Report
Title Link:
Area Name: PROJECT WIDE
Area Link:
Sub Area:
Sub Area Link:
Document Type: Monitoring Report
Date Completed: 7/11/2016
Comments: Comments to be addressed in next report

Title: Corrective Measures Study Report
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60268643
Area Name: PROJECT WIDE
Area Link:
Sub Area:
Sub Area Link:
Document Type: Corrective Measures Study Report
Date Completed: 4/5/2016
Comments: Conditional technical completeness

Title: Quarterly Interim Measures Progress Report - NW Corner
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60392133
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: AOC # 1A, Tank Truck Staging Area (NW Corner)
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008524
Document Type: Other Report
Date Completed: 5/1/2015
Comments: No review - GSU to review data along with rebound results.

Title: OWR Ozone Sparging Interim Measures Implementation Report
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60361888
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: SWMU # 08, Former Wash Rack
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type: Interim Measures Implementation Report
Date Completed: 7/25/2014
Comments: Sources of contaminants at the 21111 Wilmington property to be discussed in the CMS report

Title: Groundwater Split Sampling
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60354491
Area Name: PROJECT WIDE
Area Link:
Sub Area:
Sub Area Link:
Document Type: Fieldwork
Date Completed: 6/6/2014
Comments: Complete

Title: Initial Study and Draft Negative Declaration

Title Link:	http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&enforcement_id=60317616
Area Name:	Area Specific
Area Link:	http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area:	SWMU # 08, Former Wash Rack
Sub Area Link:	http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type:	CEQA - Initial Study/ Neg. Declaration
Date Completed:	10/14/2013
Comments:	Complete

Title:	SCAQMD Permit to Construct
Title Link:	http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&enforcement_id=60327659
Area Name:	Area Specific
Area Link:	http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area:	AOC # 1A, Tank Truck Staging Area (NW Corner)
Sub Area Link:	http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008524
Document Type:	Correspondence
Date Completed:	6/19/2013
Comments:	Issued by South Coast Air Quality Management District

Title:	Interim Measures Work Plan Addendum
Title Link:	http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60299830
Area Name:	Area Specific
Area Link:	http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area:	AOC # 1A, Tank Truck Staging Area (NW Corner)
Sub Area Link:	http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008524
Document Type:	Interim Measures Workplan
Date Completed:	7/10/2012
Comments:	.

Title:	Quarterly Interim Measures Project Report - OWR
Title Link:	
Area Name:	Area Specific
Area Link:	http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area:	SWMU # 08, Former Wash Rack
Sub Area Link:	http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type:	Other Report
Date Completed:	9/20/2016
Comments:	Minor comment to be addressed in future reports.

Title:	Financial Assurance Cost Estimate Validation
Title Link:	http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60370106
Area Name:	PROJECT WIDE
Area Link:	
Sub Area:	
Sub Area Link:	
Document Type:	Financial Assurance Documentation
Date Completed:	8/5/2015
Comments:	Complete

Title:	Shut-down and Rebound Monitoring Workplan
Title Link:	http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60387841
Area Name:	Area Specific
Area Link:	http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area:	AOC # 1A, Tank Truck Staging Area (NW Corner)
Sub Area Link:	http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008524
Document Type:	Technical Workplan
Date Completed:	1/15/2015
Comments:	Conditionally approved.

Title:	Quarterly Progress Report - Site Wide
Title Link:	http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60364290
Area Name:	PROJECT WIDE
Area Link:	
Sub Area:	

Sub Area Link:
Document Type: Other Report
Date Completed: 11/21/2014
Comments: Acceptable as submitted

Title: Anuual Cost Estimate Inflation Update
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60384109
Area Name: PROJECT WIDE
Area Link:
Sub Area:
Sub Area Link:
Document Type: Financial Assurance Documentation
Date Completed: 10/21/2014
Comments: Accepted

Title: Response to DTSC Comments Table
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60330476
Area Name: PROJECT WIDE
Area Link:
Sub Area:
Sub Area Link:
Document Type: Other Report
Date Completed: 9/22/2013
Comments: Response acceptable

Title: Annual WDR Monitoring Report
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60315571
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: SWMU # 08, Former Wash Rack
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type: Other Report
Date Completed: 2/4/2013
Comments: Report sent to RWQCB not DTSC. Verbal comments provided during meeting on 2/4/2013.

Title: Interim Measures Progress Report
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=6029446
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: AOC # 1A, Tank Truck Staging Area (NW Corner)
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008524
Document Type: Other Report
Date Completed: 1/28/2010
Comments: Report was reviewed by GSU - report is acceptable. No response/letter required.

Title: RFI WORKPLAN APPROVED (CA150)
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=6024869
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area:
Sub Area Link:
Document Type: RFI Workplan
Date Completed: 12/23/2008
Comments: Conditional Approval of Revised RFI Workplan Addendum.
ps 12/31/08

Title: 1st Semi Annual 2019 Groundwater Monitoring Report
Title Link:
Area Name: PROJECT WIDE
Area Link:
Sub Area:
Sub Area Link:
Document Type: Monitoring Report
Date Completed: 10/9/2019
Comments:

Title:	MONITORING REPORT FOR THE PERIOD FROM April 1, 2019 to June 30, 2019
Title Link:	http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60462853
Area Name:	Area Specific
Area Link:	http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area:	SWMU # 08, Former Wash Rack
Sub Area Link:	http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type:	Other Report
Date Completed:	8/23/2019
Comments:	

Title:	Semi-annual Groundwater Monitoring Report
Title Link:	
Area Name:	PROJECT WIDE
Area Link:	
Sub Area:	
Sub Area Link:	
Document Type:	Monitoring Report
Date Completed:	3/15/2019
Comments:	

Title:	Quarterly Progress Report - Site Wide
Title Link:	http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60359186
Area Name:	PROJECT WIDE
Area Link:	
Sub Area:	
Sub Area Link:	
Document Type:	Other Report
Date Completed:	4/30/2014
Comments:	Acceptable as submitted.

Title:	OWR Ozone Sparging Interim Corrective Measures Implementation Work Plan
Title Link:	http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60317614
Area Name:	Area Specific
Area Link:	http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area:	SWMU # 08, Former Wash Rack
Sub Area Link:	http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type:	Interim Measures Workplan
Date Completed:	8/14/2013
Comments:	Technically complete

Title:	Letter Report - Soil / Soil Gas Sampling at 21111 S. Wilmington Ave
Title Link:	http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60320017
Area Name:	PROJECT WIDE
Area Link:	
Sub Area:	
Sub Area Link:	
Document Type:	Technical Report
Date Completed:	5/31/2013
Comments:	Comments to be address in the CMS Report

Title:	Pilot Study Work Notice
Title Link:	http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60291367
Area Name:	Area Specific
Area Link:	http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area:	SWMU # 08, Former Wash Rack
Sub Area Link:	http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type:	Work Notice
Date Completed:	7/10/2012
Comments:	Finalized and mailed 7/10/2012

Title:	First Amendment to Corrective Action Consent Agreement
Title Link:	http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&enforcement_id=60180138
Area Name:	Area Specific
Area Link:	http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area:	

Sub Area Link:
Document Type: Amendment - Order/Agreement
Date Completed: 7/20/2010
Comments: First amendment to corrective action consent agreement to cover corrective measures study

Title: Work Plan for Off-Site Sampling in the Northwest Area
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=6023649
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: AOC # 1A, Tank Truck Staging Area (NW Corner)
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008524
Document Type: RFI Workplan
Date Completed: 6/29/2009
Comments:

Title: WDR Monitorong Report October 1, 2019 to December 31, 2019
Title Link:
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: SWMU # 08, Former Wash Rack
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type: Other Report
Date Completed: 4/29/2020
Comments:

Title: Quarterly Interim Measures Progress Report - OWR
Title Link:
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: SWMU # 08, Former Wash Rack
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type: Other Report
Date Completed: 3/15/2019
Comments:

Title: Quarterly Progress Report - Site Wide
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60412157
Area Name: PROJECT WIDE
Area Link:
Sub Area:
Sub Area Link:
Document Type: Other Report
Date Completed: 10/24/2018
Comments:

Title: WDR Monitoring Report
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60453407
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: SWMU # 08, Former Wash Rack
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type: Other Report
Date Completed: 1/16/2018
Comments:

Title: Quarterly Interim Measures Progress Report - OWR
Title Link:
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: SWMU # 08, Former Wash Rack
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type: Other Report
Date Completed: 5/2/2016
Comments: Accepted as submitted

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Title: Quarterly Interim Measures Progress Report - NW Corner
Title Link:
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: AOC # 1A, Tank Truck Staging Area (NW Corner)
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008524
Document Type: Other Report
Date Completed: 4/29/2016
Comments: Accepted as submitted

Title: Quarterly Interim Measures Progress Report - OWR
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60394161
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: SWMU # 08, Former Wash Rack
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type: Other Report
Date Completed: 2/11/2016
Comments: Conditional approval

Title: Quarterly Interim Measures Progress Report - OWR
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60367563
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: SWMU # 08, Former Wash Rack
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type: Other Report
Date Completed: 12/23/2014
Comments: Comments rolled into comments on the shut-down plan

Title: Quarterly Interim Measures Progress Report - OWR
Title Link: http://www.envirostor.dtsc.ca.gov/public/final_documents2?global_id=80001649&doc_id=60367561
Area Name: Area Specific
Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&ou_id=1970540&hideside=True&printerfriendly=True
Sub Area: SWMU # 08, Former Wash Rack
Sub Area Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001649&site_id=2008525
Document Type: Other Report
Date Completed: 9/19/2014
Comments: Figure discussed during conference call with ENVIRON on 9/29/2014

75	4 of 4	ENE	0.94 / 4,971.79	27.53 / 10	**RAINBOW INC** **21119 WILMINGTON AVE** **LONG BEACH CA 908100000**	HWP

Estor/EPA ID: CAD009774118
Site Code: 400398, 400398
Nat Priority List:
Acres:
Special Program:
Funding:
Assembly District: 64
Senate District: 35
School District:
APN:
Cleanup Status:
Cleanup Oversight Agencies:
Site Type: CLOSED
Office:
Past Use that Caused Contam:
Potential Media Affected:
Potential Contamin of Concern:

Permit Renewal Lead:
Project Manager:
Supervisor:
Public Partici Spclst:
Census Tract:
County: LOS ANGELES
Latitude: 33.837458
Longitude: -118.238385

Site History:

INTRODUCTION

Rainbow LLC (Rainbow) occupies a 10 acre parcel zoned for light industrial uses. The site is used for the following purposes; tanker truck cleaning under the name "Rainbow Transport Tank Cleaners", truck and trailer parking, containerization, vehicle staging and vehicle maintenance.

PERMITTING

Permitting - Historical
The tanker truck business has operated at the site since the 1960's, formerly under the name "Chemical Rainbow Tank Cleaners". Rainbow applied for RCRA Interim Status on November 18, 1980 and was granted RCRA Interim Status on December 23, 1981. Rainbow subsequently applied for and was granted Standardized Permit Interim Status on June 1, 1993. After receipt of Standardized Permit Interim Status, discussions occured between Rainbow and DTSC regarding the appropriate regulatory status of site operations. In a letter dated July 14, 1994, DTSC determined that the hazardous waste generated from cleaning of trucks that contained hazardous materials was generated on-site. Given that Rainbow had ceased cleaning trucks that contained hazardous waste, and only generated waste on-site, they were eligible for conversion to the tiered permitting program under the Permit-by-rule tier. In a letter dated May 26, 1995, DTSC authorized delayed "limited" closure of the facility until the facility closes or terminates use of the hazardous waste management units for on-site hazardous waste treatment under Permit-by-rule.

CORRECTIVE ACTION

For information regarding the on-going investigation and cleanup of the Rainbow site please refer to the separate EnviroStor page for corrective action.

Status: CLOSED
Program Type: HAZ WASTE - Standardized
CalEnviroScreen Score: 91-95%
Summary Link: http://www.envirostor.dtsc.ca.gov/public/hwmp_profile_report?global_id=CAD009774118

Permit Units - Completed Activities

Unit: NO PERMIT ACTIVITIES HAVE BEEN COMPLETED FOR THIS SITE
Event Description:
Date:
Doc Link:

Units Undergoing Closure

Unit: STTANKTRT1
Event Description: CLOSURE ADMINISTRATIVE - ISSUE CLOSURE VERIFICATION
Date: 5/26/1995
Doc Link:

76	1 of 5	ESE	0.96 / 5,069.41	25.53 / 8	NIKLOR CHEMICAL CO., INC. 2060 E 220TH STREET LONG BEACH CA 90810	RCRA CORRACTS

EPA Handler ID: CAD008392052
Gen Status Universe: No Report
Contact Name:
Contact Address: US
Contact Phone No and Ext:
Contact Email:
Contact Country: US
County Name: LOS ANGELES
EPA Region: 09
Land Type:
Receive Date: 19930924

Event/Area Details

Area Name: ENTIRE FACILITY
Event Code: CA075LO
Corrective Action Event Descri: CA PRIORITIZATION-LOW CA PRIORITY
Actual Date of Event: 19910716
Orig Sched Event Date:
New Sched Event Date:

Best Date: 19910716
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind:
Event Responsible Agency: E

Violation/Evaluation Summary

Note: VIOLATION or UNDETERMINED: There are VIOLATION or UNDETERMINED details or records associated with this facility (EPA ID) in the Compliance Monitoring and Enforcement table dated May, 2020.

Violation Details

Citation: FR - 264.140-150.H
Violation Short Description: TSD - Financial Requirements
Violation Type: 264.H
Violation Determined Date: 19890425
Scheduled Compliance Date:
Return to Compliance: Observed
Actual Return to Compl: 19890425
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 310
Enforcement Type Description: FINAL 3008(A) COMPLIANCE ORDER
Enforcement Action Date: 19881101
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount: 25000
Paid Amount: 25000

Violation Details

Citation: FR - 270
Violation Short Description: TSD - General
Violation Type: 264.A
Violation Determined Date: 19880222
Scheduled Compliance Date: 19880324
Return to Compliance: Observed
Actual Return to Compl: 19880303
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 19880302
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Citation: F - 264.140-150.H
Violation Short Description: TSD - Financial Requirements

Violation Type: 264.H
Violation Determined Date: 19880208
Scheduled Compliance Date:
Return to Compliance: Observed
Actual Return to Compl: 19880303
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 210
Enforcement Type Description: INITIAL 3008(A) COMPLIANCE
Enforcement Action Date: 19880606
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount: 77500
Final Amount:
Paid Amount:

Evaluation Details

Evaluation Start Date: 19890427
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description:
Return to Compliance Date:
Evaluation Agency: State

Evaluation Start Date: 19890425
Evaluation Type Description: FINANCIAL RECORD REVIEW
Violation Short Description: TSD - Financial Requirements
Return to Compliance Date: 19890425
Evaluation Agency: State

Evaluation Start Date: 19880222
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description: TSD - General
Return to Compliance Date: 19880303
Evaluation Agency: State

Evaluation Start Date: 19880208
Evaluation Type Description: FINANCIAL RECORD REVIEW
Violation Short Description: TSD - Financial Requirements
Return to Compliance Date: 19880303
Evaluation Agency: State

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner: No
Smelting, Melting and Refining: No
Underground Injection Control: No
Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 19810227
Handler Name: NIKLOR CHEMICAL CO., INC.
Federal Waste Generator Code: N
Generator Code Description: Not a Generator, Verified
Source Type: Notification

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 19930924
Handler Name: NIKLOR CHEMICAL CO., INC.
Federal Waste Generator Code: N
Generator Code Description: Not a Generator, Verified
Source Type: Implementer

Owner/Operator Details

Owner/Operator Ind: Current Owner
Type: Private
Name: NIKLOR CHEMICAL CO INC.
Date Became Current:
Date Ended Current:
Phone: 213-830-2253
Source Type: Notification

Street No:
Street 1: 2060 E 220TH STREET
Street 2:
City: LONG BEACH
State: CA
Country:
Zip Code: 90810

Owner/Operator Ind: Current Operator
Type: Private
Name: NIKLOR CHEMICAL CO INC.
Date Became Current:
Date Ended Current:
Phone: 213-830-2253
Source Type: Implementer

Street No:
Street 1: 2060 E 220TH STREET
Street 2:
City: CITY NOT REPORTED
State: CA
Country:
Zip Code: 99999

Historical Handler Details

Receive Dt: 19810227
Generator Code Description: Not a Generator, Verified
Handler Name: NIKLOR CHEMICAL CO., INC.

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2060 E 220TH ST
LONG BEACH CA 908100000 | ***ENVIROSTOR***

Estor/EPA ID: CAD008392052
Site Code:
Nat Priority List:
APN:
Census Tract:
Site Type: PROTECTIVE FILER
Address Description: 2060 E 220TH ST
Office:
Special Program:
Funding:
Cleanup Status:
Cleanup Oversight Agencies:
School District:
Past Use that Caused Contam:
Potential Media Affected:
Potential Contamin of Concern:

Assembly District: 64
Senate District: 35
Permit Renewal Lead:
Public Partici Spclst:
Project Manager:
County: LOS ANGELES
Latitude: 33.827509
Longitude: -118.237113
Acres:
Supervisor:

Site History:

NO FACILITY HISTORY HAS BEEN ENTERED FOR THIS SITE

Status: PROTECTIVE FILER
A2 Program Type: HAZ WASTE
CalEnviroScreen Score: 91-95%
Summary Link: http://www.envirostor.dtsc.ca.gov/public/hwmp_profile_report?global_id=CAD008392052

Permit Units - Completed Activities

Unit: NO PERMIT ACTIVITIES HAVE BEEN COMPLETED FOR THIS SITE
Event Description:
Date:
Doc Link:

Units Undergoing Closure

Unit: NO PERMIT ACTIVITIES HAVE BEEN COMPLETED FOR THIS SITE
Event Description:
Date:
Doc Link:

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2060 E 220TH ST
LONG BEACH CA 908100000 | **ENVIROSTOR**

Estor/EPA ID: 80001581
Site Code:
Nat Priority List: NO
APN: 7316027017
Census Tract: 6037543306
Site Type: CORRECTIVE ACTION
Address Description: 2060 E 220TH ST
Office: CLEANUP CHATSWORTH
Special Program:
Funding:
Assembly District: 64
Senate District: 35
Permit Renewal Lead:
Public Partici Spclst:
Project Manager:
County: LOS ANGELES
Latitude: 33.827509
Longitude: -118.237113
Acres: 0 ACRES
Supervisor: * UNKNOWN
Cleanup Status: NO ACTION REQUIRED AS OF 6/19/2013
Cleanup Oversight Agencies: NONE SPECIFIED
School District:
Past Use that Caused Contam: NONE SPECIFIED
Potential Media Affected: NONE SPECIFIED
Potential Contamin of Concern:

NONE SPECIFIED

Site History:

Status: NO ACTION REQUIRED
A2 Program Type: CORRECTIVE ACTION
CalEnviroScreen Score: 91-95%
Summary Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001581

Completed Activities

Title: PA OR CERCLA INSPECTION-NOT A PA PLUS (CA049PA)
Title Link:
Area Name:
Area Link:
Sub Area:
Sub Area Link:
Document Type: Preliminary Assessment Report
Date Completed: 7/16/1991
Comments:

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
76	4 of 5	ESE	0.96 / 5,069.41	25.53 / 8	NIKLOR CHEMICAL COMPANY INC. 2060 E. 220TH ST. CARSON CA 90810	ENVIROSTOR

Estor/EPA ID: 19281226
Site Code:
Nat Priority List: NO
APN: NONE SPECIFIED
Census Tract: 6037543306
Site Type: EVALUATION
Address Description: 2060 E. 220TH ST.
Office: CLEANUP CYPRESS
Special Program:
Funding: NOT APPLICABLE
Assembly District: 64
Senate District: 35
Permit Renewal Lead:
Public Partici Spclst:
Project Manager:
County: LOS ANGELES
Latitude: 33.8275373869414
Longitude: -118.237105100141
Acres: NONE SPECIFIED
Supervisor:
Cleanup Status: REFER: 1248 LOCAL AGENCY AS OF 5/27/2004
Cleanup Oversight Agencies: NONE SPECIFIED
School District:
Past Use that Caused Contam: NONE SPECIFIED
Potential Media Affected: NONE SPECIFIED
Potential Contamin of Concern:

NONE SPECIFIED

Site History:

Status: REFER: 1248 LOCAL AGENCY
A2 Program Type: EVALUATION
CalEnviroScreen Score: 91-95%
Summary Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=19281226

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
76	5 of 5	ESE	0.96 / 5,069.41	25.53 / 8	NIKLOR CHEMICAL CO INC 2060 E 220TH ST LONG BEACH CA 908100000	HWP

Estor/EPA ID: CAD008392052
Site Code:
Nat Priority List:
Acres:
Special Program:
Funding:
Assembly District: 64
Senate District: 35
School District:
APN:
Cleanup Status:
Cleanup Oversight Agencies:
Site Type: PROTECTIVE FILER
Office:
Past Use that Caused Contam:
Potential Media Affected:
Potential Contamin of Concern:
Permit Renewal Lead:
Project Manager:
Supervisor:
Public Partici Spclst:
Census Tract:
County: LOS ANGELES
Latitude: 33.827509
Longitude: -118.237113

Site History:

NO FACILITY HISTORY HAS BEEN ENTERED FOR THIS SITE

Status: PROTECTIVE FILER
Program Type: HAZ WASTE
CalEnviroScreen Score: 91-95%
Summary Link: http://www.envirostor.dtsc.ca.gov/public/hwmp_profile_report?global_id=CAD008392052

Permit Units - Completed Activities

Unit: NO PERMIT ACTIVITIES HAVE BEEN COMPLETED FOR THIS SITE
Event Description:

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Date:
Doc Link:

Units Undergoing Closure

Unit: NO PERMIT ACTIVITIES HAVE BEEN COMPLETED FOR THIS SITE
Event Description:
Date:
Doc Link:

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
77	1 of 1	S	0.96 / 5,089.87	34.48 / 17	PIONEER VIDEO MFG., INC. 1041 E. 230TH STREET CARSON CA 90745	ENVIROSTOR

Estor/EPA ID: 71002654
Site Code:
Nat Priority List: NO
APN: NONE SPECIFIED
Census Tract: 6037543905
Site Type: TIERED PERMIT
Address Description: 1041 E. 230TH STREET
Office: CLEANUP CHATSWORTH
Special Program:
Funding:
Cleanup Status: REFER: OTHER AGENCY AS OF
Cleanup Oversight Agencies: NONE SPECIFIED
School District:
Past Use that Caused Contam: NONE SPECIFIED
Potential Media Affected: NONE SPECIFIED
Potential Contamin of Concern:

NONE SPECIFIED

Site History:

Assembly District: 64
Senate District: 35
Permit Renewal Lead:
Public Partici Spclst:
Project Manager:
County: LOS ANGELES
Latitude: 33.817983
Longitude: -118.256122
Acres: NONE SPECIFIED
Supervisor:

Status: REFER: OTHER AGENCY
A2 Program Type: TIERED PERMIT
CalEnviroScreen Score: 86-90%
Summary Link: http://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=71002654

Unplottable Summary

Total: 15 Unplottable sites

DB	Company Name/Site Name	Address	City	Zip	ERIS ID
CHMIRS	UPRR	Railyard - 2442 East Carson ***Control No* | *Notified Date:*** 08-6409 |	Carson CA	90810	821870082
CHMIRS	UPRR	Carson Street Crossing ***Control No* | *Notified Date:*** 07-2438 |	Carson CA		821809456
CHMIRS	LA County Fire Hazmat	E Carson St west of Wilmington. ***Control No* | *Notified Date:*** 17-1824 |	Carson CA	90745	860465357
DELISTED COUNTY	GARDENA VALLEY LANDFILL #6	0000 CHICO ST	CARSON CA	90746	820048375
ERNS		CARSON ST	LOS ANGELES CA		807226431
HMIRS		SOUTHBOUND I 405	LOS ANGELES CA		880614410
HMIRS		INTERSTATE 405	LONG BEACH CA		818331675
LA SML	ARMCO STEEL PLANT	0000 CARSON ST	TORRANCE CA	90501	820048371
RCRA CORRACTS	US NAVY BRAC PMO-W (LONG BEACH)	B-821 REEVES AVE TERMINAL ISLAND COMPLEX ***EPA Handler ID:*** CA6170023109	LONG BEACH CA	90810-1011	810472188
RCRA NON GEN	CALIFORNIA DEPARTMENT OF TRANSPORTATION	ROUTE 405 AT LATIJERA BRIDGE OVERCROSSING ***EPA Handler ID:*** CAC002974304	LOS ANGELES CA	90045	873918259
RCRA NON GEN	CALTRANS DIST 07/ EA 07-296304	07-LA-405 PM 24.5 ***EPA Handler ID:*** CAC003002077	LOS ANGELES CA	90045	875121695

RCRA NON GEN	CALTRANS DIST 07/EA 07-296104	RTE 405 0.7/6.7 ***EPA Handler ID:*** CAC003029713	LONG BEACH CA	90807	879464147
RCRA NON GEN	CALTRANS DIST 07/ EA 07-296104	RTE 405 0.7/3.82 ***EPA Handler ID:*** CAC003014286	LONG BEACH CA	90807	878159905
RCRA TSD	CALTRANS DIST 07/ EA 07-296104	RTE 405 0.7/3.82 ***EPA Handler ID:*** CAC003014286	LONG BEACH CA	90807	877593296
SUPERFUND ROD	NAVAL SHIPYARD LONG BEACH	TERMINAL ISLAND	LONG BEACH CA	90822	859640009

Unplottable Report

Site: ***UPRR***
Railyard - 2442 East Carson Carson CA 90810

CHMIRS

Control No:	08-6409	***Notified Date:***	
Notified Date Time:		***Year:***	2008
County:	Los Angeles County		
URL:	https://w3.calema.ca.gov/operational/malhaz.nsf/f1841a103c102734882563e200760c4a/a700dbb5063f1158882574b8005b066e?OpenDocument		

California Hazardous Material Incident Report System (as of 2006 to 2015)

Contained:	Yes	***3 Ves >= 300 Tons:***	
1 Substance:	Oil	***Incident Date:***	9/2/2008
1 Measure:	Gal(s)	***Incident Time:***	601
1 Other:		***Spill Site:***	Rail Road
1 Quantity:	50-70	***Injuries?:***	
1 Type:	PETROLEUM	***No of Injuries:***	0
1 Pipeline:		***Fatals?:***	
1 Vessel >= 300 Tons:		***No of Fatals:***	0
2 Substance:		***Evacs?:***	
2 Quantity:		***No of Evacs:***	0
2 Measure:		***Cleanup:***	Contractor
2 Type:		***Site:***	
2 Other:		***Cause:***	
2 Pipeline:		***Cause Other:***	
2 Vessel >= 300 Tons:		***Dog No:***	
3 Substance:		***Water:***	No
3 Quantity:		***Water Way:***	
3 Measure:		***City:***	Carson
3 Type:		***County:***	Los Angeles County
3 Other:		***Zip:***	90810
3 Pipeline:			
Admin Agency:	L. A. County Fire Prevention		
Notification Area:	AA/CUPA,DFG-OSPR,DTSC,RWQCB,US EPA,USFWS		
Location:	Railyard - 2442 East Carson		
Description:	RP indicates release occurred when oil released from holding tanks into containment area.		

Spill Report View

Amount 1:		***Creation Date:***	09/02/2008 09:34 AM
Amount 2:		***Received By:***	
Amount 3:		***Admin Agency:***	
Type:	PETROLEUM	***Admin Agency 2:***	
Water:		***Additional County:***	
On Scene:		***Phone No:***	
Other on Scene:		***Ext:***	
Other Notified:		***Pag Cell:***	
Document Title:	SPILL Report		
Spill Site:	Rail Road		
Cause Desc for Other:			
Person Notifying Cal OES:			

Hazardous Materials Spill Report

Control Cal OES:	08-6409	***Type 3:***	
Control NRC:		***Other 3:***	
Date :	09/02/2008	***Pipeline 3:***	No
Incident Date:	09/02/2008	***Ves >= 300 Tons 3:***	No
Time:	0934	***Name:***	

Incident Time:	0601	***Phone:***	
Water Involved:	No	***Ext:***	
Drink Wtr Impact:		***Pag Cell:***	
Qty 1:	=	***PRS Name:***	
Measure 1:	Gal(s)	***PRS Phone:***	
Type 1:	PETROLEUM	***PRS Ext:***	
Pipeline 1:	No	***PRS Pag Cell:***	
Ves >= 300 Tons 1:	No	***Received By:***	
Qty 2:	=	***Header Unknown:***	SOUTH COAST AQMD
Amount 2:		***Incident Desc:***	
Measure 2:		***R R Crssing < 50 Ft:***	
Type 2:		***Uprr Rim :***	
Other 2:		***Notification Info:***	
Pipeline 2:	No	***Notification List:***	
Vessel >= 300 Tns 2:	No	***DOG Unit:***	
Qty 3:	=	***RWQCB Unit:***	4
Amount 3:		***Injuries:***	No
Measure 3:		***Fatality:***	No
Incident Location:	Railyard - 2442 East Carson		
Reported Cause:			
Amount 1:	50-70		
Substance 1:	Oil		
Substance 2:			
Substance 3:			
Waterway:			
Contained:	Yes		
Known Impact:			
Other 1:			
Detail for Other:			
Site:	Rail Road		
On Scene:			
Other on Scene:			
Other Notified:			
Evacuation:	No		
Cleanup By:	Contractor		
Agency:	UPRR		
PRS Agency:			
Admin Agency:	L. A. County Fire Prevention		
Sec Agency:			
Additional County:			
Admin Agency 2:			
Description:	RP indicates release occurred when oil released from holding tanks into containment area.		

Site: ***UPRR***
Carson Street Crossing Carson CA

CHMIRS

Control No:	07-2438	***Notified Date:***	
Notified Date Time:		***Year:***	2007
County:	Los Angeles County		
URL:	https://w3.calema.ca.gov/operational/malhaz.nsf/f1841a103c102734882563e200760c4a/83fa6aea84a9c96f882572c300722408?OpenDocument		

California Hazardous Material Incident Report System (as of 2006 to 2015)

Contained:	Yes	***3 Ves >= 300 Tons:***	
1 Substance:	Train vs Truck	***Incident Date:***	4/20/2007
1 Measure:	N/A	***Incident Time:***	1316
1 Other:		***Spill Site:***	Rail Road
1 Quantity:	Unk	***Injuries?:***	
1 Type:	RAILROAD	***No of Injuries:***	0
1 Pipeline:		***Fatals?:***	
1 Vessel >= 300 Tons:		***No of Fatals:***	0
2 Substance:		***Evacs?:***	
2 Quantity:		***No of Evacs:***	0
2 Measure:		***Cleanup:***	Reporting Party
2 Type:		***Site:***	
2 Other:		***Cause:***	
2 Pipeline:		***Cause Other:***	
2 Vessel >= 300 Tons:		***Dog No:***	

3 Substance: | ***Water:*** No
3 Quantity: | ***Water Way:***
3 Measure: | ***City:*** Carson
3 Type: | ***County:*** Los Angeles County
3 Other: | ***Zip:***
3 Pipeline:
Admin Agency: L. A. County Fire Prevention
Notification Area: AA/CUPA,DFG-OSPR,DTSC,RWQCB,US EPA,USFWS,PUC,SFM
Location: Carson Street Crossing
Description: Train hit a semi truck. (unknown train #).

Spill Report View

Amount 1: | ***Creation Date:*** 04/20/2007 01:46 PM
Amount 2: | ***Received By:***
Amount 3: | ***Admin Agency:***
Type: RAILROAD | ***Admin Agency 2:***
Water: | ***Additional County:***
On Scene: | ***Phone No:***
Other on Scene: | ***Ext:***
Other Notified: | ***Pag Cell:***
Document Title: SPILL Report
Spill Site: Rail Road
Cause Desc for Other:
Person Notifying Cal OES:

Hazardous Materials Spill Report

Control Cal OES: 07-2438 | ***Type 3:***
Control NRC: | ***Other 3:***
Date : 04/20/2007 | ***Pipeline 3:*** No
Incident Date: 04/20/2007 | ***Ves >= 300 Tons 3:*** No
Time: 1346 | ***Name:***
Incident Time: 1316 | ***Phone:***
Water Involved: No | ***Ext:***
Drink Wtr Impact: No | ***Pag Cell:***
Qty 1: = | ***PRS Name:***
Measure 1: N/A | ***PRS Phone:***
Type 1: RAILROAD | ***PRS Ext:***
Pipeline 1: No | ***PRS Pag Cell:***
Ves >= 300 Tons 1: No | ***Received By:***
Qty 2: = | ***Header Unknown:*** SOUTH COAST AQMD
Amount 2: | ***Incident Desc:***
Measure 2: | ***R R Crssing < 50 Ft:***
Type 2: | ***Uprr Rim :***
Other 2: | ***Notification Info:***
Pipeline 2: No | ***Notification List:***
Vessel >= 300 Tns 2: No | ***DOG Unit:***
Qty 3: = | ***RWQCB Unit:*** 4
Amount 3: | ***Injuries:*** No
Measure 3: | ***Fatality:*** No
Incident Location: Carson Street Crossing
Reported Cause:
Amount 1: Unk
Substance 1: Train vs Truck
Substance 2:
Substance 3:
Waterway:
Contained: Yes
Known Impact:
Other 1:
Detail for Other:
Site: Rail Road
On Scene:
Other on Scene:
Other Notified:
Evacuation: No
Cleanup By: Reporting Party
Agency: UPRR

PRS Agency:
Admin Agency: L. A. County Fire Prevention
Sec Agency:
Additional County:
Admin Agency 2:
Description: Train hit a semi truck. (unknown train #).

Site: **LA County Fire Hazmat**
E Carson St west of Wilmington. Carson CA 90745

CHMIRS

Control No:	17-1824	**Notified Date:**	
Notified Date Time:		**Year:**	2017
County:	Los Angeles County		
URL:	https://w3.calema.ca.gov/operational/malhaz.nsf/f1841a103c102734882563e200760c4a/3eabbca365518b51882580d700676f0f?OpenDocument		

California Hazardous Material Incident Report System (2017)

Contained:	Yes	**Incident Date:**	3/2/2017
1 Substance:	Transmission Fluid	**Incident Time:**	815
1 Quantity:	5	**Spill Site:**	Road
1 Measure:	Gal(s)	**Injuries?:**	No
1 Type:	PETROLEUM	**No of Injuries:**	
1 Pipeline:	No	**Fatals?:**	No
1 Vessel >= 300 Tons:	No	**No of Fatals:**	
1 Other:		**Evacs?:**	No
2 Substance:		**No of Evacs:**	
2 Quantity:		**Cleanup:**	Contractor
2 Measure:		**Site:**	
2 Type:		**Cause:**	Mechanical
2 Other:		**Cause Other:**	
2 Pipeline:	No	**Drinking Wtr Imp:**	No
2 Vessel >= 300 Tons:	No	**Known Impact:**	None
3 Substance:		**Water:**	No
3 Quantity:		**Water Way:**	
3 Measure:		**City:**	Carson
3 Type:		**County:**	Los Angeles County
3 Other:		**Zip:**	90745
3 Pipeline:	No	**DOG No:**	
3 Vessel >= 300 Tons:	No		

Admin Agency: LACoFD Health Haz-Mat
Notification Area: AA/CUPA,DFG-OSPR,DTSC,RWQCB,US EPA,USFWS,Co/Hlth,Co/E-Hlth
Location: E Carson St west of Wilmington.
Description: RP states: Mechanical failure caused 5 gallons of transmission fluid to release to the street and into the gutter. Release is contained and no longer releasing. No waterways impacted. Ocean Blue is on scene conducting clean up. One (1) lane is closed on E Carson St WO Wilmington.

Spill Report View

Amount 1:		**Creation Date:**	03/02/2017 10:49 AM
Amount 2:		**Received By:**	
Amount 3:		**Admin Agency:**	
Type:	PETROLEUM	**Admin Agency 2:**	
Water:		**Additional County:**	
On Scene:		**Phone No:**	
Other on Scene:		**Ext:**	
Other Notified:		**Pag Cell:**	
Document Title:	SPILL Report		
Spill Site:	Road		
Cause Desc for Other:			
Person Notifying Cal OES:			

Hazardous Materials Spill Report

Control Cal OES:	17-1824	**Type 3:**	
Control NRC:		**Other 3:**	
Date :	03/02/2017	**Pipeline 3:**	No
Incident Date:	03/02/2017	**Ves >= 300 Tons 3:**	No

Time:	1049	***Name:***	
Incident Time:	0815	***Phone:***	
Water Involved:	No	***Ext:***	
Drink Wtr Impact:	No	***Pag Cell:***	
Qty 1:	=	***PRS Name:***	
Measure 1:	Gal(s)	***PRS Phone:***	
Type 1:	PETROLEUM	***PRS Ext:***	
Pipeline 1:	No	***PRS Pag Cell:***	
Ves >= 300 Tons 1:	No	***Received By:***	
Qty 2:	=	***Header Unknown:***	SOUTH COAST AQMD
Amount 2:		***Incident Desc:***	
Measure 2:		***R R Crssing < 50 Ft:***	
Type 2:		***Uprr Rim :***	
Other 2:		***Notification Info:***	
Pipeline 2:	No	***Notification List:***	
Vessel >= 300 Tns 2:	No	***DOG Unit:***	
Qty 3:	=	***RWQCB Unit:***	4
Amount 3:		***Injuries:***	No
Measure 3:		***Fatality:***	No

Incident Location:	E Carson St west of Wilmington.
Reported Cause:	Mechanical
Amount 1:	5
Substance 1:	Transmission Fluid
Substance 2:	
Substance 3:	
Waterway:	
Contained:	Yes
Known Impact:	None
Other 1:	
Detail for Other:	
Site:	Road
On Scene:	Fire Dept., Other
Other on Scene:	Public Works & Code Enforcement
Other Notified:	
Evacuation:	No
Cleanup By:	Contractor
Agency:	LA County Fire Hazmat
PRS Agency:	
Admin Agency:	LACoFD Health Haz-Mat
Sec Agency:	
Additional County:	
Admin Agency 2:	
Description:	RP states: Mechanical failure caused 5 gallons of transmission fluid to release to the street and into the gutter. Release is contained and no longer releasing. No waterways impacted. Ocean Blue is on scene conducting clean up. One (1) lane is closed on E Carson St WO Wilmington.

Site: ***GARDENA VALLEY LANDFILL #6***
0000 CHICO ST CARSON CA 90746

DELISTED COUNTY

Original Source Facility ID:	
Original Source Name:	Los Angeles County Site Mitigation List
Record Date:	23-JUN-2015

Site:
CARSON ST LOS ANGELES CA

ERNS

NRC Report No:	741315	***Latitude Degrees:***	
Type of Incident:	RAILROAD	***Latitude Minutes:***	
Incident Cause:	UNKNOWN	***Latitude Seconds:***	
Incident Date:	11/13/2004 9:20:00 PM	***Longitude Degrees:***	
Incident Location:	ICTF RAIL YARD	***Longitude Minutes:***	
Incident Dtg:	OCCURRED	***Longitude Seconds:***	
Distance from City:		***Lat Quad:***	
Distance Units:		***Long Quad:***	
Direction from City:		***Location Section:***	
Location County:	LOS ANGELES	***Location Township:***	
Potential Flag:		***Location Range:***	
Year:	Year 2004 Reports		

Description of Incident: LOCAL LOCOMOTIVE STRUCK A DIESEL TRUCK AT A RAIL YARD. THE VEHICLE DISCHARGED AN UNKNOWN AMOUNT OF DIESEL. NO DERAILMENTS REPORTED. NO INJURIES OR FATALITIES OCCURRED. IF IS UNKNOWN IF THE SPILL IMPACTED ANY WATERWAYS.

Material Spill Information

Chris Code:	ODS	***Unit of Measure:***	UNKNOWN AMOUNT
CAS No:	000000-00-0	***If Reached Water:***	UNKNOWN
UN No:		***Amount in Water:***	0
Name of Material:	OIL: DIESEL	***Unit Reach Water:***	UNKNOWN AMOUNT
Amount of Material:	0		

Calls Information

Date Time Received:	11/13/2004 10:56:16 PM	***Responsible City:***	
Date Time Complete:	11/13/2004 11:01:17 PM	***Responsible State:***	XX
Call Type:	INC	***Responsible Zip:***	
Resp Company:		***Source:***	TELEPHONE
Resp Org Type:	UNKNOWN		

Incident Information

Tank ID:		***Building ID:***	
Tank Regulated:	U	***Location Area ID:***	
Tank Regulated By:		***Location Block ID:***	
Capacity of Tank:		***OCSG No:***	
Capacity Tank Units:		***OCSP No:***	
Description of Tank:		***State Lease No:***	
Actual Amount:		***Pier Dock No:***	
Actual Amount Units:		***Berth Slip No:***	
Tank Above Ground:	ABOVE	***Brake Failure:***	N
NPDES:		***Airbag Deployed:***	
NPDES Compliance:	U	***Transport Contain:***	U
Init Contin Rel No:		***Location Subdiv:***	ALAMEDA CORRIDOR
Contin Rel Permit:		***Platform Rig Name:***	
Contin Release Type:		***Platform Letter:***	
Aircraft ID:		***Allision:***	N
Aircraft Runway No:		***Type of Structure:***	
Aircraft Spot No:		***Structure Name:***	
Aircraft Type:		***Structure Oper:***	U
Aircraft Model:		***Transit Bus Flag:***	
Aircraft Fuel Cap:		***Date Time Norm Serv:***	
Aircraft Fuel Cap U:		***Serv Disrupt Time:***	
Aircraft Fuel on Brd:		***Serv Disrupt Units:***	
Aircraft Fuel OB U:		***CR Begin Date:***	
Aircraft Hanger:		***CR End Date:***	
Road Mile Marker:		***CR Change Date:***	
Power Gen Facility:	U	***FBI Contact:***	
Generating Capacity:		***FBI Contact Dt Tm:***	
Type of Fixed Obj:		***Passenger Handling:***	
Type of Fuel:		***Passenger Route:***	XXX
DOT Crossing No:		***Passenger Delay:***	XXX
DOT Regulated:	U	***Sub Part C Test Req:***	XXX
Pipeline Type:		***Conductor Test:***	
Pipeline Abv Ground:	ABOVE	***Engineer Test:***	
Pipeline Covered:	U	***Trainman Test:***	
Exposed Underwater:	N	***Yard Foreman Test:***	
Railroad Hotline:		***RCL Operator Test:***	
Railroad Milepost:	13.48	***Brakeman Test:***	
Grade Crossing:	N	***Train Dispat Test:***	
Crossing Device Ty:		***Signalman Test:***	
Ty Vehicle Involved:		***Oth Employee Test:***	
Device Operational:	Y	***Unknown Test:***	

Incident Details Information

Release Secured:	U	***State Agen Report No:***	045928
Release Rate:		***State Agen on Scene:***	

Release Rate Unit:		***State Agen Notified:***	HWY PATROL/ OES
Release Rate Rate:		***Fed Agency Notified:***	
Est Duration of Rel:		***Oth Agency Notified:***	
Desc Remedial Act:	HAZMAT TEAMS EN ROUTE FOR CLEAN UP	***Body of Water:***	
Fire Involved:	N	***Tributary of:***	
Fire Extinguished:	U	***Near River Mile Make:***	
Any Evacuations:	N	***Near River Mile Mark:***	
No Evacuated:		***Offshore:***	N
Who Evacuated:		***Weather Conditions:***	RAINY
Radius of Evacu:		***Air Temperature:***	61
Any Injuries:	N	***Wind Direction:***	
No. Injured:		***Wind Speed:***	
No. Hospitalized:		***Wind Speed Unit:***	
No. Fatalities:		***Water Supp Contam:***	U
Any Fatalities:	N	***Water Temperature:***	
Any Damages:	N	***Wave Condition:***	
Damage Amount:		***Current Speed:***	
Air Corridor Closed:	N	***Current Direction:***	
Air Corridor Desc:		***Current Speed Unit:***	
Air Closure Time:		***EMPL Fatality:***	
Waterway Closed:	N	***Pass Fatality:***	
Waterway Desc:		***Community Impact:***	N
Waterway Close Time:		***Passengers Transfer:***	UNK
Road Closed:	N	***Passenger Injuries:***	
Road Desc:		***Employee Injuries:***	
Road Closure Time:		***Occupant Fatality:***	
Road Closure Units:		***Sheen Size:***	
Closure Direction:		***Sheen Size Units:***	
Major Artery:	No	***Sheen Size Length:***	
Track Closed:	Y	***Sheen Size Length U:***	
Track Desc:	YARD	***Sheen Size Width:***	
Track Closure Time:		***Sheen Size Width U:***	
Track Closure Units:		***Sheen Color:***	
Track Close Dir:		***Dir of Sheen Travel:***	
Media Interest:	NONE	***Sheen Odor Desc:***	
Medium Desc:	LAND	***Duration Unit:***	
Addl Medium Info:		***Additional Info:***	NONE PROVIDED.

Site:

SOUTHBOUND I 405 LOS ANGELES CA HMIRS

Incident County: LOS ANGELES

HMIR Incident Reports

Report No:	I-2019050060	***Fed DOT Agency Nm:***	
Report Type:	A hazardous material incident	***Fed DOT Report No:***	
Date of Incident:	2019-03-10	***Report Submit Src:***	Paper
Time of Incident:	0630	***Inc Multiple Rows:***	No
Haz Class Code:		***Inc Non US State:***	
Hazardous Class:	2.1	***Mode Transport:***	Highway
Commodity Short Nm:	LIQUEFIED PETROLEUM GAS	***Transport Phase:***	In Transit
Commodity Long Nm:	LIQUEFIED PETROLEUM GAS	***Incident Occrrnce:***	
Trade Name:	PROPANE	***Mat Ship Approval?:***	No
ID No:	UN1075	***Mat Ship Approv No:***	
Haz Waste Ind:	No	***Undecl Hazmat Ship?:***	No
Haz Waste EPA No:		***Packaging Type:***	Cargo Tank Motor Vehicle (CTMV)
HMIS Tox Inhalation?:	No	***Packing Group:***	
TIH Hazard Zone:		***Carrier Reporter:***	CALIFORNIA GAS TRANSPORT INC.
Qty Released:	0	***CR Street Name:***	5959 GATEWAY WEST BLVD STE 660
Unit of Measure:		***CR City:***	EL PASO
What Failed:		***CR State:***	TX
What Failed Desc:		***CR Postal Code:***	79925
How Failed Code:		***CR Non US State:***	
How Failed Desc:		***CR Fed DOT ID:***	589266
Failure Cause Code:		***CR Hazmat Reg ID:***	062018550548A
Failure Cause Desc:		***CR Country:***	US
Ident. Markings:	C/T UN1075, LIQUIFIED PETROLEUM GAS,	***Shipper Name:***	MIDSTREAM ENERGY PARTNERS LLC

	2.1
Cont1 Pkging Type:	
Cont1 Const Mat:	
Cont1 Head Type:	
Cont1 Pkg Capacity:	0
C1 Capacity UOM:	
Cont1 Pkg Amt:	0
C1 Pkg Amt UOM:	
Cont1 Pkg No:	0
C1 Pkg NO Failed:	0
Cont1 Pkg Mnfctr:	
Cont1 Pkg Mnfct Dt:	0-00-00 00:00:00
Cont1 Pkg Serial NO:	
C1 Pkg Last Test Dt:	0-00-00 00:00:00
C1 Test Const Mat:	
C1 Pkg Dsign Pres.:	0
C1 Dsign Press UOM:	
C1 Pkg Shell Thick:	0
C1 Shell Thick UOM:	
C1 Head Thickness:	0
C1 Head Thick UOM:	
C1 Pkg Srvc Pres.:	0
C1 Srvc Press UOM:	
C1 Valve/Device Fail?:	No
C1 Device Type:	
C1 Device Mnfctr:	
C1 Device Model:	
NRC No:	

Shipper Street Name:	9224 TUPMAN RD
Shipper City:	TUPMAN
Shipper State:	CA
Shipper Postal:	93276-0430
Shipper Non US St:	
Shipper Country:	US
Shipper Waybill:	357350
Ship Hazmat Reg ID:	
Origin City:	
Origin State:	CA
Origin Postal:	
Origin Non US St:	
Origin Country:	US
Destination City:	
Destination State:	
Destination Postal:	
Destination Non US:	
Destination Country:	
Cont2 Package Type:	
Cont2 Const Mat:	
Cont2 Pkg Capacity:	0
Cont2 Capacity UOM:	
Cont2 Pkg Amount:	0
Cont2 Pkg Amt UOM:	
Cont2 Pkg No:	0
Cont2 Pkg No Failed:	0

RAM Pkg Category:	
RAM Pkg Cert.:	FALSE
RAM Pkg Cert. NBR:	
RAM Nuclide S:	
RAM Transport Index:	
RAM UOM:	
RAM Activity Rpted:	0
RAM UOM Rpted:	
RAM Activity:	0
RAM Activity UOM:	
RAM Mat Safety:	
Spillage Result:	No
Fire Result:	No
Explosion Result:	No
Water Sewer Result:	No
Gas Dispersion:	No
Environment Damage:	No
No Release Result:	Yes
Fire EMS Report:	No
Fire EMS EMS Report:	
Police Report:	Yes
Police Report No:	9580-201900916
In House Cleanup:	No
Other Cleanup:	Yes
Damage > 500:	No
Material Loss:	0
Carrier Damage:	0
Property Damage:	0
Response Cost:	0
Remediation Cost:	0
Damage Old Form:	0
Total Damages Amt:	0
Hazmat Fatality:	No
Haz Fatal Employees:	0
Haz Fatal Respndrs:	0
Haz Fatal Gen Public:	0
Tot Hazmat Fatalities:	0
Non Hazmat Fatality:	No
Non Hazmat Fatals:	0
Hazmat Injury:	No
Haz Hospital Empl:	0
Haz Hospital Resp:	0

Haz NonHosp Public:	0
Haz NonHosp Old:	
Tot Haz Non Hosp Inj:	
Total Hazmat Injuries:	0
Evacuation Indicator:	No
Public Evacuated:	0
Employees Evac:	0
Total Evacuated:	0
Total Evacuation Hrs:	0
Major Artery Closed:	Yes
Mjr Artery Hrs Closed:	6
Material Involved:	Yes
Estimated Speed:	60
Weather Conditions:	CLEAR SKYS
Vehicle Overturn:	Yes
Vehicle Left Roadway:	Yes
Passenger Aircraft:	No
Cargo Baggage:	
Ship Non Transport:	No
Ship Air First Flight:	No
Ship Air Subflight:	No
Ship Init Transport:	No
Ship Phase Transfer:	No
Contact Name:	OSCAR GARDEA
Contact Title:	PRESIDENT
Contact Business:	
Contact Street:	5959 GATEWAY WEST BLVD STE 660
Contact City:	
Contact State:	
Contact Postal:	
Contact Non US St:	
Contact Country:	US
Inc. Report Prepared:	Carrier
HMIS Serious Incidnt:	No
HMIS Serious Fatality:	No
HMIS Serious Injury:	No
HMIS Flight Plan:	No
HMIS Serious Evacs:	No
HMIS Major Artery:	Yes
HMIS Bulk Release:	No
HMIS Marine Pollutnt:	No
HMIS Radioactive:	No

Haz Hosp Gen Public:	0	***HMIS Gen Pkg Type:***	TANK
Haz Hosp Old Form:	0	***HMIS Container Code:***	TANK TRK
Total Haz Hosp Inj:	0	***HMIS Container Desc:***	Tank truck, tank mounted on truck chassis
Haz Non Hosp Empl:	0	***HMIS Bulk Incident:***	Yes
Haz Non Hosp Resp:	0	***Undeclared Shipment:***	No

Description of Events: OUR EMPLOYEE LOST CONTROL OF THE VEHICLE AFTER COMPLAINING ON ANOTHER VEHICLE GETTING TO CLOSE TO HIT HIM, THE VEHICLE OVERTURN (ROLLOVER). WE ARE NOT RECEIVING ANY COST FOR THE CLEAN UP BY THE CITY OF LOS ANGELES.

Recommend Actions Taken: ADDITIONAL DRIVERS TRAINING FOR ALL DRIVERS.

Site:

INTERSTATE 405 LONG BEACH CA

HMIRS

Incident County: LOS ANGELES

HMIR Incident Reports

Report No:	I-1990100456	***Fed DOT Agency Nm:***	
Report Type:	A hazardous material incident	***Fed DOT Report No:***	
Date of Incident:	1990-09-04	***Report Submit Src:***	Paper
Time of Incident:	1600	***Inc Multiple Rows:***	No
Haz Class Code:		***Inc Non US State:***	
Hazardous Class:	8	***Mode Transport:***	Highway
Commodity Short Nm:	CAUSTIC ALKALI LIQUIDS,	***Transport Phase:***	In Transit
Commodity Long Nm:	CAUSTIC ALKALI LIQUIDS, N.O.S.	***Incident Occrrnce:***	
Trade Name:	DECONTAMINATION AGEN	***Mat Ship Approval?:***	No
ID No:	UN1719	***Mat Ship Approv No:***	
Haz Waste Ind:	No	***Undecl Hazmat Ship?:***	No
Haz Waste EPA No:		***Packaging Type:***	Non-Bulk
HMIS Tox Inhalation?:	No	***Packing Group:***	
TIH Hazard Zone:		***Carrier Reporter:***	U S GOVT - MARINE CORPS
Qty Released:	13	***CR Street Name:***	MARINE CORPS BASE
Unit of Measure:	Liquid - Gallon	***CR City:***	PENDLETON
What Failed:	161;	***CR State:***	CA
What Failed Desc:	Weld or Seam;	***CR Postal Code:***	920555010
How Failed Code:	303; 305	***CR Non US State:***	
How Failed Desc:	Burst or Ruptured; Crushed	***CR Fed DOT ID:***	0
Failure Cause Code:	511;	***CR Hazmat Reg ID:***	
Failure Cause Desc:	Dropped;	***CR Country:***	US
Ident. Markings:		***Shipper Name:***	U S GOVT - MARINE CORPS
Cont1 Pkging Type:		***Shipper Street Name:***	MACC-38 3D MAW MCB
Cont1 Const Mat:		***Shipper City:***	CAMP PENDLETON
Cont1 Head Type:		***Shipper State:***	CA
Cont1 Pkg Capacity:	5	***Shipper Postal:***	920556046
C1 Capacity UOM:	LGA	***Shipper Non US St:***	
Cont1 Pkg Amt:	0	***Shipper Country:***	US
C1 Pkg Amt UOM:		***Shipper Waybill:***	
Cont1 Pkg No:	36	***Ship Hazmat Reg ID:***	
C1 Pkg NO Failed:	3	***Origin City:***	
Cont1 Pkg Mnfctr:	P S C C	***Origin State:***	
Cont1 Pkg Mnfct Dt:	0-00-00 00:00:00	***Origin Postal:***	
Cont1 Pkg Serial NO:		***Origin Non US St:***	
C1 Pkg Last Test Dt:	0-00-00 00:00:00	***Origin Country:***	US
C1 Test Const Mat:		***Destination City:***	SAN PEDRO
C1 Pkg Dsign Pres.:	0	***Destination State:***	CALIFORNIA
C1 Dsign Press UOM:		***Destination Postal:***	
C1 Pkg Shell Thick:	0	***Destination Non US:***	
C1 Shell Thick UOM:		***Destination Country:***	US
C1 Head Thickness:	0	***Cont2 Package Type:***	
C1 Head Thick UOM:		***Cont2 Const Mat:***	
C1 Pkg Srvc Pres.:	0	***Cont2 Pkg Capacity:***	0
C1 Srvc Press UOM:		***Cont2 Capacity UOM:***	
C1 Valve/Device Fail?:	No	***Cont2 Pkg Amount:***	0
C1 Device Type:		***Cont2 Pkg Amt UOM:***	
C1 Device Mnfctr:		***Cont2 Pkg No:***	0
C1 Device Model:		***Cont2 Pkg No Failed:***	0
NRC No:			

RAM Pkg Category:		***Haz NonHosp Public:***	0

RAM Pkg Cert.:	FALSE	***Haz NonHosp Old:***	
RAM Pkg Cert. NBR:		***Tot Haz Non Hosp Inj:***	
RAM Nuclide S:		***Total Hazmat Injuries:***	0
RAM Transport Index:		***Evacuation Indicator:***	No
RAM UOM:		***Public Evacuated:***	0
RAM Activity Rpted:	0	***Employees Evac:***	0
RAM UOM Rpted:		***Total Evacuated:***	0
RAM Activity:	0	***Total Evacuation Hrs:***	0
RAM Activity UOM:		***Major Artery Closed:***	No
RAM Mat Safety:		***Mjr Artery Hrs Closed:***	0
Spillage Result:	Yes	***Material Involved:***	No
Fire Result:	No	***Estimated Speed:***	0
Explosion Result:	No	***Weather Conditions:***	
Water Sewer Result:	No	***Vehicle Overturn:***	No
Gas Dispersion:	No	***Vehicle Left Roadway:***	No
Environment Damage:	No	***Passenger Aircraft:***	No
No Release Result:	No	***Cargo Baggage:***	
Fire EMS Report:	No	***Ship Non Transport:***	No
Fire EMS EMS Report:		***Ship Air First Flight:***	No
Police Report:	No	***Ship Air Subflight:***	No
Police Report No:		***Ship Init Transport:***	No
In House Cleanup:	No	***Ship Phase Transfer:***	No
Other Cleanup:	No	***Contact Name:***	DON A HETTERVIK
Damage > 500:	Yes	***Contact Title:***	DIR ENNRMO
Material Loss:	241	***Contact Business:***	
Carrier Damage:	0	***Contact Street:***	
Property Damage:	0	***Contact City:***	
Response Cost:	0	***Contact State:***	
Remediation Cost:	3059	***Contact Postal:***	
Damage Old Form:	0	***Contact Non US St:***	
Total Damages Amt:	3300	***Contact Country:***	US
Hazmat Fatality:	No	***Inc. Report Prepared:***	
Haz Fatal Employees:	0	***HMIS Serious Incidnt:***	No
Haz Fatal Respndrs:	0	***HMIS Serious Fatality:***	No
Haz Fatal Gen Public:	0	***HMIS Serious Injury:***	No
Tot Hazmat Fatalities:	0	***HMIS Flight Plan:***	No
Non Hazmat Fatality:	No	***HMIS Serious Evacs:***	No
Non Hazmat Fatals:	0	***HMIS Major Artery:***	No
Hazmat Injury:	No	***HMIS Bulk Release:***	No
Haz Hospital Empl:	0	***HMIS Marine Pollutnt:***	No
Haz Hospital Resp:	0	***HMIS Radioactive:***	No
Haz Hosp Gen Public:	0	***HMIS Gen Pkg Type:***	DRUM METAL
Haz Hosp Old Form:	0	***HMIS Container Code:***	17C
Total Haz Hosp Inj:	0	***HMIS Container Desc:***	Steel STC* RHA*
Haz Non Hosp Empl:	0	***HMIS Bulk Incident:***	No
Haz Non Hosp Resp:	0	***Undeclared Shipment:***	No

Description of Events: 1. C9/10 NO SHIPMENT PAPERS WERE PREPARED BY THE SHIPPER OR CARRIER. 2. F18(17) HAZARDOUS MATERIAL (HM) WAS NOT DUE TO CONTAINER/PACKAGUNG FAILUYRE. CONTAINERS WERE IMPROPERLY PALLETIZED, THIS ALLOWED 6 CONTAINERS TO FALL OFF TRAILER DURING TRANSIT. 3. D13 ESTIMATE OF $3300.00 INCLUDES ONLY REPLACEMENT COST OF HM DISPOSED AND CLEAN UP COSTS OF SPILL. ESTIMATES OF 2 VEHICLES DAMAGED DURING SPILL ARE NOT AVAILBALE TO DATE. 4. SHIPPER DID NOT IDENTIFY HM TO CARRIER. SHIPPER DID NOT IDENTITY HM TO CARRIER OR PROVIDE CARRIER WITH REQUIRED SHIPPING DOCUMENTS. CARRIER VEHICLE OPERATOR OBSERVED HM LABELS ON CONTAINERS AND FAILED TO TAKE APPROPRIATE ACTION. FULL INVESTIGATION WAS CONDUCTED AND IS ON FILE. 5. CARRIER VEHICLE OPERATOR OBSERVED HM LABELS ON CONTAINERS AND FAILED TO TAKE APPROPRIATE ACTION. 6. FULL INVESTIGATION WAS CONDUCTED AND IS ON FILE. 7. CURRENT USMC GUIDELINES FOR PALLETIZING, PACKAGING, HANDLING AND SHIPPING HEVE BEEN REVIEWED AND FOUND TO MEET ALL DOT REGULATIONS. 8. TRAINING ON HM PROCEDURES WILL BE REVIEWDED AND IMPROVED TO PREVENT FUTURE INCIDENTS.

Recommend Actions Taken:

Site: ***ARMCO STEEL PLANT***
0000 CARSON ST TORRANCE CA 90501

LA SML

Site ID: SD0010118
Case ID: RO0000338
Status:

EPA Handler ID:	CA6170023109
Gen Status Universe:	Large Quantity Generator
Contact Name:	DOUGLAS E DELONG
Contact Address:	1 AVE OF THE PALMS, SUITE-161, SAN FRANCISCO, CA, 94130, US
Contact Phone No and Ext:	415-743-4713
Contact Email:	DOUGLAS.DELONG@NAVY.MIL
Contact Country:	US
County Name:	LOS ANGELES
EPA Region:	09
Land Type:	Federal
Receive Date:	20100131

Event/Area Details

Area Name:	ENTIRE FACILITY
Event Code:	CA150
Corrective Action Event Descri:	INVESTIGATION WORKPLAN APPROVED
Actual Date of Event:	19910813
Orig Sched Event Date:	
New Sched Event Date:	
Best Date:	19910813
Groundwater Release Indicator:	
Soil Release Indicator:	
Air Release Indicator:	
Surface Waste Release Ind:	
Event Responsible Agency:	S

Area Name:	SITE 6B SALVAGE YARD
Event Code:	CA200
Corrective Action Event Descri:	INVESTIGATION COMPLETE
Actual Date of Event:	19930917
Orig Sched Event Date:	
New Sched Event Date:	
Best Date:	19930917
Groundwater Release Indicator:	
Soil Release Indicator:	
Air Release Indicator:	
Surface Waste Release Ind:	
Event Responsible Agency:	S

Area Name:	ENTIRE FACILITY
Event Code:	CA725YE
Corrective Action Event Descri:	HUMAN EXPOSURES CONTROLLED DETERMINATION-YES, APPLICABLE AS OF THIS DATE
Actual Date of Event:	20010214
Orig Sched Event Date:	20010214
New Sched Event Date:	
Best Date:	20010214
Groundwater Release Indicator:	
Soil Release Indicator:	
Air Release Indicator:	
Surface Waste Release Ind:	
Event Responsible Agency:	S

Area Name:	ENTIRE FACILITY
Event Code:	CA050
Corrective Action Event Descri:	RFA COMPLETED
Actual Date of Event:	19891130
Orig Sched Event Date:	19891130
New Sched Event Date:	
Best Date:	19891130
Groundwater Release Indicator:	
Soil Release Indicator:	
Air Release Indicator:	
Surface Waste Release Ind:	
Event Responsible Agency:	S

Area Name:	ENTIRE FACILITY

Event Code: CA070YE
Corrective Action Event Descri: DETERMINATION OF NEED FOR AN INVESTIGATION-INVESTIGATION IS NECESSARY
Actual Date of Event: 19891130
Orig Sched Event Date: 19891130
New Sched Event Date:
Best Date: 19891130
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: SITES 1,2,3,4,5,7,8,9,10,11,12
Event Code: CA150
Corrective Action Event Descri: INVESTIGATION WORKPLAN APPROVED
Actual Date of Event: 19931103
Orig Sched Event Date:
New Sched Event Date:
Best Date: 19931103
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: ENTIRE FACILITY
Event Code: CA300
Corrective Action Event Descri: CMS WORKPLAN APPROVED
Actual Date of Event: 19930913
Orig Sched Event Date:
New Sched Event Date:
Best Date: 19930913
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: SITES 1,2,3,4,5,7,8,9,10,11,12
Event Code: CA600EC
Corrective Action Event Descri: STABILIZATION/INTERIM MEASURES DECISION-PRIMARY MEAS IS EXPOSURE CONTROL
Actual Date of Event: 19931206
Orig Sched Event Date:
New Sched Event Date:
Best Date: 19931206
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: ENTIRE FACILITY
Event Code: CA550RC
Corrective Action Event Descri: REMEDY CONSTRUCTION-REMEDY CONSTRUCTED
Actual Date of Event: 20100607
Orig Sched Event Date: 20100607
New Sched Event Date:
Best Date: 20100607
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: SITE 6 BOAT DISPOSAL YARD
Event Code: CA150
Corrective Action Event Descri: INVESTIGATION WORKPLAN APPROVED
Actual Date of Event: 19931021
Orig Sched Event Date:
New Sched Event Date:
Best Date: 19931021

Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: ENTIRE FACILITY
Event Code: CA750IN
Corrective Action Event Descri: RELEASE TO GW CONTROLLED DETERMINATION-MORE INFORMATION NEEDED
Actual Date of Event: 20010214
Orig Sched Event Date: 20010214
New Sched Event Date:
Best Date: 20010214
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: ENTIRE FACILITY
Event Code: CA225IN
Corrective Action Event Descri: STABILIZATION MEASURES EVALUATION-FURTHER INVESTIGATION NECESSARY
Actual Date of Event: 19940520
Orig Sched Event Date: 19940520
New Sched Event Date:
Best Date: 19940520
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind:
Event Responsible Agency: S

Area Name: ENTIRE FACILITY
Event Code: CA750YE
Corrective Action Event Descri: RELEASE TO GW CONTROLLED DETERMINATION-YES, APPLICABLE AS OF THIS DATE
Actual Date of Event: 20030819
Orig Sched Event Date: 20030819
New Sched Event Date:
Best Date: 20030819
Groundwater Release Indicator:
Soil Release Indicator:
Air Release Indicator:
Surface Waste Release Ind:
Event Responsible Agency: S

Violation/Evaluation Summary

Note: VIOLATION or UNDETERMINED: There are VIOLATION or UNDETERMINED details or records associated with this facility (EPA ID) in the Compliance Monitoring and Enforcement table dated May, 2020.

Violation Details

Citation: FR - 262.30-34.C
Violation Short Description: Generators - General
Violation Type: 262.A
Violation Determined Date: 19960820
Scheduled Compliance Date:
Return to Compliance: Observed
Actual Return to Compl: 19961004
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 19960820
Enf Disposition Status:
Disposition Status Date:

Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Citation: FR - 262.10-12.A
Violation Short Description: Generators - General
Violation Type: 262.A
Violation Determined Date: 19960820
Scheduled Compliance Date:
Return to Compliance: Observed
Actual Return to Compl: 19961004
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 19960820
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Citation: FR - 264.10-18.B
Violation Short Description: TSD - General
Violation Type: 264.A
Violation Determined Date: 19960820
Scheduled Compliance Date:
Return to Compliance: Observed
Actual Return to Compl: 19961004
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 19960820
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Citation: FR - 262.50-60
Violation Short Description: Generators - General
Violation Type: 262.A
Violation Determined Date: 19950928
Scheduled Compliance Date:
Return to Compliance: Observed
Actual Return to Compl: 19951102
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL

Enforcement Action Date: 19950928
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Citation: FR - 264.10-18.B
Violation Short Description: TSD - General
Violation Type: 264.A
Violation Determined Date: 19950928
Scheduled Compliance Date:
Return to Compliance: Observed
Actual Return to Compl: 19951102
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 19950928
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Citation: FR - 264.30-37.C
Violation Short Description: TSD - General
Violation Type: 264.A
Violation Determined Date: 19950928
Scheduled Compliance Date:
Return to Compliance: Observed
Actual Return to Compl: 19951004
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 19950928
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Citation: FR - 264.170-177.I
Violation Short Description: TSD - General
Violation Type: 264.A
Violation Determined Date: 19950928
Scheduled Compliance Date:
Return to Compliance: Observed
Actual Return to Compl: 19950929
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 19950928
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Citation: FR - 264.190-201.J
Violation Short Description: TSD - General
Violation Type: 264.A
Violation Determined Date: 19950928
Scheduled Compliance Date:
Return to Compliance: Observed
Actual Return to Compl: 19951102
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 19950928
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Citation: FR - 270
Violation Short Description: TSD - General
Violation Type: 264.A
Violation Determined Date: 19950928
Scheduled Compliance Date:
Return to Compliance: Observed
Actual Return to Compl: 19951102
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 19950928
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Citation: FR - 262.50-60
Violation Short Description: Generators - General
Violation Type: 262.A
Violation Determined Date: 19950322
Scheduled Compliance Date:
Return to Compliance: Observed
Actual Return to Compl: 19950419
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 19950322
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Citation: FR - 268.7
Violation Short Description: LDR - General
Violation Type: 268.A
Violation Determined Date: 19950322
Scheduled Compliance Date:
Return to Compliance: Observed
Actual Return to Compl: 19950419
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 19950322
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Citation: FR - 262.50-60
Violation Short Description: Generators - General
Violation Type: 262.A
Violation Determined Date: 19950321
Scheduled Compliance Date:
Return to Compliance: Observed
Actual Return to Compl: 19950321
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 19950321
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Citation: FR - 262.30-34.C
Violation Short Description: Generators - General
Violation Type: 262.A
Violation Determined Date: 19950321
Scheduled Compliance Date:

Return to Compliance: Observed
Actual Return to Compl: 19950321
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 19950321
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Citation: FR - 264.170-177.I
Violation Short Description: TSD - General
Violation Type: 264.A
Violation Determined Date: 19940428
Scheduled Compliance Date:
Return to Compliance: Observed
Actual Return to Compl: 19940615
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 210
Enforcement Type Description: INITIAL 3008(A) COMPLIANCE
Enforcement Action Date: 19940428
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount: 400
Final Amount: 400
Paid Amount: 400

Violation Details

Citation: FR - 264.10-18.B
Violation Short Description: TSD - General
Violation Type: 264.A
Violation Determined Date: 19940428
Scheduled Compliance Date:
Return to Compliance: Observed
Actual Return to Compl: 19940615
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 210
Enforcement Type Description: INITIAL 3008(A) COMPLIANCE
Enforcement Action Date: 19940428
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount: 400
Final Amount: 400
Paid Amount: 400

Violation Details

Citation: FR - 264.190-201.J
Violation Short Description: TSD - General

Violation Type: 264.A
Violation Determined Date: 19930607
Scheduled Compliance Date:
Return to Compliance: Observed
Actual Return to Compl: 19940104
Violation Responsible Agency: State

Violation Details

Citation: FR - 264.50-56.D
Violation Short Description: TSD - General
Violation Type: 264.A
Violation Determined Date: 19930607
Scheduled Compliance Date:
Return to Compliance: Observed
Actual Return to Compl: 19940104
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 19930607
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Citation: FR - 264.10-18.B
Violation Short Description: TSD - General
Violation Type: 264.A
Violation Determined Date: 19930607
Scheduled Compliance Date:
Return to Compliance: Observed
Actual Return to Compl: 19940104
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 19930607
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Citation: FR - 264.30-37.C
Violation Short Description: TSD - General
Violation Type: 264.A
Violation Determined Date: 19930607
Scheduled Compliance Date:
Return to Compliance: Observed
Actual Return to Compl: 19940104
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 19930607
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Citation: FR - 270
Violation Short Description: TSD - General
Violation Type: 264.A
Violation Determined Date: 19930607
Scheduled Compliance Date:
Return to Compliance: Observed
Actual Return to Compl: 19940104
Violation Responsible Agency: State

Violation Details

Citation: FR - 270
Violation Short Description: TSD - General
Violation Type: 264.A
Violation Determined Date: 19901129
Scheduled Compliance Date: 19910214
Return to Compliance: Observed
Actual Return to Compl: 19910214
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 19910115
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Citation: FR - 270
Violation Short Description: TSD - General
Violation Type: 264.A
Violation Determined Date: 19900719
Scheduled Compliance Date:
Return to Compliance: Observed
Actual Return to Compl: 19901215
Violation Responsible Agency: EPA

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 19901113
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: EPA
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Citation: FR - 268.7
Violation Short Description: LDR - General
Violation Type: 268.A
Violation Determined Date: 19900719
Scheduled Compliance Date:
Return to Compliance: Observed
Actual Return to Compl: 19901215
Violation Responsible Agency: EPA

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 19901113
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: EPA
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Citation: FR - 268 ALL
Violation Short Description: LDR - General
Violation Type: 268.A
Violation Determined Date: 19900719
Scheduled Compliance Date:
Return to Compliance: Observed
Actual Return to Compl: 19901215
Violation Responsible Agency: EPA

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 19901113
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: EPA
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Citation: FR - 270
Violation Short Description: TSD - General
Violation Type: 264.A
Violation Determined Date: 19890806
Scheduled Compliance Date: 19891018
Return to Compliance: Observed
Actual Return to Compl: 19900221
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 19890918
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: EPA
Proposed Penalty Amount:

Final Amount:
Paid Amount:

Violation Details

Citation: FR - 270
Violation Short Description: TSD - General
Violation Type: 264.A
Violation Determined Date: 19880928
Scheduled Compliance Date: 19881221
Return to Compliance: Observed
Actual Return to Compl: 19890117
Violation Responsible Agency: EPA

Enforcement Details

Enforcement Type: 120
Enforcement Type Description: WRITTEN INFORMAL
Enforcement Action Date: 19881116
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: EPA
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Citation: FR - 268.7
Violation Short Description: LDR - General
Violation Type: 268.A
Violation Determined Date: 19870308
Scheduled Compliance Date:
Return to Compliance: Unverifiable
Actual Return to Compl: 19880928
Violation Responsible Agency: EPA

Violation Details

Citation: FR - 268 ALL
Violation Short Description: LDR - General
Violation Type: 268.A
Violation Determined Date: 19870308
Scheduled Compliance Date:
Return to Compliance: Unverifiable
Actual Return to Compl: 19880928
Violation Responsible Agency: EPA

Violation Details

Citation: FR - 270
Violation Short Description: TSD - General
Violation Type: 264.A
Violation Determined Date: 19870306
Scheduled Compliance Date:
Return to Compliance: Unverifiable
Actual Return to Compl: 19880928
Violation Responsible Agency: EPA

Evaluation Details

Evaluation Start Date: 19970820
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description:
Return to Compliance Date:
Evaluation Agency: State

Evaluation Start Date: 19960820
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description: Generators - General
Return to Compliance Date: 19961004
Evaluation Agency: State

Evaluation Start Date: 19960820
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description: TSD - General
Return to Compliance Date: 19961004
Evaluation Agency: State

Evaluation Start Date: 19950928
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description: TSD - General
Return to Compliance Date: 19950929
Evaluation Agency: State

Evaluation Start Date: 19950928
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description: TSD - General
Return to Compliance Date: 19951004
Evaluation Agency: State

Evaluation Start Date: 19950928
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description: TSD - General
Return to Compliance Date: 19951102
Evaluation Agency: State

Evaluation Start Date: 19950928
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description: Generators - General
Return to Compliance Date: 19951102
Evaluation Agency: State

Evaluation Start Date: 19950321
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description: LDR - General
Return to Compliance Date: 19950419
Evaluation Agency: State

Evaluation Start Date: 19950321
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description: Generators - General
Return to Compliance Date: 19950419
Evaluation Agency: State

Evaluation Start Date: 19950321
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description: Generators - General
Return to Compliance Date: 19950321
Evaluation Agency: State

Evaluation Start Date: 19940316
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description: TSD - General
Return to Compliance Date: 19940615
Evaluation Agency: State

Evaluation Start Date: 19930524
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description: TSD - General
Return to Compliance Date: 19940104
Evaluation Agency: State

Evaluation Start Date: 19920127
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description:
Return to Compliance Date:

Evaluation Agency: State

Evaluation Start Date: 19901129
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description: TSD - General
Return to Compliance Date: 19910214
Evaluation Agency: State

Evaluation Start Date: 19900719
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description: TSD - General
Return to Compliance Date: 19901215
Evaluation Agency: EPA

Evaluation Start Date: 19900719
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description: LDR - General
Return to Compliance Date: 19901215
Evaluation Agency: EPA

Evaluation Start Date: 19890806
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description: TSD - General
Return to Compliance Date: 19900221
Evaluation Agency: State

Evaluation Start Date: 19880928
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description: TSD - General
Return to Compliance Date: 19890117
Evaluation Agency: EPA

Evaluation Start Date: 19870308
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description: LDR - General
Return to Compliance Date: 19880928
Evaluation Agency: EPA

Evaluation Start Date: 19870306
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description: TSD - General
Return to Compliance Date: 19880928
Evaluation Agency: EPA

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner: No
Smelting, Melting and Refining: No
Underground Injection Control: No
Commercial TSD: Yes
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 19800818
Handler Name: USNAVY LONG BEACH NAVAL SHIPYARD
Federal Waste Generator Code: 1
Generator Code Description: Large Quantity Generator

Source Type: Notification

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 19900320
Handler Name: LONG BEACH NAVAL SHIPYARD
Federal Waste Generator Code: 1
Generator Code Description: Large Quantity Generator
Source Type: Annual/Biennial Report

Hazardous Waste Handler Details

Sequence No: 2
Receive Date: 19920330
Handler Name: LONG BEACH NAVAL SHIPYARD
Federal Waste Generator Code: 1
Generator Code Description: Large Quantity Generator
Source Type: Annual/Biennial Report

Hazardous Waste Handler Details

Sequence No: 3
Receive Date: 19940328
Handler Name: USNAVY LONGBEACH
Federal Waste Generator Code: 1
Generator Code Description: Large Quantity Generator
Source Type: Annual/Biennial Report

Hazardous Waste Handler Details

Sequence No: 4
Receive Date: 19960312
Handler Name: USNAVY LONG BEACH SHIPYARD
Federal Waste Generator Code: 1
Generator Code Description: Large Quantity Generator
Source Type: Annual/Biennial Report

Hazardous Waste Handler Details

Sequence No: 5
Receive Date: 19990415
Handler Name: LONG BEACH NAVAL SHIPYARD
Federal Waste Generator Code: 1
Generator Code Description: Large Quantity Generator
Source Type: Annual/Biennial Report

Hazardous Waste Handler Details

Sequence No: 2
Receive Date: 20020129
Handler Name: US NAVY, LONG BEACH NAVAL SHIPYARD
Federal Waste Generator Code: 2
Generator Code Description: Small Quantity Generator
Source Type: Implementer

Hazardous Waste Handler Details

Sequence No: 6
Receive Date: 20020129
Handler Name: US NAVY, LONG BEACH NAVAL SHIPYARD
Federal Waste Generator Code: 1
Generator Code Description: Large Quantity Generator
Source Type: Annual/Biennial Report

Waste Code Details

Hazardous Waste Code: D001
Waste Code Description: IGNITABLE WASTE

Hazardous Waste Code: D002
Waste Code Description: CORROSIVE WASTE

Hazardous Waste Code: D039
Waste Code Description: TETRACHLOROETHYLENE

Hazardous Waste Code: D040
Waste Code Description: TRICHLORETHYLENE

Hazardous Waste Code: F003
Waste Code Description: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Hazardous Waste Code: F004
Waste Code Description: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: CRESOLS, CRESYLIC ACID, AND NITROBENZENE; AND THE STILL BOTTOMS FROM THE RECOVERY OF THESE SOLVENTS; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 20100131
Handler Name: US NAVY BRAC PMO-W (LONG BEACH)
Federal Waste Generator Code: 1
Generator Code Description: Large Quantity Generator
Source Type: Annual/Biennial Report update with Notification

Waste Code Details

Hazardous Waste Code: 134
Waste Code Description: Aqueous solution with <10% total organic residues

Hazardous Waste Code: 521
Waste Code Description: Drilling mud

Hazardous Waste Code: D039
Waste Code Description: TETRACHLOROETHYLENE

Hazardous Waste Code: F002
Waste Code Description: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2, TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Owner/Operator Details

Owner/Operator Ind: Current Operator
Type: Federal
Name: DOUGLAS DELONG
Date Became Current: 19970930
Date Ended Current:

Street No:
Street 1:
Street 2:
City:
State:

Phone:		***Country:***	
Source Type:	Annual/Biennial Report update with Notification	***Zip Code:***	
Owner/Operator Ind:	Current Owner	***Street No:***	
Type:	Federal	***Street 1:***	
Name:	US NAVY	***Street 2:***	
Date Became Current:	19400101	***City:***	
Date Ended Current:		***State:***	
Phone:		***Country:***	US
Source Type:	Annual/Biennial Report	***Zip Code:***	
Owner/Operator Ind:	Current Owner	***Street No:***	
Type:	Federal	***Street 1:***	1 AVE OF THE PALMS
Name:	US NAVY BPAC PMO-W	***Street 2:***	SUITE-161
Date Became Current:	19970930	***City:***	SAN FRANCISCO
Date Ended Current:		***State:***	CA
Phone:	415-743-4713	***Country:***	US
Source Type:	Annual/Biennial Report update with Notification	***Zip Code:***	94130
Owner/Operator Ind:	Current Owner	***Street No:***	
Type:	Federal	***Street 1:***	
Name:	US NAVY	***Street 2:***	
Date Became Current:	19400101	***City:***	
Date Ended Current:		***State:***	
Phone:		***Country:***	US
Source Type:	Implementer	***Zip Code:***	
Owner/Operator Ind:	Current Owner	***Street No:***	
Type:	Federal	***Street 1:***	COMMANDER ATTN CODE 400
Name:	UNITED STATES NAVY	***Street 2:***	
Date Became Current:		***City:***	LONG BEACH
Date Ended Current:		***State:***	CA
Phone:	213-547-6443	***Country:***	
Source Type:	Notification	***Zip Code:***	90822

Historical Handler Details

Receive Dt:	20020129
Generator Code Description:	Large Quantity Generator
Handler Name:	US NAVY, LONG BEACH NAVAL SHIPYARD
Receive Dt:	20020129
Generator Code Description:	Small Quantity Generator
Handler Name:	US NAVY, LONG BEACH NAVAL SHIPYARD
Receive Dt:	19990415
Generator Code Description:	Large Quantity Generator
Handler Name:	LONG BEACH NAVAL SHIPYARD
Receive Dt:	19960312
Generator Code Description:	Large Quantity Generator
Handler Name:	USNAVY LONG BEACH SHIPYARD
Receive Dt:	19940328
Generator Code Description:	Large Quantity Generator
Handler Name:	USNAVY LONGBEACH
Receive Dt:	19920330
Generator Code Description:	Large Quantity Generator
Handler Name:	LONG BEACH NAVAL SHIPYARD
Receive Dt:	19900320
Generator Code Description:	Large Quantity Generator
Handler Name:	LONG BEACH NAVAL SHIPYARD
Receive Dt:	19800818
Generator Code Description:	Large Quantity Generator
Handler Name:	USNAVY LONG BEACH NAVAL SHIPYARD

Site: ***CALIFORNIA DEPARTMENT OF TRANSPORTATION***
ROUTE 405 AT LATIJERA BRIDGE OVERCROSSING LOS ANGELES CA 90045

RCRA NON GEN

EPA Handler ID:	CAC002974304
Gen Status Universe:	No Report
Contact Name:	SAMUEL GALLARDO
Contact Address:	18730 S. WILMINGTON AVE SUITE 103, , RANCHO DOMINGUEZ, CA, 90220,
Contact Phone No and Ext:	310-609-0266
Contact Email:	SAMUEL.GALLARDO@DOT.CA.GOV
Contact Country:	
County Name:	LOS ANGELES
EPA Region:	09
Land Type:	
Receive Date:	20180806

Violation/Evaluation Summary

Note: NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility:	No
Onsite Burner Exemption:	No
Furnace Exemption:	No
Underground Injection Activity:	No
Commercial TSD:	No
Used Oil Transporter:	No
Used Oil Transfer Facility:	No
Used Oil Processor:	No
Used Oil Refiner:	No
Used Oil Burner:	No
Used Oil Market Burner:	No
Used Oil Spec Marketer:	No

Hazardous Waste Handler Details

Sequence No:	1
Receive Date:	20180806
Handler Name:	CALIFORNIA DEPARTMENT OF TRANSPORTATION
Source Type:	Implementer
Federal Waste Generator Code:	N
Generator Code Description:	Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind:	Current Owner	***Street No:***	
Type:	Other	***Street 1:***	1120 N. MAIN ST. MS 31
Name:	CALTRANS LAMBERT	***Street 2:***	
Date Became Current:		***City:***	SACRAMENTO
Date Ended Current:		***State:***	CA
Phone:	310-609-0266	***Country:***	
Source Type:	Implementer	***Zip Code:***	95814

Owner/Operator Ind:	Current Operator	***Street No:***	
Type:	Other	***Street 1:***	18730 S. WILMINGTON AVE SUITE 103
Name:	SAMUEL GALLARDO	***Street 2:***	
Date Became Current:		***City:***	RANCHO DOMINGUEZ
Date Ended Current:		***State:***	CA
Phone:	310-609-0266	***Country:***	
Source Type:	Implementer	***Zip Code:***	90220

Site: ***CALTRANS DIST 07/ EA 07-296304***
07-LA-405 PM 24.5 LOS ANGELES CA 90045

RCRA NON GEN

EPA Handler ID: CAC003002077
Gen Status Universe: No Report
Contact Name: ZARIF SAYKALI
Contact Address: 12975 W CULVER BLVD, , LOS ANGELES, CA, 90066,
Contact Phone No and Ext: 310-345-6274
Contact Email: KOLBEODONNELL@GMAIL.COM
Contact Country:
County Name: LOS ANGELES
EPA Region: 09
Land Type:
Receive Date: 20190221

Violation/Evaluation Summary

Note: NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No
Furnace Exemption: No
Underground Injection Activity: No
Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 20190221
Handler Name: CALTRANS DIST 07/ EA 07-296304
Source Type: Implementer
Federal Waste Generator Code: N
Generator Code Description: Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind: Current Owner
Type: Other
Name: CALTRANS CEJA
Date Became Current:
Date Ended Current:
Phone: 858-688-1511
Source Type: Implementer
Street No:
Street 1: 1120 N STREET
Street 2: MS-31
City: SACRAMENTO
State: CA
Country:
Zip Code: 95814

Owner/Operator Ind: Current Operator
Type: Other
Name: ZARIF SAYKALI
Date Became Current:
Date Ended Current:
Phone: 310-345-6274
Source Type: Implementer
Street No:
Street 1: 12975 W CULVER BLVD
Street 2:
City: LOS ANGELES
State: CA
Country:
Zip Code: 90066

Site: ***CALTRANS DIST 07/EA 07-296104***
RTE 405 0.7/6.7 LONG BEACH CA 90807

RCRA NON GEN

EPA Handler ID: CAC003029713

Gen Status Universe: No Report
Contact Name: RAMON ROBILLOS
Contact Address: 13230 FIRESTONE BLVD STE A, , SANTA FE SPRINGS, CA, 90670,
Contact Phone No and Ext: 562-345-9901
Contact Email: RAMON.ROBILLOS@DOT.CA.GOV
Contact Country:
County Name: LOS ANGELES
EPA Region: 09
Land Type:
Receive Date: 20190816

Violation/Evaluation Summary

Note: NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No
Furnace Exemption: No
Underground Injection Activity: No
Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 20190816
Handler Name: CALTRANS DIST 07/EA 07-296104
Source Type: Implementer
Federal Waste Generator Code: N
Generator Code Description: Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind: Current Operator
Type: Other
Name: RAMON ROBILLOS
Date Became Current:
Date Ended Current:
Phone: 562-345-9901
Source Type: Implementer
Street No:
Street 1: 13230 FIRESTONE BLVD STE A
Street 2:
City: SANTA FE SPRINGS
State: CA
Country:
Zip Code: 90670

Owner/Operator Ind: Current Owner
Type: Other
Name: CALTRANS MARADUDIN
Date Became Current:
Date Ended Current:
Phone: 858-688-1511
Source Type: Implementer
Street No:
Street 1: 1120 N STREET
Street 2: MS-31
City: SACRAMENTO
State: CA
Country:
Zip Code: 95814

Site: ***CALTRANS DIST 07/ EA 07-296104***
RTE 405 0.7/3.82 LONG BEACH CA 90807

RCRA NON GEN

EPA Handler ID: CAC003014286
Gen Status Universe: No Report
Contact Name: RAMON ROBILLOS

Contact Address:	13230 FIRESTONE BLVD STE A, , SANTA FE SPRINGS, CA, 90670,
Contact Phone No and Ext:	562-345-9901
Contact Email:	RAMON_ROBILLOS@DOT.CA.GOV
Contact Country:	
County Name:	LOS ANGELES
EPA Region:	09
Land Type:	
Receive Date:	20190509

Violation/Evaluation Summary

Note:	NO RECORDS: As of Oct 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility:	No
Onsite Burner Exemption:	No
Furnace Exemption:	No
Underground Injection Activity:	No
Commercial TSD:	No
Used Oil Transporter:	No
Used Oil Transfer Facility:	No
Used Oil Processor:	No
Used Oil Refiner:	No
Used Oil Burner:	No
Used Oil Market Burner:	No
Used Oil Spec Marketer:	No

Hazardous Waste Handler Details

Sequence No:	1
Receive Date:	20190509
Handler Name:	CALTRANS DIST 07/ EA 07-296104
Source Type:	Implementer
Federal Waste Generator Code:	N
Generator Code Description:	Not a Generator, Verified

Owner/Operator Details

Owner/Operator Ind:	Current Operator	***Street No:***	
Type:	Other	***Street 1:***	13230 FIRESTONE BLVD STE A
Name:	RAMON ROBILLOS	***Street 2:***	
Date Became Current:		***City:***	SANTA FE SPRINGS
Date Ended Current:		***State:***	CA
Phone:	562-345-9901	***Country:***	
Source Type:	Implementer	***Zip Code:***	90670
Owner/Operator Ind:	Current Owner	***Street No:***	
Type:	Other	***Street 1:***	1120 N STREET
Name:	CALTRANS HAYES	***Street 2:***	MS-31
Date Became Current:		***City:***	SACRAMENTO
Date Ended Current:		***State:***	CA
Phone:	858-688-1511	***Country:***	
Source Type:	Implementer	***Zip Code:***	95814

Site: ***CALTRANS DIST 07/ EA 07-296104***
RTE 405 0.7/3.82 LONG BEACH CA 90807

RCRA TSD

EPA Handler ID:	CAC003014286
Gen Status Universe:	No Report
Contact Name:	RAMON ROBILLOS
Contact Address:	13230 FIRESTONE BLVD STE A, , SANTA FE SPRINGS, CA, 90670,
Contact Phone No and Ext:	562-345-9901

Contact Email: RAMON_ROBILLOS@DOT.CA.GOV
Contact Country:
Land Type:
County Name: LOS ANGELES
EPA Region: 09
Receive Date: 20190509

Violation/Evaluation Summary

Note: NO RECORDS: As of May 2020, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No
Smelting, Melting and Refining: No
Underground Injection Control: No
Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 1
Receive Date: 20190509
Handler Name: CALTRANS DIST 07/ EA 07-296104
Federal Waste Generator Code: N
Generator Code Description: Not a Generator, Verified
Source Type: Implementer

Owner/Operator Details

Owner/Operator Ind: Current Owner
Type: Other
Name: CALTRANS HAYES
Date Became Current:
Date Ended Current:
Phone: 858-688-1511
Source Type: Implementer
Street No:
Street 1: 1120 N STREET
Street 2: MS-31
City: SACRAMENTO
State: CA
Country:
Zip Code: 95814

Owner/Operator Ind: Current Operator
Type: Other
Name: RAMON ROBILLOS
Date Became Current:
Date Ended Current:
Phone: 562-345-9901
Source Type: Implementer
Street No:
Street 1: 13230 FIRESTONE BLVD STE A
Street 2:
City: SANTA FE SPRINGS
State: CA
Country:
Zip Code: 90670

Site: ***NAVAL SHIPYARD LONG BEACH***
TERMINAL ISLAND LONG BEACH CA 90822

SUPERFUND ROD

EPA ID: CA1170090483
Site ID: 0903474
NPL Status: Not on the NPL
Non NPL Status: Other Cleanup Activity: Federal Facility-Lead Cleanup
County: LOS ANGELES
Region: 09
Data Source(s): U.S. EPA SUPERFUND PROGRAM - Source: SEMS Superfund Public User Database - FOIA-002 Records of

Decision (RODS), ROD Amendments, and Explanation of Significant Differences (ESDs); Searchable Superfund Decision Documents database (https://www.epa.gov/superfund/search-superfund-documents), made available by the US Environmental Protection Agency (EPA). Retrieved on June 26, 2020.

Document Information

Doc ID:	2044797
Date:	10/13/2000
Pub No:	
Description:	
PDF Link:	https://semspub.epa.gov/src/document/09/2044797
Title:	Compact Disc: Final record of decision (ROD)/RA plan (RAP), installation restoration program sites 8 & 10(2 pp, 19.26 KB)

Action Information

Seq ID:	1
Action Name:	GOVT Decision Document (ROD)
Operable Unit Name:	LONG BEACH NAVAL COMPLEX OU 4
Actual Comp Date:	06/30/05

Seq ID:	4
Action Name:	GOVT Decision Document (ROD)
Operable Unit Name:	LONG BEACH NAVAL COMPLEX OU 4
Actual Comp Date:	09/30/04

Appendix: Database Descriptions

Environmental Risk Information Services (ERIS) can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of update. ERIS updates databases as set out in ASTM Standard E1527-13, Section 8.1.8 Sources of Standard Source Information:

"Government information from nongovernmental sources may be considered current if the source updates the information at least every 90 days, or, for information that is updated less frequently than quarterly by the government agency, within 90 days of the date the government agency makes the information available to the public."

Standard Environmental Record Sources

Federal

Facility Response Plan: FRP

List of facilities that have submitted Facility Response Plans (FRP) to EPA. Facilities that could reasonably be expected to cause "substantial harm" to the environment by discharging oil into or on navigable waters are required to prepare and submit Facility Response Plans (FRPs). Harm is determined based on total oil storage capacity, secondary containment and age of tanks, oil transfer activities, history of discharges, proximity to a public drinking water intake or sensitive environments.

Government Publication Date: Mar 26, 2020

National Priority List: NPL

National Priorities List (Superfund)-NPL: EPA's (United States Environmental Protection Agency) list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under the Superfund program. The NPL, which EPA is required to update at least once a year, is based primarily on the score a site receives from EPA's Hazard Ranking System. A site must be on the NPL to receive money from the Superfund Trust Fund for remedial action.

Government Publication Date: Sep 22, 2020

National Priority List - Proposed: PROPOSED NPL

Includes sites proposed (by the EPA, the state, or concerned citizens) for addition to the NPL due to contamination by hazardous waste and identified by the Environmental Protection Agency (EPA) as a candidate for cleanup because it poses a risk to human health and/or the environment.

Government Publication Date: Sep 22, 2020

Deleted NPL: DELETED NPL

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Government Publication Date: Sep 22, 2020

SEMS List 8R Active Site Inventory: SEMS

The Superfund Program has deployed the Superfund Enterprise Management System (SEMS), which integrates multiple legacy systems into a comprehensive tracking and reporting tool. This inventory contains active sites evaluated by the Superfund program that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The Active Site Inventory Report displays site and location information at active SEMS sites. An active site is one at which site assessment, removal, remedial, enforcement, cost recovery, or oversight activities are being planned or conducted.

Government Publication Date: Oct 28, 2020

SEMS List 8R Archive Sites: SEMS ARCHIVE

The Superfund Enterprise Management System (SEMS) Archived Site Inventory displays site and location information at sites archived from SEMS. An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time.

Government Publication Date: Oct 28, 2020

Inventory of Open Dumps, June 1985: ODI

The Resource Conservation and Recovery Act (RCRA) provides for publication of an inventory of open dumps. The Act defines "open dumps" as facilities which do not comply with EPA's "Criteria for Classification of Solid Waste Disposal Facilities and Practices" (40 CFR 257).

Government Publication Date: Jun 1985

EPA Report on the Status of Open Dumps on Indian Lands: IODI

Public Law 103-399, The Indian Lands Open Dump Cleanup Act of 1994, enacted October 22, 1994, identified congressional concerns that solid waste open dump sites located on American Indian or Alaska Native (AI/AN) lands threaten the health and safety of residents of those lands and contiguous areas. The purpose of the Act is to identify the location of open dumps on Indian lands, assess the relative health and environment hazards posed by those sites, and provide financial and technical assistance to Indian tribal governments to close such dumps in compliance with Federal standards and regulations or standards promulgated by Indian Tribal governments or Alaska Native entities.

Government Publication Date: Dec 31, 1998

Comprehensive Environmental Response, Compensation and Liability Information System - CERCLIS: CERCLIS

Superfund is a program administered by the United States Environmental Protection Agency (EPA) to locate, investigate, and clean up the worst hazardous waste sites throughout the United States. CERCLIS is a database of potential and confirmed hazardous waste sites at which the EPA Superfund program has some involvement. It contains sites that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The EPA administers the Superfund program in cooperation with individual states and tribal governments; this database is made available by the EPA.

Government Publication Date: Oct 25, 2013

CERCLIS - No Further Remedial Action Planned: CERCLIS NFRAP

An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time. The Archive designation means that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL). This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Government Publication Date: Oct 25, 2013

CERCLIS Liens: CERCLIS LIENS

A Federal Superfund lien exists at any property where EPA has incurred Superfund costs to address contamination ("Superfund site") and has provided notice of liability to the property owner. A Federal CERCLA ("Superfund") lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. This database is made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Jan 30, 2014

RCRA CORRACTS-Corrective Action: RCRA CORRACTS

RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. At these sites, the Corrective Action Program ensures that cleanups occur. EPA and state regulators work with facilities and communities to design remedies based on the contamination, geology, and anticipated use unique to each site.

Government Publication Date: Oct 19, 2020

RCRA non-CORRACTS TSD Facilities: RCRA TSD

RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. This database includes Non-Corrective Action sites listed as treatment, storage and/or disposal facilities of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA).

Government Publication Date: Oct 19, 2020

RCRA Generator List: RCRA LQG

RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Large Quantity Generators (LQGs) generate 1,000 kilograms per month or more of hazardous waste or more than one kilogram per month of acutely hazardous waste.

Government Publication Date: Oct 19, 2020

RCRA Small Quantity Generators List: RCRA SQG

RCRA Info is the EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Small Quantity Generators (SQGs) generate more than 100 kilograms, but less than 1,000 kilograms, of hazardous waste per month.

Government Publication Date: Oct 19, 2020

RCRA Conditionally Exempt and Very Small Quantity Generators List: RCRA CESQG

RCRA Info is the EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Conditionally Exempt and Very Small Quantity Generators (VSQG and CESQG) generate 100 kilograms or less per month of hazardous waste, or one kilogram or less per month of acutely hazardous waste. Additionally, VSQG and CESQG may not accumulate more than 1,000 kilograms of hazardous waste at any time.

Government Publication Date: Oct 19, 2020

RCRA Non-Generators: RCRA NON GEN

RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Non-Generators do not presently generate hazardous waste.

Government Publication Date: Oct 19, 2020

Federal Engineering Controls-ECs: FED ENG

Engineering controls (ECs) encompass a variety of engineered and constructed physical barriers (e.g., soil capping, sub-surface venting systems, mitigation barriers, fences) to contain and/or prevent exposure to contamination on a property. This database is made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Aug 26, 2020

Federal Institutional Controls- ICs: FED INST

Institutional controls are non-engineered instruments, such as administrative and legal controls, that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy. Although it is EPA's (United States Environmental Protection Agency) expectation that treatment or engineering controls will be used to address principal threat wastes and that groundwater will be returned to its beneficial use whenever practicable, ICs play an important role in site remedies because they reduce exposure to contamination by limiting land or resource use and guide human behavior at a site.

Government Publication Date: Aug 26, 2020

Emergency Response Notification System: ERNS 1982 TO 1986

Database of oil and hazardous substances spill reports controlled by the National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.

Government Publication Date: 1982-1986

Emergency Response Notification System: ERNS 1987 TO 1989

Database of oil and hazardous substances spill reports controlled by the National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.

Government Publication Date: 1987-1989

Emergency Response Notification System: ERNS

Database of oil and hazardous substances spill reports controlled by the National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories. This database is made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Nov 9, 2020

The Assessment, Cleanup and Redevelopment Exchange System (ACRES) Brownfield Database: FED BROWNFIELDS

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties protects the environment, reduces blight, and takes development pressures off greenspaces and working lands. This database is made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Sep 3, 2019

FEMA Underground Storage Tank Listing: FEMA UST

The Federal Emergency Management Agency (FEMA) of the Department of Homeland Security maintains a list of FEMA owned underground storage tanks.

Government Publication Date: Dec 31, 2017

Petroleum Refineries: REFN

List of petroleum refineries from the U.S. Energy Information Administration (EIA) Refinery Capacity Report. Includes operating and idle petroleum refineries (including new refineries under construction) and refineries shut down during the previous year located in the 50 States, the District of Columbia, Puerto Rico, the Virgin Islands, Guam, and other U.S. possessions. Survey locations adjusted using public data.

Government Publication Date: Jul 10, 2020

Petroleum Product and Crude Oil Rail Terminals: BULK TERMINAL

List of petroleum product and crude oil rail terminals made available by the U.S. Energy Information Administration (EIA). Includes operable bulk petroleum product terminals located in the 50 States and the District of Columbia with a total bulk shell storage capacity of 50,000 barrels or more, and/or the ability to receive volumes from tanker, barge, or pipeline; also rail terminals handling the loading and unloading of crude oil that were active between 2017 and 2018. Petroleum product terminals comes from the EIA-815 Bulk Terminal and Blender Report, which includes working, shell in operation, and shell idle for several major product groupings. Survey locations adjusted using public data.

Government Publication Date: Apr 28, 2020

LIEN on Property: SEMS LIEN

The EPA Superfund Enterprise Management System (SEMS) provides LIEN information on properties under the EPA Superfund Program.

Government Publication Date: Oct 28, 2020

Superfund Decision Documents: SUPERFUND ROD

This database contains a listing of decision documents for Superfund sites. Decision documents serve to provide the reasoning for the choice of (or) changes to a Superfund Site cleanup plan. The decision documents include Records of Decision (ROD), ROD Amendments, Explanations of Significant Differences (ESD), along with other associated memos and files. This information is maintained and made available by the US EPA (Environmental Protection Agency).

Government Publication Date: Sep 22, 2020

State

State Response Sites: RESPONSE

A list of identified confirmed release sites where the Department of Toxic Substances Control (DTSC) is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk. This database is state equivalent NPL.

Government Publication Date: Oct 5, 2020

EnviroStor Database: ENVIROSTOR

The EnviroStor Data Management System is made available by the Department of Toxic Substances Control (DTSC). Includes Corrective Action sites, Tiered Permit sites, Historical Sites and Evaluation/Investigation sites. This database is state equivalent CERCLIS.

Government Publication Date: Oct 5, 2020

Delisted State Response Sites: DELISTED ENVS

Sites removed from the list of State Response Sites made available by the EnviroStor Data Management System, Department of Toxic Substances Control (DTSC).

Government Publication Date: Oct 5, 2020

Solid Waste Information System (SWIS): SWF/LF

The Solid Waste Information System (SWIS) database made available by the Department of Resources Recycling and Recovery (CalRecycle) contains information on solid waste facilities, operations, and disposal sites throughout the State of California. The types of facilities found in this database include landfills, transfer stations, material recovery facilities, composting sites, transformation facilities, waste tire sites, and closed disposal sites.

Government Publication Date: Oct 15, 2020

EnviroStor Hazardous Waste Facilities: HWP

A list of hazardous waste facilities including permitted, post-closure and historical facilities found in the Department of Toxic Substances Control (DTSC) EnviroStor database.

Government Publication Date: Oct 5, 2020

Sites Listed in the Solid Waste Assessment Test (SWAT) Program Report: SWAT

In a 1993 Memorandum of Understanding, the State Water Resources Control Board (SWRCB) agreed to submit a comprehensive report on the Solid Waste Assessment Test (SWAT) Program to the California Integrated Waste Management Board (CIWMB). This report summarizes the work completed to date on the SWAT Program, and addresses both the impacts that leakage from solid waste disposal sites (SWDS) may have upon waters of the State and the actions taken to address such leakage.

Government Publication Date: Dec 31, 1995

Land Disposal Sites: LDS

Land Disposal Sites in GeoTracker, the State Water Resources Control Board (SWRCB)'s data management system. The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units. Waste management units include waste piles, surface impoundments, and landfills.

Government Publication Date: Nov 16, 2020

Leaking Underground Fuel Tank Reports: LUST

List of Leaking Underground Storage Tanks within the Cleanup Sites data in GeoTracker database. GeoTracker is the State Water Resources Control Board's (SWRCB) data management system for managing sites that impact groundwater, especially those that require groundwater cleanup (Underground Storage Tanks, Department of Defense and Site Cleanup Program) as well as permitted facilities such as operating Underground Storage Tanks. The Leak Prevention Program that overlooks LUST sites is the SWRCB in California's Environmental Protection Agency.

Government Publication Date: Nov 16, 2020

Delisted Leaking Storage Tanks: DELISTED LST

List of Leaking Underground Storage Tanks (LUST) cleanup sites removed from GeoTracker, the State Water Resources Control Board (SWRCB)'s database system, as well as sites removed from the SWRCB's list of UST Case closures.

Government Publication Date: Nov 16, 2020

Solid Waste Disposal Sites with Waste Constituents Above Hazardous Waste Levels: SWRCB SWF

This is a list of solid waste disposal sites identified by California State Water Resources Control Board with waste constituents above hazardous waste levels outside the waste management unit.

Government Publication Date: Sep 20, 2006

Permitted Underground Storage Tank (UST) in GeoTracker: UST

List of Permitted Underground Storage Tank (UST) sites made available by the State Water Resources Control Board (SWRCB) in California's Environmental Protection Agency (EPA).

Government Publication Date: Nov 16, 2020

Proposed Closure of Underground Storage Tank Cases: UST CLOSURE

List of UST cases that are being considered for closure by either the California Environmental Protection Agency, State Water Resources Control Board or the Executive Director that have been posted for a 60-day public comment period.

Government Publication Date: Oct 7, 2020

Historical Hazardous Substance Storage Information Database: HHSS

The Historical Hazardous Substance Storage database contains information collected in the 1980s from facilities that stored hazardous substances. The information was originally collected on paper forms, was later transferred to microfiche, and recently indexed as a searchable database. When using this database, please be aware that it is based upon self-reported information submitted by facilities which has not been independently verified. It is unlikely that every facility responded to the survey and the database should not be expected to be a complete inventory of all facilities that were operating at that time. This database is maintained by the California State Water Resources Control Board's (SWRCB) Geotracker.

Government Publication Date: Aug 27, 2015

Aboveground Storage Tanks: AST

A statewide list from 2009 of aboveground storage tanks (ASTs) made available by the Cal FIRE Office of the State Fire Marshal (OSFM). This list is no longer maintained or updated by the Cal FIRE OSFM.

Government Publication Date: Aug 31, 2009

Oil and Gas Facility Tanks: TANK OIL GAS

Locations of oil and gas tanks that fall under the jurisdiction of the Geologic Energy Management Division of the California Department of Conservation (CalGEM) (CCR 1760). CalGEM was formerly the Division of Oil, Gas, and Geothermal Resources (DOGGR).

Government Publication Date: Oct 7, 2020

Delisted Storage Tanks: DELISTED TNK

This database contains a list of storage tank sites that were removed by the State Water Resources Control Board (SWRCB) in California's Environmental Protection Agency (EPA) and the Cal FIRE Office of State Fire Marshal (OSFM).

Government Publication Date: Dec 9, 2020

California Environmental Reporting System (CERS) Tanks: CERS TANK

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs. The CalEPA oversees the statewide implementation of the Unified Program which applies regulatory standards to protect Californians from hazardous waste and materials.

Government Publication Date: Oct 26, 2020

Site Mitigation and Brownfields Reuse Program Facility Sites with Land Use Restrictions: LUR

The Department of Toxic Substances Control (DTSC) Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents land use restrictions that are active. Some sites have multiple land use restrictions.

Government Publication Date: Oct 5, 2020

Hazardous Waste Management Program Facility Sites with Deed / Land Use Restrictions: HLUR

The Department of Toxic Substances Control (DTSC) Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Government Publication Date: Oct 16, 2020

Deed Restrictions and Land Use Restrictions: DEED

List of Deed Restrictions, Land Use Restrictions and Covenants in GeoTracker made available by the State Water Resources Control Board (SWRCB) in California's Environmental Protection Agency. A deed restriction (land use covenant) may be required to facilitate the remediation of past environmental contamination and to protect human health and the environment by reducing the risk of exposure to residual hazardous materials.

Government Publication Date: Nov 16, 2020

Voluntary Cleanup Program: VCP

List of sites in the Voluntary Cleanup Program made available by the Department of Toxic Substances and Control (DTSC). The Voluntary Cleanup Program was designed to respond to lower priority sites. Under the Voluntary Cleanup Program, DTSC enters site-specific agreements with project proponents for DTSC oversight of site assessment, investigation, and/or removal or remediation activities, and the project proponents agree to pay DTSC's reasonable costs for those services.

Government Publication Date: Oct 5, 2020

GeoTracker Cleanup Program Sites: CLEANUP SITES

A list of Cleanup Program sites in the state of California made available by The State Water Resources Control Board (SWRCB) of the California Environmental Protection Agency (EPA). SWRCB tracks leaking underground storage tank cleanups as well as other water board cleanups.

Government Publication Date: Nov 16, 2020

Delisted County Records: DELISTED COUNTY

Records removed from county or CUPA databases. Records may be removed from the county lists made available by the respective county departments because they are inactive, or because they have been deemed to be below reportable thresholds.

Government Publication Date: Dec 3, 2020

Delisted California Environmental Reporting System (CERS) Tanks: DELISTED CTNK

This database contains a list of Aboveground Petroleum Storage and Underground Storage Tank sites that were removed from in the California Environmental Protection Agency (CalEPA) Regulated Site Portal.

Government Publication Date: Oct 26, 2020

Historical Hazardous Substance Storage Container Information - Facility Summary: HIST TANK

The State Water Resources Control Board maintained the Hazardous Substance Storage Containers listing and inventory in th 1980s. This facility summary lists historic tank sites where the following container types were present: farm motor vehicle fuel tanks; waste tanks; sumps; pits, ponds, lagoons, and others; and all other product tanks. This set, published in May 1988, lists facility and owner information, as well as the number of containers. This data is historic and will not be updated.

Government Publication Date: May 27, 1988

Tribal

Leaking Underground Storage Tanks (LUSTs) on Indian Lands: INDIAN LUST

LUSTs on Tribal/Indian Lands in Region 9, which includes California.

Government Publication Date: Apr 8, 2020

Underground Storage Tanks (USTs) on Indian Lands: INDIAN UST

USTs on Tribal/Indian Lands in Region 9, which includes California.

Government Publication Date: Apr 8, 2020

Delisted Tribal Leaking Storage Tanks: DELISTED ILST

Leaking Underground Storage Tank facilities which have been removed from the Regional Tribal LUST lists made available by the EPA.

Government Publication Date: Apr 14, 2020

Delisted Tribal Underground Storage Tanks: DELISTED IUST

Underground Storage Tank facilities which have been removed from the Regional Tribal UST lists made available by the EPA.

Government Publication Date: Apr 14, 2020

County

Los Angeles County - Site Mitigation List: LA SML

A Site Mitigation List in the County of Los Angeles. The list is made available by Los Angeles County Fire Department. Site mitigation is handled by the Site Mitigation Unit (SMU) which facilitates completion of site clean-up projects of contaminated sites in an expeditious manner in all cities of the Los Angeles County except El Segundo, Glendale, Long Beach, Santa Fe Springs, and Vernon.

Government Publication Date: Jul 20, 2020

Los Angeles County - Solid Waste Sites: LA SWF

List of permitted solid waste facilities, closed landfills, historical dumpsites and other solid waste sites in Los Angeles County, made available by the Department of Public Works in Los Angeles County.

Government Publication Date: Sep 2, 2020

Los Angeles County - CUPA Program Records: LA COUNTY CUPA

A list of inspection and enforcement records for active and inactive CUPA Program facilities, made available by the Health Hazardous Materials Division (HHMD) of the County of Los Angeles Fire Department. Includes Hazardous Materials Business Plan (HMBP), California Accidental Release Prevention Plan (CalARP), Hazardous Waste Generator (HWG), and the Aboveground Petroleum Storage Act Programs (APSA). Inactive programs include facilities that are out of business or no longer regulated by the HHMD.

Government Publication Date: Mar 25, 2020

Los Angeles County - HMS List: LA HMS

List of sites in the Los Angeles County Department of Public Works Hazardous Materials System (HMS) Database which have or have had permits for Industrial Waste, Underground Storage Tanks, or Stormwater in the county of Los Angeles.

Government Publication Date: Nov 5, 2020

Los Angeles County - Santa Fe Springs Underground Storage Tank: UST SANTAFESP

A list of registered active Underground Storage Tanks (USTs) in the City of Santa Fe Springs. This list is made available by Santa Fe Springs Department of Fire-Rescue.

Government Publication Date: Jun 25, 2020

Los Angeles County - Long Beach UST List: UST LONGB

List of registered Underground Storage Tanks (USTs) in the City of Long Beach, Los Angeles County, made available by the Long Beach Certified Unified Program Agency (CUPA). The Long Beach CUPA operates under oversight shared by the Long Beach Fire Department and Health Department.

Government Publication Date: Jul 9, 2018

Los Angeles County - Burbank City CUPA List: BURBANK CUPA

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in the City of Burbank. This list is made available by the City of Burbank Fire Department.

Government Publication Date: Aug 21, 2019

Los Angeles County - El Segundo City Underground Storage Tanks List: UST ELSEGUNDO

List of registered Underground Storage Tanks (USTs) in the City of El Segundo of Los Angeles County, made available by El Segundo City Fire Department.

Government Publication Date: Jan 17, 2017

Los Angeles County - Santa Monica City Underground Storage Tank List: UST SANTA MONICA

A list of registered active Underground Storage Tanks (USTs) in the City of Santa Monica made available by Santa Monica Fire Prevention Division.

Government Publication Date: Mar 20, 2020

Los Angeles County - Santa Monica City Aboveground Storage Tank List: SANTAMON AST

List of registered Aboveground Storage Tanks (ASTs) made available by the Santa Monica Fire Department in the City of Santa Monica of Los Angeles County, California.

Government Publication Date: Dec 3, 2020

Los Angeles County - Santa Monica City CUPA Facilities List: SANTAMON CUPA

The Santa Monica Fire Department's office maintains a list of CUPA Facilities located in Santa Monica city.

Government Publication Date: Jul 19, 2019

Los Angeles County - Torrance City Underground Storage Tanks: UST TORRANCE

A list of registered Underground Storage Tank (UST) sites in Torrance City of Los Angeles County. This list is made available by Torrance City Office of Clerk.

Government Publication Date: Aug 12, 2020

Los Angeles County - Vernon City UST List: UST VERNON

A list of Underground Storage Tanks (UST) in Vernon City provided by the Vernon City Fire Department.

Government Publication Date: Dec 14, 2020

Los Angeles County - Vernon City CUPA List: VERNON CUPA

The Vernon City Fire Department's office maintains a list of CUPA Facilities located in Vernon city.

Government Publication Date: Dec 14, 2020

Los Angeles County - City of Los Angeles UST List: UST LA CITY

A list of active and inactive underground storage tank facilities made available by the Los Angeles Fire Department CUPA.

Government Publication Date: Jun 1, 2019

Los Angeles County - City of Los Angeles AST List: AST LA CITY

A list of active and inactive above ground petroleum storage tanks made available by the Los Angeles Fire Department CUPA.

Government Publication Date: Jun 1, 2019

Los Angeles County - City of Los Angeles Hazardous Materials Facilities: LA CITY HAZMAT

A list of active and inactive hazardous materials facilities made available by the Los Angeles Fire Department CUPA.

Government Publication Date: Jun 1, 2019

Additional Environmental Record Sources

Federal

PFOA/PFOS Contaminated Sites: PFAS NPL

List of sites where PFOA or PFOS contaminants have been found in drinking water or soil. Made available by the Federal Environmental Protection Agency (EPA).

Government Publication Date: Nov 18, 2020

Facility Registry Service/Facility Index: FINDS/FRS

The Facility Registry Service (FRS) is a centrally managed database that identifies facilities, sites, or places subject to environmental regulations or of environmental interest. FRS creates high-quality, accurate, and authoritative facility identification records through rigorous verification and management procedures that incorporate information from program national systems, state master facility records, and data collected from EPA's Central Data Exchange registrations and data management personnel. This list is made available by the Environmental Protection Agency (US EPA).

Government Publication Date: Jun 15, 2020

Toxics Release Inventory (TRI) Program: TRIS

The EPA's Toxics Release Inventory (TRI) is a database containing data on disposal or other releases of over 650 toxic chemicals from thousands of U. S. facilities and information about how facilities manage those chemicals through recycling, energy recovery, and treatment. One of TRI's primary purposes is to inform communities about toxic chemical releases to the environment.

Government Publication Date: Feb 19, 2020

Perfluorinated Alkyl Substances (PFAS) Releases: PFAS TRI

List of Toxics Release Inventory (TRI) facilities at which the reported chemical is a Per- or polyfluorinated alkyl substance (PFAS) included in the Environmental Protection Agency (EPA)'s consolidated PFAS Master List of PFAS Substances. The EPA's Toxics Release Inventory (TRI) is a database containing data on disposal or other releases of over 650 toxic chemicals from thousands of U.S. facilities and information about how facilities manage those chemicals through recycling, energy recovery, and treatment.

Government Publication Date: Feb 19, 2020

Perfluorinated Alkyl Substances (PFAS) Water Quality: PFAS WATER

The Water Quality Portal (WQP) is a cooperative service sponsored by the United States Geological Survey (USGS), the Environmental Protection Agency (EPA), and the National Water Quality Monitoring Council (NWQMC). This listing includes records from the Water Quality Portal where the characteristic (environmental measurement) is in the Environmental Protection Agency (EPA)'s consolidated PFAS Master List of PFAS Substances.

Government Publication Date: Jul 20, 2020

Hazardous Materials Information Reporting System: HMIRS

US DOT - Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) Incidents Reports Database taken from Hazmat Intelligence Portal, U.S. Department of Transportation.

Government Publication Date: Sep 1, 2020

National Clandestine Drug Labs: NCDL

The U.S. Department of Justice ("the Department") provides this data as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy.

Government Publication Date: Oct 5, 2020

Toxic Substances Control Act: TSCA

The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.

The CDR enables EPA to collect and publish information on the manufacturing, processing, and use of commercial chemical substances and mixtures (referred to hereafter as chemical substances) on the TSCA Chemical Substance Inventory (TSCA Inventory). This includes current information on chemical substance production volumes, manufacturing sites, and how the chemical substances are used. This information helps the Agency determine whether people or the environment are potentially exposed to reported chemical substances. EPA publishes submitted CDR data that is not Confidential Business Information (CBI).

Government Publication Date: Apr 11, 2019

Hist TSCA: HIST TSCA

The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.
The 2006 IUR data summary report includes information about chemicals manufactured or imported in quantities of 25,000 pounds or more at a single site during calendar year 2005. In addition to the basic manufacturing information collected in previous reporting cycles, the 2006 cycle is the first time EPA collected information to characterize exposure during manufacturing, processing and use of organic chemicals. The 2006 cycle also is the first time manufacturers of inorganic chemicals were required to report basic manufacturing information.

Government Publication Date: Dec 31, 2006

FTTS Administrative Case Listing: FTTS ADMIN

An administrative case listing from the Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA) and Toxic Substances Control Act (TSCA), together known as FTTS. This database was obtained from the Environmental Protection Agency's (EPA) National Compliance Database (NCDB). The FTTS and NCDB was shut down in 2006.

Government Publication Date: Jan 19, 2007

FTTS Inspection Case Listing: FTTS INSP

An inspection case listing from the Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA) and Toxic Substances Control Act (TSCA), together known as FTTS. This database was obtained from the Environmental Protection Agency's (EPA) National Compliance Database (NCDB). The FTTS and NCDB was shut down in 2006.

Government Publication Date: Jan 19, 2007

Potentially Responsible Parties List: PRP

Early in the cleanup process, the Environmental Protection Agency (EPA) conducts a search to find the potentially responsible parties (PRPs). EPA looks for evidence to determine liability by matching wastes found at the site with parties that may have contributed wastes to the site.

Government Publication Date: Sep 22, 2020

State Coalition for Remediation of Drycleaners Listing: SCRD DRYCLEANER

The State Coalition for Remediation of Drycleaners (SCRD) was established in 1998, with support from the U.S. Environmental Protection Agency (EPA) Office of Superfund Remediation and Technology Innovation. Coalition members are states with mandated programs and funding for drycleaner site remediation. Current members are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Government Publication Date: Nov 08, 2017

Integrated Compliance Information System (ICIS): ICIS

The Integrated Compliance Information System (ICIS) is a system that provides information for the Federal Enforcement and Compliance (FE&C) and the National Pollutant Discharge Elimination System (NPDES) programs. The FE&C component supports the Environmental Protection Agency's (EPA) Civil Enforcement and Compliance program activities. These activities include Compliance Assistance, Compliance Monitoring and Enforcement. The NPDES program supports tracking of NPDES permits, limits, discharge monitoring data and other program reports.

Government Publication Date: Aug 24, 2020

Drycleaner Facilities: FED DRYCLEANERS

A list of drycleaner facilities from Enforcement and Compliance History Online (ECHO) online search. The Environmental Protection Agency (EPA) tracks facilities that possess NAIC and SIC codes that classify businesses as drycleaner establishments.

Government Publication Date: Jan 20, 2020

Delisted Drycleaner Facilities: DELISTED FED DRY

List of sites removed from the list of Drycleaner Facilities (sites in the EPA's Integrated Compliance Information System (ICIS) with NAIC or SIC codes identifying the business as a drycleaner establishment).

Government Publication Date: Jan 20, 2020

Formerly Used Defense Sites: FUDS

Formerly Used Defense Sites (FUDS) are properties that were formerly owned by, leased to, or otherwise possessed by and under the jurisdiction of the Secretary of Defense prior to October 1986, where the Department of Defense (DoD) is responsible for an environmental restoration. This list is published by the U.S. Army Corps of Engineers.

Government Publication Date: Jan 28, 2020

PHMSA Pipeline Safety Flagged Incidents: PIPELINE INCIDENT

A list of flagged pipeline incidents made available by the U.S. Department of Transportation (US DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA). PHMSA regulations require incident and accident reports for five different pipeline system types.

Government Publication Date: Jul 7, 2020

Material Licensing Tracking System (MLTS): MLTS

A list of sites that store radioactive material subject to the Nuclear Regulatory Commission (NRC) licensing requirements. This list is maintained by the NRC. As of September 2016, the NRC no longer releases location information for sites. Site locations were last received in July 2016.

Government Publication Date: Aug 5, 2020

Historic Material Licensing Tracking System (MLTS) sites: HIST MLTS

A historic list of sites that have inactive licenses and/or removed from the Material Licensing Tracking System (MLTS). In some cases, a site is removed from the MLTS when the state becomes an "Agreement State". An Agreement State is a State that has signed an agreement with the Nuclear Regulatory Commission (NRC) authorizing the State to regulate certain uses of radioactive materials within the State.

Government Publication Date: Jan 31, 2010

Mines Master Index File: MINES

The Master Index File (MIF) contains mine identification numbers issued by the Department of Labor Mine Safety and Health Administration (MSHA) for mines active or opened since 1971. Note that addresses may or may not correspond with the physical location of the mine itself.

Government Publication Date: May 1, 2020

Alternative Fueling Stations: ALT FUELS

List of alternative fueling stations made available by the US Department of Energy's Office of Energy Efficiency & Renewable Energy. Includes Biodiesel stations, Ethanol (E85) stations, Liquefied Petroleum Gas (Propane) stations, Ethanol (E85) stations, Natural Gas stations, Hydrogen stations, and Electric Vehicle Supply Equipment (EVSE). The National Renewable Energy Laboratory (NREL) obtains information about new stations from trade media, Clean Cities coordinators, a Submit New Station form on the Station Locator website, and through collaborating with infrastructure equipment and fuel providers, original equipment manufacturers (OEMs), and industry groups.

Government Publication Date: Sep 24, 2020

Registered Pesticide Establishments: SSTS

List of active EPA-registered foreign and domestic pesticide-producing and device-producing establishments based on data from the Section Seven Tracking System (SSTS). The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Section 7 requires that facilities producing pesticides, active ingredients, or devices be registered. The list of establishments is made available by the EPA.

Government Publication Date: Mar 31, 2020

Polychlorinated Biphenyl (PCB) Notifiers: PCB

Facilities included in the national list of facilities that have notified the United States Environmental Protection Agency (EPA) of Polychlorinated Biphenyl (PCB) activities. Any company or person storing, transporting or disposing of PCBs or conducting PCB research and development must notify the EPA and receive an identification number.

Government Publication Date: Nov 19, 2020

State

Dry Cleaning Facilities: DRYCLEANERS

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial, linen supply, commercial laundry, dry cleaning and pressing machines - Coin Operated Laundry and Dry Cleaning. This is provided by the Department of Toxic Substance Control.

Government Publication Date: Nov 10, 2020

Delisted Drycleaners: DELISTED DRYCLEANERS

Sites removed from the list of drycleaner related facilities that have EPA ID numbers, made available by the California Department of Toxic Substance Control.

Government Publication Date: Nov 10, 2020

Non-Toxic Dry Cleaning Incentive Program: DRYC GRANT

A list of grant recipients of the Non-Toxic Dry Cleaning Incentive Program made available by the California Air Resources Board (CARB). The program provides grants to eligible dry cleaning businesses to assist them in transitioning away from PERC machines to alternative non-toxic and non-smog forming technologies.

Government Publication Date: Feb 28, 2018

Per- and Polyfluoroalkyl Substances (PFAS): PFAS

List of sites from the State Water Resources Control Board (SWRCB)'s GeoTracker at which one or more of the potential contaminants of concern are in the PFAS Master List of PFAS Substances made available by the Environmental Protection Agency (US EPA).

Government Publication Date: Nov 16, 2020

PFOA/PFOS Groundwater: PFAS GW

A list of water wells from the Groundwater Ambient Monitoring and Assessment Program (GAMA) Groundwater Information System with the groundwater chemical perfluorooctanoic acid (PFOA) (NL = 0.014 UG/L) or perfluorooctanoic sulfonate (PFOS) (NL = 0.013 UG/L). The GAMA Groundwater Information System search is made available by California Water Boards.

Government Publication Date: Oct 22, 2020

Hazardous Waste and Substances Site List - Site Cleanup: HWSS CLEANUP

The Hazardous Waste and Substances Sites (Cortese) List is a planning document used by the State, local agencies and developers to comply with the California Environmental Quality Act requirements in providing information about the location of hazardous materials release sites. This list is published by California Department of Toxic Substance Control.

Government Publication Date: Nov 10, 2020

List of Hazardous Waste Facilities Subject to Corrective Action: DTSC HWF

This is a list of hazardous waste facilities identified in Health and Safety Code (HSC) § 25187.5. These facilities are those where Department of Toxic Substances Control (DTSC) has taken or contracted for corrective action because a facility owner/operator has failed to comply with a date for taking corrective action in an order issued under HSC § 25187, or because DTSC determined that immediate corrective action was necessary to abate an imminent or substantial endangerment.

Government Publication Date: Jul 18, 2016

EnviroStor Inspection, Compliance, and Enforcement: INSP COMP ENF

A list of permitted facilities with inspections and enforcements tracked in the Department of Toxic Substance Control (DTSC) EnviroStor.

Government Publication Date: Oct 7, 2020

School Property Evaluation Program Sites: SCH

A list of sites registered with The Department of Toxic Substances Control (DTSC) School Property Evaluation and Cleanup (SPEC) Division. SPEC is responsible for assessing, investigating and cleaning up proposed school sites. The Division ensures that selected properties are free of contamination or, if the properties were previously contaminated, that they have been cleaned up to a level that protects the students and staff who will occupy the new school.

Government Publication Date: Oct 5, 2020

California Hazardous Material Incident Report System (CHMIRS): CHMIRS

A list of reported hazardous material incidents, spills, and releases from the California Hazardous Material Incident Report System (CHMIRS). This list has been made available by the California Office of Emergency Services (OES).

Government Publication Date: Oct 12, 2020

Hazardous Waste Manifest Data: HAZNET

A list of hazardous waste manifests received each year by Department of Toxic Substances Control (DTSC). The volume of manifests is typically 900,000 - 1,000,000 annually, representing approximately 450,000 - 500,000 shipments.

Government Publication Date: Oct 24, 2016

Historical California Hazardous Material Incident Report System (CHMIRS): HIST CHMIRS

A list of reported hazardous material incidents, spills, and releases from the California Hazardous Material Incident Report System (CHMIRS) prior to 1993. This list has been made available by the California Office of Emergency Services (OES).

Government Publication Date: Jan 1, 1993

Historical Hazardous Waste Manifest Data: HIST MANIFEST

A list of historic hazardous waste manifests received by the Department of Toxic Substances Control (DTSC) from year the 1980 to 1992. The volume of manifests is typically 900,000 - 1,000,000 annually, representing approximately 450,000 - 500,000 shipments.

Government Publication Date: Dec 31, 1992

Historical Cortese List: HIST CORTESE

List of sites which were once included on the Cortese list. The Hazardous Waste and Substances Sites (Cortese) List is a planning document used by the State, local agencies and developers to comply with the California Environmental Quality Act requirements for providing information about the location of hazardous sites.

Government Publication Date: Nov 13, 2008

Cease and Desist Orders and Cleanup and Abatement Orders: CDO/CAO

The California Environment Protection Agency "Cortese List" of active Cease and Desist Orders (CDO) and Cleanup and Abatement Orders (CAO). This list contains many CDOs and CAOs that do NOT concern the discharge of wastes that are hazardous materials. Many of the listed orders concern, as examples, discharges of domestic sewage, food processing wastes, or sediment that do not contain hazardous materials, but the Water Boards' database does not distinguish between these types of orders.

Government Publication Date: Feb 16, 2012

California Environmental Reporting System (CERS) Hazardous Waste Sites: CERS HAZ

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the following regulatory programs: Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, RCRA LQ HW Generator. The CalEPA oversees the statewide implementation of the Unified Program which applies regulatory standards to protect Californians from hazardous waste and materials.

Government Publication Date: Oct 26, 2020

Delisted Environmental Reporting System (CERS) Hazardous Waste Sites: DELISTED HAZ

This database contains a list of sites that were removed from the California Environmental Protection Agency (CalEPA) in the following regulatory programs: Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, RCRA LQ HW Generator.

Government Publication Date: Nov 29, 2018

Sites in GeoTracker: GEOTRACKER

GeoTracker is the State Water Resource Control Boards' data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater. This is a list of sites in GeoTracker that aren't otherwise categorized as LUST, Land Disposal Sites (LDS), Cleanup Sites, or sites having Waste Discharge Requirements (WDR). This listing includes program types such as Underground Injection Control (UIC), Confined Animal Facilities (CAF), Irrigated Lands Regulatory Program, plans, and non-case information.

Government Publication Date: Nov 16, 2020

Waste Discharge Requirements: WASTE DISCHG

List of sites in California State Water Resources Control Board (SWRCB) Waste Discharge Requirements (WDRs) Program in California, made available by the SWRCB via GeoTracker. The WDR program regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to section 20230 of Title 27.

Government Publication Date: Nov 16, 2020

Toxic Pollutant Emissions Facilities: EMISSIONS

A list of criteria and toxic pollutant emissions data for facilities in California made available by the California Environmental Protection Agency - Air Resources Board (ARB). Risk data may be based on previous inventory submittals. The toxics data are submitted to the ARB by the local air districts as requirement of the Air Toxics "Hot Spots" Program. This program requires emission inventory updates every four years.

Government Publication Date: Dec 31, 2018

Clandestine Drug Lab Sites: CDL

The Department of Toxic Substances Control (DTSC) maintains a listing of drug lab sites. DTSC is responsible for removal and disposal of hazardous substances discovered by law enforcement officials while investigating illegal/clandestine drug laboratories.

Government Publication Date: Jun 30, 2018

Tribal

No Tribal additional environmental record sources available for this State.

County

Los Angeles County - Santa Monica City Hazardous Materials Facilities: SANTAMON HAZ

A list of Hazardous Materials Facilities in the City of Santa Monica, Los Angeles county. This list is made available by Santa Monica Fire Prevention Division which has been designated as the CUPA for the City.

Government Publication Date: Mar 12, 2020

Los Angeles County - Santa Monica City Hazardous Waste Facilities: SANTAMON HW

A list of Hazardous Waste Facilities in Los Angeles County, City of Santa Monica. This list is made available by Santa Monica Fire Prevention Division.

Government Publication Date: Jul 19, 2019

Definitions

Database Descriptions: This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

Detail Report: This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

Distance: The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries. All values are an approximation.

Direction: The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

Elevation: The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

Executive Summary: This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

Map Key: The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

Unplottables: These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and are included as reference.

APPENDIX I
LOS ANGELES COUNTY RECORDS

19 - HQ

COUNTY OF LOS ANGELES
DEPARTMENT OF COUNTY ENGINEER
PROJECT PLANNING AND POLLUTION CONTROL DIVISION

INSPECTOR'S REPORT
for closures

TO: ROGER HIGBEE DATE: May 4, 1990.

FROM: I. AZIE FILE: I-5839-22

INDUSTRY: PACIFIC YACHT
21611 PERRY STREET, CARSON, CA. 90745

REPORT: Removal Company: MOINE BROS PH: 830-1570
Contact: CHUCK MOINE
Address:

TANKS

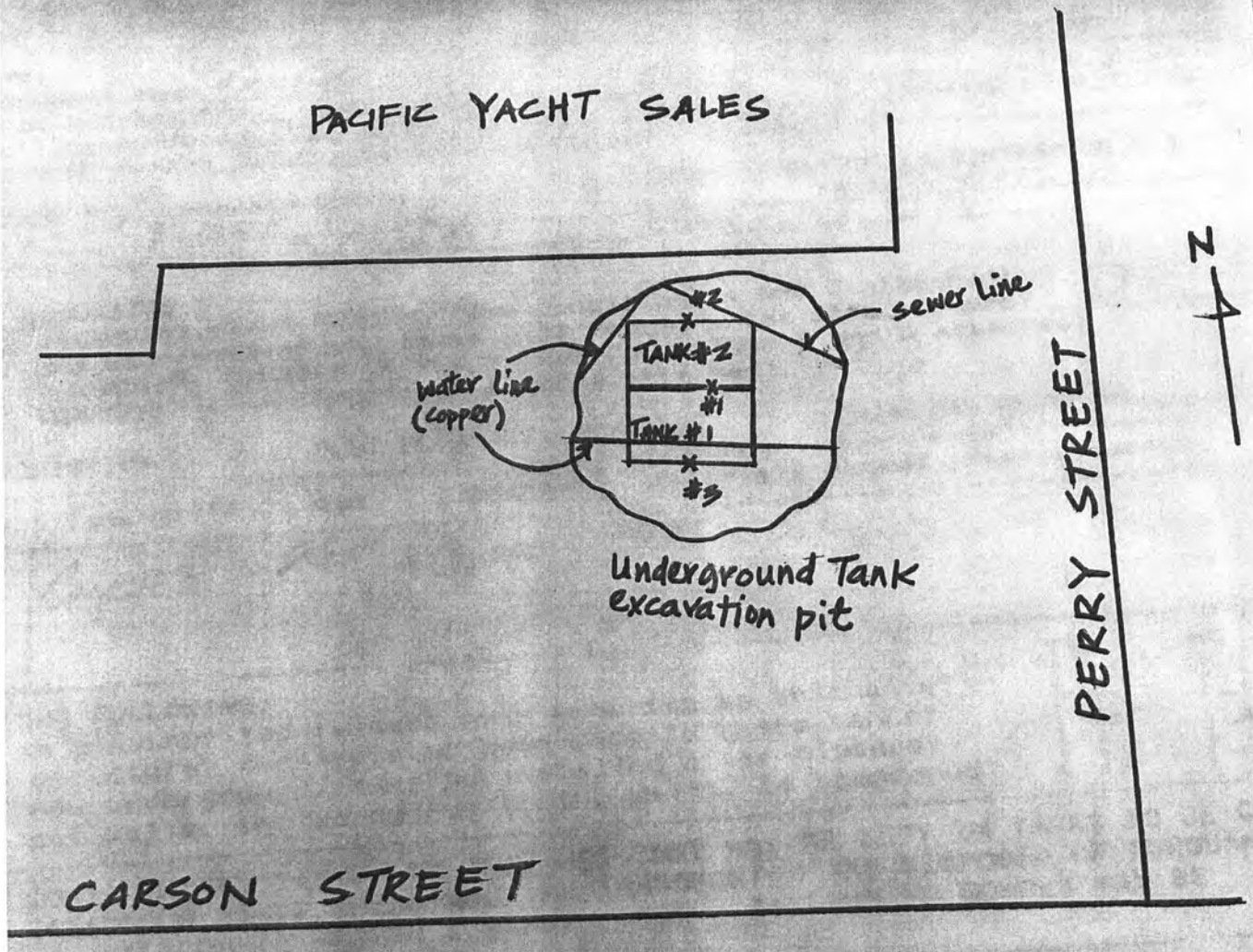
Number	Gallonage	Type	Content	Holes
TWO	1500	CONCRETE	WASTE OIL	N/A

Closure Number: 6979 B Charges: ONE INSPECTION, TWO

Remarks. (See Attached Sheet for Report)

Soil Samples taken by:
LAW ENVIRONMENTAL, INC.
3320 N. SAN FERNANDO BLVD
BURBANK, CA. 91504
(818) 840-0214
Project Environmental Engineer — Linda S. Hollings

70 0001-15-CE 868270



NOT DRAWN TO SCALE

Pacific Yacht
21611 Perry Street
Carson, CA. 90745
I-5839-22

...MANAGEMENT DIVISION
900 S. FREMONT AVENUE
ALHAMBRA, CALIFORNIA 91803-1331

5/4/90 12:00 Arrived 11:55AM

File 5839 R/C 22
Fee $ 14
Check [X] Cash [ ]

OWNER: Name PACIFIC YACHT Phone 830-1570
Mailing Address 21611 PERRY ST City CARSON State CA Zip 907

FACILITY:
Occupant Name PACIFIC YACHT Phone 830-1570
Site Address 21611 PERRY ST City CARSON Zip 90
Mailing Address 21611 PERRY ST City CARSON State CA Zip 90
Contact Person RICK GOALE Title SUPERVISOR

CONTRACTOR [✓], complete below: OWNER/OPERATOR AS CONTRACTOR [ ]
Name MOINE BROS Phone 830-1570
State License No. 343466 Class C-61 D40

CLOSURE REQUESTED:
[✓] PERMANENT, TANK REMOVAL (See Conditions A and C Attached)
How many underground tanks will remain after this closure? -0-
[ ] PERMANENT, CLOSURE IN PLACE (See Conditions A and D Attached)
[ ] TEMPORARY (See Conditions A and B Attached)

TANK DESCRIPTION: PLOT PLAN ATTACHED [✓] EXISTING HMUSP NO.

Tank No.	Tank Mat'l	Age	Capacity	Materials Stored (Past/Present)
1	CONCRETE	20+	3,000	WASTE OIL

COMPLETE THE FOLLOWING:

	YES
Has an unauthorized release ever occurred at this site?	[ ]
Have structural repairs ever been made to these tanks?	[ ]
Will new underground tanks be installed after closure?	[ ]
Will any wells, including monitoring wells, be abandoned?	[ ]

NOTICE: CONTAMINATED TANKS AND RESIDUES THAT MAY BE LEFT IN TANKS TO MAY BE A HAZARDOUS WASTE WHICH MUST BE TRANSPORTED AND DISPOSED OF PUR CHAPTER 6.5, CALIFORNIA HEALTH & SAFETY CODE. FAILURE TO COMPLY MAY B PROSECUTED AS A FELONY VIOLATION.

By signature below the applicant certifies that all statements an disclosures above are true and correct and that they have read an to abide by this permit and all conditions and limitations attach

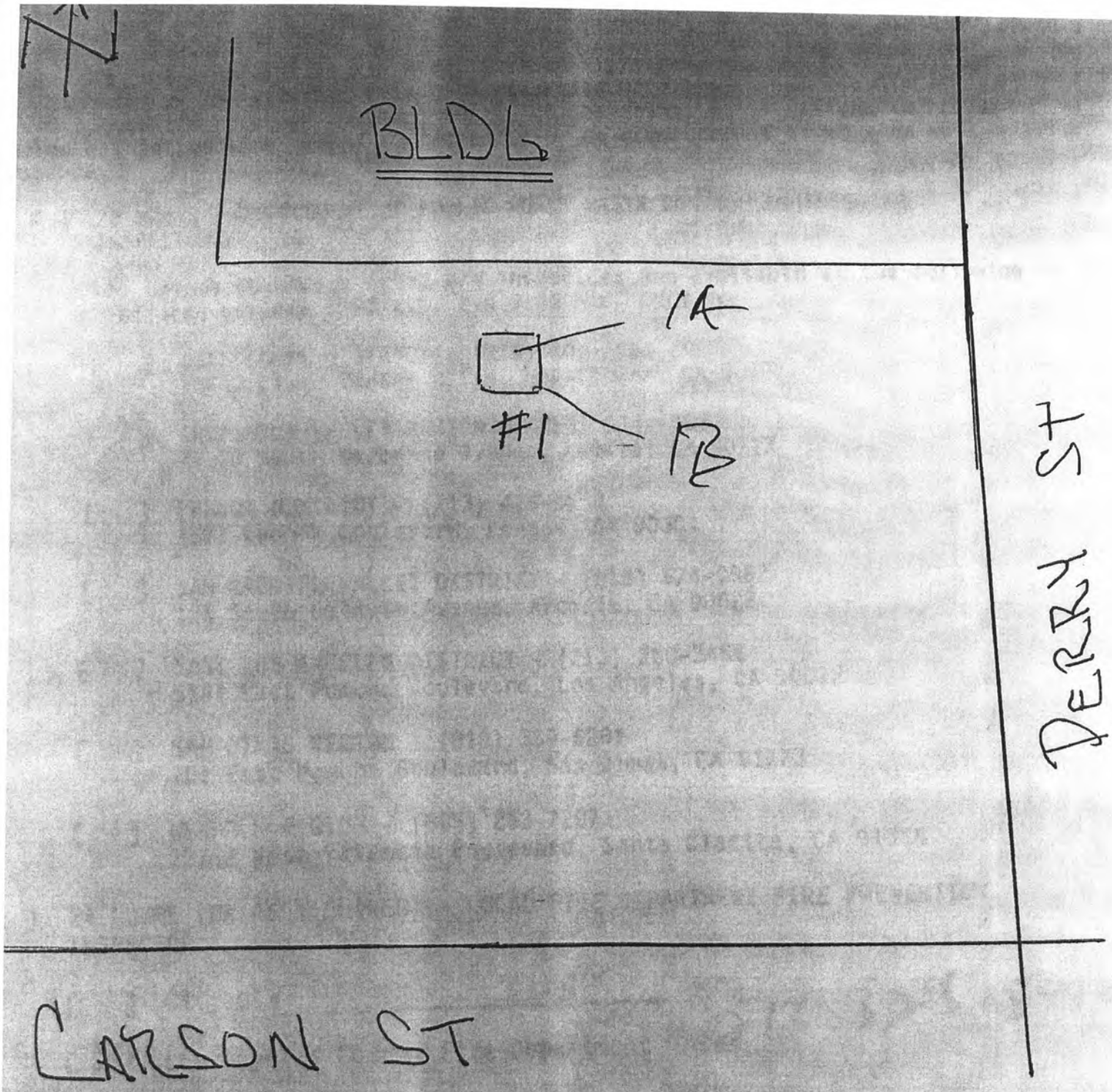
Applicant's Signature _____ Date 4-
(Print Name) CHARLES MOINE Phone 83
Owner [ ] Operator [ ] Contractor [ ]

TO BE COMPLETED BY THE DEPARTMENT OF PUBLIC WORKS

PURSUANT TO SECTION 11.80.070B, LOS ANGELES COUNTY CODE, PERMISSION GRANTED TO PROCEED WITH THE CLOSURE DESCRIBED ABOVE SUBJECT TO THE CONDITIONS AND LIMITATIONS [X]. THIS PERMIT EXPIRES 180 DAYS FROM BELOW.

T.A. TIDEMANSON
Director of Public Works

By _____ Date 4-30-90


N
BLDG
1A
#1
1B
PERRY ST
CARSON ST

SITE

UNDERGROUND STORAGE TANK PROGRAM
FACILITY/SITE, INFORMATION and/or PERMIT APPLICATION
COMPLETE THIS FORM FOR EACH FACILITY/SITE

MARK ONLY ONE ITEM: ☐ 1 NEW PERMIT ☐ 2 INTERIM PERMIT ☐ 3 RENEWAL PERMIT ☐ 4 AMENDED PERMIT ☐ 5 CHANGE OF INFORMATION ☐ 6 TEMPORARY SITE CLOSURE ☑ 7 PERMANENTLY CLOSED SITE

I. FACILITY/SITE INFORMATION & ADDRESS — (MUST BE COMPLETED)

FACILITY/SITE NAME: PACIFIC YACHT
ADDRESS: 21611 PERRY ST
CITY NAME: CARSON
TYPE OF BUSINESS: ☐ 1 GAS STATION ☐ 2 DISTRIBUTOR ☐ 3 FARM ☐ 4 PROCESSOR ☑ 5 OTHER
☐ BOX IF INDIAN RESERVATION or TRUST LANDS

CARE OF ADDRESS INFORMATION: PACIFIC YACHT
NEAREST CROSS STREET: CARSON
☑ BOX TO INDICATE OWNERSHIP: ☑ CORPORATION ☐ INDIVIDUAL ☐ PARTNERSHIP ☐ LOCAL AGENCY ☐ COUNTY AGENCY ☐ STATE AGENCY ☐ FEDERAL AGENCY
STATE: CA | ZIP CODE: 90745 | SITE PHONE # WITH AREA CODE: 830-1570
EPA ID #: Unknown | # of TANKS AT THIS SITE: 1

EMERGENCY CONTACT PERSON (PRIMARY)
DAYS NAME (LAST, FIRST): RICH GABLE PHONE # WITH AREA CODE: (213) 830-1570
NIGHTS NAME (LAST, FIRST): SAME PHONE # WITH AREA CODE:

EMERGENCY CONTACT PERSON (SECONDARY)
DAYS NAME (LAST, FIRST): RICH GABLE PHONE # WITH AREA CODE: (213) 830-1570
NIGHTS NAME (LAST, FIRST): SAME PHONE # WITH AREA CODE:

II. PROPERTY OWNER INFORMATION & ADDRESS — (MUST BE COMPLETED)

NAME: PACIFIC YACHT
MAILING or STREET ADDRESS: 21611 PERRY ST
CITY NAME: CARSON

CARE OF ADDRESS INFORMATION: PACIFIC YACHT
☑ BOX TO INDICATE: ☐ CORPORATION ☐ INDIVIDUAL ☐ PARTNERSHIP ☐ LOCAL AGENCY ☐ COUNTY AGENCY ☐ STATE AGENCY ☐ FEDERAL AGENCY
STATE: CA | ZIP CODE: 90745 | PHONE # WITH AREA CODE: (213) 830-1570

III. TANK OWNER INFORMATION & ADDRESS — (MUST BE COMPLETED)

NAME: SAME AS ABOVE
MAILING or STREET ADDRESS:
CITY NAME:

CARE OF ADDRESS INFORMATION:
☑ BOX TO INDICATE: ☐ CORPORATION ☐ INDIVIDUAL ☐ PARTNERSHIP ☐ LOCAL AGENCY ☐ COUNTY AGENCY ☐ STATE AGENCY ☐ FEDERAL AGENCY
STATE: | ZIP CODE: | PHONE # WITH AREA CODE:

IV. LEGAL NOTIFICATION AND BILLING ADDRESS

CHECK ONE (1) BOX INDICATING WHICH ABOVE ADDRESS SHOULD BE USED FOR BOTH LEGAL NOTIFICATION AND BILLING: I. ☐ II. ☒ III. ☐

THIS FORM HAS BEEN COMPLETED UNDER PENALTY OF PERJURY, AND TO THE BEST OF MY KNOWLEDGE, IS TRUE AND CORRECT.

APPLICANT'S NAME (PRINTED & SIGNATURE): JAY BONGIOVANNI
DATE: 4-30-90

LOCAL AGENCY USE ONLY

COUNTY #	JURISDICTION #	AGENCY #	FACILITY ID #	# of TANKS at SITE
19	000	001	0005039	000

CURRENT LOCAL AGENCY FACILITY ID #:
APPROVED BY NAME:
PHONE # WITH AREA CODE:

PERMIT NUMBER: TEMP
PERMIT APPROVAL DATE:
PERMIT EXPIRATION DATE:

LOCATION CODE: 22
CENSUS TRACT #:
SUPERVISOR-DISTRICT CODE:
BUSINESS PLAN FILED: YES ☐ NO ☐
DATE FILED:

CHECK #:
PERMIT AMOUNT:
SURCHARGE AMOUNT:
FEE CODE:
RECEIPT #:
BY: J

THIS FORM MUST BE ACCOMPANIED BY AT LEAST (1) OR MORE TANK PERMIT **FORM 'B'** APPLICATION(S), UNLESS THIS IS A CHANGE OF SITE INFORM.

A (3-2-88)

DATA PROCESSING COPY

TANK APPLICATION INFORMATION

COMPLETE A SEPARATE FORM WITH THE FOLLOWING INFORMATION FOR EACH TANK.

No. 58972

MARK ONLY ONE ITEM: 1 NEW PERMIT; 2 INTERIM PERMIT; 3 RENEWAL PERMIT; 4 AMENDED PERMIT; 5 CHANGE OF INFORMATION; 6 TEMPORARY TANK CLOSURE; 7 PERMANENTLY CLOSED TANK; [8] TANK REMOVED

FACILITY/SITE NAME WHERE TANK IS INSTALLED: 2161 PERRY ST CARSON FARM TANK - YES ☐ NO [X]

I. TANK DESCRIPTION COMPLETE ALL ITEMS - IF UNKNOWN — SO SPECIFY

A. OWNERS TANK ID # #1	B. MANUFACTURED BY: N/A
C. YEAR INSTALLED N/A	D. TANK CAPACITY IN GALLONS: 3,000

II. TANK CONTENTS IF (A.1), IS MARKED, COMPLETE ITEM C. IF (A.1), IS NOT MARKED, COMPLETE ITEM D.

A. [X] 1 MOTOR VEHICLE FUEL; ☐ 2 PETROLEUM; ☐ 3 CHEMICAL PRODUCT; [X] 4 OIL; ☐ 5 HAZARDOUS; ☐ 80 EMPTY; ☐ 95 UNKNOWN

B. ☐ 1 PRODUCT; [X] 2 WASTE

C. ☐ 1 UNLEADED; ☐ 2 LEADED; [X] 3 DIESEL; ☐ 4 GASAHOL; ☐ 5 JET FUEL; ☐ 6 AVIATION GAS; ☐ 7 METHANOL; ☐ 99 OTHER (DESCRIBE IN ITEM D, BELOW)

D. IF NOT MOTOR VEHICLE FUEL, ENTER NAME OF HAZARDOUS SUBSTANCE STORED & C.A.S. # C.A.S. #:

III. TANK CONSTRUCTION MARK ONE ITEM ONLY IN BOX A, B, C, & D

A. TYPE OF SYSTEM	☐ 1 DOUBLE WALLED; ☐ 2 SINGLE WALLED	☐ 3 SINGLE WALLED WITH EXTERIOR LINER; ☐ 4 SECONDARY CONTAINMENT	[X] 95 UNKNOWN	☐ 99 OTHER
B. TANK MATERIAL	☐ 1 STEEL/IRON; ☐ 5 CONCRETE; ☐ 9 BRONZE	☐ 2 STAINLESS STEEL; ☐ 6 POLYVINYL CHLORIDE; ☐ 10 GALVANIZED STEEL	☐ 3 FIBERGLASS; ☐ 7 ALUMINUM; [X] 95 UNKNOWN	☐ 4 STEEL CLAD W/FIBERGLASS REINFORCED PLASTIC; ☐ 8 100% METHANOL COMPATIBLE FRP; ☐ 99 OTHER
C. INTERIOR LINING	☐ 1 RUBBER LINED; ☐ 5 GLASS LINING; ☐ IS LINING MATERIAL COMPATIBLE WITH 100% METHANOL?	☐ 2 ALKYD LINING; ☐ 6 UNLINED; ☐ YES ☐ NO	☐ 3 EPOXY LINING; [X] 95 UNKNOWN	☐ 4 PHENOLIC LINING; ☐ 99 OTHER
D. CORROSION PROTECTION	☐ 1 POLYETHLENE WRAP; ☐ 5 CATHODIC PROTECTION	☐ 2 TAR OR ASPHALT; ☐ 91 NONE	☐ 3 VINYL WRAP; [X] 95 UNKNOWN	☐ 4 FIBERGLASS REINFORCED PLASTIC; ☐ 99 OTHER

IV. PIPING INFORMATION CIRCLE A IF ABOVE GROUND, U IF UNDERGROUND, BOTH IF APPLICABLE

A. SYSTEM TYPE	A U 1 SUCTION	A U 2 PRESSURE	A U 3 GRAVITY	A U 91 NONE	A U 95 UNKNOWN A U 99 OTHER
B. CONSTRUCTION	A U 1 SINGLE WALLED	A U 2 DOUBLE WALLED	A U 3 LINED TRENCH	A U 91 NONE	A U 95 UNKNOWN A U 99 OTHER
C. MATERIAL	A U 1 STEEL/IRON; A U 5 ALUMINUM; A U 9 GALVANIZED STEEL	A U 2 STAINLESS STEEL; A U 6 CONCRETE; A U 95 UNKNOWN	A U 3 POLYVINYL CHLORIDE (PVC); A U 7 STEEL CLAD W/FRP; A U 99 OTHER	A U 4 FIBERGLASS PIPE; A U 8 100% METHANOL COMPATIBLE FRP	A U 91 NONE

V. LEAK DETECTION SYSTEM CIRCLE P FOR PRIMARY, OR S FOR SECONDARY. A PRIMARY LEAK DETECTION SYSTEM MUST BE CIRCLED.

P S 1 VISUAL CHECK; P S 2 INVENTORY RECONCILIATION; P S 3 VADOSE WELLS; P S 4 ELECTRONIC MONITOR; P S 5 GROUND WATER MONITORING WELLS; P S 6 PRECISION TESTING; P S 7 PRESSURE TESTING; P S 91 NONE; P S 95 UNKNOWN; P S 99 OTHER

VI. INFORMATION ON TANK PERMANENTLY CLOSED IN PLACE

1. ESTIMATED DATE LAST USED (MO/YR)	2. ESTIMATED QUANTITY OF SUBSTANCE REMAINING IN GALLONS	3. WAS TANK FILLED WITH INERT MATERIAL? ☐ YES ☐ NO

THIS FORM HAS been COMPLETED UNDER PENALTY OF PERJURY, AND TO THE BEST OF MY KNOWLEDGE, IS TRUE AND CORRECT.

APPLICANT'S NAME (PRINTED & SIGNATURE)	DATE
JAY BONGIOVANNI	4-30-90

LOCAL AGENCY USE ONLY

COUNTY #	JURISDICTION #	AGENCY #	FACILITY ID #	TANK ID #
19	000	001	0058399	0001

CURRENT LOCAL AGENCY FACILITY ID #	APPROVED BY NAME	PHONE # WITH AREA CODE

PERMIT NUMBER	PERMIT APPROVAL DATE	PERMIT EXPIRATION DATE
6979B	4-30-90	

CHECK #	PERMIT AMOUNT	SURCHARGE AMT.	FEE CODE	RECEIPT #	BY: JOA

FORM B (6-29-88) THIS FORM MUST BE ACCOMPANIED BY A FACILITY/SITE APPLICATION, FORM 'A', UNLESS A CURRENT FORM 'A' HAS BEEN FILED

DATA PROCESSING COPY

HAZARDOUS MATERIALS UNDERGROUND STORAGE
COUNTY OF LOS ANGELES-DEPARTMENT OF PUBLIC WORKS
WASTE MANAGEMENT DIVISION
900 S. FREMONT AVENUE
ALHAMBRA, CALIFORNIA 91803-1331

Permit 6979 B
File 5839 R/C 22
Fee $ 14
Check [X] Cash [ ]

OWNER: Name PACIFIC YACHT Phone 830-1570
Mailing Address 21611 PERRY ST City CARSON State CA Zip 90745

FACILITY:
Occupant Name PACIFIC YACHT Phone 830-1570
Site Address 21611 PERRY ST City CARSON Zip 90745
Mailing Address 21611 PERRY ST City CARSON State CA Zip 90745
Contact Person RICK GOAGE Title SUPERVISOR

CONTRACTOR [V], complete below: OWNER/OPERATOR AS CONTRACTOR [ ]
Name MOINE BROS Phone 830-1570
State License No. 343466 Class C-61 D40

CLOSURE REQUESTED:
[V] PERMANENT, TANK REMOVAL (See Conditions A and C Attached)
How many underground tanks will remain after this closure? -0-
[ ] PERMANENT, CLOSURE IN PLACE (See Conditions A and D Attached)
[ ] TEMPORARY (See Conditions A and B Attached)

TANK DESCRIPTION: PLOT PLAN ATTACHED [V] EXISTING HMUSP NO.

Tank No.	Tank Mat'l	Age	Capacity	Materials Stored (Past/Present)
1	CONCRETE	20+	3,000	WASTE OIL

COMPLETE THE FOLLOWING:

	YES	NO
Has an unauthorized release ever occurred at this site?	[ ]	[V]
Have structural repairs ever been made to these tanks?	[ ]	[V]
Will new underground tanks be installed after closure?	[ ]	[V]
Will any wells, including monitoring wells, be abandoned?	[ ]	[V]

NOTICE: CONTAMINATED TANKS AND RESIDUES THAT MAY BE LEFT IN TANKS TO BE CL
MAY BE A HAZARDOUS WASTE WHICH MUST BE TRANSPORTED AND DISPOSED OF PURSUANT
CHAPTER 6.5, CALIFORNIA HEALTH & SAFETY CODE. FAILURE TO COMPLY MAY BE
PROSECUTED AS A FELONY VIOLATION.

By signature below the applicant certifies that all statements and disclosures above are true and correct and that they have read and agr to abide by this permit and all conditions and limitations attached.

Applicant's Signature _____ Date 4-30-
(Print Name) CHARLES MOINE Phone 830-15
Owner [ ] Operator [ ] Contractor [ ]

TO BE COMPLETED BY THE DEPARTMENT OF PUBLIC WORKS

PURSUANT TO SECTION 11.80.070B, LOS ANGELES COUNTY CODE, PERMISSION IS GRANTED TO PROCEED WITH THE CLOSURE DESCRIBED ABOVE SUBJECT TO THE ATT CONDITIONS AND LIMITATIONS [X]. THIS PERMIT EXPIRES 180 DAYS FROM THE BELOW.

T.A. TIDEMANSON
Director of Public Works

By _____ Date 4-30-90

5772

OWNER/OPERATOR UNDERGROUND STORAGE TANK PROGRAM
FACILITY/SITE INFORMATION and/or PERMIT APPLICATION
COMPLETE THIS FORM FOR EACH FACILITY/SITE

MARK ONLY ONE ITEM: ☐ 1 NEW PERMIT ☐ 2 INTERIM PERMIT ☐ 3 RENEWAL PERMIT ☐ 4 AMENDED PERMIT ☐ 5 CHANGE OF INFORMATION ☐ 6 TEMPORARY SITE CLOSURE ☐ PERMANENTLY CLOSED SITE

I. FACILITY/SITE INFORMATION & ADDRESS — (MUST BE COMPLETED)

FACILITY/SITE NAME: PACIFIC YACHT	CARE OF ADDRESS INFORMATION: PACIFIC YACHT
ADDRESS: 21611 PERRY ST	NEAREST CROSS STREET: CARSON ☑ CORPORATION ☐ INDIVIDUAL ☐ PARTNERSHIP ☐ LOCAL AGENCY ☐ COUNTY AGENCY ☐ STATE AGENCY ☐ FEDERAL AGENCY
CITY NAME: CARSON	STATE: CA ZIP CODE: 90745 SITE PHONE # WITH AREA CODE: 830-1570
TYPE OF BUSINESS: ☐ 1 GAS STATION ☐ 2 DISTRIBUTOR ☐ 3 FARM ☐ 4 PROCESSOR ☑ 5 OTHER ☐ BOX IF INDIAN RESERVATION or TRUST LANDS	EPA ID #: Unknown # of TANK's AT THIS SITE: 1
EMERGENCY CONTACT PERSON (PRIMARY)	EMERGENCY CONTACT PERSON (SECONDARY)
DAYS NAME (LAST, FIRST): RICH GABLE PHONE # WITH AREA CODE: (213) 830-1570	DAYS NAME (LAST, FIRST): RICH GABLE PHONE # WITH AREA CODE: (213) 830-1570
NIGHTS NAME (LAST, FIRST): SAME PHONE # WITH AREA CODE:	NIGHTS NAME (LAST, FIRST): SAME PHONE # WITH AREA CODE:

II. PROPERTY OWNER INFORMATION & ADDRESS — (MUST BE COMPLETED)

NAME: PACIFIC YACHT	CARE OF ADDRESS INFORMATION: PACIFIC YACHT
MAILING or STREET ADDRESS: 21611 PERRY ST	✓ Box to indicate ☐ CORPORATION ☐ INDIVIDUAL ☐ PARTNERSHIP ☐ LOCAL AGENCY ☐ COUNTY AGENCY ☐ STATE AGENCY ☐ FEDERAL AGENCY
CITY NAME: CARSON	STATE: CA ZIP CODE: 90745 PHONE # WITH AREA CODE: (213) 830-1570

III. TANK OWNER INFORMATION & ADDRESS — (MUST BE COMPLETED)

NAME: SAME AS ABOVE	CARE OF ADDRESS INFORMATION:
MAILING or STREET ADDRESS:	✓ Box to indicate ☐ CORPORATION ☐ INDIVIDUAL ☐ PARTNERSHIP ☐ LOCAL AGENCY ☐ COUNTY AGENCY ☐ STATE AGENCY ☐ FEDERAL AGENCY
CITY NAME:	STATE: ZIP CODE: PHONE # WITH AREA CODE:

IV. LEGAL NOTIFICATION AND BILLING ADDRESS

CHECK ONE (1) BOX INDICATING WHICH ABOVE ADDRESS SHOULD BE USED FOR BOTH LEGAL NOTIFICATION AND BILLING: I. ☐ II. ☒ III. ☐

THIS FORM HAS BEEN COMPLETED UNDER PENALTY OF PERJURY, AND TO THE BEST OF MY KNOWLEDGE, IS TRUE AND CORRECT.

APPLICANT'S NAME (PRINTED & SIGNATURE): JAY BONAVENTURA DATE: 4-30-90

LOCAL AGENCY USE ONLY

COUNTY #	JURISDICTION #	AGENCY #	FACILITY ID #	# of TANKS at SITE
19	000	001	0005839	0006

CURRENT LOCAL AGENCY FACILITY ID #: APPROVED BY NAME: PHONE # WITH AREA CODE:

PERMIT NUMBER: TEMP	PERMIT APPROVAL DATE:	PERMIT EXPIRATION DATE:		
LOCATION CODE: 22	CENSUS TRACT #	SUPERVISOR-DISTRICT CODE	BUSINESS PLAN FILED ☐ YES ☐ NO	DATE FILED
CHECK #	PERMIT AMOUNT	SURCHARGE AMOUNT	FEE CODE	RECEIPT # / BY: JO7

THIS FORM MUST BE ACCOMPANIED BY AT LEAST (1) OR MORE TANK PERMIT FORM 'B' APPLICATION(S), UNLESS THIS IS A CHANGE OF SITE INFORMATION

FORM A (3-7-88)

DATA PROCESSING COPY

ONE ITEM | 2 INTERIM PERMIT | 3 AMENDED PERMIT | 4 TEMPORARILY OUT OF USE/CONSUMPTION | 5 TEMPORARILY TANK GLOBULE | 6 PERMANENTLY OUT OF USE/CONSUMPTION

FACILITY/SITE NAME WHERE TANK IS INSTALLED: 2611 PERRY ST CARSON | FARM TANK - YES ☐ NO ☐

I. TANK DESCRIPTION COMPLETE ALL ITEMS - IF UNKNOWN — SO SPECIFY

A. OWNERS TANK ID # #1	B. MANUFACTURED BY: N/A
C. YEAR INSTALLED N/A	D. TANK CAPACITY IN GALLONS: 3,000

II. TANK CONTENTS IF (A.1), IS MARKED, COMPLETE ITEM C. IF (A.1), IS NOT MARKED, COMPLETE ITEM D.

A. ☒ 1 MOTOR VEHICLE FUEL ☐ 2 PETROLEUM ☐ 3 CHEMICAL PRODUCT ☒ 4 OIL ☐ 5 HAZARDOUS ☐ 80 EMPTY ☐ 95 UNKNOWN

B. ☐ 1 PRODUCT ☒ 2 WASTE

C. ☐ 1 UNLEADED ☐ 2 LEADED ☒ 2 DIESEL ☐ 4 GASAHOL ☐ 5 JET FUEL ☐ 6 AVIATION GAS ☐ 7 METHANOL ☐ 99 OTHER (DESCRIBE IN ITEM D, BELOW)

D. IF NOT MOTOR VEHICLE FUEL, ENTER NAME OF HAZARDOUS SUBSTANCE STORED & C.A.S. # C.A.S. #:

III. TANK CONSTRUCTION MARK ONE ITEM ONLY IN BOX A, B, C, & D

A. TYPE OF SYSTEM
☐ 1 DOUBLE WALLED ☐ 2 SINGLE WALLED ☐ 3 SINGLE WALLED WITH EXTERIOR LINER ☐ 4 SECONDARY CONTAINMENT ☒ 95 UNKNOWN ☐ 99 OTHER

B. TANK MATERIAL
☐ 1 STEEL/IRON ☐ 2 STAINLESS STEEL ☐ 3 FIBERGLASS ☐ 4 STEEL CLAD W/FIBERGLASS REINFORCED PLASTIC ☐ 5 CONCRETE ☐ 6 POLYVINYL CHLORIDE ☐ 7 ALUMINUM ☐ 8 100% METHANOL COMPATIBLE FRP ☐ 9 BRONZE ☐ 10 GALVANIZED STEEL ☒ 95 UNKNOWN ☐ 99 OTHER

C. INTERIOR LINING
☐ 1 RUBBER LINED ☐ 2 ALKYD LINING ☐ 3 EPOXY LINING ☐ 4 PHENOLIC LINING ☐ 5 GLASS LINING ☐ 6 UNLINED ☒ 95 UNKNOWN ☐ IS LINING MATERIAL COMPATIBLE WITH 100% METHANOL? ☐ YES ☐ NO ☐ 99 OTHER

D. CORROSION PROTECTION
☐ 1 POLYETHLENE WRAP ☐ 2 TAR OR ASPHALT ☐ 3 VINYL WRAP ☐ 4 FIBERGLASS REINFORCED PLASTIC ☐ 5 CATHODIC PROTECTION ☐ 91 NONE ☒ 95 UNKNOWN ☐ 99 OTHER

IV. PIPING INFORMATION CIRCLE A IF ABOVE GROUND, U IF UNDERGROUND, BOTH IF APPLICABLE

A. SYSTEM TYPE	A	U	1 SUCTION	A	U	2 PRESSURE	A	U	3 GRAVITY	A	U	91 NONE	A	U	95 UNKNOWN	A	U	99
B. CONSTRUCTION	A	U	1 SINGLE WALLED	A	U	2 DOUBLE WALLED	A	U	3 LINED TRENCH	A	U	91 NONE	A	U	95 UNKNOWN	A	U	99
C. MATERIAL	A	U	1 STEEL/IRON	A	U	2 STAINLESS STEEL	A	U	3 POLYVINYL CHLORIDE (PVC)	A	U	4 FIBERGLASS PIPE	A	U	91 N			
	A	U	5 ALUMINUM	A	U	6 CONCRETE	A	U	7 STEEL CLAD W/FRP	A	U	8 100% METHANOL COMPATIBLE FR						
	A	U	9 GALVANIZED STEEL	A	U	95 UNKNOWN	A	U	99 OTHER									

V. LEAK DETECTION SYSTEM CIRCLE P FOR PRIMARY, OR S FOR SECONDARY, A PRIMARY LEAK DETECTION SYSTEM MUST BE CIR

P	S	1 VISUAL CHECK	P	S	2 INVENTORY RECONCILIATION	P	S	3 VADOSE WELLS	P S 4 ELECTRONIC MONITOR	P S 5 GROUND WATER MONITORIN
P	S	6 PRECISION TESTING	P	S	7 PRESSURE TESTING	P	S	91 NONE	P S 95 UNKNOWN	P S 99 OTHER

VI. INFORMATION ON TANK PERMANENTLY CLOSED IN PLACE

1. ESTIMATED DATE LAST USED (MO/YR)	2. ESTIMATED QUANTITY OF SUBSTANCE REMAINING IN GALLONS	3. WAS TANK FILLED WITH INERT MATERIAL? ☐ YES

THIS FORM HAS BEEN COMPLETED UNDER PENALTY OF PERJURY, AND TO THE BEST OF MY KNOWLEDGE, IS TRUE AND CORR

APPLICANT'S NAME (PRINTED & SIGNATURE)	DATE
JAY BONGIOVANNI	4-30-90

LOCAL AGENCY USE ONLY

COUNTY #	JURISDICTION #	AGENCY #	FACILITY ID #	TANK ID #
19	000	001	0058399	000

CURRENT LOCAL AGENCY FACILITY ID #	APPROVED BY NAME	PHONE # WITH AREA CO

PERMIT NUMBER	PERMIT APPROVAL DATE	PERMIT EXPIRATION DATE
6979B	4-30-90	

CHECK #	PERMIT AMOUNT	SURCHARGE AMT.	FEE CODE	RECEIPT #	BY:
					J

FORM B (6-29-88) THIS FORM MUST BE ACCOMPANIED BY A FACILITY/SITE APPLICATION, **FORM 'A'**, UNLESS A CURRENT FORM 'A' HAS BEEN FILED

DATA PROCESSING COPY

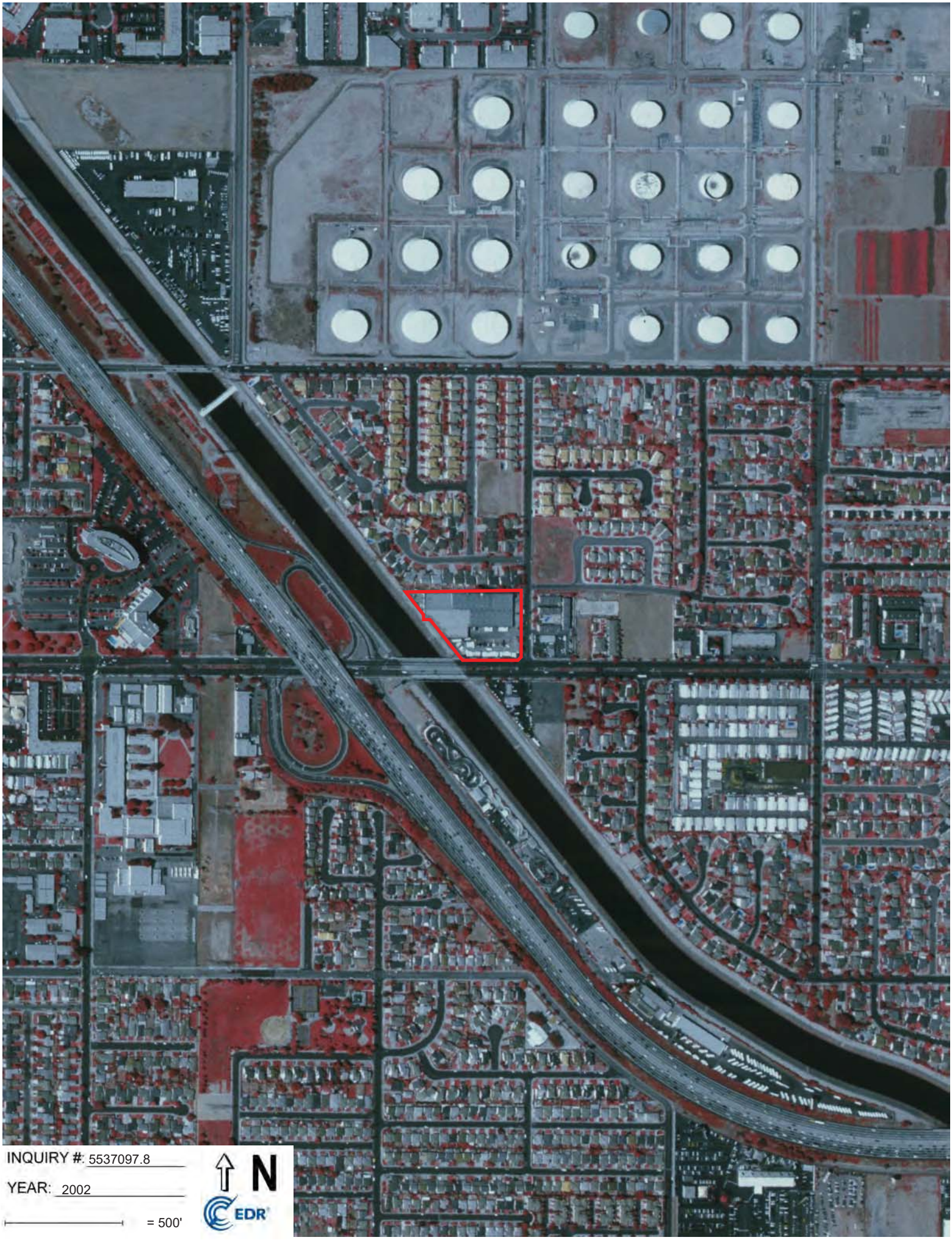
APPENDIX J
HISTORICAL RESOURCES


INQUIRY #: 5537097.8
YEAR: 2016
= 500'
N
EDR

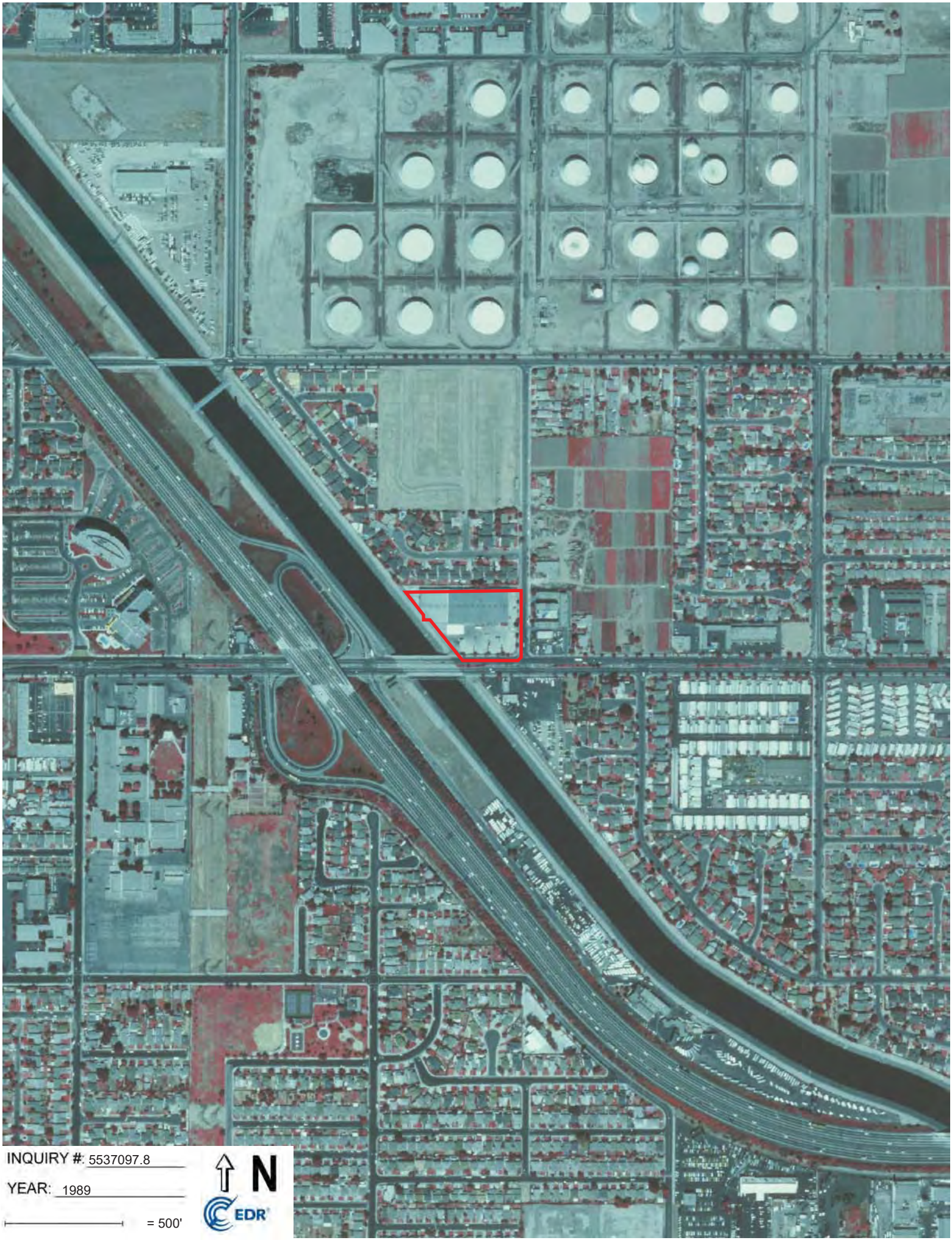

INQUIRY #: 5537097.8
YEAR: 2012
= 500'
N
EDR


INQUIRY #: 5537097.8
YEAR: 2009
= 500'
N
EDR


INQUIRY #: 5537097.8
YEAR: 2005
= 500'
N
EDR


INQUIRY #: 5537097.8
YEAR: 2002
= 500'
N
EDR


INQUIRY #: 5537097.8
YEAR: 1994
= 500'
N
EDR


INQUIRY #: 5537097.8
YEAR: 1989
= 500'
N
EDR


INQUIRY #: 5537097.8
YEAR: 1983
= 500'
N
EDR


INQUIRY #: 5537097.8
YEAR: 1977
= 500'
N
EDR

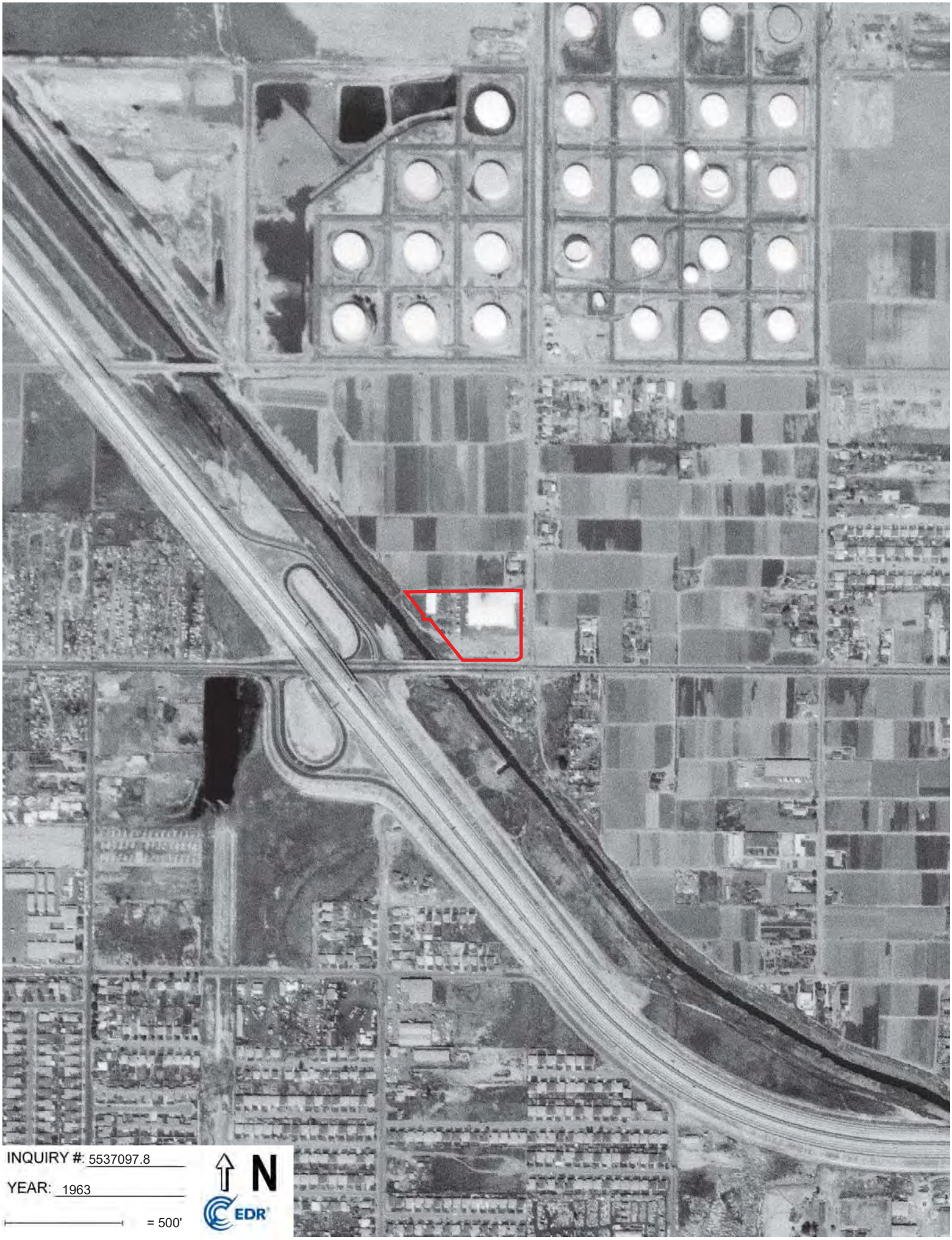
INQUIRY #: 5537097.8

YEAR: 1972

= 500'

N

EDR


INQUIRY #: 5537097.8
YEAR: 1963
= 500'
N
EDR


INQUIRY #: 5537097.8
YEAR: 1952
= 500'
N
EDR


INQUIRY #: 5537097.8
YEAR: 1947
= 500'
N
EDR

INQUIRY #: 5537097.8

YEAR: 1928

= 500'

N

EDR

EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Abstract includes a search and abstract of available city directory data. For each address, the directory lists the name of the corresponding occupant at five year intervals.

Business directories including city, cross reference and telephone directories were reviewed, if available, at approximately five year intervals for the years spanning 1920 through 2014. This report compiles information gathered in this review by geocoding the latitude and longitude of properties identified and gathering information about properties within 660 feet of the target property.

A summary of the information obtained is provided in the text of this report.

RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

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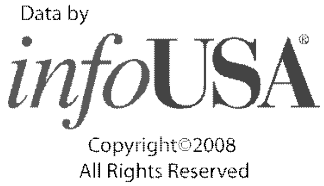

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. An "X" indicates where information was identified in the source and provided in this report.

Year	Source	TP	Adjoining	Text Abstract	Source Image
2014	EDR Digital Archive	-	X	X	-
2010	EDR Digital Archive	-	X	X	-
2006	Haines Company, Inc.	-	X	X	-
	Haines Company, Inc.	X	X	X	-
2004	Haines Company	-	-	-	-
2003	Haines & Company	-	-	-	-
2001	Haines & Company, Inc.	-	X	X	-
2000	Pacific Bell Telephone	-	-	-	-
1999	Haines Company	-	-	-	-
1996	GTE	-	-	-	-
1995	Pacific Bell	-	X	X	-
1992	PACIFIC BELL WHITE PAGES	-	-	-	-

EXECUTIVE SUMMARY

Year	Source	TP	Adjoining	Text Abstract	Source Image
1991	Pacific Bell	-	-	-	-
1990	Pacific Bell	-	X	X	-
1986	Pacific Bell	-	X	X	-
1985	Pacific Bell	-	X	X	-
1981	Pacific Telephone	-	X	X	-
1980	Pacific Telephone	-	X	X	-
1976	Pacific Telephone	-	X	X	-
1975	Pacific Telephone	-	X	X	-
1972	R. L. Polk & Co.	-	-	-	-
1971	R. L. Polk & Co.	-	-	-	-
1970	Pacific Telephone	-	X	X	-
1969	Pacific Telephone	-	-	-	-
1967	R. L. Polk & Co.	-	-	-	-
1966	Pacific Telephone	-	-	-	-
1965	GTE	-	-	-	-
1964	Pacific Telephone	-	X	X	-
1963	Pacific Telephone	-	-	-	-
1962	Pacific Telephone	-	X	X	-
1961	R. L. Polk & Co.	-	-	-	-
1960	Pacific Telephone	-	-	-	-
1958	Pacific Telephone	-	-	-	-
1957	Pacific Telephone	-	X	X	-
1956	Pacific Telephone	-	-	-	-
1955	R. L. Polk & Co.	-	-	-	-
1954	R. L. Polk & Co.	-	X	X	-
1952	Los Angeles Directory Co.	-	-	-	-
1951	Los Angeles Directory Co Publishers	-	-	-	-
1950	Pacific Telephone	-	X	X	-
1949	Los Angeles Directory Co.	-	-	-	-
1948	Los Angeles Directory Co.	-	-	-	-
1947	Pacific Directory Co.	-	-	-	-
1946	Southern California Telephone Co	-	-	-	-
1945	The Glendale Directory Co.	-	-	-	-
1944	R. L. Polk & Co.	-	-	-	-
1942	Los Angeles Directory Co.	-	-	-	-
1940	Los Angeles Directory Co.	-	-	-	-
1939	Los Angeles Directory Co.	-	-	-	-
1938	Los Angeles Directory Company Publishers	-	-	-	-
1937	Los Angeles Directory Co.	-	-	-	-
1936	Los Angeles Directory Co.	-	-	-	-
1935	Los Angeles Directory Co.	-	-	-	-
1934	Los Angeles Directory Co.	-	-	-	-

EXECUTIVE SUMMARY

Year	Source	TP	Adjoining	Text Abstract	Source Image
1933	Los Angeles Directory Co.	-	-	-	-
1932	Los Angeles Directory Co.	-	-	-	-
1931	Los Angeles Directory Company Publishers	-	-	-	-
1930	Los Angeles Directory Co.	-	-	-	-
1929	Los Angeles Directory Co.	-	-	-	-
1928	Los Angeles Directory Co.	-	-	-	-
1927	Los Angeles Directory Co.	-	-	-	-
1926	Los Angeles Directory Co.	-	-	-	-
1925	Los Angeles Directory Co.	-	-	-	-
1924	Los Angeles Directory Co.	-	-	-	-
1923	Los Angeles Directory Co.	-	-	-	-
1921	Los Angeles Directory Co.	-	-	-	-
1920	Los Angeles Directory Co.	-	-	-	-

FINDINGS

TARGET PROPERTY INFORMATION

ADDRESS

21611 S. Perry St.
Carson, CA 90745

FINDINGS DETAIL

Target Property research detail.

S PERRY ST

21611 S PERRY ST

Year	*Uses*	*Source*
2006	CARSON TRAILER	Haines Company, Inc.
	SALES	Haines Company, Inc.

FINDINGS

ADJOINING PROPERTY DETAIL

The following Adjoining Property addresses were researched for this report. Detailed findings are provided for each address.

215TH PL E

1100 215TH PL E

Year	Uses	Source
1995	COMMODORE SIDNEY	Pacific Bell
	COMMODORE SIDNEY	Pacific Bell
1990	COMMODORE SIDNEY	Pacific Bell

1101 215TH PL E

Year	Uses	Source
1990	CONNER NORMAN E	Pacific Bell

1102 215TH PL E

Year	Uses	Source
1995	GREGORIO LESLIE S	Pacific Bell
1990	GREGORIO LESLIE S	Pacific Bell

1104 215TH PL E

Year	Uses	Source
1995	ORTEGA JOHN	Pacific Bell
1990	ORTEGA JOHN	Pacific Bell

1119 215TH PL E

Year	Uses	Source
1995	MC RAE JAS A	Pacific Bell
1990	MC RAE JAS A	Pacific Bell

1126 215TH PL E

Year	Uses	Source
1990	RICE GLENN C	Pacific Bell

1156 215TH PL E

Year	Uses	Source
1990	LACERENZA DAN	Pacific Bell

FINDINGS

216TH E

1302 216TH E

Year	Uses	Source
1995	NEGLEY NEIL L	Pacific Bell
1990	NEGLEY NEIL L	Pacific Bell

ACARUS AVE

21702 ACARUS AVE

Year	Uses	Source
2006	NOVILLAJosefina	Haines Company, Inc.
	GUEVARRA Jody	Haines Company, Inc.
2001	GUEVARRAConrado	Haines & Company, Inc.
1985	CLINE GENE	Pacific Bell
1980	CLINE GENE	Pacific Telephone
1975	CLINE GENE	Pacific Telephone
1970	CLINE GENE	Pacific Telephone

21706 ACARUS AVE

Year	Uses	Source
2006	a SAMPRonal	Haines Company, Inc.
2001	SAMPRonal	Haines & Company, Inc.

21712 ACARUS AVE

Year	Uses	Source
2006	a VABREY Marcus	Haines Company, Inc.
2001	OVABREYMarcus	Haines & Company, Inc.

21718 ACARUS AVE

Year	Uses	Source
2006	LENTZLance	Haines Company, Inc.
2001	L 8 NTZLanc	Haines & Company, Inc.

21719 ACARUS AVE

Year	Uses	Source
2006	ALCALAJuan	Haines Company, Inc.
2001	SALCALAJuan	Haines & Company, Inc.

FINDINGS

21724 ACARUS AVE

Year	Uses	Source
2006	No Current Listing	Haines Company, Inc.
2001	BLUSH Shirley	Haines & Company, Inc.
1995	Sampraict A	Pacific Bell

21728 ACARUS AVE

Year	Uses	Source
2006	TAIRANorman	Haines Company, Inc.
2001	TAIRANorman	Haines & Company, Inc.
1985	TAIRA NORMAN H	Pacific Bell
1970	TAIRA NORMAN H	Pacific Telephone

21734 ACARUS AVE

Year	Uses	Source
2006	a MEZAJesus	Haines Company, Inc.
2001	SMEZAJesus	Haines & Company, Inc.
1995	De Guzman Neliai	Pacific Bell
	DE GUZMAN GENEROSO B	Pacific Bell
	De Guzman Generos B	Pacific Bell
1990	DE GUZMAN GENEROSO B	Pacific Bell
1985	DE GUZMAN NELAI	Pacific Bell
	DE GUZNAN GENEROSO B	Pacific Bell
1980	DE GUZMAN NELIAEL	Pacific Telephone
	DE GUZMAN GENEROSO B	Pacific Telephone
1975	HACK ALAN N	Pacific Telephone
1970	HACK ALAN N	Pacific Telephone

21744 ACARUS AVE

Year	Uses	Source
1970	GUEVARA DAVID	Pacific Telephone

21748 ACARUS AVE

Year	Uses	Source
1970	DUNLAP HARRY G	Pacific Telephone

21749 ACARUS AVE

Year	Uses	Source
1970	EASTON CHAS R	Pacific Telephone

FINDINGS

Alvar Pl

21348 Alvar Pl

Year	Uses	Source
2014	DHANTI INC	EDR Digital Archive
	BHAG INC	EDR Digital Archive

ALVAR PL

21502 ALVAR PL

Year	Uses	Source
2006	No Current Listing	Haines Company, Inc.
2001	VOREISRob OM	Haines & Company, Inc.
1995	VOREIS ROBT M	Pacific Bell
	Voreis Robt M	Pacific Bell
1990	VOREIS ROBT M	Pacific Bell
1985	VOREIS ROBT M	Pacific Bell

Alvar Pl

21503 Alvar Pl

Year	Uses	Source
2014	GCW DISTRIBUTORS	EDR Digital Archive
2010	GCW DISTRIBUTORS	EDR Digital Archive
	WILLIAMS GLENN	EDR Digital Archive

ALVAR PL

21503 ALVAR PL

Year	Uses	Source
2006	GARCIAMaxe G	Haines Company, Inc.
	a WILLIAMS Glenn	Haines Company, Inc.
2001	GARCIAMa 5imia	Haines & Company, Inc.
1995	GUTIERREZ SIMEON	Pacific Bell
1990	TANO ARMANDO	Pacific Bell

21507 ALVAR PL

Year	Uses	Source
2006	SMALDINOVickli	Haines Company, Inc.
2001	SMALOINOVicki	Haines & Company, Inc.
1970	SMALDINO NORMA G	Pacific Telephone

Year	Uses	Source
1970	SMALDINO NORMA	Pacific Telephone

21508 ALVAR PL

Year	Uses	Source
2006	TROULLIER Normr	Haines Company, Inc.
	a RANGEL Chades	Haines Company, Inc.
2001	SRANGELCharles	Haines & Company, Inc.

21515 ALVAR PL

Year	Uses	Source
2006	a HERNANDEZAngel	Haines Company, Inc.
2001	HER 0 ERAAngel	Haines & Company, Inc.
1995	TATLONGHARI MAXIMO	Pacific Bell
	Tatlonghari Maximo	Pacific Bell
1990	TATLONGHARI MAXIMO	Pacific Bell
1985	TATLONGHARI MAXIMO	Pacific Bell

ASHMILL

1236 ASHMILL

Year	Uses	Source
1995	BROADNAX A S	Pacific Bell
	BROADNAX A S	Pacific Bell

1239 ASHMILL

Year	Uses	Source
1981	AUSTIN JOHN RICHARD CARSON	Pacific Telephone

ASHMILL ST

1233 ASHMILL ST

Year	Uses	Source
2006	JACOBUS Carol	Haines Company, Inc.
2001	JACOBUSCarol	Haines & Company, Inc.
1975	JACOBUS E DEAN	Pacific Telephone
1970	MELEKA NABIL F	Pacific Telephone

1236 ASHMILL ST

Year	Uses	Source
2006	o BROADNAXAnnie M	Haines Company, Inc.
2001	BROADNAXAS	Haines & Company, Inc.

FINDINGS

1239 ASHMILL ST

Year	Uses	Source
2006	SMITH Charles D	Haines Company, Inc.
2001	SMITH Charles D	Haines & Company, Inc.
1985	AUSTIN JOHN RICHARD	Pacific Bell
1980	AUSTIN JOHN RICHARD	Pacific Telephone

1243 ASHMILL ST

Year	Uses	Source
2006	IBARRA Angellto	Haines Company, Inc.
2001	t BARRAAngellto	Haines & Company, Inc.
1980	HEILMAN E N	Pacific Telephone

1260 ASHMILL ST

Year	Uses	Source
2006	DOMINGUEZ HILL	Haines Company, Inc.

CARSON E

1135 CARSON E

Year	Uses	Source
1995	MOBIL ARMOR LTD	Pacific Bell
	DISCOUNT VANS & ACCESSORIES	Pacific Bell

1141 CARSON E

Year	Uses	Source
1995	PARKING CONCEPTS INC TRANSPORTATION	Pacific Bell

1152 CARSON E

Year	Uses	Source
1995	AMERICAN CAMPER SHELLS	Pacific Bell

1209 CARSON E

Year	Uses	Source
1995	VINCES AUTOMOTIVE SPECIALTIES	Pacific Bell
1990	VINCES AUTOMOTIVE SPECIALTIES	Pacific Bell

1211 CARSON E

Year	Uses	Source
1995	SINATRA DEVELOPEMENT INC	Pacific Bell
1990	REAR KEEN CAROLE	Pacific Bell

Year	Uses	Source
1990	JOLET EVELYN	Pacific Bell
	GONZALEZ MARCELINO	Pacific Bell

1309 CARSON E

Year	Uses	Source
1995	DILIP PATEL & ASSOCIATES INC	Pacific Bell
1990	VANCE RUDY L II	Pacific Bell
	VANCE RUDY L II	Pacific Bell
	1403 IMPACT	Pacific Bell
	VANCE RUDY L II	Pacific Bell

CLOVERBROOK

1219 CLOVERBROOK

Year	Uses	Source
1990	CAWAGAS FRANCISCO	Pacific Bell

1223 CLOVERBROOK

Year	Uses	Source
1995	BAUTISTA ENRICO	Pacific Bell
1990	BAUTISTA ENRICO	Pacific Bell

1227 CLOVERBROOK

Year	Uses	Source
1995	CALHOUN EVERETT JR	Pacific Bell
1990	CALHOUN EVERETT JR	Pacific Bell
	CALHOUN EVERETT JR CARSON	Pacific Bell
1981	CALHOUN EVERETT R CARSON	Pacific Telephone

1243 CLOVERBROOK

Year	Uses	Source
1995	CAPITLY ROMAN	Pacific Bell
1990	CAPITLY ROMAN	Pacific Bell

CLOVERBROOK ST

1218 CLOVERBROOK ST

Year	Uses	Source
2006	TRULL Joe	Haines Company, Inc.
2001	STRULLloe	Haines & Company, Inc.

FINDINGS

1219 CLOVERBROOK ST

Year	Uses	Source
2006	CANILANGAesopo	Haines Company, Inc.
2001	CAWAGASEvelyn	Haines & Company, Inc.
1985	CAWAGAS FRANCISCO	Pacific Bell
1980	CAWAGAS FRANCISCO	Pacific Telephone

1222 CLOVERBROOK ST

Year	Uses	Source
2006	a RIVIEMano	Haines Company, Inc.
2001	RIVIEMario	Haines & Company, Inc.

1223 CLOVERBROOK ST

Year	Uses	Source
2006	BAUTISTAEnnco	Haines Company, Inc.
2001	BAUTISTAEnnco	Haines & Company, Inc.
1995	Bautista Enrico	Pacific Bell
1985	BAUTISTA ENRICO	Pacific Bell

1226 CLOVERBROOK ST

Year	Uses	Source
2006	MARQUEZ Rolando	Haines Company, Inc.
2001	MARQUEZRolando	Haines & Company, Inc.

1227 CLOVERBROOK ST

Year	Uses	Source
2006	CALHOUN Everelt	Haines Company, Inc.
2001	CALHOUNEverett	Haines & Company, Inc.
1995	Calhoun Everett Jr	Pacific Bell
1985	CALHOUN EVERETT JR	Pacific Bell
1980	CALHOUN EVERETT R	Pacific Telephone
	CALHOUN EVERETT L	Pacific Telephone

1232 CLOVERBROOK ST

Year	Uses	Source
2006	PEARSON Rebecca	Haines Company, Inc.
2001	PEARSON Rebecca	Haines & Company, Inc.
1980	PEARSON JOE	Pacific Telephone
1975	PEARSON JOE	Pacific Telephone
1970	PEARSON JOE	Pacific Telephone

FINDINGS

1233 CLOVERBROOK ST

Year	Uses	Source
2006	o ZUNIGAHugo	Haines Company, Inc.
2001	ZUNIGAHugo	Haines & Company, Inc.

1238 CLOVERBROOK ST

Year	Uses	Source
2006	MARTINEZ Marcelino	Haines Company, Inc.
2001	MARTINEZMarcalino	Haines & Company, Inc.

1239 CLOVERBROOK ST

Year	Uses	Source
2006	CRUTCHFIELD	Haines Company, Inc.
	Robert	Haines Company, Inc.

1242 CLOVERBROOK ST

Year	Uses	Source
2006	o NAJERARaul	Haines Company, Inc.
2001	NAJERAEdn	Haines & Company, Inc.
1980	MARINARO SALVADORE	Pacific Telephone
1975	MARINARO SALVADORE	Pacific Telephone
1970	MARINARO SALVADORE	Pacific Telephone

1243 CLOVERBROOK ST

Year	Uses	Source
2006	o CAPITLYRoman	Haines Company, Inc.
2001	CAPITLYRoman	Haines & Company, Inc.
1995	Capitly Roman	Pacific Bell
1985	CAPITLY ROMAN	Pacific Bell
1975	MAZON INEZ T	Pacific Telephone
1970	MAZON S LANDSCAPING & DESIGNING	Pacific Telephone
	MAZON ARNOLD	Pacific Telephone

E 215TH PL

1100 E 215TH PL

Year	Uses	Source
2006	a CASUPANGEdward	Haines Company, Inc.
2001	COMMODOREK 4rmberly	Haines & Company, Inc.
1995	Commodore Sidney	Pacific Bell
	Commodore Sidney	Pacific Bell

FINDINGS

Year	Uses	Source
1985	COMMODORE SIDNEY	Pacific Bell
1975	COMMODORE SIDNEY	Pacific Telephone
1970	DAVIS R STEVE	Pacific Telephone

1101 E 215TH PL

Year	Uses	Source
2006	BAILEYKalhleen	Haines Company, Inc.
2001	WOODS Kathleen	Haines & Company, Inc.
1995	Conner G	Pacific Bell
1985	CONNER NORMAN E	Pacific Bell

1102 E 215TH PL

Year	Uses	Source
2006	GREGORIOLeslies	Haines Company, Inc.
2001	GREGORIO Leslie S	Haines & Company, Inc.
1995	Gregorio Leslie S	Pacific Bell
1985	BEGANO ROBT	Pacific Bell
1980	BEGANO ROBT	Pacific Telephone
1975	BEGANO ROBT	Pacific Telephone
1970	GREGG FRANK W	Pacific Telephone

1104 E 215TH PL

Year	Uses	Source
2006	SPEARSRoland	Haines Company, Inc.
2001	SPEARSRoland	Haines & Company, Inc.
1995	Ortega John	Pacific Bell
1970	HOLCROFT C D	Pacific Telephone

1107 E 215TH PL

Year	Uses	Source
2006	BETISA	Haines Company, Inc.
	GOMEZ HERNANDE	Haines Company, Inc.
	Rigoberto	Haines Company, Inc.
	HERNANDEZ	Haines Company, Inc.
	Isabel	Haines Company, Inc.
2001	SWEETS Waller	Haines & Company, Inc.
1970	FUETTE ROLAND JR	Pacific Telephone

FINDINGS

1108 E 215TH PL

Year	Uses	Source
2006	a TAYAGRamon	Haines Company, Inc.
2001	TAYA 09amon	Haines & Company, Inc.
1985	SAVOISKES RONALD	Pacific Bell

1111 E 215TH PL

Year	Uses	Source
2006	ESPIQUEOscar	Haines Company, Inc.
2001	OESPIOUEOscar	Haines & Company, Inc.
1970	CRANE JOHN K	Pacific Telephone

1112 E 215TH PL

Year	Uses	Source
2006	JACKSONEvelyn	Haines Company, Inc.
2001	JACKSON Evelyn	Haines & Company, Inc.
1975	DOHERTY JAS J JR	Pacific Telephone
	MARTIN LEWIS W	Pacific Telephone
1970	DOHERTY JAS J JR	Pacific Telephone
	MARTIN LEWIS W	Pacific Telephone

E 215th Pl

1116 E 215th Pl

Year	Uses	Source
2010	EMACULATE MOBILE DETAIL	EDR Digital Archive

E 215TH PL

1116 E 215TH PL

Year	Uses	Source
2001	YOUNG Kenneth	Haines & Company, Inc.
1985	JOHNSON M	Pacific Bell
	JOHNSON M	Pacific Bell
1975	BEARDEN DAVID A	Pacific Telephone
1970	CRONKRITE BETTYE	Pacific Telephone
1950	JOHNSON KEN	Pacific Telephone

1119 E 215TH PL

Year	Uses	Source
2006	MCRAEJames	Haines Company, Inc.

FINDINGS

Year	Uses	Source
2001	0 MCRAEJames	Haines & Company, Inc.
1995	Mc Rae Jas A	Pacific Bell
1985	MCRAE JAS A	Pacific Bell
1980	MCRAE JAS A	Pacific Telephone
1975	MC RAE JAS A	Pacific Telephone
1970	MCRAE JAS A	Pacific Telephone

1122 E 215TH PL

Year	Uses	Source
2001	e BEARDEN David	Haines & Company, Inc.
1985	BEARDEN DAVID A MAJ	Pacific Bell
1980	BEARDEN DAVID A MAJ	Pacific Telephone
1964	RIVAS MARY	Pacific Telephone

1126 E 215TH PL

Year	Uses	Source
2006	BEARDENManlee	Haines Company, Inc.
2001	BEARDEN David	Haines & Company, Inc.
1970	SMITH ERNEST M	Pacific Telephone

1129 E 215TH PL

Year	Uses	Source
2006	o PHAMAina	Haines Company, Inc.
2001	PHAMAlina	Haines & Company, Inc.

1132 E 215TH PL

Year	Uses	Source
2006	PAZAbraham	Haines Company, Inc.
2001	PAZAbraham	Haines & Company, Inc.
1975	BERDECHOWSKI J	Pacific Telephone

1135 E 215TH PL

Year	Uses	Source
1950	GALLIMORE M W	Pacific Telephone

1136 E 215TH PL

Year	Uses	Source
2006	LEETeny	Haines Company, Inc.
2001	LEETerry	Haines & Company, Inc.
1970	FICHTNER ALFHILD C MRS	Pacific Telephone

FINDINGS

1140 E 215TH PL

Year	Uses	Source
1954	LANG RAYFIELD	R. L. Polk & Co.

1142 E 215TH PL

Year	Uses	Source
2006	RICKABAUGH Belly	Haines Company, Inc.
2001	FICKABAUGH Bely	Haines & Company, Inc.

1146 E 215TH PL

Year	Uses	Source
2006	DAHL Minnie	Haines Company, Inc.
1981	BECKLEY ALBERT JR CARSON	Pacific Telephone
1980	BECKLEY ALBERT JR	Pacific Telephone
1975	PAYNE SHARON	Pacific Telephone
1970	AVILLA FRANK F	Pacific Telephone

1148 E 215TH PL

Year	Uses	Source
2001	DAHL M 4nae	Haines & Company, Inc.

1151 E 215TH PL

Year	Uses	Source
2006	a CEJAMIguel	Haines Company, Inc.
2001	CEJAMiguel	Haines & Company, Inc.
1985	LOGO TAU	Pacific Bell

1152 E 215TH PL

Year	Uses	Source
2006	DI 0 ZN Bastlia	Haines Company, Inc.
2001	NATIONALESTAM	Haines & Company, Inc.
1970	ROBINSON HARRIS E	Pacific Telephone

E 215th Pl

1156 E 215th Pl

Year	Uses	Source
2010	WEST COAST ELECTRICAL SYSTEMS	EDR Digital Archive

FINDINGS

E 215TH PL

1156 E 215TH PL

Year	Uses	Source
1985	LACERENZA DAN	Pacific Bell
1980	LACERENZA DAN	Pacific Telephone
1975	LACERENZA DAN	Pacific Telephone

E 215th Pl

1167 E 215th Pl

Year	Uses	Source
2014	MERIT SIGN COMPANY	EDR Digital Archive
2010	MERIT SIGN COMPANY	EDR Digital Archive

E 215TH PL

1167 E 215TH PL

Year	Uses	Source
2006	CEJAMiguel	Haines Company, Inc.
2001	CEJAMrguel	Haines & Company, Inc.

1207 E 215TH PL

Year	Uses	Source
2006	a MASON Charles	Haines Company, Inc.
2001	MASON Chares	Haines & Company, Inc.

1209 E 215TH PL

Year	Uses	Source
1954	DIONNE ROY R	R. L. Polk & Co.

E 215th Pl

1210 E 215th Pl

Year	Uses	Source
2014	THREE N PRODUCTIONS	EDR Digital Archive
2010	THREE N PRODUCTIONS	EDR Digital Archive

FINDINGS

E 215TH PL

1210 E 215TH PL

Year	Uses	Source
2006	o NESBITTLT	Haines Company, Inc.
2001	NESBITTLydia	Haines & Company, Inc.

1211 E 215TH PL

Year	Uses	Source
2006	CHOKEMESILImelda	Haines Company, Inc.
2001	EREZOMarvn	Haines & Company, Inc.

1214 E 215TH PL

Year	Uses	Source
2006	SINGIANMishan	Haines Company, Inc.
	ZULUETA Fredenk	Haines Company, Inc.
2001	SMITH Walker L	Haines & Company, Inc.

1215 E 215TH PL

Year	Uses	Source
2006	JOHNSON Timohy	Haines Company, Inc.
2001	JOHNSONTimnlty	Haines & Company, Inc.

1220 E 215TH PL

Year	Uses	Source
2006	o SINGIANRodolfa	Haines Company, Inc.
2001	SINGIANRodol lo	Haines & Company, Inc.

1221 E 215TH PL

Year	Uses	Source
2006	a SALVARamon	Haines Company, Inc.

1224 E 215TH PL

Year	Uses	Source
2006	JATANShlu	Haines Company, Inc.

1225 E 215TH PL

Year	Uses	Source
2006	KIRBYA	Haines Company, Inc.
2001	KIRBYA	Haines & Company, Inc.

FINDINGS

1230 E 215TH PL

Year	Uses	Source
2006	TRAN Frank	Haines Company, Inc.
2001	STRAN	Haines & Company, Inc.

1231 E 215TH PL

Year	Uses	Source
2006	LIGOTJose	Haines Company, Inc.
2001	LIGOTJose	Haines & Company, Inc.

1234 E 215TH PL

Year	Uses	Source
1957	WILSON JOHNNIE L REV	Pacific Telephone

1235 E 215TH PL

Year	Uses	Source
2006	HANCILES Jeanelle	Haines Company, Inc.

1237 E 215TH PL

Year	Uses	Source
2006	a OBISPOJorge 311 M	Haines Company, Inc.
2001	OEISPO	Haines & Company, Inc.

1239 E 215TH PL

Year	Uses	Source
2006	LABUNI Manbeth	Haines Company, Inc.
2001	VALIENTESNela	Haines & Company, Inc.

1241 E 215TH PL

Year	Uses	Source
2006	GOMEZ Rito	Haines Company, Inc.

E 216TH ST

1210 E 216TH ST

Year	Uses	Source
1957	MOON EDWIN E	Pacific Telephone

FINDINGS

E 216th St

1225 E 216th St

Year	Uses	Source
2010	KAREN HAWKINS	EDR Digital Archive

E 216TH ST

1225 E 216TH ST

Year	Uses	Source
2006	WASHAM Karen	Haines Company, Inc.
2001	WASHAMAlee	Haines & Company, Inc.

1231 E 216TH ST

Year	Uses	Source
2006	SANDERS Mark	Haines Company, Inc.
2001	SANDERSMark	Haines & Company, Inc.

E 216th St

1235 E 216th St

Year	Uses	Source
2014	WISE BIRD EXPORTS	EDR Digital Archive

E 216TH ST

1235 E 216TH ST

Year	Uses	Source
2006	COOKJanice	Haines Company, Inc.
2001	COOKJanrce	Haines & Company, Inc.

E 216th St

1241 E 216th St

Year	Uses	Source
2014	SALAVARIA PROPERTIES	EDR Digital Archive
2010	SALAVARIA PROPERTIES	EDR Digital Archive

FINDINGS

E 216TH ST

1241 E 216TH ST

Year	Uses	Source
2006	SALAVARIA Ian	Haines Company, Inc.
2001	OSALAVARIAJoy	Haines & Company, Inc.

1245 E 216TH ST

Year	Uses	Source
2006	TESOROAlfredo	Haines Company, Inc.
2001	BASMAYORDaniel	Haines & Company, Inc.

1250 E 216TH ST

Year	Uses	Source
1980	JOHNSTON MILDRED	Pacific Telephone

1257 E 216TH ST

Year	Uses	Source
1964	MONRO RICHARD	Pacific Telephone

1302 E 216TH ST

Year	Uses	Source
2006	NEGLEYNeil L	Haines Company, Inc.
2001	NEGLEYNeli L	Haines & Company, Inc.
1995	Negley Neil L	Pacific Bell
1985	NEGLEY NEIL L	Pacific Bell
1980	NEGLEY NEIL L	Pacific Telephone
1975	NEGLEY NEIL L	Pacific Telephone

1305 E 216TH ST

Year	Uses	Source
2006	PRATT Calvin	Haines Company, Inc.
2001	OCAPAROSORodngo	Haines & Company, Inc.

E Carson St

1135 E Carson St

Year	Uses	Source
2010	METROPOLITIAN LEASING	EDR Digital Archive
	MOBILE ARMOR LTD	EDR Digital Archive
	CARSON TRAILER INC	EDR Digital Archive

FINDINGS

E CARSON ST

1135 E CARSON ST

Year	Uses	Source
2006	MOBILEARMOR	Haines Company, Inc.
	METRO LEASING	Haines Company, Inc.
2001	METRO LEASING	Haines & Company, Inc.
1995	Mobil Armor Ltd	Pacific Bell
	Discount Vans & Accessories	Pacific Bell
	Discount Van Accessories & Conversions	Pacific Bell
	DISCOUNT VANS & ACCESSORIES	Pacific Bell

1141 E CARSON ST

Year	Uses	Source
2001	XXXX	Haines & Company, Inc.
1995	Parking Concepts Inc Transportation	Pacific Bell

E Carson St

1152 E Carson St

Year	Uses	Source
2014	AMERICAN LEISURE PRODUCTS INC	EDR Digital Archive
2010	ACTIVE RV	EDR Digital Archive
	AMERICAN LEISURE PRODUCTS INC	EDR Digital Archive

E CARSON ST

1152 E CARSON ST

Year	Uses	Source
2006	AMER	Haines Company, Inc.
	CAMPERSHELL	Haines Company, Inc.
2001	AMER CAMPERSHELLS	Haines & Company, Inc.
1986	WINNEBAGO SALES & RENTALS CARSON	Pacific Bell
	ALTMAN S RECREATION VEHICLES	Pacific Bell
	ALTMANS MOTOR HOME CENTERS SALES & RENTALS CARSON	Pacific Bell

FINDINGS

E Carson St

1209 E Carson St

Year	Uses	Source
2014	VAS RESTORATION & SALES INC	EDR Digital Archive
2010	VAS RESTORATION & SALES INC	EDR Digital Archive
	P & E INTERNATIONAL INC	EDR Digital Archive

E CARSON ST

1209 E CARSON ST

Year	Uses	Source
2006	VINCES	Haines Company, Inc.
	AUTOMOTIVE	Haines Company, Inc.
	SPECIALTIES	Haines Company, Inc.
2001	VINCESAUTOMOTIVE	Haines & Company, Inc.

E Carson St

1211 E Carson St

Year	Uses	Source
2010	LOMITA PINES PARTNERSHIP	EDR Digital Archive

E CARSON ST

1211 E CARSON ST

Year	Uses	Source
2001	XXXX	Haines & Company, Inc.
1990	CRANE GEORGIA CARSON	Pacific Bell
1986	CRANE DALLAS CARSON	Pacific Bell
1981	CRANE DALLAS CARSON	Pacific Telephone

E Carson St

1215 E Carson St

Year	Uses	Source
2014	ALMIGHTY WIND INC	EDR Digital Archive
2010	I REALLY WISH I HAD THAT	EDR Digital Archive
	YOUR GOLDEN STATE HOME INC	EDR Digital Archive
	FIVE 2 FIVE NOTARY SERVICE	EDR Digital Archive

FINDINGS

E CARSON ST

1215 E CARSON ST

Year	Uses	Source
2006	JORDAN Milah	Haines Company, Inc.

1219 E CARSON ST

Year	Uses	Source
2006	HILLLee A	Haines Company, Inc.
	NAVAFabiana	Haines Company, Inc.

E Carson St

1223 E Carson St

Year	Uses	Source
2010	SMILE FINDERS	EDR Digital Archive
	JOBWILLING INC	EDR Digital Archive

E CARSON ST

1223 E CARSON ST

Year	Uses	Source
2006	VIADO Leonardo	Haines Company, Inc.
	BRUNE Pamela	Haines Company, Inc.

1227 E CARSON ST

Year	Uses	Source
2006	KINNEYMyra R	Haines Company, Inc.

1229 E CARSON ST

Year	Uses	Source
2006	e CULPEPPERCharita	Haines Company, Inc.
	DYER Natasha	Haines Company, Inc.
	MAXWELL Klana	Haines Company, Inc.
	PHILLIPS Latasha	Haines Company, Inc.
2001	RAMOSAllredo	Haines & Company, Inc.

1230 E CARSON ST

Year	Uses	Source
1970	RYAN WRECKING YARD	Pacific Telephone

FINDINGS

E Carson St

1235 E Carson St

Year	Uses	Source
2014	GEMMA SPIRARE CORPORATION	EDR Digital Archive
2010	AAMOUR LLC	EDR Digital Archive

E CARSON ST

1235 E CARSON ST

Year	Uses	Source
2006	NEU Joel	Haines Company, Inc.
	HOWARD Anel	Haines Company, Inc.
	NEBRIDA Leonila	Haines Company, Inc.
	MCCOY Eva	Haines Company, Inc.
	DUNCAN Elizabeth	Haines Company, Inc.
	o DOUGLAS Debora	Haines Company, Inc.
	RICAFORT Jennifer	Haines Company, Inc.
	WRIGHTSeerena	Haines Company, Inc.
	TROTTER Sltven	Haines Company, Inc.
	o DIOQUINO Michael	Haines Company, Inc.
2001	SEENEYJames 3D	Haines & Company, Inc.

1243 E CARSON ST

Year	Uses	Source
2001	XXXX	Haines & Company, Inc.

1309 E CARSON ST

Year	Uses	Source
2006	CARSON ARTIFICIAL	Haines Company, Inc.
	KIDNEY CNTR	Haines Company, Inc.
2001	CARSON ARTIFICIAL	Haines & Company, Inc.
1995	Burns & Mc Donnell	Pacific Bell
	Dilip Patel & Associates Inc	Pacific Bell
	Encotech West	Pacific Bell
1990	VANCE RUDY L II ATTY CARSON	Pacific Bell

FINDINGS

PERRY

21506 PERRY

Year	Uses	Source
1990	T & T FARMS	Pacific Bell
1986	T & T FARMS CARSON	Pacific Bell
	TAKAHASHI HIDEO CARSON	Pacific Bell
1981	T & T FARMS CARSON	Pacific Telephone
1976	T & T Farms	Pacific Telephone

21610 PERRY

Year	Uses	Source
1995	13 MORALES RICHARD	Pacific Bell
	3 PROMOTIONS INC	Pacific Bell
1990	13 MORALES RICHARD	Pacific Bell
	4 HUGHES VINCENT	Pacific Bell
	1 MIRANDA GENCIANA	Pacific Bell
	2 PARK KYUNG HEE	Pacific Bell

21611 PERRY

Year	Uses	Source
1990	AAIRE RV & MARINE INC	Pacific Bell
	AIR-HARBOR MACHINE CO INC CARSON	Pacific Bell
	AMERICAN SEACRAFT MARINE INC	Pacific Bell
	AAIRE RV MARINE INC	Pacific Bell
	PACIFIC YACHT SALES	Pacific Bell
1986	AIR-HARBOR MACHINE CO INC CARSON	Pacific Bell
1981	AIR-HARBOR MACHINE CO INC CARSON	Pacific Telephone
1976	Air Harbor Machine Co Inc	Pacific Telephone
1962	AIR COMFORT CO INC	Pacific Telephone
	PLAN HOLD CORP	Pacific Telephone

PERRY ST

21432 PERRY ST

Year	Uses	Source
2001	SLESERRay	Haines & Company, Inc.

FINDINGS

21500 PERRY ST

Year	Uses	Source
2001	XXXX	Haines & Company, Inc.
	FUJIMORIHidesada	Haines & Company, Inc.

21506 PERRY ST

Year	Uses	Source
1985	TAKAHASHI HIDEO	Pacific Bell
	T & T FARMS	Pacific Bell

21527 PERRY ST

Year	Uses	Source
2001	SANPEDRf Oa Ilo	Haines & Company, Inc.
1980	PERRY WARREN	Pacific Telephone
	FAGAN BARNARD	Pacific Telephone
1975	LEBLANC HERVE I	Pacific Telephone

21560 PERRY ST

Year	Uses	Source
2001	XXXX	Haines & Company, Inc.

21601 PERRY ST

Year	Uses	Source
2001	XXXX	Haines & Company, Inc.

21610 PERRY ST

Year	Uses	Source
2001	ANESILellsa	Haines & Company, Inc.
1985	CHAVEZ EFREN	Pacific Bell
	PORRAS SAMUEL	Pacific Bell
	FLEMMING D	Pacific Bell
1980	NELSON WAYNE CONSTRUCTION	Pacific Telephone

21611 PERRY ST

Year	Uses	Source
2001	CARSONTRAILER 310 B	Haines & Company, Inc.
1985	AIR-HARBOR MACHINE CO INC	Pacific Bell
1980	AIR-HARBOR MACHINE CO INC	Pacific Telephone
1975	AIR-HARBOR MACHINE CO INC	Pacific Telephone

FINDINGS

Recreation Rd

21830 Recreation Rd

Year	Uses	Source
2014	SOUTH BAY AMUSEMENT CENTER	EDR Digital Archive
2010	SOUTH BAY AMUSEMENT CENTER	EDR Digital Archive

RECREATION RD

21840 RECREATION RD

Year	Uses	Source
2006	INC GOKARTWORLD	Haines Company, Inc.
	GOCARTWORLD	Haines Company, Inc.
2001	GOKARTWORLD	Haines & Company, Inc.
1995	Go Kart World	Pacific Bell
	Slick Kart Racing	Pacific Bell
	GO KART WORLD	Pacific Bell

ROSITA DR S

21503 ROSITA DR S

Year	Uses	Source
2001	WORD William	Haines & Company, Inc.

21504 ROSITA DR S

Year	Uses	Source
2001	ORJIAKORLonginus	Haines & Company, Inc.

21507 ROSITA DR S

Year	Uses	Source
2001	GETER David	Haines & Company, Inc.

21508 ROSITA DR S

Year	Uses	Source
2001	ONEALID	Haines & Company, Inc.
1995	STINNETT GARY	Pacific Bell

21511 ROSITA DR S

Year	Uses	Source
2001	OPACHECOMana	Haines & Company, Inc.

FINDINGS

21512 ROSITA DR S

Year	Uses	Source
2001	CORONAlsidro C	Haines & Company, Inc.
1995	CORONA ISIDRO C	Pacific Bell
	CORONA TILE CONTRACTOR	Pacific Bell

S PERALTA DR

21505 S PERALTA DR

Year	Uses	Source
2006	e CARIAGA Nelly	Haines Company, Inc.

21506 S PERALTA DR

Year	Uses	Source
2006	CORRALEZLauren	Haines Company, Inc.

21509 S PERALTA DR

Year	Uses	Source
2006	ONUBAHBenjamn	Haines Company, Inc.

21510 S PERALTA DR

Year	Uses	Source
2006	ANYAETOAgatha	Haines Company, Inc.

21513 S PERALTA DR

Year	Uses	Source
2006	REYESGail	Haines Company, Inc.

21514 S PERALTA DR

Year	Uses	Source
2006	GONZALESJ	Haines Company, Inc.

21522 S PERALTA DR

Year	Uses	Source
2006	SIPRASEUTH	Haines Company, Inc.
	Sakhom	Haines Company, Inc.

21536 S PERALTA DR

Year	Uses	Source
2006	GABRIELBen	Haines Company, Inc.
	GABRIELWynda	Haines Company, Inc.

FINDINGS

21542 S PERALTA DR

Year	Uses	Source
2006	FRANCISCOAntonto	Haines Company, Inc.

S PERRY ST

21432 S PERRY ST

Year	Uses	Source
2006	LESERRay	Haines Company, Inc.

21509 S PERRY ST

Year	Uses	Source
2006	HOCANSONAllson	Haines Company, Inc.
	PERALTA Margaretl	Haines Company, Inc.
	WALTER Glenn	Haines Company, Inc.

21527 S PERRY ST

Year	Uses	Source
2006	SAN Pedro Danilo	Haines Company, Inc.

S Perry St

21610 S Perry St

Year	Uses	Source
2014	DAY & NIGHT NOTARY/INTEGRITY R	EDR Digital Archive
	LORRAINE TOWNHOMES HOA	EDR Digital Archive
2010	LORRAINE TOWNHOMES HOA	EDR Digital Archive
	DAY & NIGHT NOTARY/INTEGRITY R	EDR Digital Archive

S PERRY ST

21610 S PERRY ST

Year	Uses	Source
2006	HARRIS Frank	Haines Company, Inc.
	HAMILTON Mcclnton	Haines Company, Inc.
	FERNANDEZ Rogello	Haines Company, Inc.
	FAUSTO Pia	Haines Company, Inc.
	DAROYA Laura	Haines Company, Inc.
	CHRISTY Deborah	Haines Company, Inc.
	BANKS Kenneth	Haines Company, Inc.
	MORALES Richard	Haines Company, Inc.

Year	Uses	Source
2006	ARIAS Diana	Haines Company, Inc.
	ABCEDEJudith	Haines Company, Inc.

S ROSITA DR

21503 S ROSITA DR

Year	Uses	Source
2006	No Current Listing	Haines Company, Inc.

S Rosita Dr

21504 S Rosita Dr

Year	Uses	Source
2014	NIGHTCAP LLC	EDR Digital Archive

S ROSITA DR

21504 S ROSITA DR

Year	Uses	Source
2006	ORJIAKORLonginus	Haines Company, Inc.

21507 S ROSITA DR

Year	Uses	Source
2006	GETER Davd	Haines Company, Inc.

21508 S ROSITA DR

Year	Uses	Source
2006	STINNETTGary	Haines Company, Inc.
	ONEALJD	Haines Company, Inc.
1995	Stinnett Gary	Pacific Bell

21511 S ROSITA DR

Year	Uses	Source
2006	a PACHECOMana	Haines Company, Inc.

21512 S ROSITA DR

Year	Uses	Source
2006	a CORONA Isidro C	Haines Company, Inc.
	CORONATILE	Haines Company, Inc.
	CONTR	Haines Company, Inc.
1995	Corona Tile Contractor	Pacific Bell

FINDINGS

Year	Uses	Source
1995	Corona Isidro C	Pacific Bell

Wingate Dr

1152 Wingate Dr

Year	Uses	Source
2014	DINEROS PIO	EDR Digital Archive
2010	DINEROS PIO	EDR Digital Archive

1156 Wingate Dr

Year	Uses	Source
2010	RON C FERNANDEZ	EDR Digital Archive
	ALOHA CLEANERS	EDR Digital Archive

1168 Wingate Dr

Year	Uses	Source
2014	SNACKS & DRINKS AT SUNSHINE VE	EDR Digital Archive
2010	SNACKS & DRINKS AT SUNSHINE VE	EDR Digital Archive

FINDINGS

ADJOINING PROPERTY: ADDRESSES NOT IDENTIFIED IN RESEARCH SOURCE

The following Adjoining Property addresses were researched for this report, and the addresses were not identified in research source.

Address Researched	Address Not Identified in Research Source
1100 215TH PL E	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1992, 1991, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1100 E 215TH PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1992, 1991, 1990, 1986, 1981, 1980, 1976, 1972, 1971, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1101 215TH PL E	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1101 E 215TH PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1992, 1991, 1990, 1986, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1102 215TH PL E	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1992, 1991, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1102 E 215TH PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1992, 1991, 1990, 1986, 1981, 1976, 1972, 1971, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1104 215TH PL E	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1992, 1991, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1104 E 215TH PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1107 E 215TH PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
1108 E 215TH PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1111 E 215TH PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1112 E 215TH PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1972, 1971, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1116 E 215TH PL	2014, 2010, 2006, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1981, 1980, 1976, 1972, 1971, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1116 E 215th Pl	2014, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1119 215TH PL E	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1992, 1991, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1119 E 215TH PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1992, 1991, 1990, 1986, 1981, 1976, 1972, 1971, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1122 E 215TH PL	2014, 2010, 2006, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1981, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1126 215TH PL E	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1126 E 215TH PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1129 E 215TH PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
1132 E 215TH PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1135 CARSON E	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1135 E 215TH PL	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1135 E CARSON ST	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1135 E Carson St	2014, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1136 E 215TH PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1140 E 215TH PL	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1141 CARSON E	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1141 E CARSON ST	2014, 2010, 2006, 2004, 2003, 2000, 1999, 1996, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1142 E 215TH PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1146 E 215TH PL	2014, 2010, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1976, 1972, 1971, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
1148 E 215TH PL	2014, 2010, 2006, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1151 E 215TH PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1152 CARSON E	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1152 E 215TH PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1152 E CARSON ST	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1152 E Carson St	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1152 Wingate Dr	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1156 215TH PL E	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1156 E 215TH PL	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1981, 1976, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1156 E 215th Pl	2014, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1156 Wingate Dr	2014, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920

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Address Researched	Address Not Identified in Research Source
1167 E 215th Pl	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1167 E 215TH PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1168 Wingate Dr	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1207 E 215TH PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1209 CARSON E	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1992, 1991, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1209 E 215TH PL	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1209 E CARSON ST	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1209 E Carson St	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1210 E 215th Pl	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1210 E 215TH PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1210 E 216TH ST	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920

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Address Researched	Address Not Identified in Research Source
1211 CARSON E	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1992, 1991, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1211 E 215TH PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1211 E CARSON ST	2014, 2010, 2006, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1985, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1211 E Carson St	2014, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1214 E 215TH PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1215 E 215TH PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1215 E CARSON ST	2014, 2010, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1215 E Carson St	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1218 CLOVERBROOK ST	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1219 CLOVERBROOK	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1219 CLOVERBROOK ST	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1981, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920

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Address Researched	Address Not Identified in Research Source
1219 E CARSON ST	2014, 2010, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1220 E 215TH PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1221 E 215TH PL	2014, 2010, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1222 CLOVERBROOK ST	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1223 CLOVERBROOK	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1992, 1991, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1223 CLOVERBROOK ST	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1992, 1991, 1990, 1986, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1223 E Carson St	2014, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1223 E CARSON ST	2014, 2010, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1224 E 215TH PL	2014, 2010, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1225 E 215TH PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1225 E 216TH ST	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920

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Address Researched	Address Not Identified in Research Source
1225 E 216th St	2014, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1226 CLOVERBROOK ST	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1227 CLOVERBROOK	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1992, 1991, 1986, 1985, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1227 CLOVERBROOK ST	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1992, 1991, 1990, 1986, 1981, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1227 E CARSON ST	2014, 2010, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1229 E CARSON ST	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1230 E 215TH PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1230 E CARSON ST	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1231 E 215TH PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1231 E 216TH ST	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1232 CLOVERBROOK ST	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1976, 1972, 1971, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920

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Address Researched	Address Not Identified in Research Source
1233 ASHMILL ST	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1972, 1971, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1233 CLOVERBROOK ST	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1234 E 215TH PL	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1235 E 215TH PL	2014, 2010, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1235 E 216TH ST	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1235 E 216th St	2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1235 E Carson St	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1235 E CARSON ST	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1236 ASHMILL	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1236 ASHMILL ST	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1237 E 215TH PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920

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Address Researched	Address Not Identified in Research Source
1238 CLOVERBROOK ST	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1239 ASHMILL	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1239 ASHMILL ST	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1981, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1239 CLOVERBROOK ST	2014, 2010, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1239 E 215TH PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1241 E 215TH PL	2014, 2010, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1241 E 216TH ST	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1241 E 216th St	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1242 CLOVERBROOK ST	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1976, 1972, 1971, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1243 ASHMILL ST	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1243 CLOVERBROOK	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1992, 1991, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920

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Address Researched	Address Not Identified in Research Source
1243 CLOVERBROOK ST	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1992, 1991, 1990, 1986, 1981, 1980, 1976, 1972, 1971, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1243 E CARSON ST	2014, 2010, 2006, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1245 E 216TH ST	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1250 E 216TH ST	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1257 E 216TH ST	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1260 ASHMILL ST	2014, 2010, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1302 216TH E	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1992, 1991, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1302 E 216TH ST	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1992, 1991, 1990, 1986, 1981, 1976, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1305 E 216TH ST	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1309 CARSON E	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1992, 1991, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
1309 E CARSON ST	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1992, 1991, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920

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Address Researched	Address Not Identified in Research Source
21348 Alvar Pl	2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21432 PERRY ST	2014, 2010, 2006, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21432 S PERRY ST	2014, 2010, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21500 PERRY ST	2014, 2010, 2006, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21502 ALVAR PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1992, 1991, 1986, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21503 ALVAR PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1992, 1991, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21503 Alvar Pl	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21503 ROSITA DR S	2014, 2010, 2006, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21503 S ROSITA DR	2014, 2010, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21504 ROSITA DR S	2014, 2010, 2006, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21504 S ROSITA DR	2014, 2010, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920

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Address Researched	Address Not Identified in Research Source
21504 S Rosita Dr	2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21505 S PERALTA DR	2014, 2010, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21506 PERRY	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1985, 1980, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21506 PERRY ST	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21506 S PERALTA DR	2014, 2010, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21507 ALVAR PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21507 ROSITA DR S	2014, 2010, 2006, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21507 S ROSITA DR	2014, 2010, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21508 ALVAR PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21508 ROSITA DR S	2014, 2010, 2006, 2004, 2003, 2000, 1999, 1996, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21508 S ROSITA DR	2014, 2010, 2004, 2003, 2001, 2000, 1999, 1996, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920

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Address Researched	Address Not Identified in Research Source
21509 S PERALTA DR	2014, 2010, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21509 S PERRY ST	2014, 2010, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21510 S PERALTA DR	2014, 2010, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21511 ROSITA DR S	2014, 2010, 2006, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21511 S ROSITA DR	2014, 2010, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21512 ROSITA DR S	2014, 2010, 2006, 2004, 2003, 2000, 1999, 1996, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21512 S ROSITA DR	2014, 2010, 2004, 2003, 2001, 2000, 1999, 1996, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21513 S PERALTA DR	2014, 2010, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21514 S PERALTA DR	2014, 2010, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21515 ALVAR PL	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1992, 1991, 1986, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21522 S PERALTA DR	2014, 2010, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
21527 PERRY ST	2014, 2010, 2006, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1976, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21527 S PERRY ST	2014, 2010, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21536 S PERALTA DR	2014, 2010, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21542 S PERALTA DR	2014, 2010, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21560 PERRY ST	2014, 2010, 2006, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21601 PERRY ST	2014, 2010, 2006, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21610 PERRY	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1992, 1991, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21610 PERRY ST	2014, 2010, 2006, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1981, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21610 S PERRY ST	2014, 2010, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21610 S Perry St	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21611 PERRY	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1985, 1980, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920

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Address Researched	Address Not Identified in Research Source
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21702 ACARUS AVE	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1981, 1976, 1972, 1971, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21706 ACARUS AVE	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21712 ACARUS AVE	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21718 ACARUS AVE	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21719 ACARUS AVE	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21724 ACARUS AVE	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21728 ACARUS AVE	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1981, 1980, 1976, 1975, 1972, 1971, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21734 ACARUS AVE	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1992, 1991, 1986, 1981, 1976, 1972, 1971, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21744 ACARUS AVE	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21748 ACARUS AVE	2014, 2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920

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Address Researched	Address Not Identified in Research Source
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21830 Recreation Rd	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
21840 RECREATION RD	2014, 2010, 2004, 2003, 2000, 1999, 1996, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920

TARGET PROPERTY: ADDRESS NOT IDENTIFIED IN RESEARCH SOURCE

The following Target Property addresses were researched for this report, and the addresses were not identified in the research source.

Address Researched	Address Not Identified in Research Source
21611 S. Perry St.	2014, 2010, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920

Certified Sanborn® Map Report

01/17/19

Site Name:

Car Pros Recreation Rd. LLC F
21611 S. Perry St.
Carson, CA 90745
EDR Inquiry # 5537097.3

Client Name:

Advanced GeoEnvironmental,Inc.
3335 E Miraloma Ave
Anaheim, CA 92806
Contact: Diane Becker

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Advanced GeoEnvironmental,Inc. were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

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Certified Sanborn Results:

Certification # A41A-49F2-BCF0

PO # NA

Project Car Pros Recreation Rd. LLC

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: A41A-49F2-BCF0

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- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

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APPENDIX K
PHOTOGRAPHS

1. View of the Site from the northeast looking southwest.

2. View of the Site from the northeast looking west.

3. View of the Site from the northwest looking southeast.

4. View of the Site from the west looking east.

5. View of the Site from the southwest looking northeast.

6. View of the Site from the southeast looking northwest.

Photograph Log

21611 S Perry Street
Carson, California

7. View of the Site from the southeast looking northwest.

8. View of the Site from the southeast looking west.

9. Typical debris and groundwater monitoring well.

10. Typical groundwater monitoring wells.

11. Typical debris.

12. Underground pipeline indicator at northwest corner of the Site.

13. Typical groundwater monitoring wells.

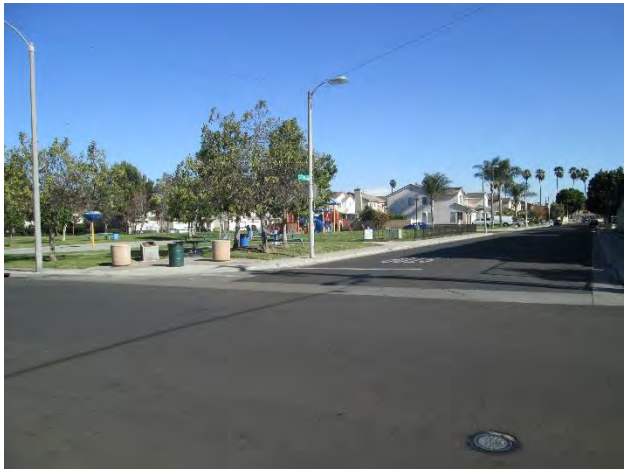
14. Typical groundwater monitoring wells.

15. Wall along southern Site boundary with apparent power related source.

16. Northern adjacent residences and power poles/lines.

17. Eastern adjacent S Perry Street and commercial/retail property.

18. Eastern adjacent S Perry Street and residential properties.



19. Northwest adjacent intersection of S Perry Street and E 216th Street, then public park.

20. Northern adjoining gate and likely utility easement.

21. Typical north adjacent residential properties .

22. Southwest adjacent E Carson Street and commercial properties.

23. Southwest adjacent E Carson Street and commercial properties.

24. Western adjacent channel.

APPENDIX L
QUALIFICATIONS

Resume Of Dan Weis, R.E.H.S.
Environmental Manager
Address: 1938 Kellogg Avenue, Suite 116, Carlsbad, CA 92008
Phone: 760.585.7070 | Email:dw@weisenviro.com

Professional Summary

Environmental Manager and California Registered Environmental Health Specialist with extensive expertise in environmental science and assessment, environmental and public health, risk assessment, health and safety, remedial design and implementation, strategic planning and project/program design and implementation. Over 20 years of professional experience and achievement. Successful completion of projects for a wide range of clientele including, but not limited to, local government entities, developers (affordable housing and market rate), educational institutions, Federal government entities, law firms, architectural and engineering firms, lending institutions, life insurance companies, conservancies, commercial/industrial real estate owners/managers, insurance companies, wireless telecommunication carriers and real estate developers. Extensive experienced in the completion of assessment, construction and remediation quality assurance during the completion of urban redevelopment/brownfields projects and public works projects, many of which have been located in downtown areas of San Diego, Los Angeles, Oakland, San Francisco, and other urban communities throughout the State of California. Proven ability to train and mentor professional, technical and support staff. Manages a comprehensive health and safety program. Holds a Master of Science in Public Health with an emphasis in environmental health science, risk assessment, health and safety, toxicology and environmental policy. Registered Environmental Health Specialist #8172 in the State of California.

Education and Professional Certification

- University of Delaware, Bachelor of Arts, 1995
- San Diego State University, Master of Science, Public/Environmental Health, 2001
- State of California Registered Environmental Health Specialist #8172
- Centers for Disease Control and Prevention National Center for Environmental Health Division of Emergency and Environmental Health Services - Environmental Health Training in Emergency Response
- Occupational Safety and Health Administration (OSHA) 40 Hour Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) Training and Annual 8 Hour HAZWOPER Refresher Training
- OSHA 8 Hour HAZWOPER Supervisor Training

Relevant Skills and Qualifications

- Proven ability to manage staff and programs/projects in challenging and diverse environments and regulatory settings. Consistently meets project schedules, goals, deadlines and budgetary restrictions.
- Completed or managed over 3,000 due diligence related environmental assessments and completed or managed over 500 subsurface environmental investigations of soil gas, soil, groundwater and other media. Investigations have included human health and ecological risk assessments, evaluations of indoor air conditions based on interpretations of subsurface conditions, underground storage tank (UST) evaluation/closure and hazardous waste characterization/management. Subsurface activities performed include the completion of soil borings using various drilling technologies, soil and groundwater sampling, installation and sampling of groundwater monitoring wells, free product evaluations, exploratory trenching and real-time delineation using mobile analytical laboratories and other soil screening technology.
- Managed over 100 remediation or construction management related projects primarily related to source removal of subsurface contaminants, including but not limited to, petroleum hydrocarbons, chlorinated solvents, heavy metals, organochlorine pesticides and other agricultural related chemicals, dioxins and furans and polychlorinated biphenyls. Has also assisted in cost recovery efforts from private parties and State/Federal funding programs for environmental assessment and remediation work and has served as an expert witness during legal proceedings pertaining to environmental related claims.
- Strong collaboration and negotiation skills with environmental regulatory agencies regarding project planning, initiation, status, approvals and implementation. Direct experience in interfacing with members of regulatory agencies including but not limited to the United States Environmental Protection Agency (EPA), California EPA Department of Toxic Substances Control and Office of Environmental Health Hazard Assessment, County of San Diego Departments of Environmental Health (DEH), Public Works and Planning and Land Use, San Diego Air Pollution Control District, South Coast Air Quality

Management District, Riverside County DEH, San Francisco City and County Department of Public Health (DPH), Arizona Department of Environmental Quality, County of Los Angeles County DPH and other local Certified Unified Program Agencies. Develop, manage and implement compliance and best practices efforts with Federal and State laws and regulations.

- Conducted and/or managed hundreds of public/environmental health related assessments including electromagnetic field surveys, radionuclide surveys, indoor air quality investigations, radon surveys, drinking water assessments, asbestos containing materials and lead-based paint surveys and mold/microbial evaluations.
- Recovered over $10,000,000 of assessment and cleanup costs for clientele from various sources including State of California Cleanup Funds, United States Environmental Protection Agency Brownfield grants and private parties including major oil companies.
- Responsible for facilitating a safe and healthy work environment in concert with the mission of the company while ensuring compliance with applicable Federal, State, and local regulations.
- Published technical papers pertaining to geogenic concentrations of metals in San Diego County, radioactive dating and pollutant chronologies in estuarine sediments and various urban runoff related implications.
- Delivered presentations pertaining to various environmental topics including human health risk assessment to membership at local and national trade conferences

Project Experience (Projects Completed at Multiple Firms)

- *14th and Island, San Diego, California* – Development of Site Mitigation Plan, contaminated soil management and disposal concurrent with site construction activities at the superblock construction site in downtown San Diego and achievement of regulatory closure with the County of San Diego Department of Environmental Health.
- *2198 Market Street, San Francisco, California* – Phase I and II Environmental Site Assessments, supplemental subsurface investigation, Site Mitigation Plan development, contaminated soil management and disposal concurrent with site construction activities and negotiation/achievement of regulatory closure with the City of San Francisco Department of Public Health.
- *Former EZ Serve, 9305 Mission Gorge Road, Santee, California* – Closure report preparation and San Diego Regional Water Quality Control Board interface and negotiation/achievement of regulatory closure under State of California low-threat policy.
- *French Field – Former Vista Burn Dump, Oceanside, California* – Oversight of the capping of a former burn dump/landfill facility and restoration for public use as a sports facility. Negotiation and achievement of regulatory closure with the California Department of Toxic Substances Control with concurrence from the San Diego Regional Water Quality Control Board and the County of San Diego Local Enforcement Agency.
- *Indoor Skydiving Facility, 1401 Imperial Avenue, San Diego, California* – Development of Soil Management Plan and contaminated soil management and disposal concurrent with site construction activities in downtown San Diego.
- Lemon Grove Avenue Realignment Project, Lemon Grove, California – Development of Impacted Soil Management Plan, Community Health and Safety Plan and Worker Health and Safety Plan and oversight of the implementation of such plans during construction activities.
- *North Side Interior Road and Utilities Project at San Diego International Airport, San Diego, California* - Subsurface assessment, development of Soil Management Plan and Work Health and Safety Plan and implementation and monitoring of soil management strategies.
- *Olympic and Hill, Los Angeles, California* – Removal of multiple underground storage tanks and underlying contaminated soil and achievement of regulatory closure with the City of Los Angeles Fire Department.
- *San Ysidro - U.S. Land Port of Entry, San Diego, California* – Subsurface assessment and development and implementation of soil management strategies.
- *VA Medical Center Long Beach, 5901 East 7th Street, Long Beach, California* - VA Long Beach: Seismic Corrections – Mental Health, Community Living Center and Chiller Replacements Project – Asbestos containing materials and lead-based paint surveys and preparation of abatement contractor bid specifications.

Appendix I
Utilities Memorandum

ESA

Carson Self-Storage
Preliminary Utilities Technical Memorandum
21611 South Perry St.
Carson, CA 90745

Date Prepared:
March 9, 2022

Prepared for:
21611 Perry Street, LLC
4132 Katella Avenue, #205B
Los Alamitos, CA 90720

Prepared By:

ΩMEGA
ENGINEERING CONSULTANTS
4340 Viewridge Ave, Suite B
San Diego, CA 92113
Ph: (858) 634-8620

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1.0 OVERVIEW

The Carson Self-Storage project, herein known as the Project, involves the development of multiple self-storage buildings with a café, and office space on the 2.80-acre site. The Project site currently consists of a vacant lot that was previously occupied by an 60,000 SF industrial building until approximately 2009. The development site is located at 21611 S. Perry Street and is bounded by E. Carson Street to the south, Dominguez Channel to the west, single-family residences to the north, and commercial and residential properties to the east.

2.0 SCOPE OF ANALYSIS

This analysis provides supporting information for the Project's environmental review pursuant to the California Environmental Quality Act (CEQA) and documents research regarding existing and proposed utility infrastructure for the Project. Both the existing conditions and previous development condition shave been analyzed.

3.0 EXISTING UTILITES AND REGULATORY FRAMEWORK

3.1 Existing Utility Providers

The following is a list of existing utilities and their service providers that are within the proximity of the Project Site.

- Storm Drain – Los Angeles County Flood Control District
- Sanitary Sewer – Los Angeles County Department of Public Works
- Water – California Water Service Company
- Electricity – Southern California Edison
- Natural Gas – Southern California Gas Company
- Telecommunications –
    - AT&T Distribution South
    - Charter Communications

3.2 Regulatory Framework

3.2.1 Water

The California Water Service Company is responsible for providing water supply to the City of Carson while complying with Local, State, and Federal regulations.

The proposed project does not meet or exceed the below specified thresholds requiring a WSA from California Water Service Company.

Below are the State and Regional water supply regulations:

California Code of Regulations, Title 20, Chapter 4, Article 4, Section 1605 establishes water efficiency standards for all new plumbing fixtures and Section 1608 prohibits the sale of fixtures that do not comply with the regulations.

2016 California Green Building Standards Code, CCR, Title 24, Part 11 (CALGreen), adopted on January 1, 2016, requires a water use reduction of 20 percent below the baseline cited in the CALGreen code book. The code applies to family homes, state buildings, health facilities, and commercial buildings.

California Urban Water Management Planning Act of 1984 requires water suppliers to adopt an Urban Water Management Plan (UWMP).

Metropolitan Water District (MWD) official reports and policies as outlined in its Regional UWMP, Water Surplus and Drought Management Plan, Water Supply Allocation Plan, and Integrated Resources Plan.

Los Angeles County Public Works' 2015 UWMP outlines the County's long-term water resources management strategy. The 2015 UWMP was approved by June 3, 2016.

Senate Bill 610, approved on October 9, 2001, requires land use agencies to perform a detailed analysis of available water supply when approving large developments. Historically, public water suppliers (PWS) simply provided a "will serve" letter to developers. For certain projects subject to CEQA review, SB 610 requires that urban water suppliers prepare a WSA to determine whether the project water demand is included as part of the most recently adopted UWMP. All projects that meet any of the following criteria require a WSA:

- o A proposed residential development of more than 500 dwelling units.
- o A proposed shopping center or business establishment of more than 500,000 square feet of floor space or employing more than 1,000 persons
- o A proposed commercial office building of more than 250,000 square feet of floor space or employing more than 1,000 persons
- o A proposed hotel or motel of more than 500 rooms
- o A proposed industrial, manufacturing, or processing plant or industrial park of more than 40 acres of land, more than 650,000 square feet of floor area, or employing more than 1,000 persons
- o A mixed-use project that falls in one or more of the above-identified categories
- o A project not falling in one of the above-identified categories but that would demand water equal or greater than the amount required by a 500-dwelling unit project.

3.2.2 Sewer

The County of Los Angeles includes regulations that allow the County to assure available sewer capacity for new projects and fees for improvements to the infrastructure system. The County requires that the applicant perform a sewer area study when any person seeks a sewer permit to connect a property to the County's sewer collection system, proposes additional discharge through their existing public sewer connection, or proposes a future sewer connection or future development. A sewer area study is an analysis of the existing sewer collection system to determine if there is adequate capacity existing in the sewer collection system to safely convey the newly generated sewage to the appropriate sewage treatment plant. The net increase in daily water demand is so small a sewer study should not be necessary.

The County of Los Angeles establishes design criteria for sewer systems to assure that new infrastructure provides sewer capacity and operating characteristics to meet standard practice for sewer design. Per County regulations, sewers will be designed so that the peak dry weather flow depth during their planning period shall not exceed one-half the pipe diameter.

3.2.3 Electricity

Title 24 of the California Code of Regulations regulates energy consumption in new construction. The standards regulate energy consumed in buildings for heating, cooling, ventilation and lighting. Title 24 is implemented through the local plan check and permit process. The current (2016) standards effective date is January 1, 2017 and it applies for new construction of both residential and non-residential buildings.

3.2.4 Natural Gas

As a public utility, the Southern California Gas Company (the Gas Co.) is under jurisdiction of the California Public Utilities Commission. As mentioned in section 3.2.3, Title 24 of the California Code of Regulations regulates energy consumption in new constructions. The standards regulate energy consumed in buildings for heating, cooling, ventilation and lighting. Title 24 is implemented through the local plan check and permit process. The Gas Co.'s 2018 Gas Report that commercial and industrial demand is expected to increase at an annual rate of 0.2 percent. This is mainly due to increased efficiency of power plants and the statewide efforts to use renewable sources of energy for electricity generation.

3.2.5 Telecommunications

As a private utility, telecommunications service providers operate jurisdiction of the California Public Utilities Commission. As mentioned in section 3.2.3, Title 24 of the California Code of Regulations regulates energy consumption in new constructions. The standards regulate energy consumed in buildings for heating, cooling, ventilation and lighting. Title 24 is implemented through the local plan check and permit process.

4.0 WATER

4.1 Existing Condition

Both the existing conditions and previous development conditions have been analyzed. California Water Service owns and operates a 12" water main in the east side of S Perry Street and a 12" branch off the main even further in the east side of S Perry Street, adjacent to the project. There is one fire hydrant on the east side of S Perry Street, adjacent to the project site. The previous condition of the currently vacant site was a 60,000 SF industrial building that covered most of the site and a parking lot. This information and historic data obtained from California Water Service Company was used to determine the existing site water usage.

4.2 Proposed Condition

The proposed project includes 3-Self Storage Buildings, a small café, & a small office space. Only the café & office space will contribute to the water demand, as the self-storage buildings will not contain and water fixtures.

Estimated Project Water Demand

Proposed Use	Average Generation Factor[(a)]	Square Footage	Average Daily Water Demand (GPD)	Estimated Water Use (AFY) 2045-Ultimate Condition
Café/Commercial	0.28 GPD/SQFT	4,675 SQFT	1,309	1.5
Landscaping/ Open Space	-	12,134 SQFT	254	0.29
System Water Losses (3.4%)			53	0.06
Existing Site Use	0	0	0	0
Previous Site Use	(*)	60,000	-3,740	-4.2
Proposed Total Demand	-	-	-2,137	1.85

a) All flows were calculated using historical data for the Dominguez District, as provided in the Cal Water WSA Water Factor Tool.
b) Estimates of landscape irrigation are based on MWELO ETWU calculations provided by Cal Water. Landscape irrigation estimates include all irrigated areas including public open space and private yards.

Domestic water is expected to be the main contributor of water consumption for the Project. The total water demand for the Project is conservatively estimated at 1.85 AFY at buildout. This culminates in a net 2.35 AFY decrease in water use when compared to the former industrial building, but an increase in water use when compared to current vacant condition. Fire water demands will create a greater immediate need on the water network, and therefore are the primary means for analyzing infrastructure capacity. A regional Fire Hydrant Flow Test has been received from California Water to confirm the pressure from the existing fire hydrant.

Due to size and area of the Project, LACFD will require onsite fire hydrants. Omega is coordinating with California Water Service Company and County of Los Angeles Fire Department to submit a Fire Hydrant Flow Test form for confirmation. The hydrant tested is on the west side of S Perry Street, within immediate vicinity of the Project site. The flow test demonstrated that the hydrant is capable of 4,144 gallons per minute.

4.3 Significance Thresholds – Water

In accordance with the State CEQA Guidelines Appendix G (Appendix G), the Project would have a significant impact related to water supply and infrastructure if it would:

- Require or result in the relocation or construction of new or expanded water facilities, the construction or relocation of which could cause significant environmental effects
- [Not] have enough water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years

The L.A. County CEQA Thresholds Guide identifies the following criteria to evaluate water supply and infrastructure:

- The total estimated water demand for the project;
- Whether enough capacity exists in the water infrastructure that would serve the project, taking into account the anticipated conditions at project buildout;
- The amount by which the project would cause the projected growth in population, housing or employment for the Community Plan area to be exceeded in the year of the project completion; and
- The degree to which scheduled water infrastructure improvements or project design features would reduce or offset service impacts.

In assessing impacts related to water supply and infrastructure, the County will use Appendix G as the thresholds of significance. The criteria identified above from the L.A. County CEQA Thresholds Guide will be used where applicable and relevant to assist in analyzing the Appendix G thresholds.

4.4 Project Impacts

The project will require the construction of new, water facilities to serve the new buildings. Construction impacts associated with the installation of water distribution lines would primarily involve trenching to place the water distribution lines below surface and would be limited to on-site water distribution, and minor off-site work associated with lateral connections to the public main. Prior to ground disturbance, Project contractors would coordinate with California Water Service Company to identify the locations and depths of all lines. Additionally, County of Los Angeles and California Water Service Company would be notified in advance of proposed ground disturbance activities to avoid water lines and disruption of water service. Therefore, Project impacts on water infrastructure associated with construction activities would be less than significant.

According to the 2019 California Fire Code Section 501.3, construction documents for proposed fire apparatus access, location of fire lanes, security gates across fire apparatus roads and construction documents and hydraulic calculations for fire hydrant systems shall be submitted to the fire department for review and approval prior to construction. Referencing the California Fire Code Appendix B (Table B105.1) and Appendix C (Table C105.1) Omega has estimated the minimum requirements are that:

- The water system must deliver 2,500 GPM at 20 psi for 2 hours.
- The spacing between fire hydrants does not exceed 450 feet via vehicular access.
- The distance of proposed buildings must be within 225 feet of a vehicular access roadway that is a minimum of 20 feet wide, paved with concrete or asphalt and does not exceed 15% grade.

Omega has corresponded with California Water Service Company and has received final receipt of the Fire Hydrant Flow Test form results that indicate the available pressure and capacity meet the proposed demands.

The total water demand for the Project is 1.83 AFY. Fire water demands will create a much greater immediate need on the water network than that of the Project's domestic uses, and therefore are the primary

means for analyzing infrastructure capacity. All buildings will be sprinklered. However, water demands for the fire hydrants are fixed per a max flow allowed through the hydrant nozzle and building sprinkler demands will be less than the required 2,500 GPM for 2 hours. Cumulative demand from both the sprinkler system and fire hydrants flowing simultaneously will further reduce the pressure in the water system, the Fire Hydrant Flow Tests results have confirmed that available pressure and capacity meet the required 20 psi at the furthest hydrant.

5.0 SEWER

5.1 Existing Condition

Both the existing conditions and previous development conditions have been analyzed. The Project site is located within the Consolidated Sewer Maintenance District run by LACDPW. There is an existing 10" clay sewer main in the center of S Perry Street adjacent to the Project Site that is owned by LACDPW. The previous condition of the site was a 60,000 SF industrial building that covered most of the site and a parking lot. This information and the sewer generation factor for industrial buildings were used to generate the existing average daily water demand.

5.2 Proposed Condition

LACDPW's average wastewater generation factors were used to calculate the estimated demand of the proposed Project as follows:

Proposed Use	Average Generation Factor[(a)]	Proposed Number of Units	Average Daily Water Demand (GPD)
Office	200/1,000 GPD/SF	3,125 SF	625
Café/Restaurants	1,000/1,000 GPD/SF	1,550 SF	1,550
Storage	25/1,000 GPD/SF	109,039 SF	2,725
Proposed Total Demand	-	-	4,900
Proposed Total Demand With 2.5 Peaking Factor	-	-	12,250
Existing Condition	-	-	0
Previous Industrial	200/1,000 GPD/SF	60,000	-12,000

a) All flows were calculated using the County of Los Angeles sewer generation values. See appendix for entire sewer generation rates.

The proposed project will contribute 12,250 GPD or .02 cubic feet per second (cfs), when a peaking factor of 2.5 is factored in. This totals a net increase of 250 GPD when compared to the former industrial building located on the site and an increase of 12,250 GPD when compared to current vacant condition. It is anticipated that the project will flow 100% into the existing 10" diameter sewer through two separate sewer laterals on the project.

A will serve letter request was submitted to the LACSD for a 100% discharge of the project sewer that enters their system.

5.3 Significant Thresholds – Sewer

In accordance with State CEQA Guidelines Appendix G (Appendix G), the Project would have a significant impact related to wastewater if it would:

- Require or result in the construction or relocation of new or expanded wastewater treatment facilities, the construction, or relocation of which would cause significant environmental effects; or
- Result in a determination by the wastewater treatment provider, which serves or may serve

the project, that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

The County of Los Angeles CEQA Thresholds Guide identifies the following criteria to evaluate wastewater impacts:

- The project would cause a measurable increase in wastewater flows at a point where, and a time when, a sewer's capacity is already constrained or that would cause a sewer's capacity to become constrained; or
- The project's additional wastewater flows would substantially or incrementally exceed the future scheduled capacity of any one treatment plant by generating flows greater than those anticipated in the Wastewater Facilities Plan or General Plan and its elements.

In assessing impacts related to wastewater, the County will use Appendix G as the thresholds of significance. The criteria identified above from the L.A. CEQA Thresholds Guide will be used where applicable and relevant to assist in analyzing the Appendix G thresholds.

5.4 Project Impacts

Construction activities for the Project would not result in wastewater generation as construction workers would typically utilize portable restrooms, which would not contribute to wastewater flows to the local wastewater system. Thus, wastewater generation from Project construction activities is not anticipated to cause a measurable increase in wastewater flows. Therefore, the Project construction impacts to the wastewater system would be less than significant.

The Project will require construction of new wastewater infrastructure to serve the new buildings. Construction impacts associated with wastewater infrastructure would primarily be confined to trenching for miscellaneous utility lines and connections to public infrastructure. Installation of wastewater infrastructure will be limited to on-site wastewater distribution, and minor off-site work associated with connections to the public main. Overall, when considering impacts are of a relatively short-term duration (i.e., months) and would cease to occur once the installation is complete. Therefore, Project impacts on wastewater associated with construction activities would be less than significant.

6.0 STORMWATER

6.1 Existing Condition

Both the existing conditions and previous development conditions have been analyzed. The previous development conditions consisted of an industrial building that covered most of the site and a parking lot. The previously developed site was approximately 96.4% impervious and underlain by soil type # 3. The previous development surface drained to the west boundary of the site, to a drainage ditch that flows to a 60" levee drain to Dominguez channel. The commercial building and on-site surface improvements were completely removed approximately 10 years ago. All offsite drainage improvements adjacent to the site remain in place.

The site as it currently exists is the bare pad where the previous development stood. The surface cover consists of compacted fills, and base materials left by the previous development. The existing site is approximately 3.5% impervious and underlain by soil type #3. The existing site drains in the same manner as in the previous development conditions, and to the same offsite improvements.

6.2 Proposed Condition

The proposed development will re-grade the entire site but will keep the same discharge point as the existing and previous developed conditions. The proposed site will be 89.7% impervious.

The project will construct gutters that wrap around the self-storage facilities and direct the runoff generated from the site towards the westerly portion of the site. Runoff will then drain into a 10'x20' Modular Wetland System for treatment. Following treatment, the stormwater will drain out via pipe flow to a storm drain clean out structure thence to the existing 5' storm drain inlet and ultimately the Dominguez Channel. This point is referred to as Discharge Point # 1 in this report.

The discharge point will have a 50-year peak discharge that increases from the existing condition but decreases from the previous development. This is accomplished by reducing the impervious footprint of the proposed site compared to that of the previous development.

6.3 SURFACE WATER HYDROLOGY

6.3.1 General Approach

The project is located within the Los Angeles County Flood Control District (LACFD) jurisdiction therefore, the City of Carson has adopted the County Department of Public Works (LACDPW) Hydrology Manual as its basis of design for storm drainage facilities. The LACDPW Hydrology Manual requires runoff from a 25-year frequency design storm falling on a saturated watershed. A 25-year frequency design storm has a probability of 1/25 of being equaled or exceeded in any year. The County's CEQA Threshold Guide, however, establishes the 50-year frequency design storm event as the threshold to analyze potential impacts on surface water hydrology as a result of development. To provide a more conservative analysis, the 50-year frequency design storm event was analyzed.

6.3.2 Hydrology Results

Table 1 below summarizes the hydrology results demonstrating the peak flows for the 25-,50-, and 100-year storm events under previously developed, existing, and proposed project conditions:

Table 1. Previously Developed, Existing, and Proposed Peak Runoff Flows

	Previously Developed	Existing	Proposed		
Storm Event	Q_{Total} [cfs]	Q_{Total} [cfs]	Q_{Total} [cfs]	% Change from Existing	% Change from Prior Development
25-Yr	6.26	1.96	5.57	+64.8%	-11.0%
50-Yr	7.61	3.12	6.74	+53.7%	-11.4%
100-Yr	8.55	4.08	7.79	+47.6%	-8.8%

The review demonstrates that the project will exceed the existing stormwater flows. However, when compared to the previous development site flows the project would have a net decrease in stormwater flows. The proposed project will treat and convey stormwater runoff to the existing drainage infrastructure that the previous industrial site also drained to. The existing infrastructure includes a concrete brow ditch running parallel to the southwest property line of the site. This brow ditch flows into a 60" RCP levee drain that discharges to Dominguez Channel, a tidally influenced water body. This offsite drainage infrastructure appears to be unchanged since the previous industrial site was demolished 10 years ago.

The 60" RCP levee drain that accepts flow from the site was constructed in 1963. When it was designed, it accepted flow from a much larger area than it does in in the existing conditions. As the area surrounding the site was developed, separate offsite-storm drain systems with separate outfalls were constructed. These offsite MS4 systems intercept the majority of the runoff that was tributary to the levee drain. In the existing conditions, the land that drains to the levee drain has been greatly reduced. The area tributary to the drain consists of the project site and a thin strip of offsite land west of the site.

This means that the offsite drainage improvements between the project site and Dominguez Chanel are significantly larger than is required by the development.

The Project will include the installation of private roof downspouts, planter drains throughout the project site to collect roof and site runoff, and direct stormwater to the LID system through a series of gutters. This onsite stormwater conveyance system would serve to prevent onsite flooding and nuisance water build-up on the Project Site.

For additional information and detailing see the full Hydrology report in the Appendices.

6.4 SURFACE WATER QUALITY

6.4.1 General Approach

Construction Best Management Practices (BMP's) will be designed and maintained as part of the implementation of the SWPPP in compliance with the General Permit. The SWPPP shall begin when construction commences. Before any site clearing and grubbing of demolition activity. During construction, the SWPPP will be referred to regulatory standards, and amended as changes occur throughout the construction process. The Notice of Intent (NOI), Amendments to the SWPPP, Annual Reports, Rain Event Action Plans (REAPs), and Non-Compliance Reporting will be posted to the State's SMARTS website in compliance with the requirements of the General Permit.

The Project falls under the jurisdiction of the Los Angeles County Department of Public Works, which follows the 2009 Low Impact Development (LID) Manual design guidelines. The purpose of this structure water quality report is:

- To document that the Los Angeles County LID requirements will be met;
- To determine the proposed development's impact on existing hydrologic conditions;
- To identify the pollutants of concern and provide BMPs that will mitigate those pollutants of concern; and
- To provide sufficient detailed information to support detailed hydraulic design stormwater treatment systems.

The LID requirements, approved by the Regional Water Quality Control Board, call for the treatment of the peak mitigation flow rate or volume of runoff produced either by a 0.75" 24-hr rainfall event or the 85th percentile rainfall event, whichever is greater. Under section 3.1.2 of the LID Manual, this post-construction stormwater runoff from the new development shall be infiltrated, evapotranspirated, captured and used, and/or treated through high efficiency BMP's onsite. The rainfall intensity of the 85th percentile rainfall event governs.

Table 1 Summary LID Mitigation BMPs

Description	Area [ac]	Impervious Area [ac]	Required Flowrate (CFS)	BMP Type	Provided Flowrate (CFS)	% Treated	Impervious Area Untreated [ac]
DMA-1	2.77	2.49	0.702	20x10 Modular Wetland System	0.710	100	0
Total Percent Treatment						100 %	

For further information and detailing see LID Plan in the Appendices.

6.5 SIGNIFICANCE THRESHOLDS

6.5.1 Surface Water Hydrology

With respect to surface water hydrology, the State 2019 CEQA Guidelines (Appendix G) inquire whether
the Project would:

- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
    - Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?
    - Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
        - Result in substantial erosion or siltation on- or off-site;
        - Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
        - Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
        - Impede or redirect flood flows?
        - In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

6.5.2 Surface Water Quality

With respect to surface water quality, the State 2019 CEQA Guidelines (Appendix G) inquire whether the Project would:

- In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

The Appendix G of the CEQA Guidelines can be used to determine the significance of a project's impact on surface water quality. These are defined in Section 13050 of the California Water Code (CWC). Pollution, contamination, or nuisance may occur if regulatory standards are violated, as defined in the applicable NPDES stormwater permit or Water Quality Control Plan for the receiving water body. The CWC include the following definitions:

"Pollution" means an alteration of the quality of waters of the state to a degree which unreasonably affects either the following: 1) the waters for beneficial uses or 2) facilities which serve these beneficial uses. "Pollution" may include "Contamination".

"Contamination" means an impairment of the quality of the waters of the state by waste to a degree, which creates a hazard to the public health through poisoning or through the spread of disease. "Contamination" includes any equivalent effect resulting from the disposal of waste, whether or not waters of the state are affected.

"Nuisance" means anything which meets all of the following requirements: 1) is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property; 2) affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extend of the annoyance or damage inflicted upon individuals may be unequal; and 3) occurs during, or as a result of the treatment or disposal of wastes.

6.6 PROJECT STORMWATER IMPACT ANALYSIS

6.6.1 Surface Water Hydrology

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☑
b. Substantially alter the existing drainage pattern of the site or area including through the alteration of the course of a stream or river, in a manner which would:	☐	☐	☐	☑
i. Result in substantial erosion or siltation on or off-site;	☐	☐	☐	☑
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off-site;	☐	☐	☐	☑

iii. Create or combine runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted; or	☐	☐	☐	☑
iv. Impede or redirect flood flows?	☐	☐	☐	☑
c. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☑
d. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☑

a. **Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?**

No Impact. Project is not located near ground recharge wells, and no groundwater recharge facilities exist downstream of the project between the project and its ultimate outfall to Dominguez Channel.

b. **Would the project substantially alter the existing drainage pattern of the site or area including through the alteration of the course of a stream or river, in a manner which would:**

i. **result in substantial erosion or siltation on or off-site;**

No Impact. The proposed site would be almost entirely impervious. Drainage conveyance from the site to Dominguez Channel is hardened. No areas will exist on or offsite produce silt, and no unhardened conveyances will exist to be eroded.

ii. **substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off-site**

No Impact. As previously discussed in section 6.3.2, while runoff will increase compared to existing conditions, it will not increase over the conditions for which the offsite drainage conveyances have been designed. All proposed onsite conveyances have been designed to safely convey the flowrates generated by the 100-year storm without negative impacts to the proposed buildings.

iii. **create or combine runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of pollution**

No Impact. As previously detailed, the planned onsite stormwater conveyances will be sized to safely convey the 100-year storm. The existing offsite conveyances were build to handle flow from a much larger area than currently drains to them.

iv. **impede or redirect flood flows?**

No Impact. There will be no impeded or redirected flood flows, as the site receives no stormwater from off-site areas.

c. **In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?**

Less Than Significant Impact. Per the Geotechnical report included as part of the LID plan in the Appendices, "The site is not located within a coastal area. Therefore, tsunamis are not considered a significant hazard at the site. Seiches are large waves generated in enclosed bodies of water in response to ground shaking. No major water-retaining structures are located immediately up gradient from the project site. Therefore, flooding resulting from a seismic-induced seiche is considered unlikely."

d. **Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?**

No Impact. The proposed project will not conflict or obstruct with implementation of a water quality control plan or sustainable groundwater management plan.

6.6.1 Surface Water Hydrology

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☑
b. Otherwise substantially degrade water quality?	☐	☐	☐	☑

a. **Violate any water quality standards or waste discharge requirements?**

No Impact. Project will comply with all water quality standards and waste discharge requirements.

b. **otherwise substantially degrade water quality??**

No Impact. Project does not propose a use that will substantially degrade water quality. Additionally, a compact biofiltration unit (Modular Wetland System) will be used to filter all runoff produced by the site for the 85th percentile storm.

7.0 ELECTRICTY

7.1 Existing Condition

The projects electric service provider will be Southern California Edison. There are no apparent existing electrical structures or equipment on the site, but this will be verified during the removal process.

7.2 Proposed Condition

Temporary Power: There is overhead power available from the pole at the south-east corner of the property which can be a potential source, given that the temporary power is no more than 200A-600A Single Phase.

Permanent Power: The proposed development would have Southern California Edison run a primary cable from the existing Edison manhole on South Perry Street to a proposed onsite 10' x 12' transformer pad approximately 175' away. Based off historical data provided to SCE, to service buildings of this size & expected usage in this climate zone, DUEX anticipates a single transformer to feed the entire site. All estimated kVA's per building can be found on the proposed utility exhibit in the Appendices.

7.3 Project Impacts

The project will require construction of a single 10' x 12' transformer pad. Additionally, during construction temporary power will need to be obtained via an overhead power available from the pole at the south-east corner of the property which can provide temporary power no more than 200A-600A Single Phase.

8.0 GAS

8.1 Existing Condition

The project gas service provider will be Southern California Gas Company. There are no apparent gas facilities on the existing site, but this will be verified during the removal process.

8.2 Proposed Condition

The proposed development would have the project connect to the existing gas mainline located in South Perry Street east of the property.

8.3 Project Impacts

Southern California Gas will need to obtain permits to conduct work in the public right of way. Additionally, note that gas meters must be 3' away from any doors and windows, if under an opening window must be minimum 10' above. Gas meters must be easily accessible for emergencies & maintenance.

9.0 TELECOMMUNICAIONS

9.1 Existing Condition

The project telecommunication provider will be AT&T. There are no apparent existing telephone structures or equipment on the site, but this will be verified during the removal process.

9.2 Proposed Condition

The proposed development would have the site tie in overhead at the existing overhead line on East Carson Street. AT&T would then run their services to the proposed pullbox location on Perry Street. The AT&T point of connection is pending confirmation.

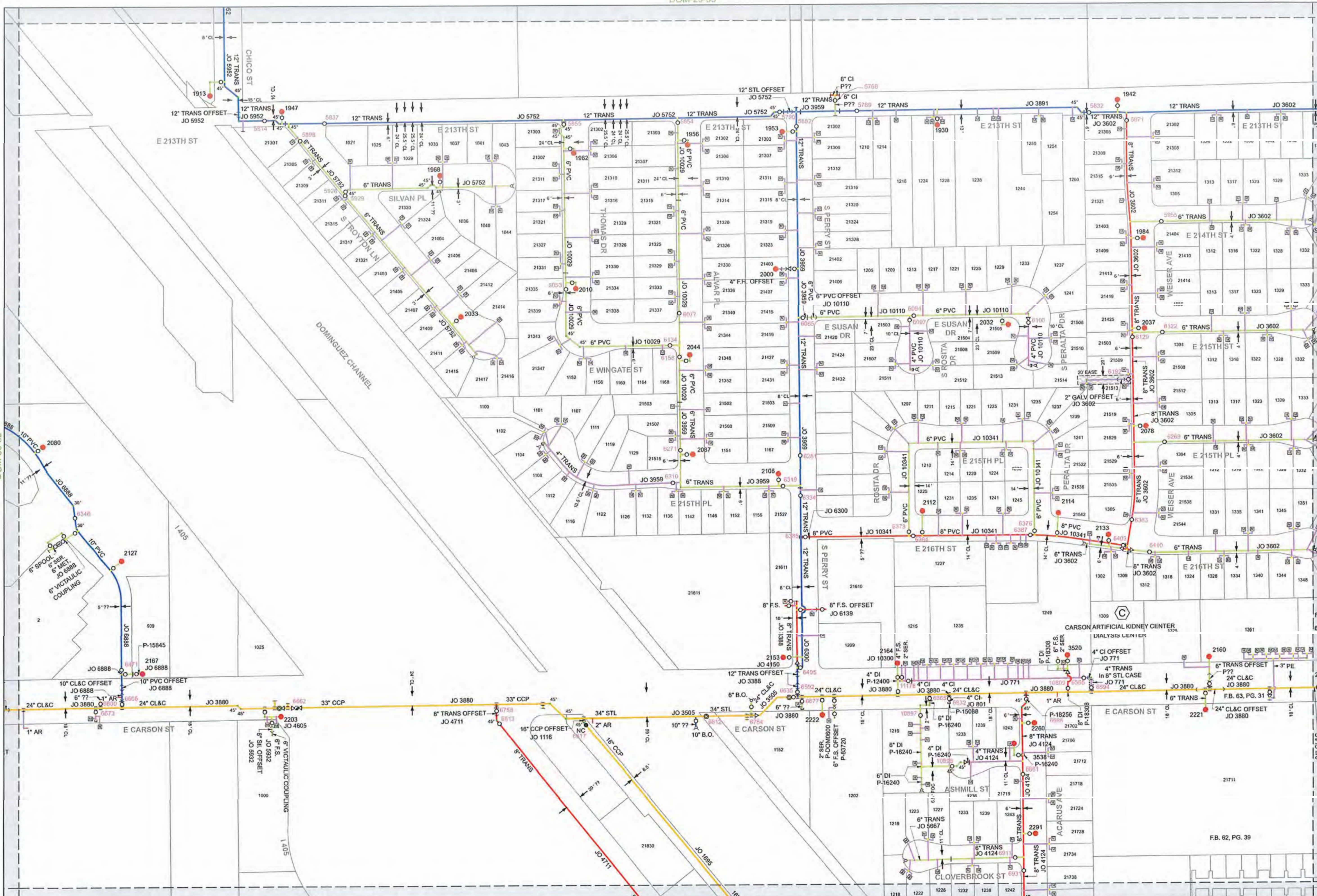
9.3 Project Impacts

AT&T will require a typical marketing agreement executed to bring fiber to the site. The location and installation of the AT&T facilities will require further coordination.

10.0 LEVEL OF SIGNIFICANCE

Based on the analysis of the proposed project, no significant impacts have been identified for water, sewer, stormwater, electrical, natural gas, or telecommunications facilities

11.0 APPENDICES



ENGINEERING DEPARTMENT

CALIFORNIA WATER SERVICE

GIS

DOMINGUEZ DISTRICT WATER SYSTEM

CONFIDENTIALITY: Applicant hereby agrees that any plans or markings made by California Water Service showing the extent of location of its underground facilities and without any warranties, representations, or guarantees of completeness or accuracy. Applicant acknowledges that said information is a suggestion as to possible locations, as would be necessary to protect Cal Water's property. Applicant accepts full responsibility for any damage to Cal Water's facilities. Applicant agrees that Cal Water is not liable for any direct or indirect damages arising out of the use of said information.

N

SCALE: 1" = 200'

Issued: October 2017

Plat Sheet: DOM-30-33

CALIFORNIA WATER SERVICE

Rancho Dominguez District 2632 West 237th Street, Torrance, CA 90505
Tel: (310) 257-1400

November 15, 2021

21611 Perry Street, LLC
4132 Katella Avenue #205b
Los Alamitos, CA 90720
Attn: Darren Embry

Will Serve Letter
21611 Perry Street, Carson, CA
Requestor for Will Serve: Darren Embry

Dear Mr. Embry:

As a regulated utility, California Water Service Company Rancho Dominguez district ("Cal Water") has an obligation to provide water service in accordance with the rules and regulations of the California Public Utility Commission (CPUC). Assuming you receive all required permits from the city of Carson and / or the County of Los Angeles, Cal Water will provide water service to the above referenced project. Cal Water agrees to operate the water system and provide service in accordance with the rules and regulations of the California Public Utilities Commission (CPUC) and the company's approved tariffs on file with the CPUC. This will serve letter shall remain valid for **two years** from the date of this letter. If construction of the project has not commenced within this **two year** time frame, Cal Water will be under no further obligation to serve the project unless the developer receives an updated letter from Cal Water reconfirming our commitment to serve the above mentioned project. Additionally, Cal Water reserves the right to rescind this letter at any time in the event its water supply is severely reduced by legislative, regulatory or environmental actions.

Cal Water will provide such potable water at such pressure as may be available from time to time as a result of its normal operations per the company's tariffs on file with the CPUC. Installation of facilities through developer funding shall be made in accordance with the current rules and regulations of the CPUC including, among others, Tariff Rules 15 and 16 and General Order 103-A. In order for us to provide adequate water for domestic use as well as fire service protection, it may be necessary for the developer to fund the cost of special facilities, such as, but not limited to, booster pumps, storage tanks and/or water wells, in addition to the cost of mains and services. Cal Water will provide more specific information regarding special facilities and fees after you provide us with your improvement plans, fire department requirements, and engineering fees for this project.

This letter shall at all times be subject to such changes or modifications by the CPUC as said Commission may, from time to time, require in the exercise of its jurisdiction.

If you have any questions regarding the above, please call me at (310) 257-1400.

Sincerely,

Daniel Armendariz
District Manager

cc: Rashmi Kashyap – Cal Water Engineering Dept
Ralph Felix – Cal Water Operations Manager
Anthony Gonzalez – Cal Water Superintendent
File

California Water Service Company
Fire Flow Test

2/7/2022

Test Date: 02/04/2022 Time: 9:00

District DOMINGUEZ Zone: II Plat: 30-33

Address: 21611 S Perry ST

Cross Street: E Carson ST

Requested By: D. Embry

Conducted By: Evan G.

Purpose Of Test: Determine Flow Availability

Witnessed By: Calwater: Richard P.

Others: Chris

Outlet No.	Outlet Size	PITOT	Observed	Static Pressure	Residual Pressure	Flow Observed	Flow Avail. @20
Location 1 Hydrant No.: 2153			Address: 21611 Perry St				
1	4.00	35	2541	67	48	2541	4144
2							
3							
4							
Location 2 Hydrant No.: 2108			Address: 21527 E. 215th Pl				
1	4.00	22	2015			2015	3286
2							
3							
4							
Location 3 Hydrant No.			Address:				
1							
2							
3							
4							
			Total Flow Observed Available @20:			4556	7430

Remarks: Elevation Difference: 0'. Distance from Static/Residual to FH: 149' & 398'. Distance from FH to Street Address P/L: 84' & 321'.

Static/Residual Location: 1209 E Carson St

Note:

Regardless of the results of this test, California Water Service Company assumes no liability beyond that stated in the following excerpt from the P.U.C. Tarriff Schedule: "The utility (California Water Service Company) will supply only such water at such pressure as may be available from time to time as a result of its normal operation of the system."

PART II **INFORMATION ON FIRE FLOW AVAILABILITY**
(Part II to be completed by Water Purveyor)

Location of hydrant west side of S Perry St
north of E Carson St Hydrant Number 2153

Distance from Nearest Property Line 84' Size of Hydrant 6" Size of Water main 12"

Static PSI 67 Residual PSI 48 Orifice size 4" Pitot 35 PSI

Fire Flow at 20 PSI 4144 GPM Duration 2 Hours [x] Flow Test Date / Time 02/04/2022, 09:00am
[ ] Hydraulic model

Location of hydrant south side of E 215th Pl
west of S Perry St Hydrant Number 2108

Distance from Nearest Property Line 321' Size of Hydrant 6" Size of Water main 6"

Static PSI 67 Residual PSI 48 Orifice size 4" Pitot 22 PSI

Fire Flow at 20 PSI 3286 GPM Duration 2 hours [x] Flow Test Date / Time 02/04/2022, 09:00am
[ ] Hydraulic model

[x] (Check box if Simultaneous/ Dual flow test was performed) Combined flow at 20 psi 7430 GPM

Location of hydrant _____
_____ Hydrant Number _____

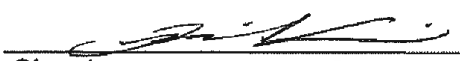
Distance from Nearest Property Line _____ Size of Hydrant _____ Size of Water main _____

Static PSI _____ Residual PSI _____ Orifice size _____ Pitot _____

Fire Flow at 20 PSI _____ Duration _____ [ ] Flow Test Date / Time _____
[ ] Hydraulic model

[ ] (Check box if Simultaneous/ Triple flow test was performed) Combined flow at 20 psi _____

California Water Service - Dominguez
Water Purveyor


Signature

310-257-1400 02/15/2022
Phone Number Date

Superintendent (Richard Garcia)
Title

This Information is Considered Valid for Twenty Four Months

Fire Department approval of building plans shall be required prior to the issuance of a Building Permit by the jurisdictional Building Department. Any deficiencies in water systems will need to be resolved by the Fire Prevention Division only prior to this department's approval of building plans.

S-1760

SEE SHT. NO. S-1759

C I T Y

O F

C A R S O N

SAN DIEGO FWY

DOMINGUEZ ST

CARSON ST

223RD ST

220TH ST

219TH ST

218TH ST

215TH ST

214TH ST

213TH ST

WILMINGTON AV

AVALON BV

CHANNEL

FRIENDSHIP PARK

DOLPHIN PARK

WATSON CENTER

CARNEGIE JR HS

CITY HALL

SHERIFF STA

CIVIC CENTER

PACIFICA VILLA CP

SEE SHT. NO. S-1705

SEE SHT. NO. S-1815

SEE SHT. NO. S-1761

THIS MAP IS INTENDED FOR USE ONLY AS OPERATIONS MAP BY LOS ANGELES COUNTY SEWER MAINTENANCE DISTRICTS. LOS ANGELES COUNTY EXPRESSLY DISCLAIMS ANY LIABILITY FOR ANY INACCURACIES WHICH MAY BE PRESENT IN THIS MAP.

AUTOMATED GRAPHICS

METERS 0 50 100 200 250

FEET 0 200 400 600 800

LEGEND

- CLAY SEWERS MAINTAINED BY SMD, 8" UNLESS OTHERWISE NOTED
- PLASTIC SEWERS
- CONCRETE SEWERS
- CLAY SEWERS, LINED
- CEMENT SEWERS, LINED
- FORCE MAINS
- SEWERS NOT MAINTAINED BY SMD
- TRUNK SEWERS
- CITY BOUNDARY
- STANDARD MANHOLE
- DROP MANHOLE
- SHALLOW MANHOLE
- TRAP MANHOLE
- WEIR MANHOLE
- C.O. CLEANOUT
- L.H. LAMP HOLE
- PUMP STATION

TOTAL MH'S THIS MAP: 615

MAP REV
05-19-16

DATA BASE REV
05-21-86

CONSOLIDATED S.M.D.

S-1760

T: 7S4 E-7

0219.0319.1760

LOS ANGELES COUNTY
SANITATION DISTRICTS
Converting Waste Into Resources

Robert C. Ferrante
Chief Engineer and General Manager

1955 Workman Mill Road, Whittier, CA 90601-1400
Mailing Address: P.O. Box 4998, Whittier, CA 90607-4998
(562) 699-7411 • www.lacsd.org

January 31, 2022

Ref. DOC 6440338

Mr. Darren Embry, Vice President
21611 Perry Street LLC
3430 Viewridge Avenue, Suite B
San Diego, CA 92123

Dear Mr. Embry:

Will Serve Letter for Perry Street Self-Storage

The Los Angeles County Sanitation Districts (Districts) received your will serve letter request for the subject project on January 20, 2022. The proposed project is located within the jurisdictional boundary of District No. 8. We offer the following comments regarding sewerage service:

1. The wastewater flow originating from the proposed project will discharge to a local sewer line, which is not maintained by the Districts, for conveyance to the Districts' Wilmington Avenue Trunk Sewer, located in Martin Street at Carson Street. The Districts' 27-inch diameter trunk sewer has a capacity of 6.9 million gallons per day (mgd) and conveyed a peak flow of 1 mgd when last measured in 2016.

2. The wastewater generated by the proposed project will be treated at the Joint Water Pollution Control Plant located in the City of Carson, which has a capacity of 400 mgd and currently processes an average flow of 249.8 mgd.

3. The expected increase in average wastewater flow from the project, described in the application as a 113,818 square-foot indoor self-storage facility with a 1,550 square-foot café and a 3,100 square-foot retail store, is 2,536 gallons per day, after all structures on the project site are demolished. For a copy of the Districts' average wastewater generation factors, go to www.lacsd.org, Wastewater & Sewer Systems, click on Will Serve Program, and click on the Table 1, Loadings for Each Class of Land Use link.

4. The Districts are empowered by the California Health and Safety Code to charge a fee to connect facilities (directly or indirectly) to the Districts' Sewerage System or to increase the strength or quantity of wastewater discharged from connected facilities. This connection fee is used by the Districts for its capital facilities. Payment of a connection fee may be required before this project is permitted to discharge to the Districts' Sewerage System. For more information and a copy of the Connection Fee Information Sheet, go to www.lacsd.org, under Services, then Wastewater (Sewage) and select Rates & Fees. In determining the impact to the Sewerage System and applicable connection fees, the Districts will determine the user category (e.g. Condominium, Single Family home, etc.) that best represents the actual or anticipated use of the parcel(s) or facilities on the parcel(s) in the development. For more specific information regarding the connection fee application procedure and fees, the developer should contact the Districts' Wastewater Fee Public Counter at (562) 908-4288, extension 2727.

5. In order for the Districts to conform to the requirements of the Federal Clean Air Act (CAA), the capacities of the Districts' wastewater treatment facilities are based on the regional growth forecast adopted by the Southern California Association of Governments (SCAG). Specific policies included in the development

of the SCAG regional growth forecast are incorporated into clean air plans, which are prepared by the South Coast and Antelope Valley Air Quality Management Districts in order to improve air quality in the South Coast and Mojave Desert Air Basins as mandated by the CAA. All expansions of Districts' facilities must be sized and service phased in a manner that will be consistent with the SCAG regional growth forecast for the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. The available capacity of the Districts' treatment facilities will, therefore, be limited to levels associated with the approved growth identified by SCAG. As such, this letter does not constitute a guarantee of wastewater service, but is to advise the developer that the Districts intend to provide this service up to the levels that are legally permitted and to inform the developer of the currently existing capacity and any proposed expansion of the Districts' facilities.

If you have any questions, please contact the undersigned at (562) 908-4288, extension 2708 or at dcurry@lacsd.org.

Very truly yours,

Donna J. Curry

Donna J. Curry
Customer Service Specialist
Facilities Planning Department

DC:dc

Carson Self-Storage
Drainage Study

21611 South Perry St.
Carson, CA 90745

Date Prepared:
March 8, 2022

Prepared for:
21611 Perry Street, LLC
4132 Katella Avenue, #205B
Los Alamitos, CA 90720

Prepared By:

ΩMEGA
ENGINEERING CONSULTANTS
4340 Viewridge Ave, Suite B
San Diego, CA 92113
Ph: (858) 634-8620

Declaration of Responsible Charge:
I hereby declare that I am the engineer of work for this project, that I have exercised responsible charge over the design of the project as defined in section 6703 of the business and professions code, and that the design is consistent with current standards. I understand that the check of the project drawings and specifications by the City of Carson is confined to a review only and does not relieve me, as an engineer of work, of my responsibilities for project design.

Patric T. de Boer RCE 83583
Registration Expires 3-31-2023

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Proposed HydroCalc Analysis 2
Results and Conclusions 3
Site Vicinity Map 4
Existing Hydrology Exhibit 5
Prior Developed Hydrology Exhibit 6
Proposed Hydrology Exhibit 7
HydroCalc Analysis Exhibits 8

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50-Year Isopluvial ..... **Appendix 1**
Soil Type Map ..... **Appendix 2**
Pipe Sizing ..... **Appendix 3**
Gutter Analysis ..... **Appendix 4**

Site & Project Description

This drainage study has been prepared for Carson Self-Storage located at 21611 South Perry Street in the City of Carson.

The project involves the construction of three two-story storage buildings with asphalt paving throughout the development. The total area of analysis is 2.77 acres.

See figure No.1 for a Vicinity Map. Figures 2, 3, & 4 show the existing and proposed drainage flow paths and basins.

Methodology

This drainage report has been prepared in accordance with current County of Los Angeles regulations and procedures.

The analysis of the previously developed, currently existing and proposed conditions were performed using HydroCalc (Version 1.02) to calculate runoff rates and volumes. Given the area, length of flow path, average slope, design storm depth, imperviousness, and soil type, HydroCalc generates a hydrograph for the existing and proposed conditions. Soil and rainfall input data was determined using the maps provided in the LA County Hydrology Manual.

This report analyzes the flow generated by the 50 and 100-year storm events for storm drain sizing and flood control purposes.

(1) Handbook of Hydraulics, E.F. Brater & H.W. King, 6th Ed., 1976.
(2) Los Angeles County Department of Public Works Hydrology Manual, 2006

Previously Developed Conditions

The previous developed conditions which consisted of an industrial building that covered most of the site and a parking lot have been analyzed. The previously developed site was approximately 96.4% impervious and underlain by soil type # 3. The site drained via surface flow from east to west to an existing 5' storm drain inlet that outlets to the Dominguez Channel, a concrete lined channel. This point is referred to as Discharge Point # 1 in this report.

Existing Conditions

The existing condition site is approximately 3.5% impervious and underlain by soil type #3. The site drains via surface flow from east to west to an existing 5' storm drain inlet that outlets to the Dominguez Channel, a concrete lined channel. This point is referred to as Discharge Point # 1 in this report.

Proposed Conditions

The proposed development will re-grade the entire site but will keep the same discharge point as the existing and previous developed conditions. The proposed site will be 89.7% impervious.

The project will construct gutters that wrap around the self-storage facilities and direct the runoff generated from the site towards the westerly portion of the site. Runoff will then drain into a 10'x20' Modular Wetland System for treatment. Following treatment, the stormwater will drain out via pipe flow to a storm drain clean out structure thence to the existing 5' storm drain inlet and ultimately the Dominguez Channel. This point is referred to as Discharge Point # 1 in this report.

The discharge point will have a 50-year peak discharge that increases from the existing condition but decreases from the previous development. This is accomplished by reducing the impervious footprint of the proposed site compared to that of the previous development.

Previous Development HydroCalc Analysis

The previous developed condition was modeled using HydroCalc. The area of analysis consists of one basin being E-1.1.

Below is a summary of the results of the HydroCalc Calculations for the previous development conditions (E-1.1).

Basin #	Area (ac)	Soil Type	Imperv. (%)	$T_{C\ 50}$ (min)	I_{50} (in/hr)	$T_{C\ 100}$ (min)	I_{100} (in/hr)	Q_{25} (cfs)	Q_{50} (cfs)	Q_{100} (cfs)
E-1.1	2.77	3	96.4	10.0	3.11	9.0	3.49	6.26	7.61	8.55
							Total	6.26	7.61	8.55

Existing HydroCalc Analysis

The existing condition was modeled using HydroCalc. The area of analysis consists of one basin being A-1.1.

Below is a summary of the results of the HydroCalc Calculations for the existing conditions (A-1.1).

Basin #	Area (ac)	Soil Type	Imperv. (%)	$T_{C\ 50}$ (min)	I_{50} (in/hr)	$T_{C\ 100}$ (min)	I_{100} (in/hr)	Q_{25} (cfs)	Q_{50} (cfs)	Q_{100} (cfs)
A-1.1	2.77	3	3.50	7.0	2.63	7.0	3.10	1.96	3.12	4.08
							Total	1.96	3.12	4.08

Proposed HydroCalc Analysis

The proposed site was modeled as two basins, referred to as P-1.1 and P-1.2 in this report.

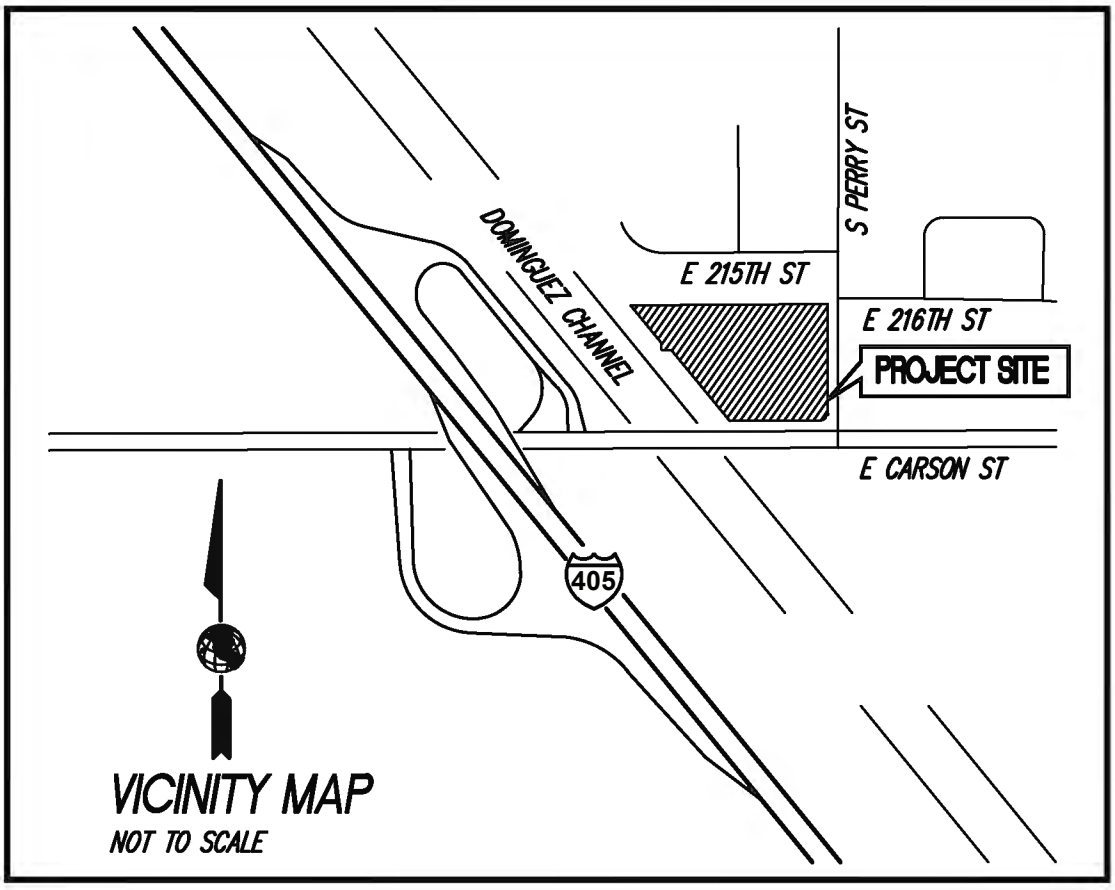
Below is a summary of the HydroCalc calculations for the proposed conditions.

Basin #	Area (ac)	Soil Type	Imperv. (%)	$T_{C\ 50}$ (min)	I_{50} (in/hr)	$T_{C\ 100}$ (min)	I_{100} (in/hr)	Q_{50} (cfs)	Q_{100} (cfs)
P-1.1	1.44	3	90.6	10.0	2.63	9.0	3.10	3.23	3.83
P-1.2	1.33	3	88.9	7.0	3.11	7.0	3.49	3.52	3.97
							Total	6.74	7.79

Results and Conclusions

The development of the project site will slightly modify the onsite drainage patterns; however, the existing and previous development point of discharge and the point of compliance remain the same.

The review demonstrates that the project will exceed the existing stormwater flows. However, when compared to the previous development site flows the project would have a net decrease in stormwater flows. The proposed project will treat and convey stormwater runoff to the existing drainage infrastructure that the previous industrial site also drained to. The existing infrastructure includes a concrete brow ditch running parallel to the southwest property line of the site. This brow ditch flows into a 60" RCP levee drain that discharges to Dominguez Channel, a tidally influenced water body. This offsite drainage infrastructure appears to be unchanged since the previous industrial site was demolished approximately 10 years ago.



VICINITY MAP

NOT TO SCALE

DRAINAGE BASIN DATA

BASIN #	AREA (AC)	SOIL TYPE	IMPERV. (%)	I_{25} (IN/HR)	I_{50} (IN/HR)	I_{100} (IN/HR)	Q_{25} (CFS)	Q_{50} (CFS)	Q_{100} (CFS)
A-1.1	2.77	3	3.5	2.04	2.63	3.10	1.96	3.12	4.08

LEGEND

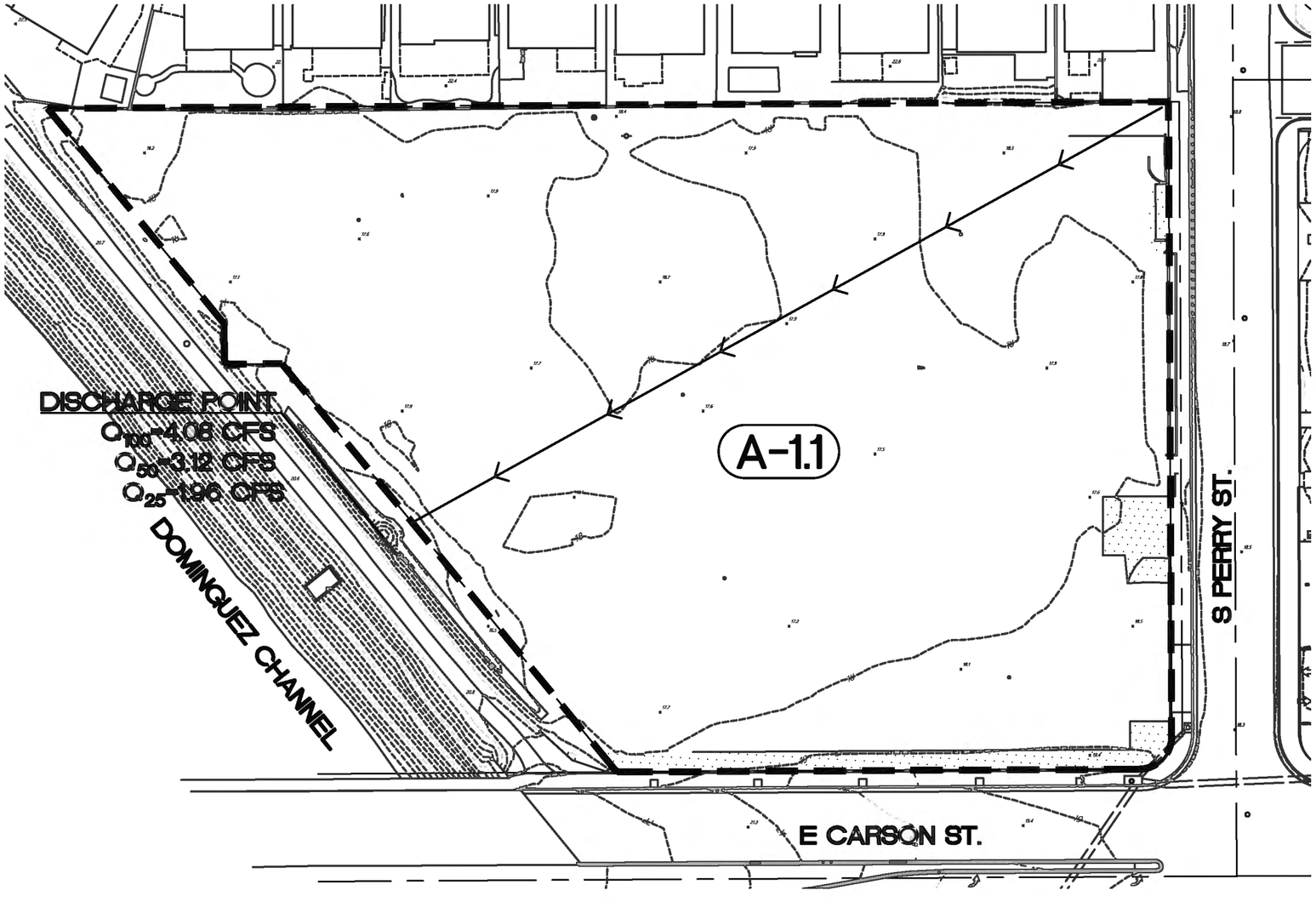
BASIN NUMBER ..... A-#.#

AREA LIMITS .....

DRAINAGE FLOW PATH .....

PAVEMENT AREA .....

PERVIOUS AREA .....



GRAPHICAL SCALE: 1" = 60'

0 30 60 120

CARSON SELF-STORAGE
EXISTING
HYDROLOGY EXHIBIT

OMEGA

EXISTING HYDROLOGY EXHIBIT

DRAINAGE BASIN DATA

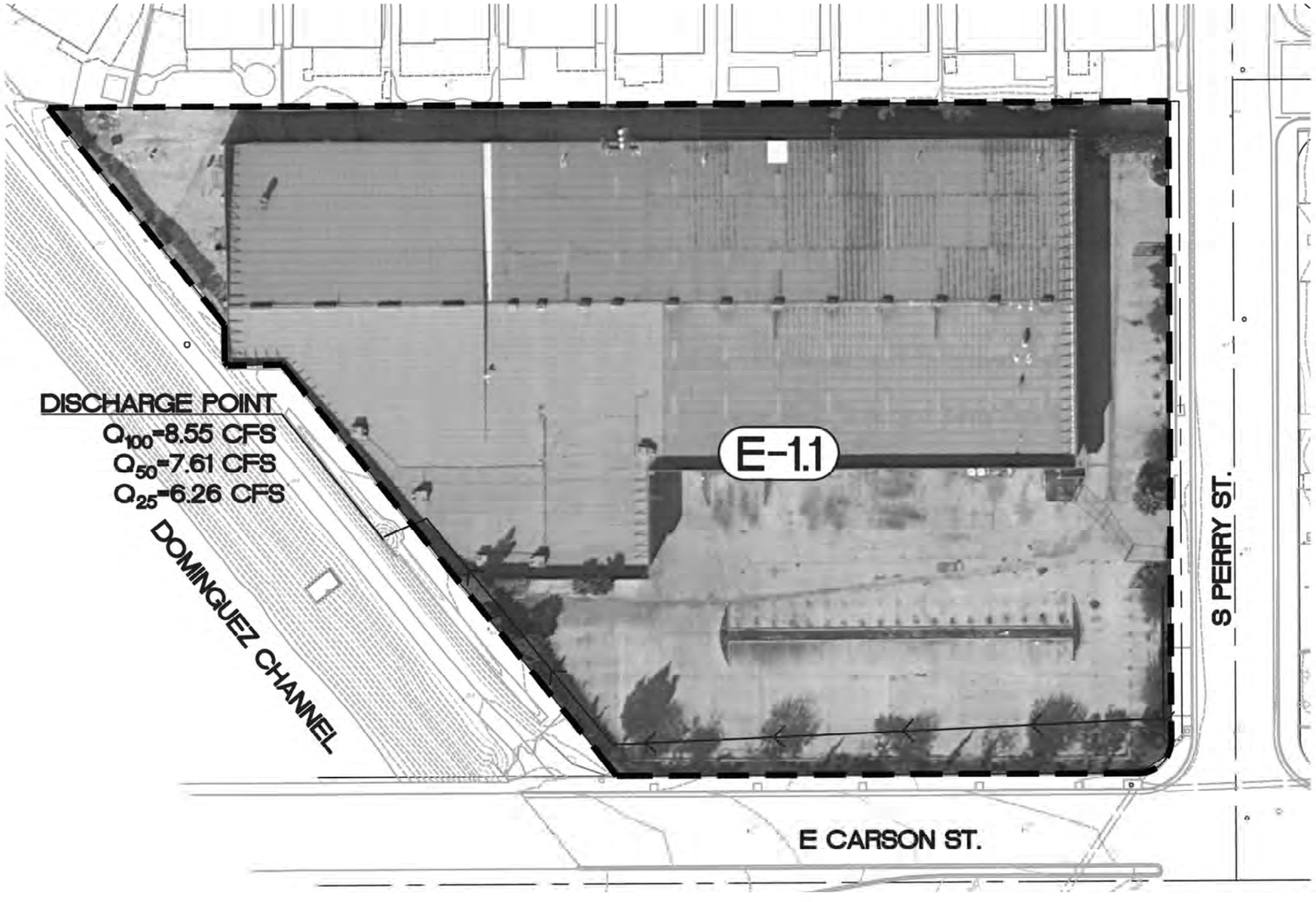
BASIN #	AREA (AC)	SOIL TYPE	IMPERV. (%)	I_{25} (IN/HR)	I_{50} (IN/HR)	I_{100} (IN/HR)	Q_{25} (CFS)	Q_{50} (CFS)	Q_{100} (CFS)
E-1.1	2.77	3	96.4	2.56	3.11	3.49	6.26	7.61	8.55

LEGEND

BASIN NUMBER ..... E-#.#

AREA LIMITS .....

DRAINAGE FLOW PATH .....



GRAPHICAL SCALE: 1" = 60'

0 30 60 120

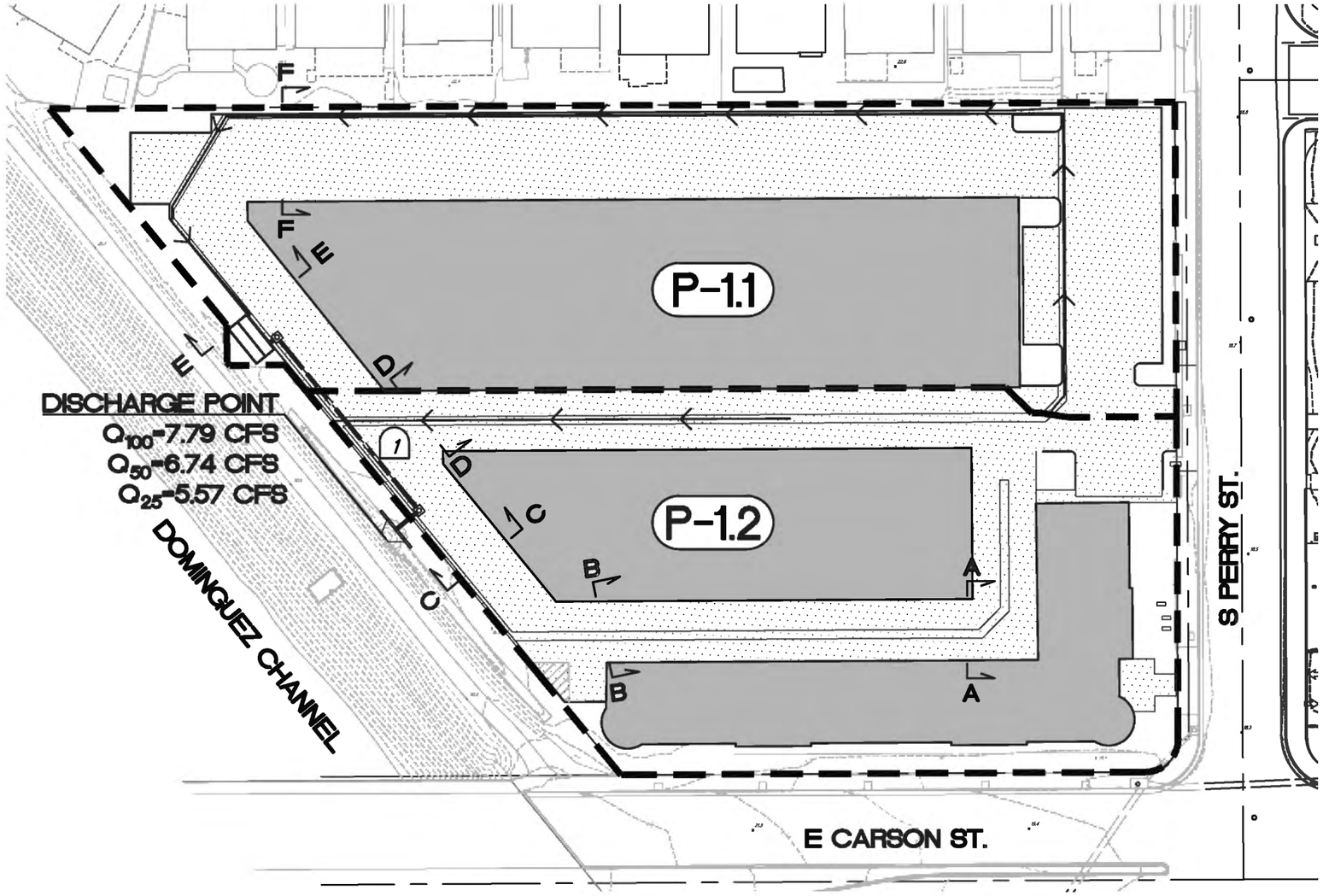
CARSON SELF-STORAGE PRE-DEVELOPED EXHIBIT

OMEGA

PRE-DEVELOPED HYDROLOGY EXHIBIT

DRAINAGE BASIN DATA

BASIN #	AREA (AC)	SOIL TYPE	IMPERV. (%)	I_{25} (IN/HR)	I_{50} (IN/HR)	I_{100} (IN/HR)	Q_{25} (CFS)	Q_{50} (CFS)	Q_{100} (CFS)
P-1.1	1.44	3	90.6	2.21	2.63	3.10	2.70	3.23	3.83
P-1.2	1.33	3	88.9	2.56	3.11	3.49	2.88	3.52	3.97



LEGEND

- BASIN NUMBER ..... P-#.#
- AREA LIMITS .....
- DRAINAGE FLOW PATH .....
- BUILDING AREA .....
- PAVEMENT AREA .....
- PERVIOUS AREA .....

(X) PIPE DATA

PIPE #	DIAMETER (INCHES)	SLOPE (%)	DEPTH /DIA	V_{100} (FPS)	Q_{100} (CFS)
1	18	1.0	0.64	6.52	7.79

NOTE: SEE APPENDIX 4 IN THE HYDROLOGY REPORT FOR GUTTER ANALYSIS SECTIONS

GRAPHICAL SCALE: 1" = 60'

0 30 60 120

CARSON SELF-STORAGE PROPOSED HYDROLOGY EXHIBIT

OMEGA

PROP. HYDROLOGY EXHIBIT

Peak Flow Hydrologic Analysis

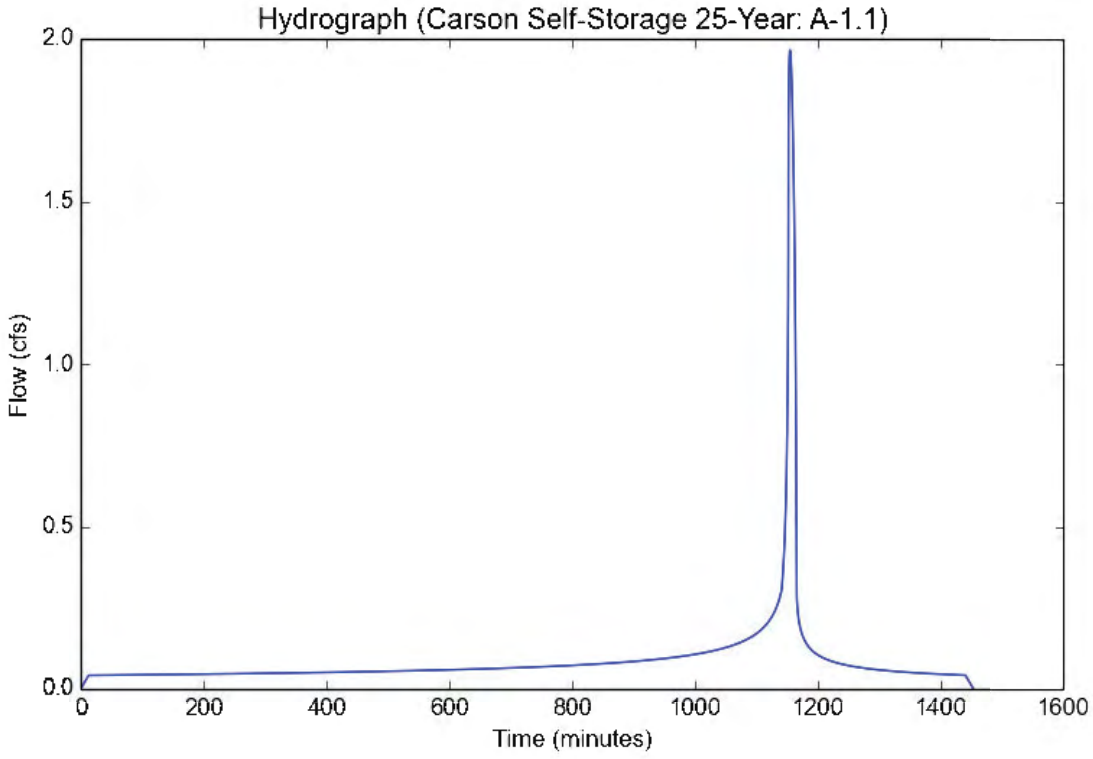
File location: P:/DWG OMEGA/0633 Faring SS Carson/STORMWATER REPORTS/H&H/HydroCalc Exhibits/25-Year/Carson Self-Storage 25-Year - A-1
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Carson Self-Storage 25-Year
Subarea ID	A-1.1
Area (ac)	2.77
Flow Path Length (ft)	398.0
Flow Path Slope (vft/hft)	0.007
50-yr Rainfall Depth (in)	6.1
Percent Impervious	0.035
Soil Type	3
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.3558
Peak Intensity (in/hr)	2.0393
Undeveloped Runoff Coefficient (Cu)	0.3278
Developed Runoff Coefficient (Cd)	0.3478
Time of Concentration (min)	13.0
Clear Peak Flow Rate (cfs)	1.9646
Burned Peak Flow Rate (cfs)	1.9646
24-Hr Clear Runoff Volume (ac-ft)	0.1771
24-Hr Clear Runoff Volume (cu-ft)	7713.7249



Peak Flow Hydrologic Analysis

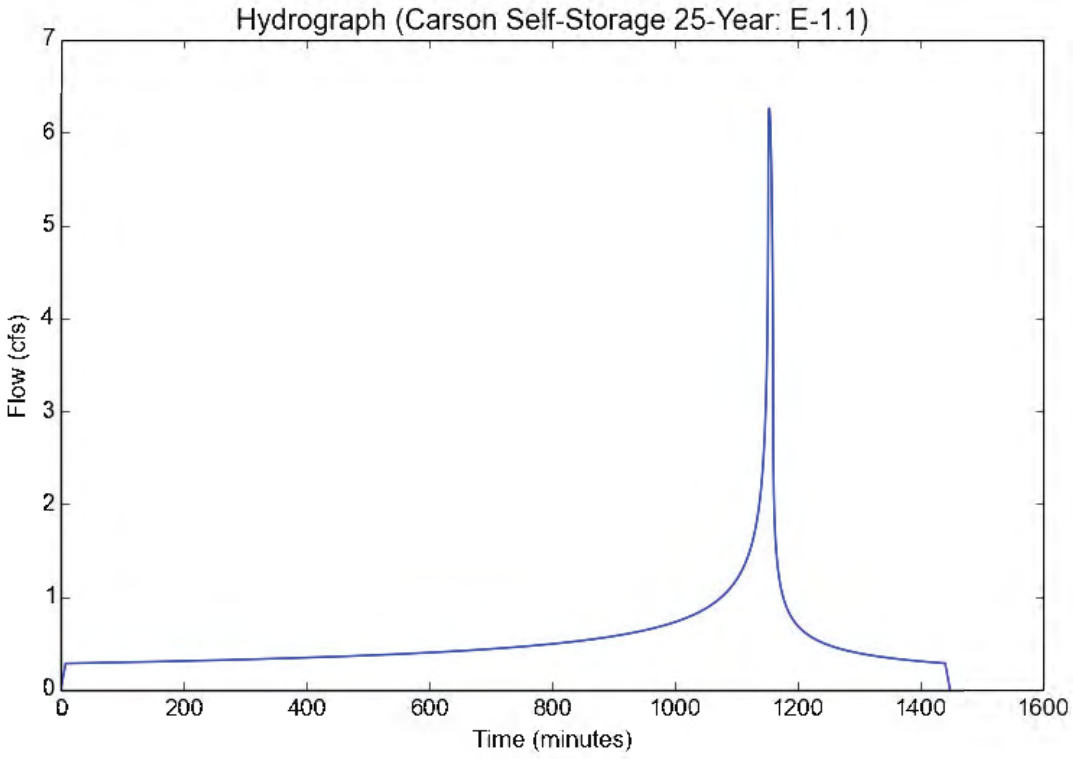
File location: P:/DWG OMEGA/0633 Faring SS Carson/STORMWATER REPORTS/H&H/HydroCalc Exhibits/25-Year/Carson Self-Storage 25-Year - E-1
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Carson Self-Storage 25-Year
Subarea ID	E-1.1
Area (ac)	2.77
Flow Path Length (ft)	475.0
Flow Path Slope (vft/hft)	0.005
50-yr Rainfall Depth (in)	6.1
Percent Impervious	0.964
Soil Type	3
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.3558
Peak Intensity (in/hr)	2.5621
Undeveloped Runoff Coefficient (Cu)	0.4041
Developed Runoff Coefficient (Cd)	0.8821
Time of Concentration (min)	8.0
Clear Peak Flow Rate (cfs)	6.2605
Burned Peak Flow Rate (cfs)	6.2605
24-Hr Clear Runoff Volume (ac-ft)	1.069
24-Hr Clear Runoff Volume (cu-ft)	46566.8167



Peak Flow Hydrologic Analysis

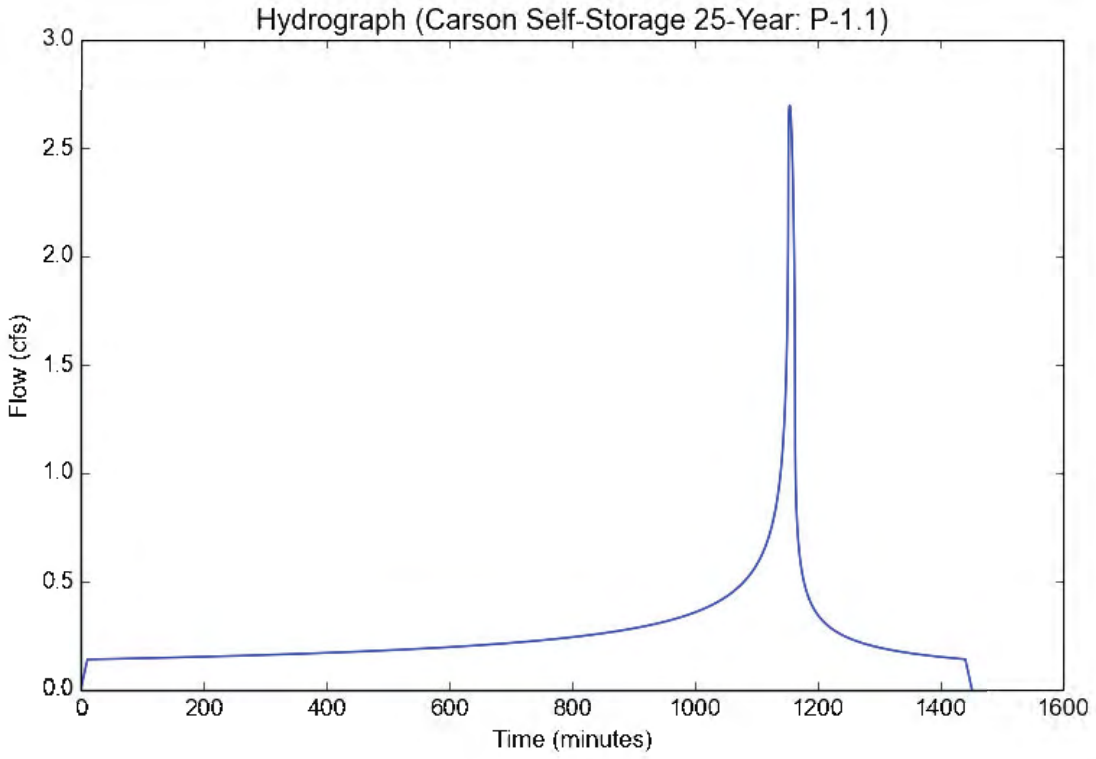
File location: P:/DWG OMEGA/0633 Faring SS Carson/STORMWATER REPORTS/H&H/HydroCalc Exhibits/25-Year/Carson Self-Storage 25-Year - P-1
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Carson Self-Storage 25-Year
Subarea ID	P-1.1
Area (ac)	1.44
Flow Path Length (ft)	635.0
Flow Path Slope (vft/hft)	0.0036
50-yr Rainfall Depth (in)	6.1
Percent Impervious	0.906
Soil Type	3
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.3558
Peak Intensity (in/hr)	2.2059
Undeveloped Runoff Coefficient (Cu)	0.353
Developed Runoff Coefficient (Cd)	0.8486
Time of Concentration (min)	11.0
Clear Peak Flow Rate (cfs)	2.6955
Burned Peak Flow Rate (cfs)	2.6955
24-Hr Clear Runoff Volume (ac-ft)	0.5268
24-Hr Clear Runoff Volume (cu-ft)	22947.0155



Peak Flow Hydrologic Analysis

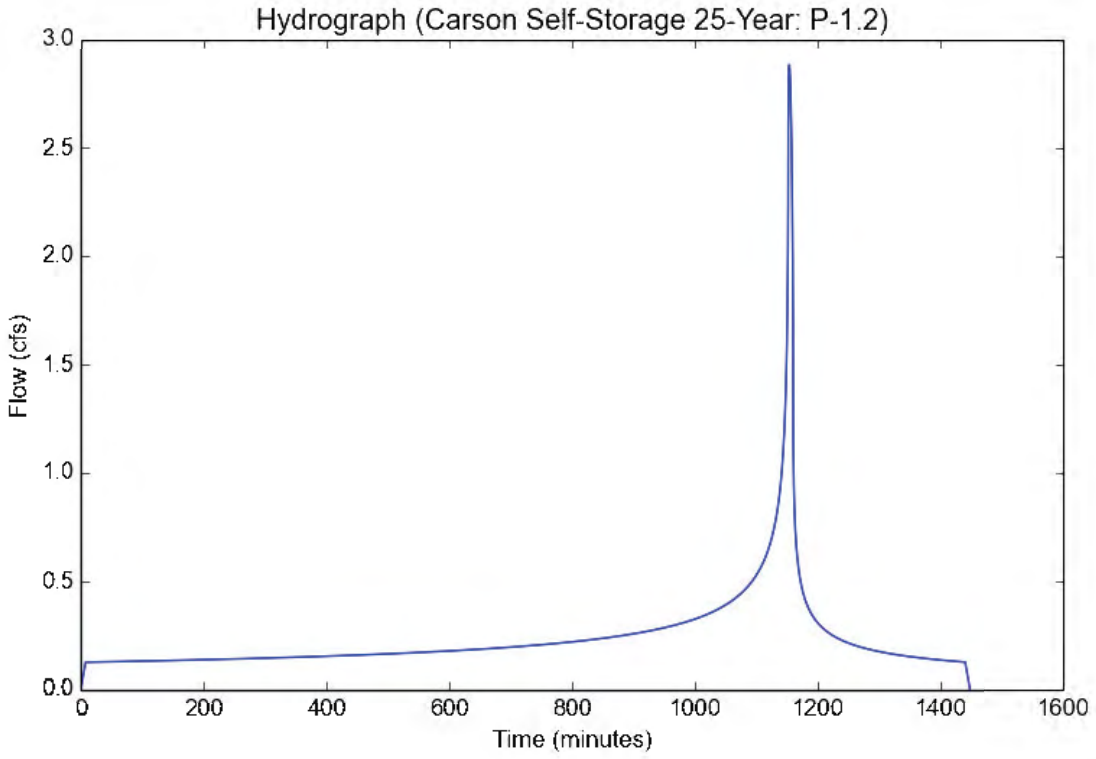
File location: P:/DWG OMEGA/0633 Faring SS Carson/STORMWATER REPORTS/H&H/HydroCalc Exhibits/25-Year/Carson Self-Storage 25-Year - P-1
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Carson Self-Storage 25-Year
Subarea ID	P-1.2
Area (ac)	1.33
Flow Path Length (ft)	645.0
Flow Path Slope (vft/hft)	0.0177
50-yr Rainfall Depth (in)	6.1
Percent Impervious	0.889
Soil Type	3
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.3558
Peak Intensity (in/hr)	2.5621
Undeveloped Runoff Coefficient (Cu)	0.4041
Developed Runoff Coefficient (Cd)	0.845
Time of Concentration (min)	8.0
Clear Peak Flow Rate (cfs)	2.8792
Burned Peak Flow Rate (cfs)	2.8792
24-Hr Clear Runoff Volume (ac-ft)	0.4788
24-Hr Clear Runoff Volume (cu-ft)	20857.8893



Peak Flow Hydrologic Analysis

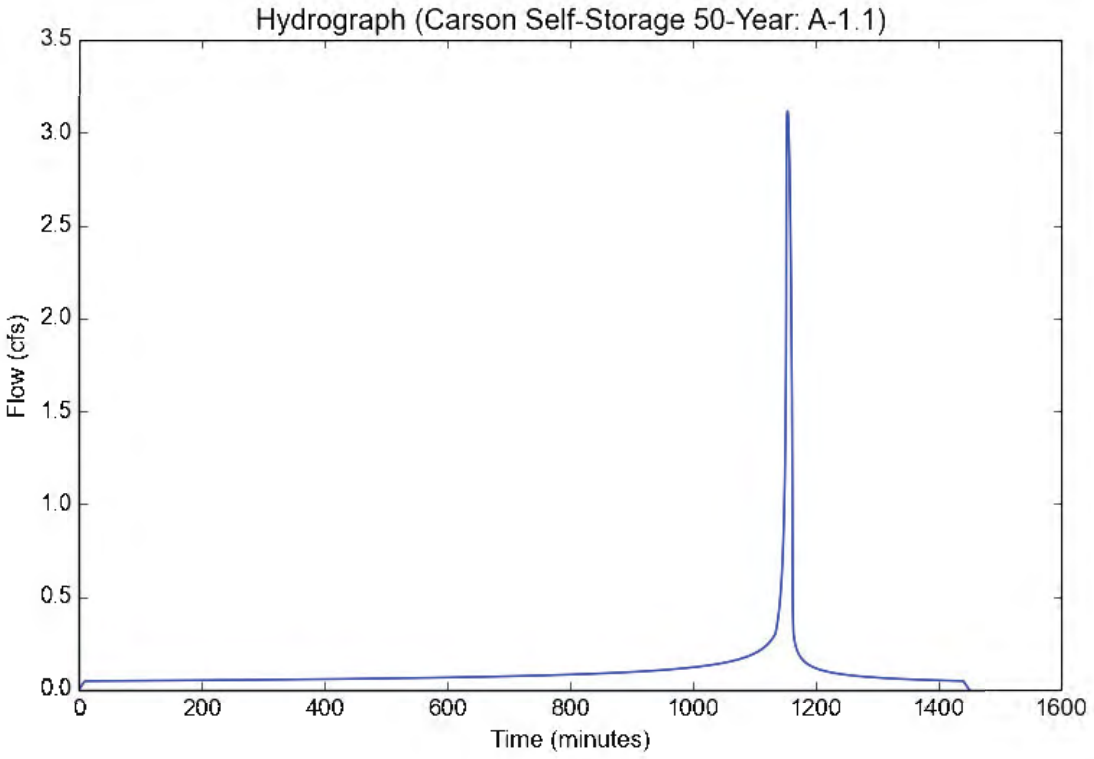
File location: P:/DWG OMEGA/0633 Faring SS Carson/STORMWATER REPORTS/H&H/HydroCalc Exhibits/50-Year/Carson Self-Storage 50-Year - A-1
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Carson Self-Storage 50-Year
Subarea ID	A-1.1
Area (ac)	2.77
Flow Path Length (ft)	398.0
Flow Path Slope (vft/hft)	0.007
50-yr Rainfall Depth (in)	6.1
Percent Impervious	0.035
Soil Type	3
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.1
Peak Intensity (in/hr)	2.6275
Undeveloped Runoff Coefficient (Cu)	0.411
Developed Runoff Coefficient (Cd)	0.4281
Time of Concentration (min)	10.0
Clear Peak Flow Rate (cfs)	3.1157
Burned Peak Flow Rate (cfs)	3.1157
24-Hr Clear Runoff Volume (ac-ft)	0.2097
24-Hr Clear Runoff Volume (cu-ft)	9133.0128



Peak Flow Hydrologic Analysis

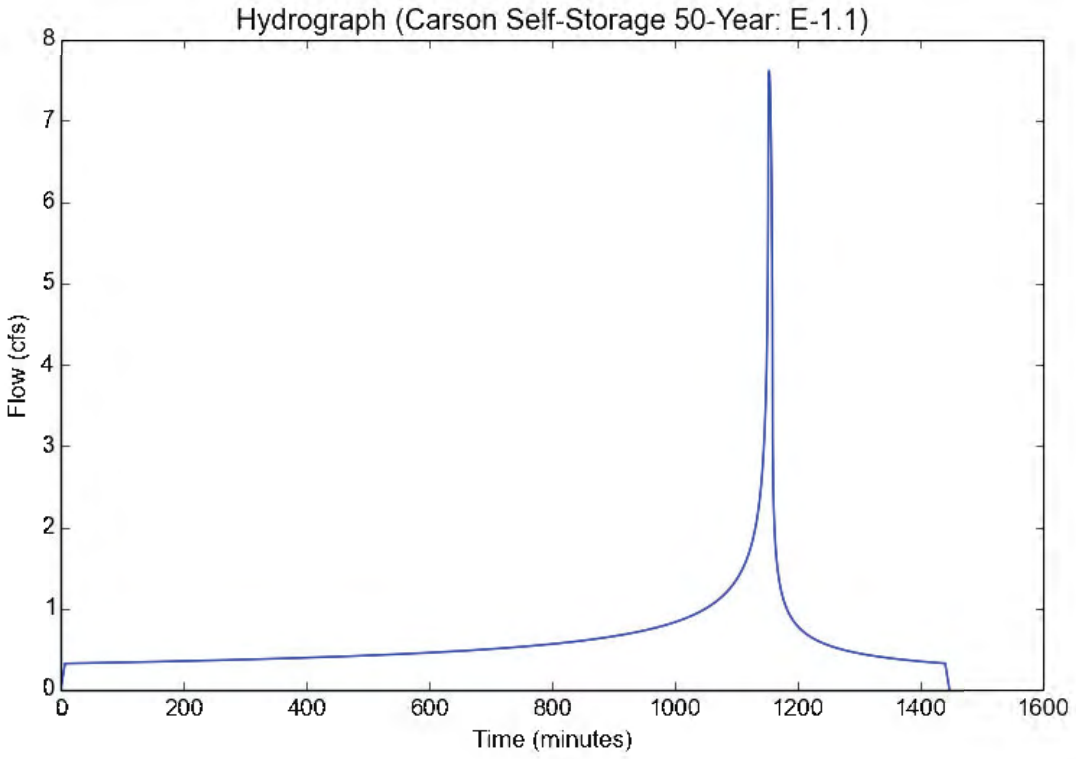
File location: P:/DWG OMEGA/0633 Faring SS Carson/STORMWATER REPORTS/H&H/HydroCalc Exhibits/50-Year/Carson Self-Storage 50-Year - E-1
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Carson Self-Storage 50-Year
Subarea ID	E-1.1
Area (ac)	2.77
Flow Path Length (ft)	475.0
Flow Path Slope (vft/hft)	0.005
50-yr Rainfall Depth (in)	6.1
Percent Impervious	0.964
Soil Type	3
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.1
Peak Intensity (in/hr)	3.1071
Undeveloped Runoff Coefficient (Cu)	0.4613
Developed Runoff Coefficient (Cd)	0.8842
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	7.61
Burned Peak Flow Rate (cfs)	7.61
24-Hr Clear Runoff Volume (ac-ft)	1.2178
24-Hr Clear Runoff Volume (cu-ft)	53047.6479



Peak Flow Hydrologic Analysis

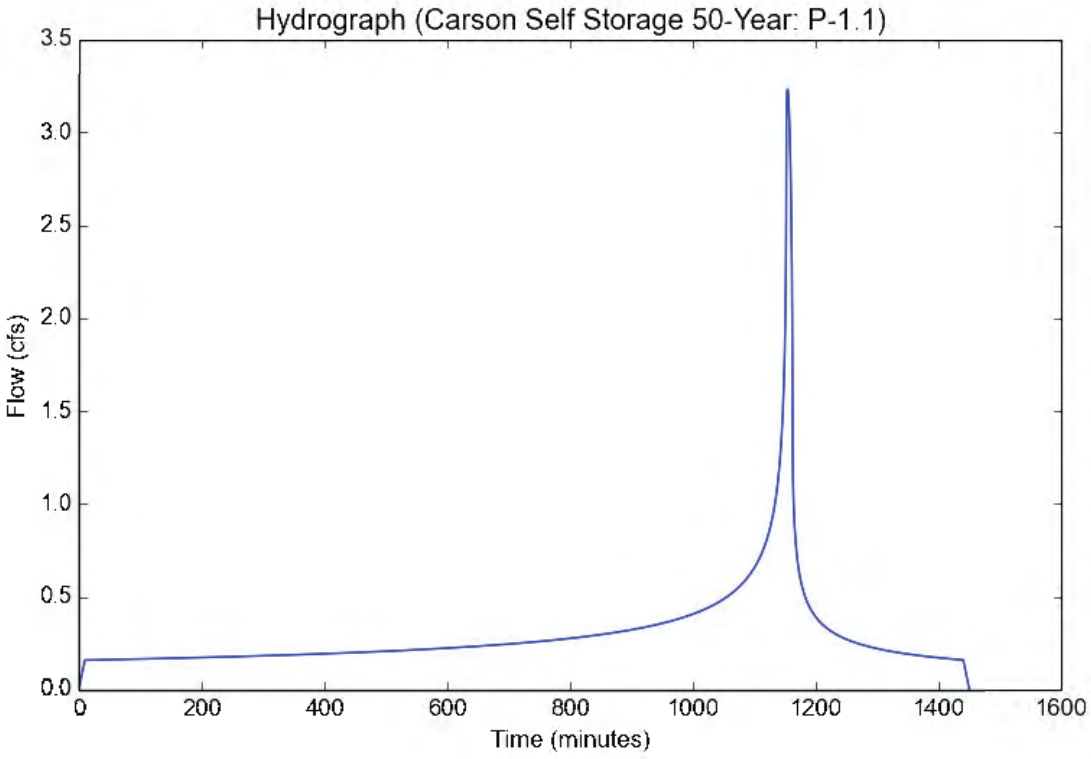
File location: P:/DWG OMEGA/0633 Faring SS Carson/STORMWATER REPORTS/H&H/HydroCalc Exhibits/50-Year/Carson Self-Storage 50-Year - P-1
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Carson Self Storage 50-Year
Subarea ID	P-1.1
Area (ac)	1.44
Flow Path Length (ft)	635.0
Flow Path Slope (vft/hft)	0.0036
50-yr Rainfall Depth (in)	6.1
Percent Impervious	0.906
Soil Type	3
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.1
Peak Intensity (in/hr)	2.6275
Undeveloped Runoff Coefficient (Cu)	0.411
Developed Runoff Coefficient (Cd)	0.854
Time of Concentration (min)	10.0
Clear Peak Flow Rate (cfs)	3.2314
Burned Peak Flow Rate (cfs)	3.2314
24-Hr Clear Runoff Volume (ac-ft)	0.6003
24-Hr Clear Runoff Volume (cu-ft)	26150.392



Peak Flow Hydrologic Analysis

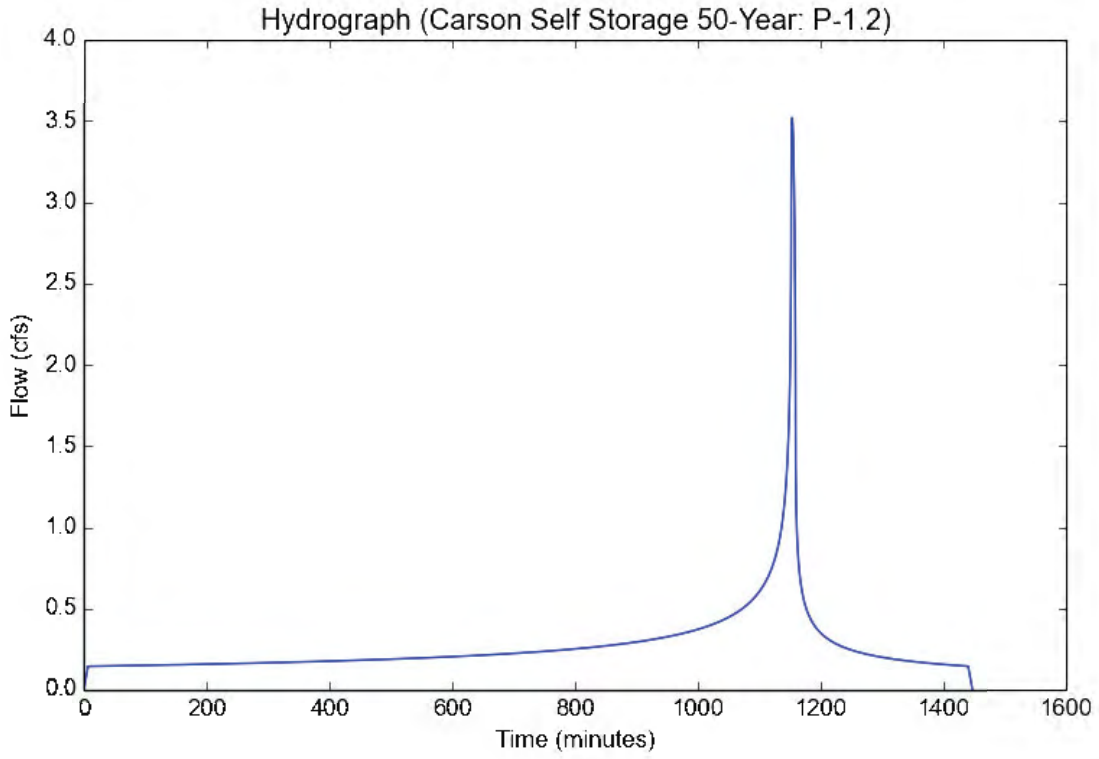
File location: P:/DWG OMEGA/0633 Faring SS Carson/STORMWATER REPORTS/H&H/HydroCalc Exhibits/50-Year/Carson Self-Storage 50-Year - P-1
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Carson Self Storage 50-Year
Subarea ID	P-1.2
Area (ac)	1.33
Flow Path Length (ft)	645.0
Flow Path Slope (vft/hft)	0.0177
50-yr Rainfall Depth (in)	6.1
Percent Impervious	0.889
Soil Type	3
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.1
Peak Intensity (in/hr)	3.1071
Undeveloped Runoff Coefficient (Cu)	0.4613
Developed Runoff Coefficient (Cd)	0.8513
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	3.518
Burned Peak Flow Rate (cfs)	3.518
24-Hr Clear Runoff Volume (ac-ft)	0.5457
24-Hr Clear Runoff Volume (cu-ft)	23771.3544



Peak Flow Hydrologic Analysis

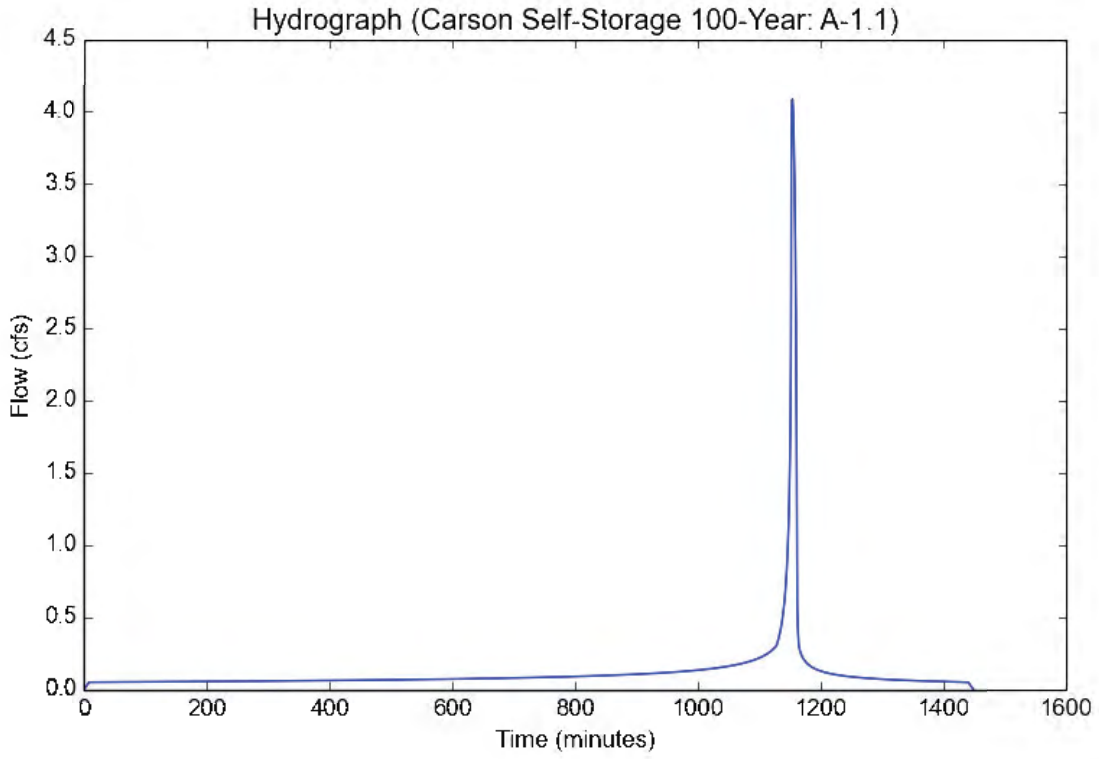
File location: P:/DWG OMEGA/0633 Faring SS Carson/STORMWATER REPORTS/H&H/HydroCalc Exhibits/100-Year/Carson Self-Storage 100-Year - A
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Carson Self-Storage 100-Year
Subarea ID	A-1.1
Area (ac)	2.77
Flow Path Length (ft)	398.0
Flow Path Slope (vft/hft)	0.007
50-yr Rainfall Depth (in)	6.1
Percent Impervious	0.035
Soil Type	3
Design Storm Frequency	100-yr
Fire Factor	0
LID	False

Output Results

Modeled (100-yr) Rainfall Depth (in)	6.8442
Peak Intensity (in/hr)	3.0978
Undeveloped Runoff Coefficient (Cu)	0.4604
Developed Runoff Coefficient (Cd)	0.4757
Time of Concentration (min)	9.0
Clear Peak Flow Rate (cfs)	4.0823
Burned Peak Flow Rate (cfs)	4.0823
24-Hr Clear Runoff Volume (ac-ft)	0.2423
24-Hr Clear Runoff Volume (cu-ft)	10556.6976



Peak Flow Hydrologic Analysis

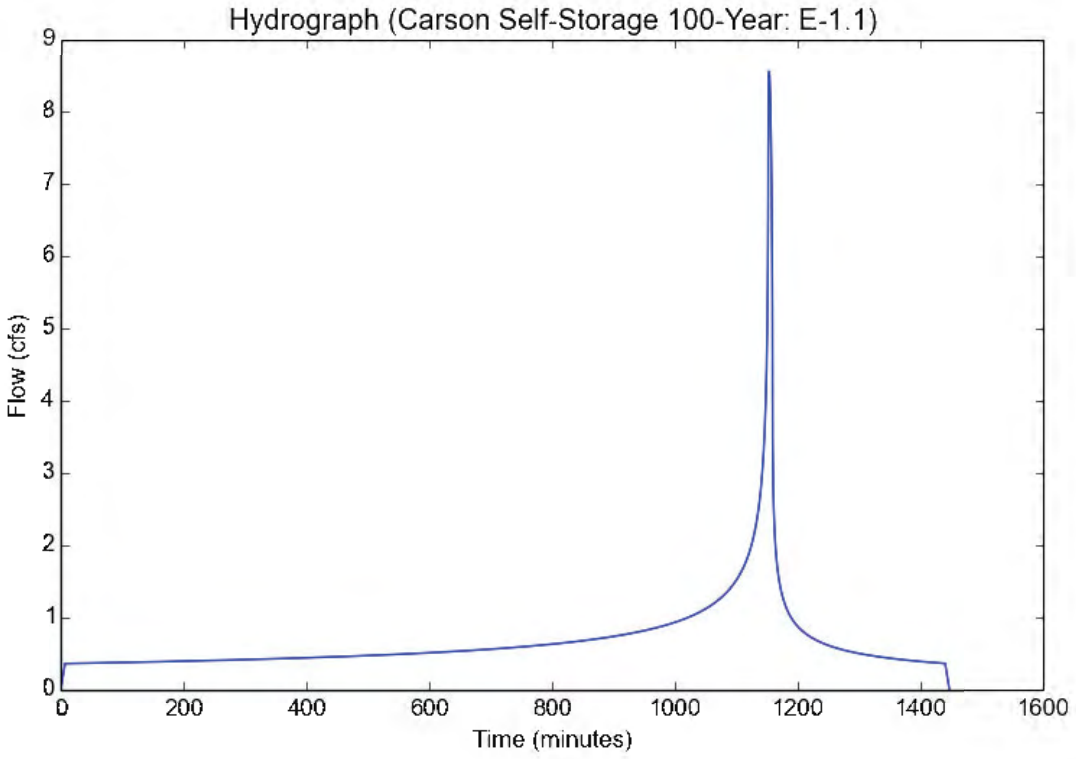
File location: P:/DWG OMEGA/0633 Faring SS Carson/STORMWATER REPORTS/H&H/HydroCalc Exhibits/100-Year/Carson Self-Storage 100-Year - E
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Carson Self-Storage 100-Year
Subarea ID	E-1.1
Area (ac)	2.77
Flow Path Length (ft)	475.0
Flow Path Slope (vft/hft)	0.005
50-yr Rainfall Depth (in)	6.1
Percent Impervious	0.964
Soil Type	3
Design Storm Frequency	100-yr
Fire Factor	0
LID	False

Output Results

Modeled (100-yr) Rainfall Depth (in)	6.8442
Peak Intensity (in/hr)	3.4861
Undeveloped Runoff Coefficient (Cu)	0.5012
Developed Runoff Coefficient (Cd)	0.8856
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	8.5523
Burned Peak Flow Rate (cfs)	8.5523
24-Hr Clear Runoff Volume (ac-ft)	1.3666
24-Hr Clear Runoff Volume (cu-ft)	59530.2221



Peak Flow Hydrologic Analysis

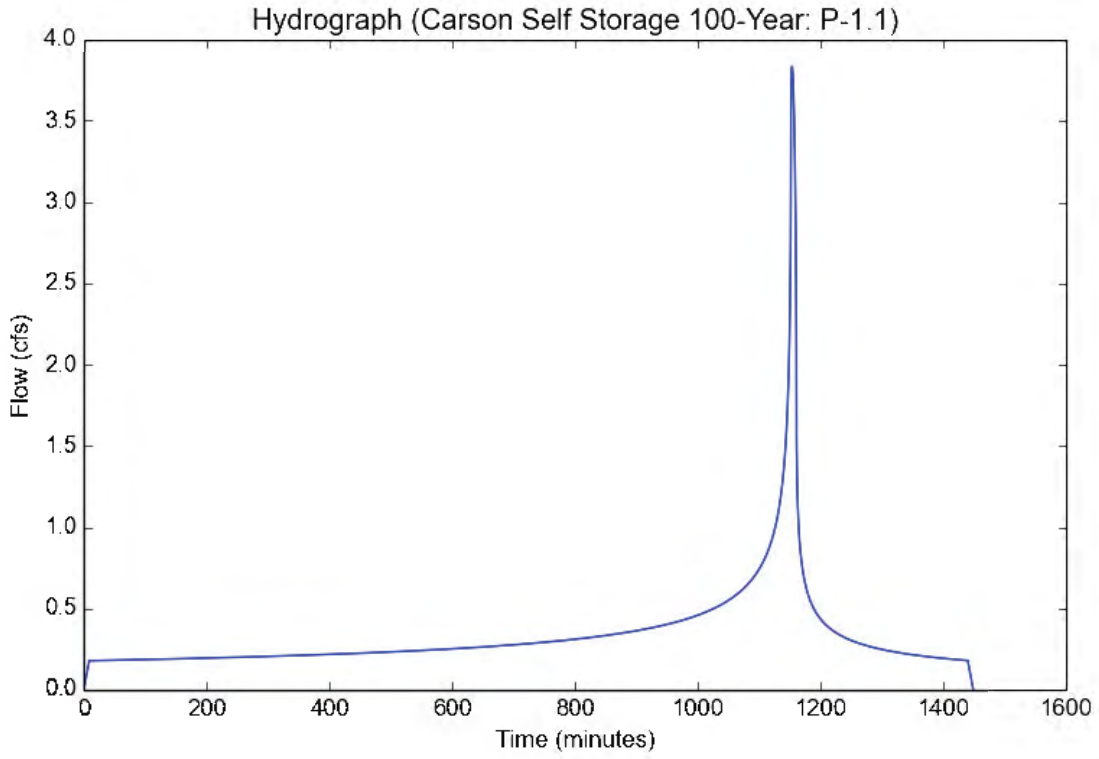
File location: P:/DWG OMEGA/0633 Faring SS Carson/STORMWATER REPORTS/H&H/HydroCalc Exhibits/100-Year/Carson Self-Storage 100-Year - P
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Carson Self Storage 100-Year
Subarea ID	P-1.1
Area (ac)	1.44
Flow Path Length (ft)	635.0
Flow Path Slope (vft/hft)	0.0036
50-yr Rainfall Depth (in)	6.1
Percent Impervious	0.906
Soil Type	3
Design Storm Frequency	100-yr
Fire Factor	0
LID	False

Output Results

Modeled (100-yr) Rainfall Depth (in)	6.8442
Peak Intensity (in/hr)	3.0978
Undeveloped Runoff Coefficient (Cu)	0.4604
Developed Runoff Coefficient (Cd)	0.8587
Time of Concentration (min)	9.0
Clear Peak Flow Rate (cfs)	3.8304
Burned Peak Flow Rate (cfs)	3.8304
24-Hr Clear Runoff Volume (ac-ft)	0.6739
24-Hr Clear Runoff Volume (cu-ft)	29356.4034



Peak Flow Hydrologic Analysis

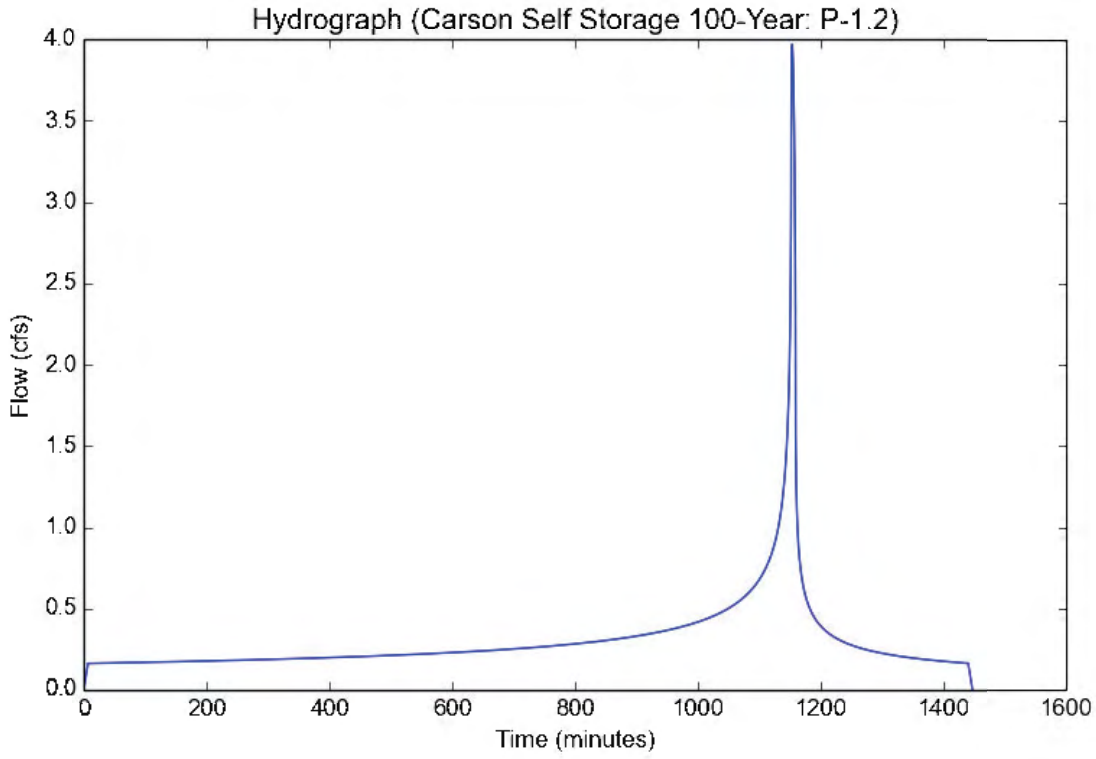
File location: P:/DWG OMEGA/0633 Faring SS Carson/STORMWATER REPORTS/H&H/HydroCalc Exhibits/100-Year/Carson Self-Storage 100-Year - P
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Carson Self Storage 100-Year
Subarea ID	P-1.2
Area (ac)	1.33
Flow Path Length (ft)	645.0
Flow Path Slope (vft/hft)	0.0177
50-yr Rainfall Depth (in)	6.1
Percent Impervious	0.889
Soil Type	3
Design Storm Frequency	100-yr
Fire Factor	0
LID	False

Output Results

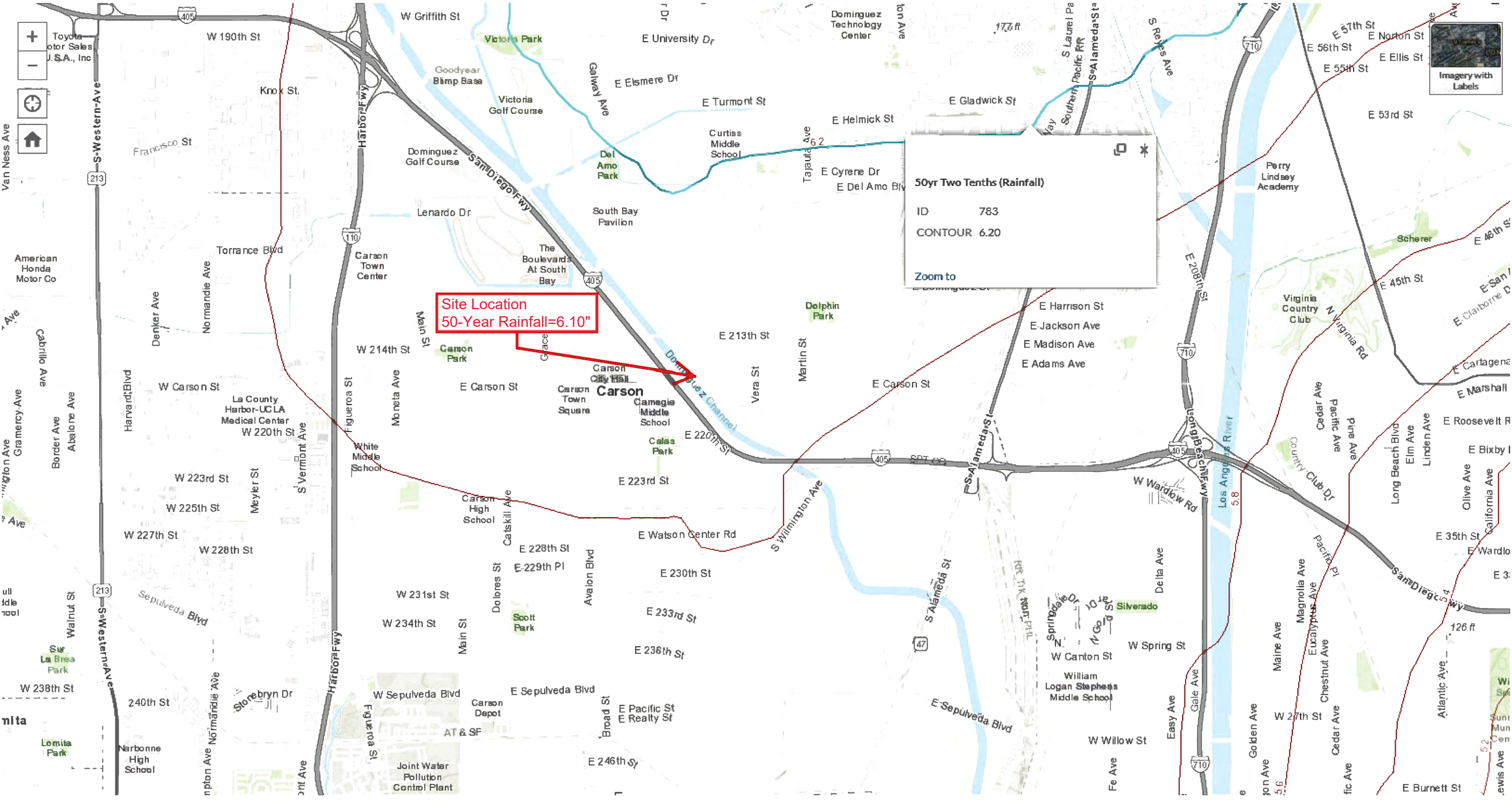
Modeled (100-yr) Rainfall Depth (in)	6.8442
Peak Intensity (in/hr)	3.4861
Undeveloped Runoff Coefficient (Cu)	0.5012
Developed Runoff Coefficient (Cd)	0.8557
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	3.9676
Burned Peak Flow Rate (cfs)	3.9676
24-Hr Clear Runoff Volume (ac-ft)	0.6127
24-Hr Clear Runoff Volume (cu-ft)	26687.391



Appendix 1

LA County Hydrology Map

Find address or place



Appendix 2

LA County Hydrology Map

Find address or place

Site Location
Soil Type: 003

Soils 2004

AREA	67,086,768.42
CLASS	003
AREA_ACRES	1,540

Zoom to

Imagery with Labels

E Dominguez St
E Balard St
E 213th St
E 214th St
E 215th Pl
E Albreda St
E Califon St
E 215th St
E Carson St
E 218th St
E Abila St
E 220th St
E Hadler St
E Fiat St
E Jay St
Jay St
220th St
218th St
Susan Dr
Civic Center
Carson
Carson Town Square
Colorado Cir
Carson City Hall
North Ln
Middle Ln
South Ln
Del Amo Elementary School
Dolphin Park
006
Carnegie Middle School
Bonita Street School
Calas Park
Northern Neighborhood
Go Kart World
Paradise Trailer
State Mobile Homes
Imperial-Avalon Mobile Est
San Diego Fwy
Recreation Rd
Avalon Blvd
Grace Ave
Harsom Ave
Newkirk Ave
Garston Ave
Selwyn Ave
Chico St
Vera
Alvar Pl
Perry St
Lostine Ave
Legend Ave
Martin St
Millpoint Ave
Pontine Ave
Water St
Oakfort Ave
Dablon Ave
Acanus Ave
S Wilmington Ave
Westward Ave
013
405
003
009
22 ft
28 ft

Appendix 3

CONDUIT SIZING CALCULATIONS

The following chart details the sizing parameters and for conduits that convey runoff on the site.
Flow parameters from *Handbook of Hydraulics, King & Brater* were used, see following page.

K'= Discharge factor	=	$(Q*n)/(d^{8/3}*s^{1/2})$
n= Mannings coefficient	=	0.013 for PVC & HDPE
d=diameter of conduit (ft)	=	per chart
Q= Discharge	=	based off portions of basins tributary to outlet
s=Minimum Pipe Slope (ft/ft)	=	per chart
D=depth of flow	=	From table 7-4 of the *Handbook of Hydraulics, King & Brater* See right
C_a= Flow factor	=	From table 7-14 of the *Handbook of Hydraulics, King & Brater* See right
A=Cross sectional area of flow	=	C_a*d^2
V=Velocity	=	Q/A

Pipe Flow

Pipe	Tributary Areas	Q (cfs)	S (%)	d (in)	K'	D/d	C_a	A (sf)	V (fps)
1	Entire Site	7.79	1	18	0.3435	0.64	0.531	1.195	6.52

Table 7-4. For Determining the Area a of the Cross Section of a Circular Conduit Flowing Part Full

Let $\frac{\text{depth of water}}{\text{diameter of channel}} = \frac{D}{d}$ and C_a = the tabulated value. Then $a = C_a d^2$.

$\frac{D}{d}$	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
.0	.0000	.0013	.0037	.0069	.0105	.0147	.0192	.0242	.0294	.0350
.1	.0409	.0470	.0534	.0600	.0668	.0739	.0811	.0885	.0961	.1039
.2	.1118	.1199	.1281	.1365	.1449	.1535	.1623	.1711	.1800	.1890
.3	.1982	.2074	.2167	.2260	.2355	.2450	.2546	.2642	.2739	.2836
.4	.2934	.3032	.3130	.3229	.3328	.3428	.3527	.3627	.3727	.3827
.5	.393	.403	.413	.423	.433	.443	.453	.462	.472	.482
.6	.492	.502	.512	.521	.531	.540	.550	.559	.569	.578
.7	.587	.596	.605	.614	.623	.632	.640	.649	.657	.666
.8	.674	.681	.689	.697	.704	.712	.719	.725	.732	.738
.9	.745	.750	.756	.761	.766	.771	.775	.779	.782	.784

Table 7-14. Values of K' for Circular Channels in the Formula

$$Q = \frac{K'}{n} d^{8/3} s^{1/2}$$

D = depth of water d = diameter of channel

$\frac{D}{d}$	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
.0		.00007	.00031	.00074	.00138	.00222	.00328	.00455	.00604	.00775
.1	.00967	.0118	.0142	.0167	.0195	.0225	.0257	.0291	.0327	.0366
.2	.0406	.0448	.0492	.0537	.0585	.0634	.0686	.0738	.0793	.0849
.3	.0907	.0966	.1027	.1089	.1153	.1218	.1284	.1352	.1420	.1490
.4	.1561	.1633	.1705	.1779	.1854	.1929	.2005	.2082	.2160	.2238
.5	.232	.239	.247	.255	.263	.271	.279	.287	.295	.303
.6	.311	.319	.327	.335	.343	.350	.358	.366	.373	.380
.7	.388	.395	.402	.409	.416	.422	.429	.435	.441	.447
.8	.453	.458	.463	.468	.473	.477	.481	.485	.488	.491
.9	.494	.496	.497	.498	.498	.498	.496	.494	.489	.483
1.0	.463									

Appendix 4

Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, May 20 2021

Section A-A Gutter Analysis

User-defined

Invert Elev (ft)	= 18.35
Slope (%)	= 4.00
N-Value	= 0.013

Calculations

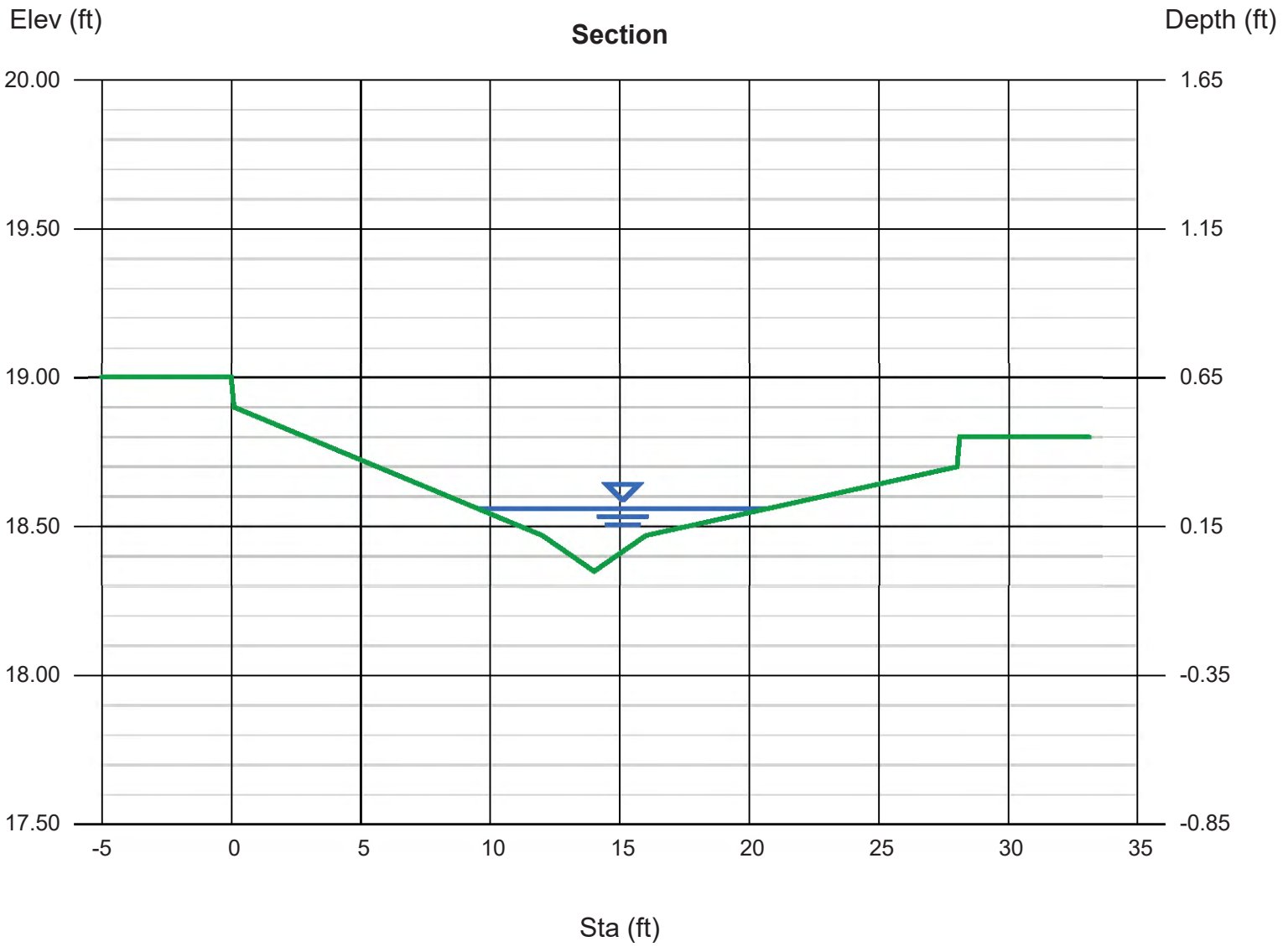
Compute by:	Known Q
Known Q (cfs)	= 3.93

Highlighted

Depth (ft)	= 0.21
Q (cfs)	= 3.930
Area (sqft)	= 0.92
Velocity (ft/s)	= 4.26
Wetted Perim (ft)	= 11.20
Crit Depth, Yc (ft)	= 0.29
Top Width (ft)	= 11.19
EGL (ft)	= 0.49

(Sta, El, n)-(Sta, El, n)...

(0.00, 19.00)-(0.10, 18.90, 0.013)-(12.00, 18.47, 0.013)-(14.00, 18.35, 0.013)-(16.00, 18.47, 0.013)-(28.00, 18.70, 0.013)-(28.10, 18.80, 0.013)



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, May 20 2021

Section B-B Gutter Analysis

User-defined

Invert Elev (ft)	= 17.66
Slope (%)	= 0.35
N-Value	= 0.013

Calculations

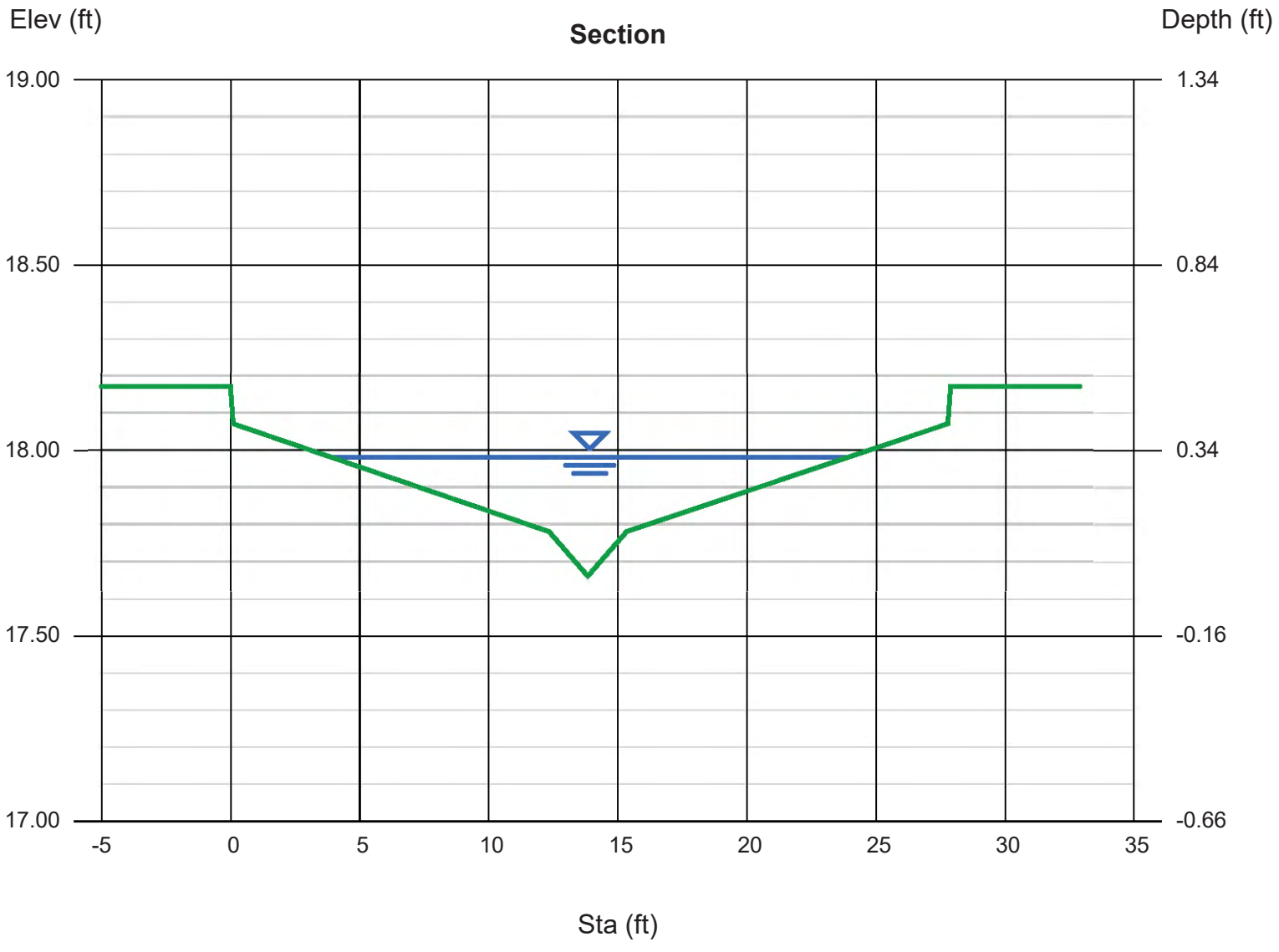
Compute by:	Known Q
Known Q (cfs)	= 3.93

Highlighted

Depth (ft)	= 0.32
Q (cfs)	= 3.930
Area (sqft)	= 2.48
Velocity (ft/s)	= 1.58
Wetted Perim (ft)	= 20.03
Crit Depth, Yc (ft)	= 0.30
Top Width (ft)	= 20.01
EGL (ft)	= 0.36

(Sta, El, n)-(Sta, El, n)...

(0.00, 18.17)-(0.10, 18.07, 0.013)-(12.33, 17.78, 0.013)-(13.83, 17.66, 0.013)-(15.33, 17.78, 0.013)-(27.77, 18.07, 0.013)-(27.87, 18.17, 0.013)



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, May 20 2021

Section C-C Gutter Analysis

User-defined

Invert Elev (ft)	= 17.32
Slope (%)	= 0.55
N-Value	= 0.013

Calculations

Compute by:	Known Q
Known Q (cfs)	= 3.93

Highlighted

Depth (ft)	= 0.35
Q (cfs)	= 3.930
Area (sqft)	= 1.81
Velocity (ft/s)	= 2.18
Wetted Perim (ft)	= 13.18
Crit Depth, Yc (ft)	= 0.36
Top Width (ft)	= 13.03
EGL (ft)	= 0.42

(Sta, El, n)-(Sta, El, n)...

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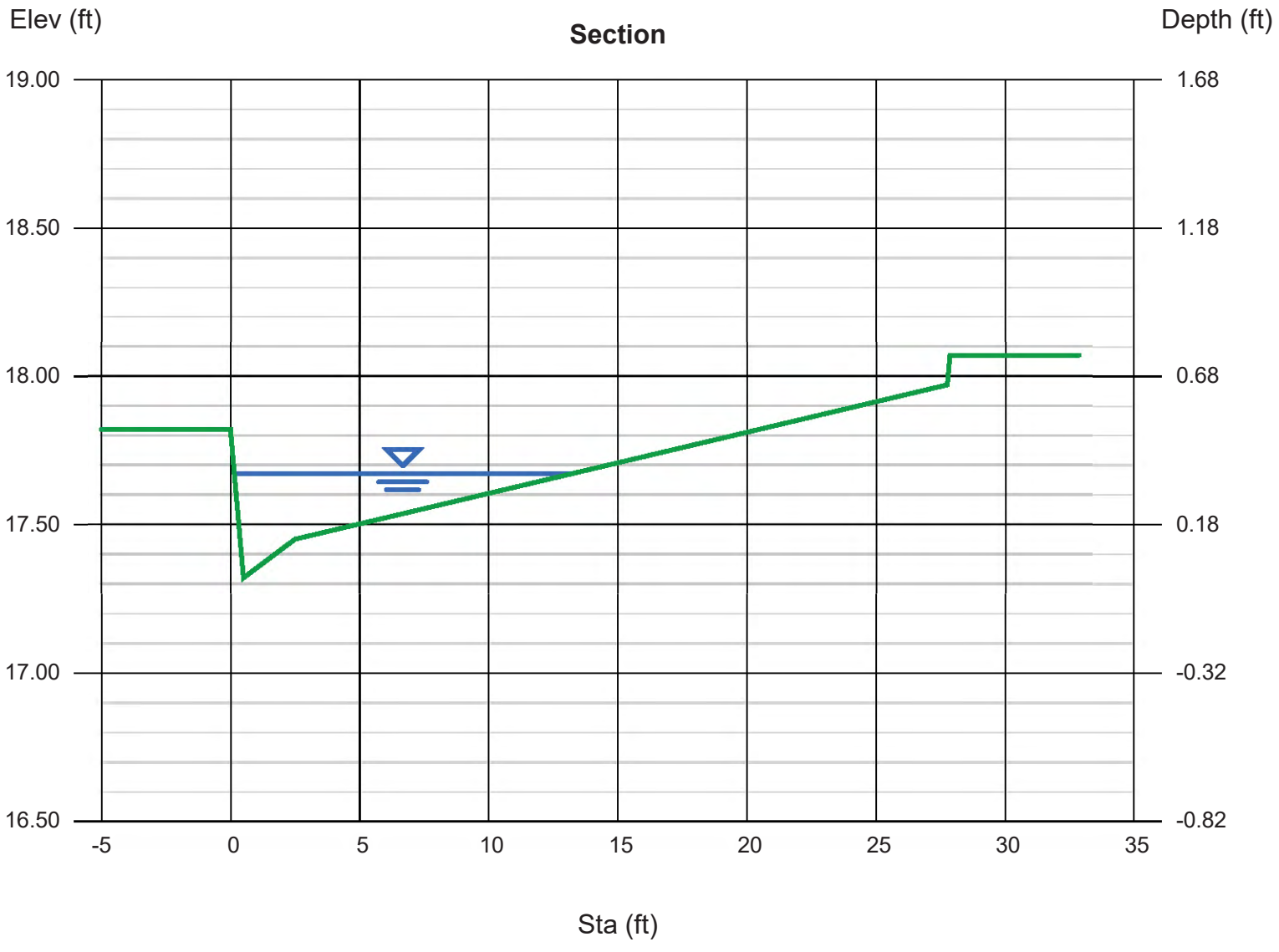


Channel Report

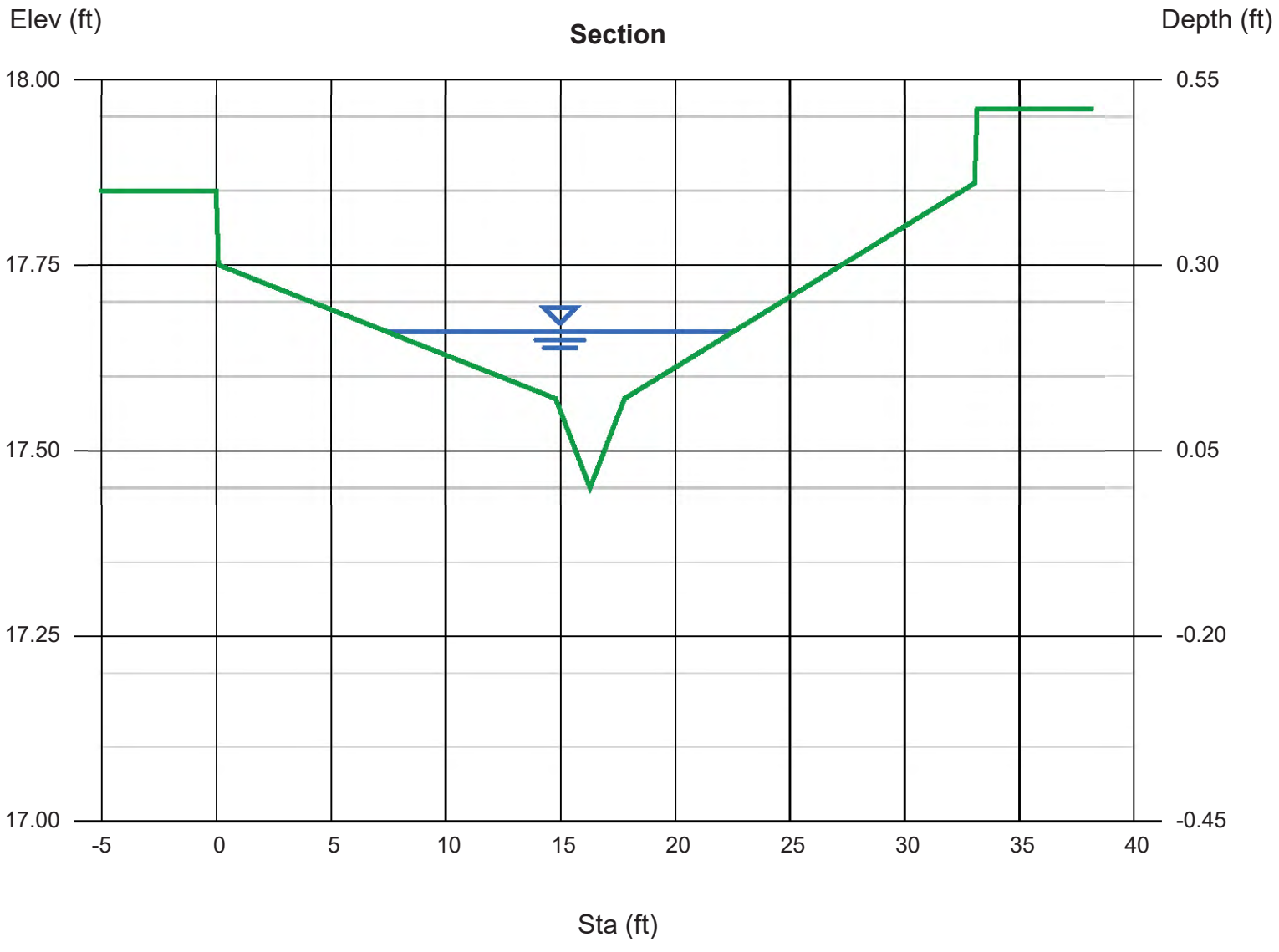
Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, May 20 2021

Section D-D Gutter Analysis

User-defined		Highlighted	
Invert Elev (ft)	= 17.45	Depth (ft)	= 0.21
Slope (%)	= 5.40	Q (cfs)	= 3.930
N-Value	= 0.013	Area (sqft)	= 0.99
		Velocity (ft/s)	= 3.96
Calculations		Wetted Perim (ft)	= 15.09
Compute by:	Known Q	Crit Depth, Yc (ft)	= 0.28
Known Q (cfs)	= 3.93	Top Width (ft)	= 15.08
		EGL (ft)	= 0.45

(Sta, El, n)-(Sta, El, n)...

(0.00, 17.85)-(0.10, 17.75, 0.013)-(14.79, 17.57, 0.013)-(16.29, 17.45, 0.013)-(17.79, 17.57, 0.013)-(33.05, 17.86, 0.013)-(33.15, 17.96, 0.013)



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, May 20 2021

Section E-E Gutter Analysis

User-defined

Invert Elev (ft)	= 16.45
Slope (%)	= 0.50
N-Value	= 0.013

Calculations

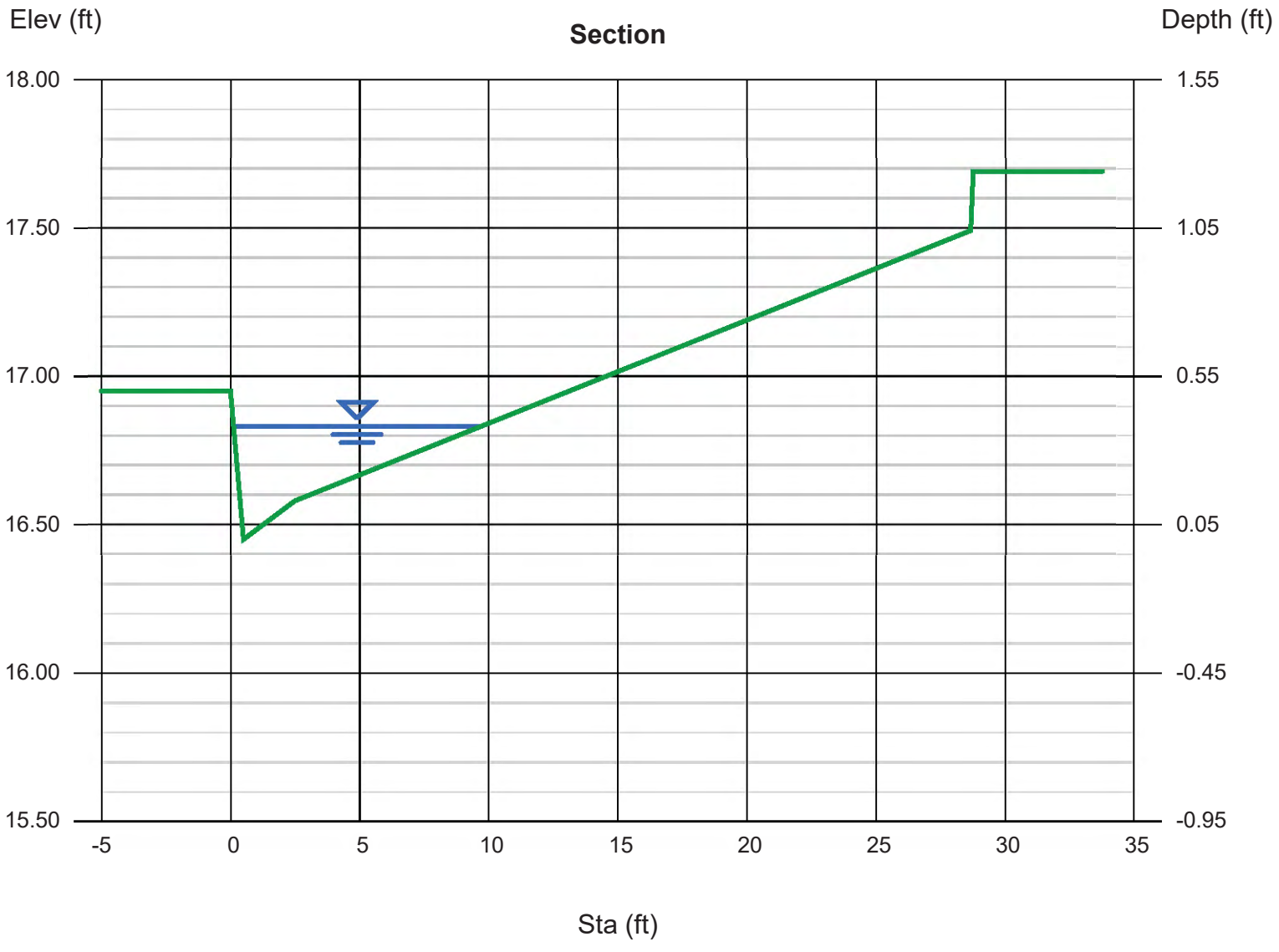
Compute by:	Known Q
Known Q (cfs)	= 3.85

Highlighted

Depth (ft)	= 0.38
Q (cfs)	= 3.850
Area (sqft)	= 1.60
Velocity (ft/s)	= 2.41
Wetted Perim (ft)	= 9.73
Crit Depth, Yc (ft)	= 0.39
Top Width (ft)	= 9.56
EGL (ft)	= 0.47

(Sta, El, n)-(Sta, El, n)...

(0.00, 16.95)-(0.50, 16.45, 0.013)-(2.50, 16.58, 0.013)-(28.65, 17.49, 0.013)-(28.75, 17.69, 0.013)



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, May 20 2021

Section F-F Gutter Analysis

User-defined

Invert Elev (ft)	= 17.02
Slope (%)	= 0.35
N-Value	= 0.013

Calculations

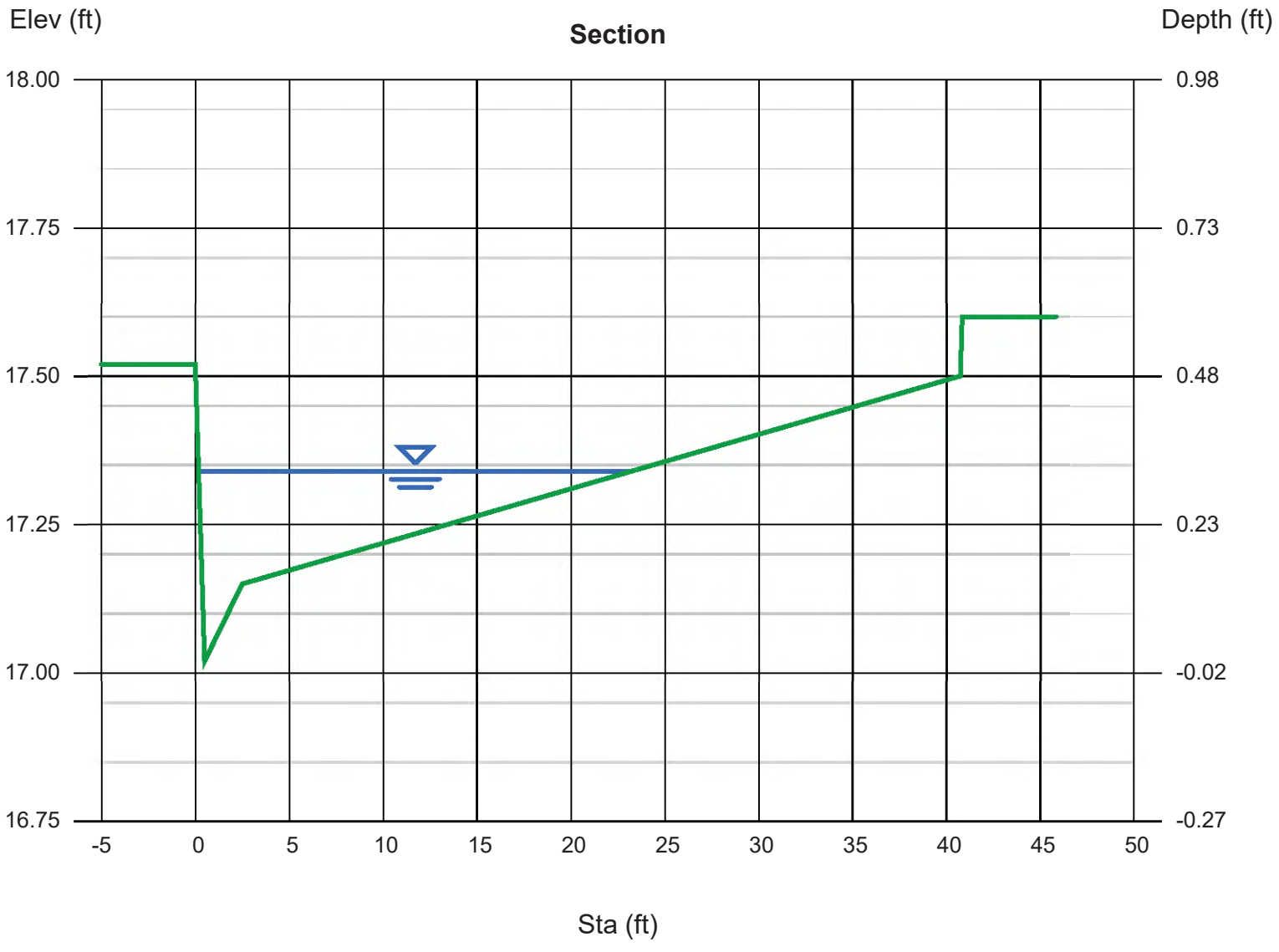
Compute by:	Known Q
Known Q (cfs)	= 3.85

Highlighted

Depth (ft)	= 0.32
Q (cfs)	= 3.850
Area (sqft)	= 2.53
Velocity (ft/s)	= 1.52
Wetted Perim (ft)	= 23.21
Crit Depth, Yc (ft)	= 0.31
Top Width (ft)	= 23.07
EGL (ft)	= 0.36

(Sta, El, n)-(Sta, El, n)...

(0.00, 17.52)-(0.50, 17.02, 0.013)-(2.50, 17.15, 0.013)-(40.73, 17.50, 0.013)-(40.83, 17.60, 0.013)



Low Impact Development Plan
(LID Plan)

Project Name:

Carson Self-Storage

21611 South Perry St.

Carson, CA 90745

Prepared for:

21611 PERRY STREET LLC

4132 Katella Avenue, #205b

Los Alamitos, Ca 90720

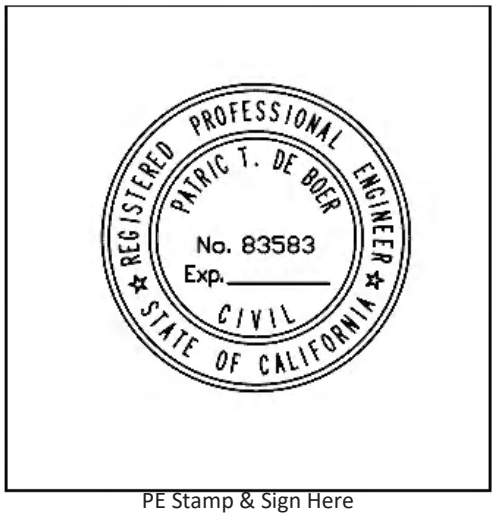
Prepared by:

Omega Engineering Consultants

4340 Viewridge Avenue, Suite B

San Diego, Ca 92123

(858) 634-8620

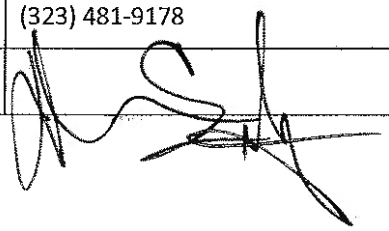


PE Stamp & Sign Here

October 5, 2021

Project Owner's Certification

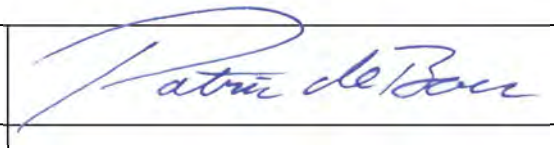
I certify under penalty of law that this document and all attachments were prepared under my jurisdiction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathered the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Applicant's Name:	Darren Embry		
Applicant's Title:	VP of Community Development		
Company:	21611 Perry Street, LLC		
Address:	4132 Katella Avenue, #205B Los Alamitos, CA 90720		
Email:	darren@faring.com		
Telephone No:	(323) 481-9178		
Signature:		Date:	10/12/21

Preparer (Engineer) Certification

Engineer's Name:	Patric de Boer
Engineer's Title:	Project Engineer
Company:	Omega Engineering Consultants
Address:	4340 Viewridge Avenue, Suite B, San Diego, CA 90069
Email:	patric@omega-consultants.com
Telephone No:	(858) 634-8620

I hereby certify that this Low Impact Development Plan is in compliance with, and meets the requirements set forth in, Order No. R4-2012-0175, of the Los Angeles Regional Water Quality Control Board.

Engineer's Signature		Date	5/20/2021
Place Stamp Here			

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Attachment F..... ..... Construction Plans

1. PROJECT DESCRIPTION

1.1. PROJECT CATEGORY

Category	YES	NO
1. Development [a] of a new project equal to 1 acre or greater of disturbed area and adding more than 10,000 square feet of impervious area [b]	☒	☐
2. Development [a] of a new industrial park with 10,000 square feet or more of surface area [c]	☐	☒
3. Development [a] of a new commercial mall with 10,000 square feet or more surface area [c]	☐	☒
4. Development [a] of a new retail gasoline outlet with 5,000 square feet or more of surface area [c]	☐	☒
5. Development [a] of a new restaurant (SIC 5812) with 5,000 square feet or more of surface area [c]	☐	☒
6. Development [a] of a new parking lot with either 5,000 ft^2 or more of impervious area [b] or with 25 or more parking spaces	☐	☒
7. Development [a] of a new automotive service facility (SIC 5013, 5014, 5511, 5541, 7532-7534 and 7536-7539) with 5,000 square feet or more of surface area [c]	☐	☒
8. Projects located in or directly adjacent to, or discharging directly to a Significant Ecological Area (SEA),[d] where the development will: a. Discharge stormwater runoff that is likely to impact a sensitive biological species or habitat; and b. Create 2,500 square feet or more of impervious area [b]	☐	☒
9. Redevelopment [e] of 5,000 square feet or more in one of the categories listed above **If yes, list redevelopment category here:**	☐	☒
10. Redevelopment [e] of 10,000 square feet or more to a Single Family Home, without a change in landuse.	☐	☒

a Development includes any construction or demolition activity, clearing, grading, grubbing, or excavation or any other activity that results in land disturbance.

b Surfaces that do not allow stormwater runoff to percolate into the ground. Typical impervious surfaces include: concrete, asphalt, roofing materials, etc.

c The surface area is the total footprint of an area. Not to include the cumulative area above or below the ground surface.

d An area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and would be disturbed or degraded by human activities and developments. Also, an area designated by the City as approved by the Regional Water Quality Control Board.

e Land-disturbing activities that result in the creation, addition, or replacement of a certain amount of impervious surface area on an already developed site. If the activity results in an alteration to more than 50% of the impervious surface area on the already developed site and the existing site was not subject to post-construction storm water quality control requirements, then the entire site must be mitigated.

1.2. PROJECT DESCRIPTION

Total Project Area (ft^2): 120,644

Total Project Area (Ac): 2.77

EXISTING CONDITIONS

Condition	Area (ft^2)	Percentage (%)
Pervious Area:	4,322	3.6
Impervious Area:	116,322	96.4

PROPOSED CONDITIONS

Condition	Area (ft^2)	Percentage (%)
Pervious Area:	12,134	10.2
Impervious Area:	108,285	89.8

SITE CHARACTERISTICS

DRAINAGE PATTERNS/CONNECTIONS	Existing: The site is currently a vacant, mass graded lot. The site is relatively level with drainage consisting of surface flow. The site drains towards the west to an existing 5' storm drain inlet that outlets directly to the Dominguez Channel thence to Long Beach Harbor and ultimately to the Pacific Ocean.
	Proposed: The site will drain from east to west via gutters that wrap around the proposed self-storage facilities. The runoff generated from the entire site will be treated by a proposed 10'x20' Modular Wetland System that will discharge via an 18" pipe to the existing 5' storm drain inlet. The discharge point will remain the same as the existing conditions.
NARRATIVE PROJECT DESCRIPTION:	The project consists of the construction of a two-story self-storage facility with asphalt drive aisles. The site address is 21611 South Perry St. in Carson, CA 90745.

OFFSITE RUNON	No off-site run-on is anticipated to be received by the site.
UTILITY AND INFRASTRUCTURE INFORMATION	Site is currenly a vacant lot. No utilities are anticipated on-site.
SIGNIFICANT ECOLOGICAL AREAS (SEAS)	N/A

1.3. HYDROMODIFICATION ANALYSIS

DOES THE PROPOSED PROJECT FALL INTO ONE OF THE FOLLOWING CATEGORIES? CHECK YES/NO.	YES	NO
1. *Project is a redevelopment that decreases the effective impervious area compared to the pre-project conditions.*	☐	☒
Describe:		
2. *Project is a redevelopment that increases the infiltration capacity of pervious areas compared to the pre-project conditions.*	☐	☒
Describe:		
3. *Project discharges directly or via a storm drain to a sump, lake, area under tidal influence, into a waterway that has a 100-year peak flow (Q_{100}) of 25,000 cfs or more.*	☒	☐
Describe:		
4. *Project discharges directly or via a storm drain into concrete or otherwise engineered (not natural) channels (e.g., channelized or armored with rip rap, shotcrete, etc.), which, in turn, discharge into receiving water that is not susceptible to hydromodification impacts.*	☒	☐
Describe: Project discharges directly to the Dominguez channel, a concrete-lined channel.		

HYDROMODIFICATION ANALYSIS

Project is hydromodification exempt.

1.4. PROPERTY OWNERSHIP/MANAGEMENT

	21611 Perry Street LLC 4132 Katella Avenue, #205B Los Alamitos, CA 90720

2. BEST MANAGEMENT PRACTICES (BMPS)

2.1. SITE DESIGN

85TH PERCENTILE, 24-HOUR STORM DEPTH	0.80"
SITE DESIGN	The project proposes a 10'x20' Modular Wetland System to treat the entire site prior to discharging to the Dominguez Channel.

BMP LIST

DMA DESIGNATION	SQUARE FOOTAGE (SF)	ACREAGE (AC)	STORM WATER QUALITY DESIGN FLOWRATE (SWQDQ, CFS)	BMP TYPE	BMP PROVIDED FLOWRATE (CFS)	GPS COORDINATES
DMA-1	120,644	2.77	0.702	10'X20' MWS	0.710	33°49'56.58"N 118°15'15.60"W

2.2. BMP SELECTION

2.2.1. INFILTRATION BMPS

NAME	INCLUDED
Bioretention without underdrains	☐
Infiltration Trench	☐
Infiltration Basin	☐
Drywell	☐
Proprietary Subsurface Infiltration Gallery	☐
Permeable Pavement (concrete, asphalt, pavers)	☐
Other:	☐
Other:	☐

DESCRIPTION	Per the Geotechnical Report, "Based on the shallow groundwater and impermeable nature of the fine grained soils which underly the site, infiltration of stormwater at this site is not considered feasible. Infiltration of stormwater at this site would be considered detrimental to the project."
CALCULATIONS	N/A

2.2.2. RAINWATER HARVEST AND USE BMPS

NAME	INCLUDED
Above-ground cisterns and basins	☐
Underground detention	☐
Other:	☐
Other:	☐
Other:	☐

DESCRIPTION	The proposed site has a low demand for harvested rainwater…
CALCULATIONS	N/A

2.2.3. ALTERNATIVE COMPLIANCE BMPS

BIOFILTRATION BMPS

(If Infiltration BMPs and Rainwater Harvest and Use BMPs are Infeasible)

NAME	INCLUDED
Bioretention with underdrains (i.e. planter box, rain garden, etc.)	☐
Constructed Wetland	☐
Vegetated Swale	☐
Vegetated Filter Strip	☐
Tree-Well Filter	☐
Other:	☐
Other:	☐

DESCRIPTION	N/A
CALCULATIONS	N/A

OFFSITE BMPS

(If Infiltration BMPs, Rainwater Harvest and Use BMPs, and Biofiltration BMPs are Infeasible)

NAME	INCLUDED
Offsite Infiltration	☐
Ground Water Replenishment Projects	☐
Offsite Project - Retrofit Existing Development	☐
Regional Storm Water Mitigation Program	☐
Other:	☐
Other:	☐

DESCRIPTION	N/A
CALCULATIONS	N/A

2.2.4. TREATMENT CONTROL BMPS

NAME	INCLUDED
Media Filter	☐
Filter Insert	☐
CDS Unit	☐
Other: Flow-through modular treatment system	☒
Other:	☐

DESCRIPTION	Project proposes a 10'x20' Modular Wetland System to treat the entire site. See below for calculations regarding the sizing of the Modular Wetland System. BMP Sizing Calculations: Tributary Area: 2.77 acres Intensity$_{1yr, 1hr}$: 0.31" Runoff Coefficient: 0.818 Required Flowrate/Discharge rate: Q=C*I*A = 0.702 cfs BMP Flowrate: 0.710 cfs

2.2.5. HYDROMODIFICATION CONTROL BMPS

NAME	INCLUDED
Infiltration System	☐
Above-ground Cistern	☐
Above-ground Basin	☐
Underground Detention	☐
Other:	☐
Other:	☐

DESCRIPTION	N/A
CALCULATIONS	N/A

2.2.6. NON-STRUCTURAL SOURCE CONTROL BMPS

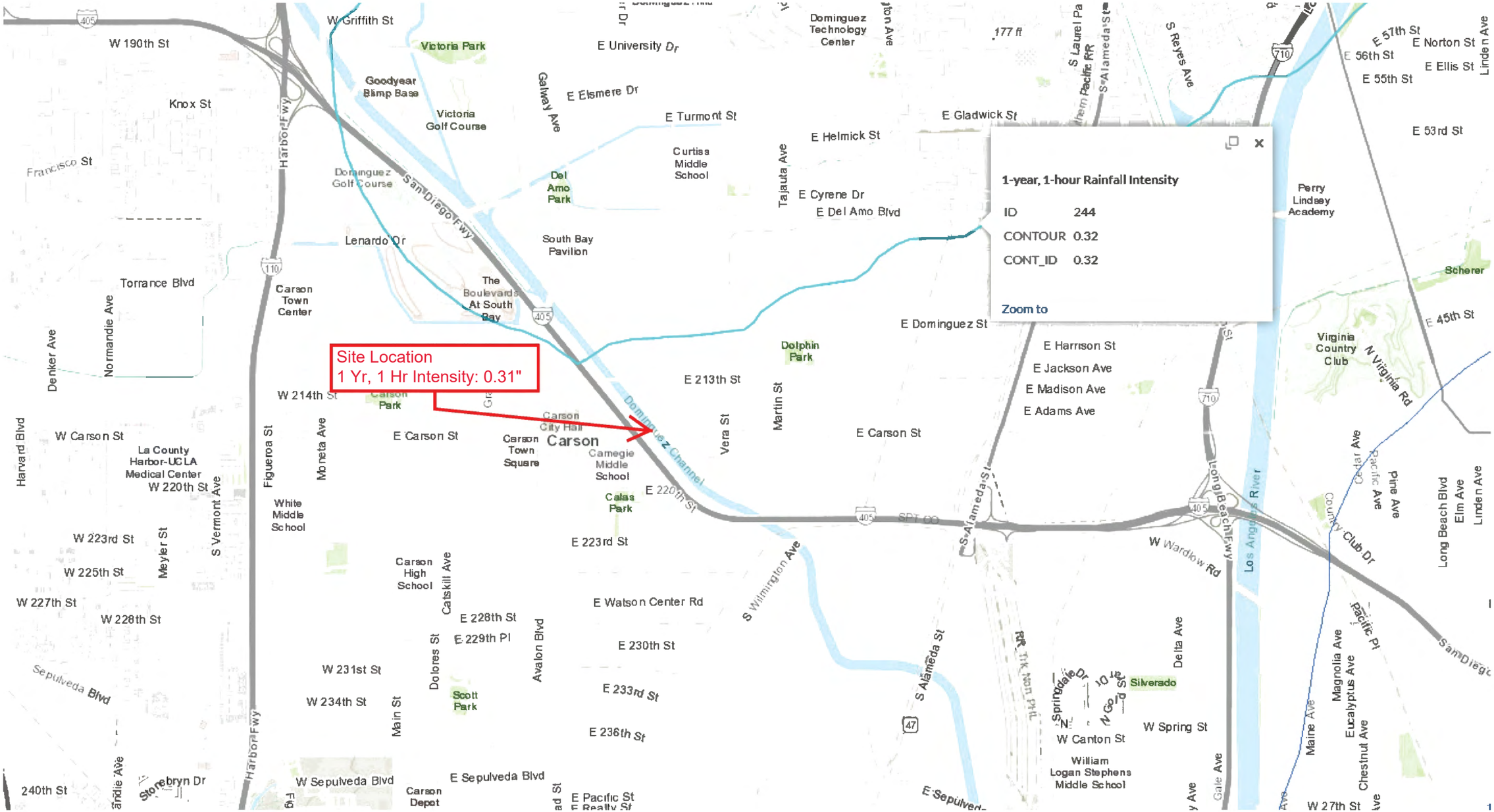
NAME	CHECK ONE	
	Included	**Not Applicable**
Education for Property Owners, Tenants and Occupants	☒	☐
Activity Restrictions	☒	☐
Common Area Landscape Management	☒	☐
Common Area Litter Control	☒	☐
Housekeeping of Loading Docks	☐	☒
Common Area Catch Basin Inspection	☒	☐
Street Sweeping Private Streets and Parking Lots	☒	☐

2.2.7. STRUCTURAL SOURCE CONTROL BMPS

NAME	CHECK ONE	
	Included	**Not Applicable**
Provide storm drain system stenciling and signage	☒	☐
Design and construct outdoor material storage areas to reduce pollution introduction	☐	☒
Design and construct trash and waste storage areas to reduce pollution introduction	☒	☐
Use efficient irrigation systems & landscape design, water conservation, smart controllers, and source control	☒	☐
Protect slopes and channels and provide energy dissipation	☐	☒
Loading docks	☐	☒
Maintenance bays	☐	☒
Vehicle wash areas	☐	☒
Outdoor processing areas	☐	☒
Equipment wash areas/racks	☐	☒
Fueling areas	☐	☒
Hillside landscaping	☐	☒

Attachment A

Calculations


Site Location
1 Yr, 1 Hr Intensity: 0.31"
1-year, 1-hour Rainfall Intensity
ID 244
CONTOUR 0.32
CONT_ID 0.32
Zoom to
W 190th St
Knox St
Francisco St
W Griffith St
Victoria Park
Goodyear Blimp Base
Victoria Golf Course
Dominguez Golf Course
Harbor Fwy
San Diego Fwy
Lenardo Dr
Torrance Blvd
Carson Town Center
Normandie Ave
Denker Ave
W 214th St
Carson Park
E University Dr
Galway Ave
E Elsmere Dr
E Turmont St
Del Amo Park
South Bay Pavilion
The Boulevards At South Bay
Curtiss Middle School
E Helmick St
Tajauta Ave
E Cyrene Dr
E Del Amo Blvd
E Gladwick St
Dominguez Technology Center
177 ft
S Laurel Pa
Southern Pacific RR
S Alameda St
S Reyes Ave
E 57th St
E Norton St
E 56th St
E Ellis St
E 55th St
Linden Ave
E 53rd St
Perry Lindsey Academy
Scherer
E 45th St
Virginia Country Club
N Virginia Rd
E Dominguez St
E Harrison St
E Jackson Ave
E Madison Ave
E Adams Ave
Dolphin Park
E 213th St
Martin St
Vera St
E Carson St
Carson City Hall
Carson
Carson Town Square
Carnegie Middle School
Dominguez Channel
Calas Park
E 220th St
E 223rd St
Harbor Fwy
Figueroa St
Moneta Ave
Harvard Blvd
W Carson St
La County Harbor-UCLA Medical Center
W 220th St
S Vermont Ave
White Middle School
W 223rd St
Meyler St
W 225th St
W 227th St
W 228th St
Sepulveda Blvd
240th St
Stonebryn Dr
Carson High School
Catskill Ave
E 228th St
E 229th Pl
Dolores St
Avalon Blvd
W 231st St
W 234th St
Main St
Scott Park
E 230th St
E 233rd St
E 236th St
W Sepulveda Blvd
E Sepulveda Blvd
Carson Depot
E Pacific St
S Wilmington Ave
S Alameda St
SPT CO
Long Beach Fwy
Los Angeles River
W Wardlow Rd
Country Club Dr
Cedar Ave
Pacific Ave
Pine Ave
Long Beach Blvd
Elm Ave
Linden Ave
Pacific Pl
Magnolia Ave
Eucalyptus Ave
Chestnut Ave
Maine Ave
Gale Ave
Delta Ave
Springdale Dr
N Golden Cir
S Silverado
W Spring St
W Canton St
William Logan Stephens Middle School
W 27th St
San Diego
405
110
710
47

LA County Hydrology Map

Find address or place

Site Location
85th Percentile: 0.80"

Final 85th Percentile, 24-hr Rainfall

ID 34

CONTOUR 0.80

Zoom to

Imagery with Labels

28 ft

22 ft

0.8

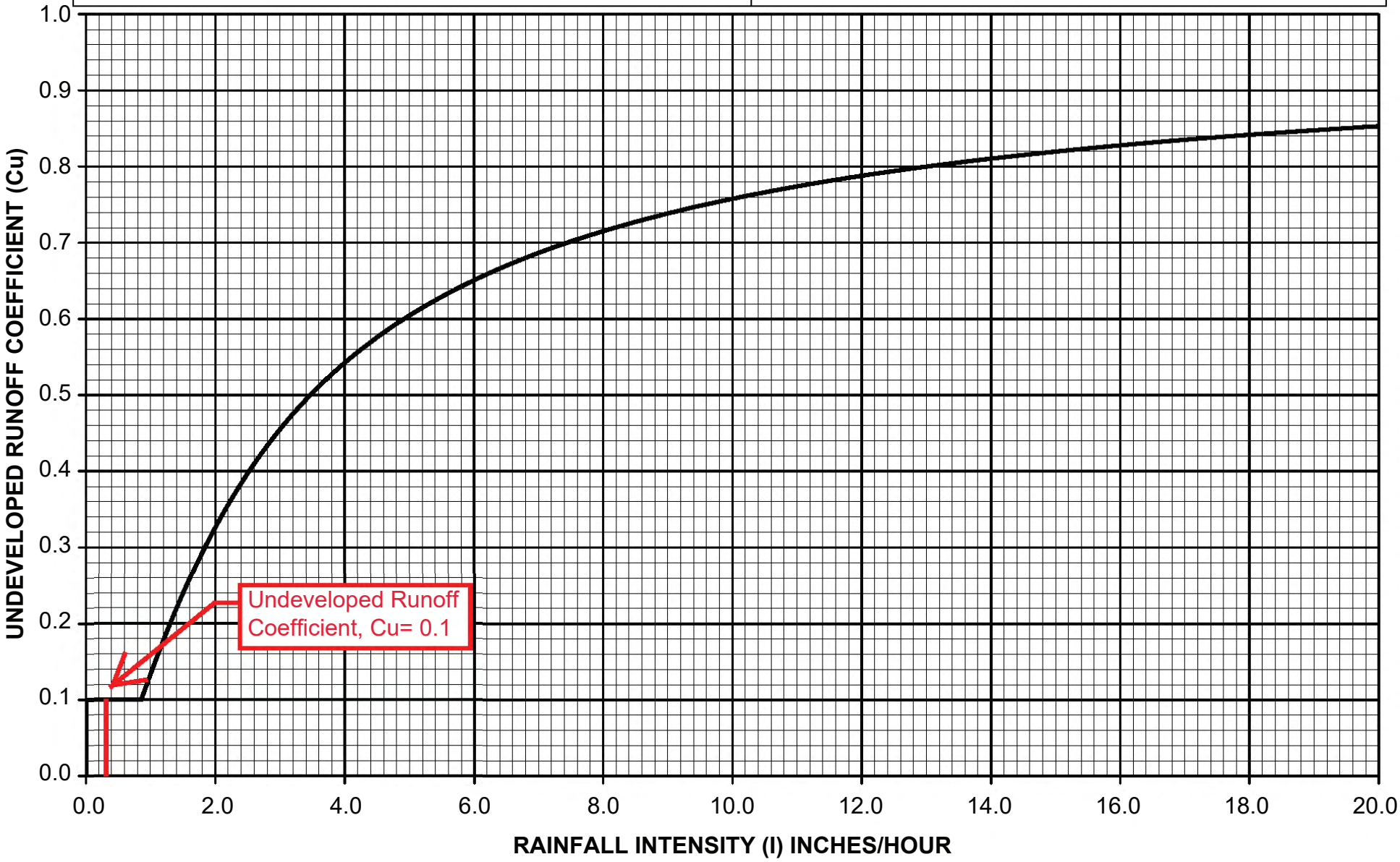
Avalon Blvd
San Diego Fwy
405
Imperial Avalon Mobile Est
Chico St
E Dominguez St
Vera
E Balard St
Del Amo Elementary School
Dolphin Park
Water St
Oakfort Ave
E 213th St
E 214th St
E Albreda St
Millport Ave
S Wilmington Ave
Wilmington Av
Grace Ave
North Ln
Middle Ln
South Ln
Garston Ave
Selwyn Ave
S Troylon Ln
Thomas Dr
Alvar Pl
S Perry St
Susan Dr
E 214th St
E 215th St
E 215th Pl
Perry St Mini Park
Lostine Ave
Legend Ave
Martin St
E Califon St
E 215th St
Carson City Hall
Civic Center Dr
Carson
E Carson St
Mobile Homes
Carson Town Square
Colorado Cir
Civic Center
Carnegie Middle School
E Calbas St
Bonita Street School
Hansom Ave
Newkirk Ave
E 220th St
E Hadler St
E Fiat St
Calas Park
E Jay St
S Edgar St
Jay St
Northern Neighborhood
E 221st St
Go Kart World
Recreation Rd
Acacia Ave
Dalton Ave
E 218th St
E Abila St
Paradise
Trailer
E Bach St
E Abri St
Pontine Ave
S Westward Ave

$C_D = (0.9 * IMP) + (1.0 - IMP) * C_U$

Where: C_D = Developed Runoff Coefficient
IMP = Proportion Impervious
C_U = Undeveloped runoff coefficient

Los Angeles County Department of Public Works

RUNOFF COEFFICIENT CURVE
SOIL TYPE NO. 003

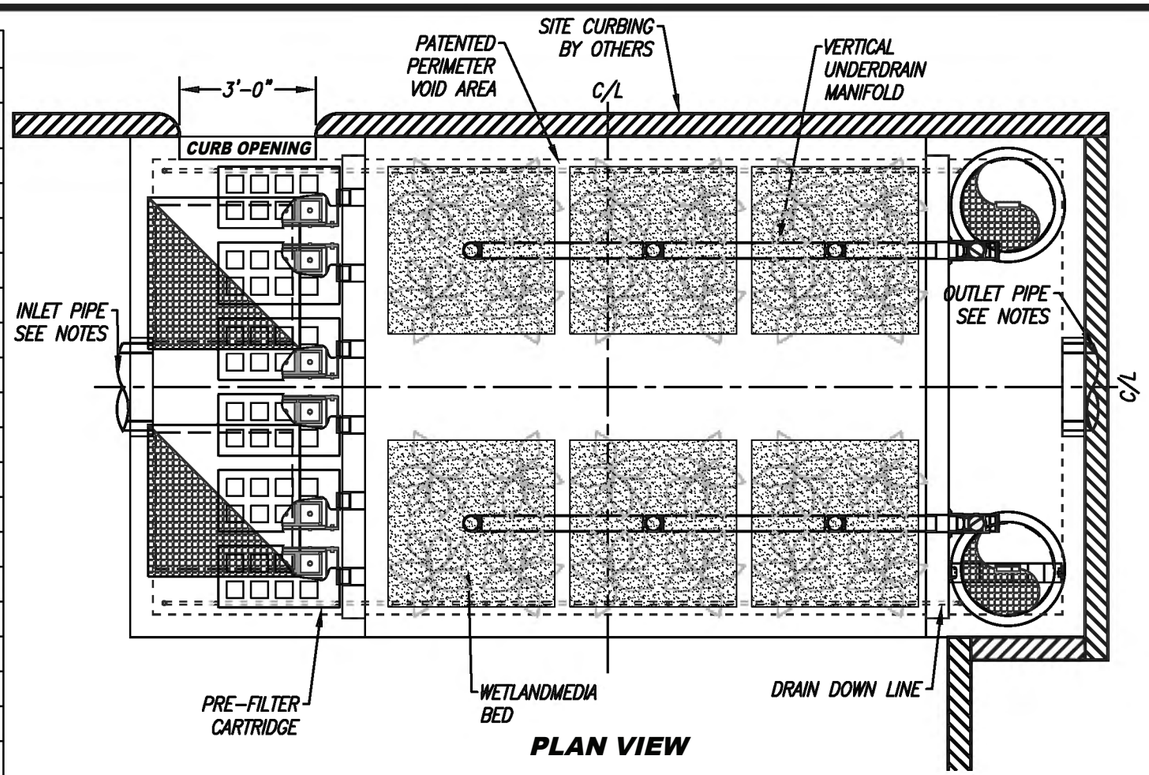


Flow Based BMP's

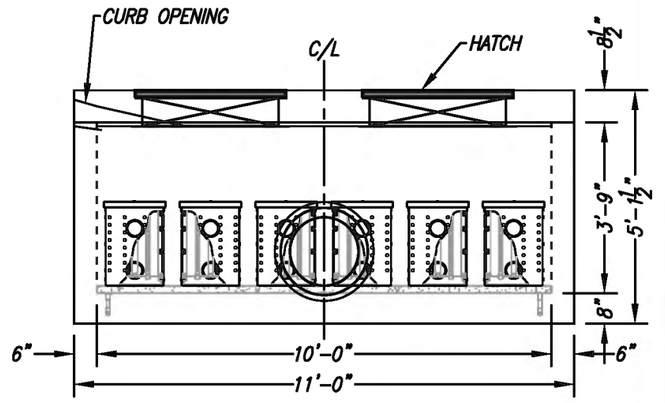
BMP-#	BMP type	BMP size	Tributary Area (ac)	Intensity (in/hr)	Runoff Coefficient (c)	Req'd flowrate/Discharge rate (cfs) Q=C*I*A	BMP Flowrate (cfs)	Notes
BMP-1	Modular wetland	10'x20'	2.77	0.31	0.818	0.702	0.710	BMP flowrate given by mfr

BASIN	AREA (SF)	AREA (AC)	% Imp	"C" Value
DMA-1	120,644	2.77	89.8%	0.818

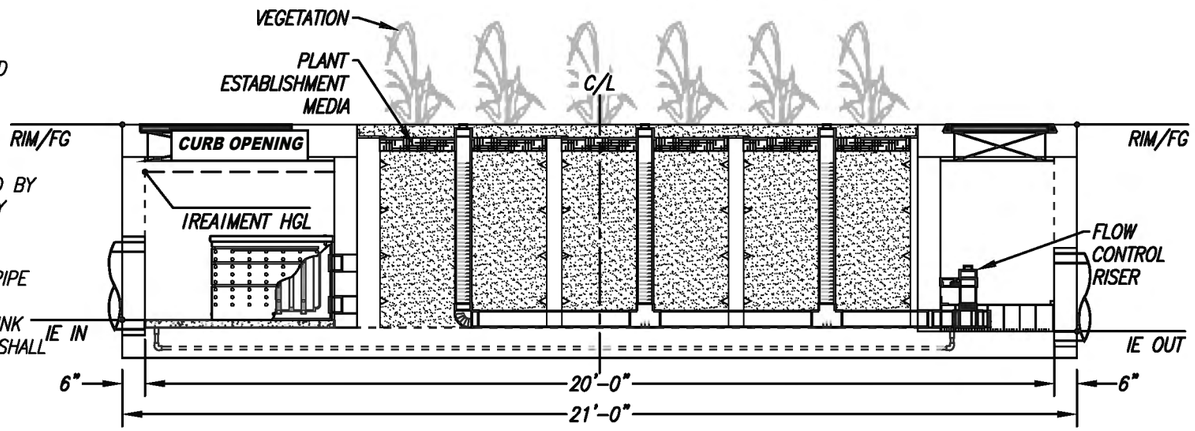
SITE SPECIFIC DATA			
PROJECT NUMBER			
PROJECT NAME			
PROJECT LOCATION			
STRUCTURE ID			
TREATMENT REQUIRED			
VOLUME BASED (CF)		FLOW BASED (CFS)	
N/A		0.710	
TREATMENT HGL AVAILABLE (FT)			N/K
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			FLOW BY
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2			
OUTLET PIPE			
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION			
SURFACE LOAD	PEDESIRIAN	OPEN PLANIER	PEDESTRIAN
FRAME & COVER	2 EA 36" X 36"	N/A	2 EA ø24"
WETLANDMEDIA VOLUME (CY)			
ORIFICE SIZE (DIA. INCHES)			2 EA ø2.67"
NOTES: PRELIMINARY. NOT FOR CONSTRUCTION.			



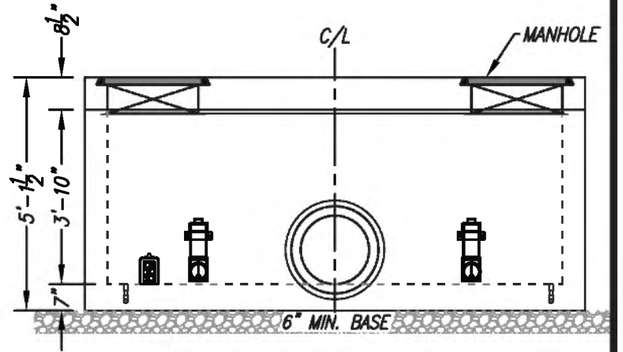
PLAN VIEW



LEFT END VIEW



ELEVATION VIEW



RIGHT END VIEW

INSTALLATION NOTES

1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURERS SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURERS CONTRACT.
2. UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE TO VERIFY PROJECT ENGINEERS RECOMMENDED BASE SPECIFICATIONS.
3. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE. (PIPES CANNOT INTRUDE BEYOND FLUSH). INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR. ALL GAPS AROUND PIPES SHALL BE SEALED WATER TIGHT WITH A NON-SHRINK GROUT PER MANUFACTURERS STANDARD CONNECTION DETAIL AND SHALL MEET OR EXCEED REGIONAL PIPE CONNECTION STANDARDS.
4. CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES.
5. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL RISERS, MANHOLES, AND HATCHES. CONTRACTOR TO GROUT ALL MANHOLES AND HATCHES TO MATCH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.
6. DRIP OR SPRAY IRRIGATION REQUIRED ON ALL UNITS WITH VEGETATION.
7. CONTRACTOR RESPONSIBLE FOR CONTACTING MODULAR WETLANDS FOR ACTIVATION OF UNIT. MANUFACTURES WARRANTY IS VOID WITH OUT PROPER ACTIVATION BY A MODULAR WETLANDS REPRESENTATIVE.

GENERAL NOTES

1. MANUFACTURER TO PROVIDE ALL MATERIALS UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS, ELEVATIONS, SPECIFICATIONS AND CAPACITIES ARE SUBJECT TO CHANGE. FOR PROJECT SPECIFIC DRAWINGS DETAILING EXACT DIMENSIONS, WEIGHTS AND ACCESSORIES PLEASE CONTACT MANUFACTURER.

LOW INFLOW PIPE DISCLOSURE:

IT IS RECOMMENDED THAT A SUFFICIENT VARIATION IN ELEVATION BETWEEN THE INLET AND OUTLET BE PROVIDED TO ALLOW FOR ACCUMULATION OF SEDIMENT IN THE PRE-TREATMENT CHAMBER. FAILURE TO DO SO MAY RESULT IN BLOCKAGE AT INFLOW POINT(S) WHICH MAY CAUSE UPSTREAM FLOODING.

TREATMENT FLOW (CFS)	0.710
OPERATING HEAD (FT)	3.5
PRETREATMENT LOADING RATE (GPM/SF)	2.1
WETLAND MEDIA LOADING RATE (GPM/SF)	1.0

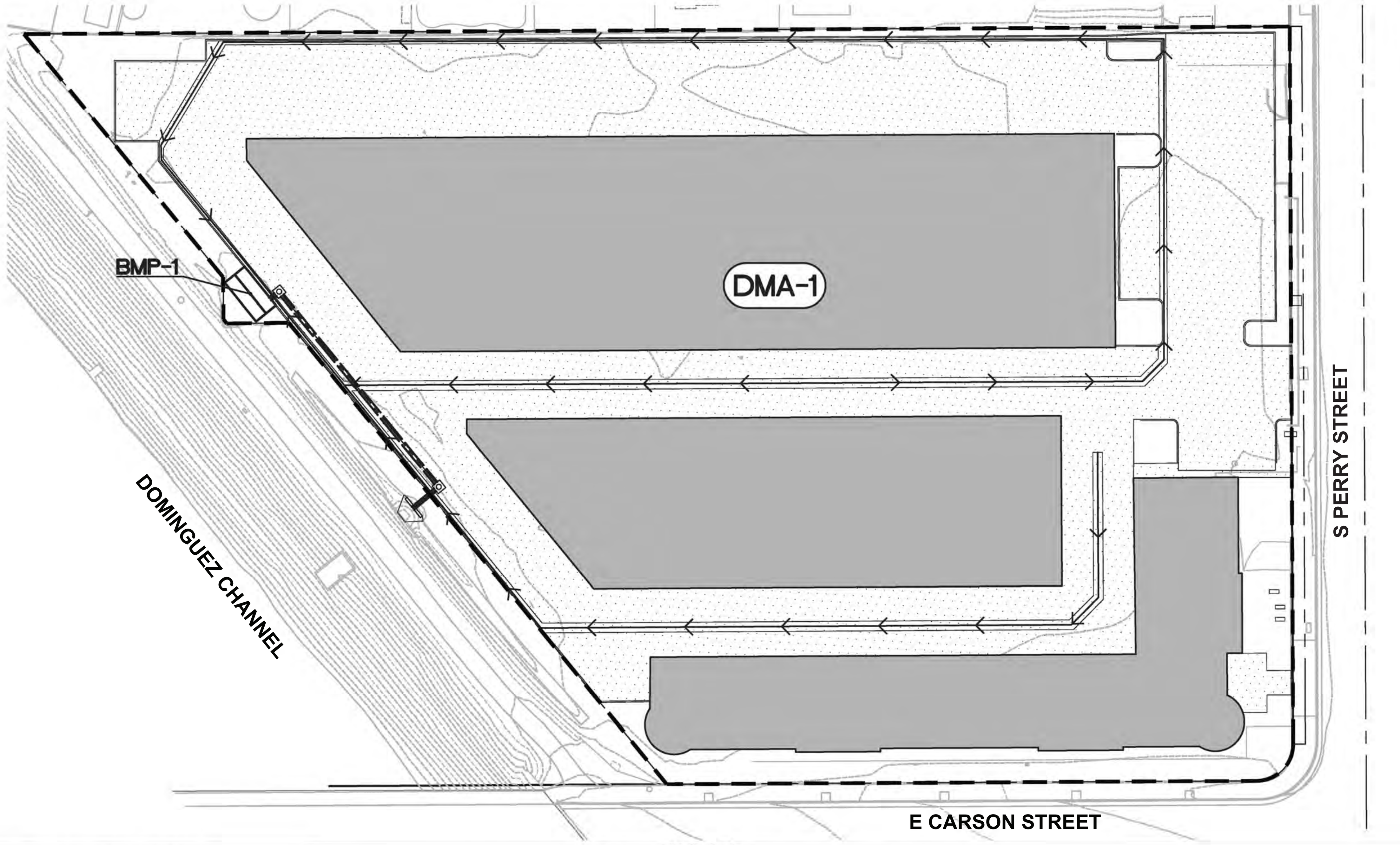
MWS-L-10-20-4'-5.5"-C-HC
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

LEGEND

AREA LIMITS	(dashed line)
FLOW ARROWS	(arrow)
BUILDING AREA	(gray fill)
PAVEMENT AREA	(dotted fill)
DRAINAGE MGMT AREA (DMA) NUMBER	DMA-1

PLAN PREPARED BY:

OMEGA ENGINEERING CONSULTANTS
4340 VIEWRIDGE AVE. SUITE B
SAN DIEGO, CA 92123
PH:(858) 634-8620 FAX:(858)-634-8627



DMA DATA TABLE

DMA-NO.	TOT. AREA (SF)	IMPERVIOUS (%)	REQ'D FLOWRATE (CFS)	BMP FLOWRATE (CFS)	TYPE/TREATED BY
DMA-1	120,644	89.8	0.702	0.710	BMP-1/MODULAR WETLAND

GENERAL STORM WATER NOTES

1. GROUNDWATER IS ANTICIPATED AT APPROXIMATELY 12.5 FEET BELOW EXISTING GRADE ON SITE.
2. NO EXISTING NATURAL HYDROLOGIC FEATURES
3. NO SIGNIFICANT ECOLOGICAL AREAS ON SITE
4. ALL APPLICABLE SOURCE CONTROL BMPS SHALL BE IMPLEMENTED
   5A. SOURCE CONTROL NOTES TO COME IN MINISTERIAL REVIEW

Peak Flow Hydrologic Analysis

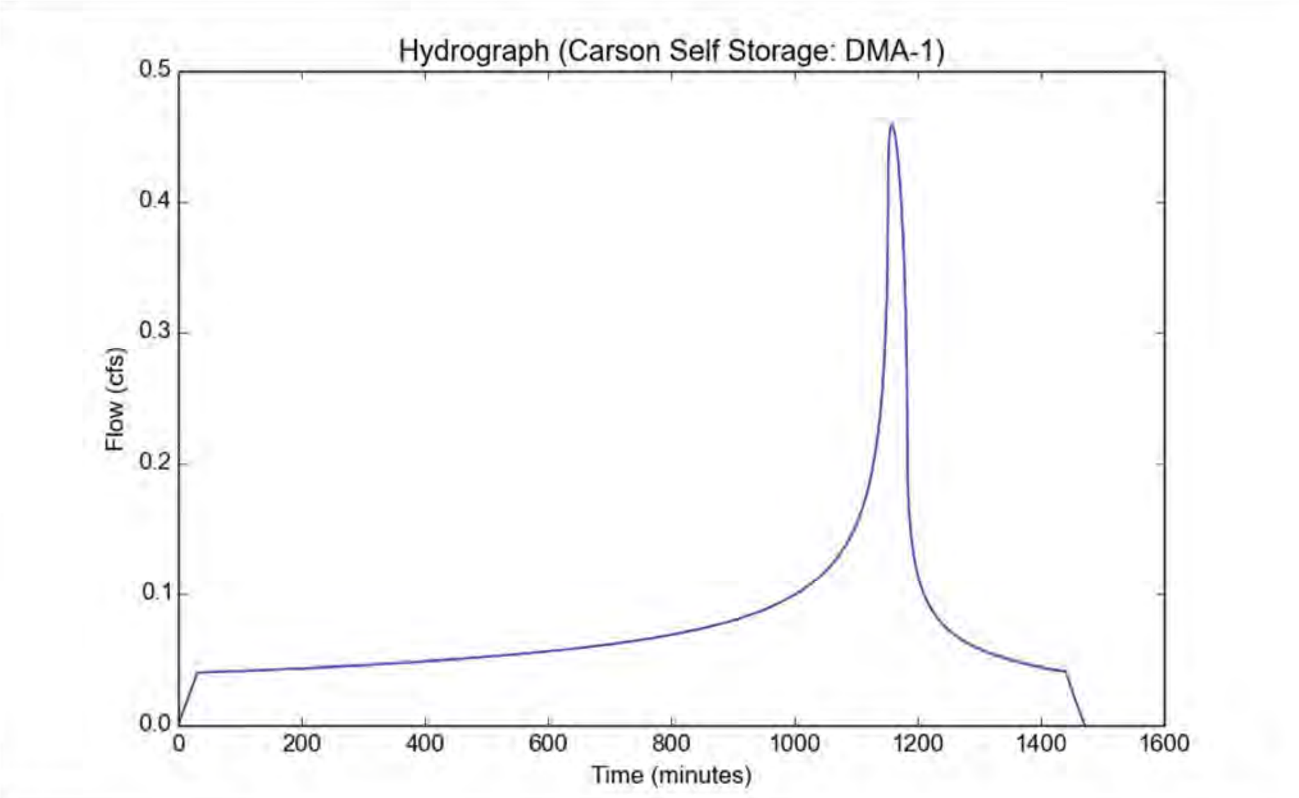
File location: P:/DWG OMEGA/0633 Faring SS Carson/STORMWATER REPORTS/Water Quality/ATTACHMENTS/85th Percentile Hydro
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Carson Self Storage
Subarea ID	DMA-1
Area (ac)	2.77
Flow Path Length (ft)	475.0
Flow Path Slope (vft/hft)	0.006
85th Percentile Rainfall Depth (in)	0.8
Percent Impervious	0.898
Soil Type	3
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	0.8
Peak Intensity (in/hr)	0.2025
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.8184
Time of Concentration (min)	31.0
Clear Peak Flow Rate (cfs)	0.459
Burned Peak Flow Rate (cfs)	0.459
24-Hr Clear Runoff Volume (ac-ft)	0.1499
24-Hr Clear Runoff Volume (cu-ft)	6528.9479



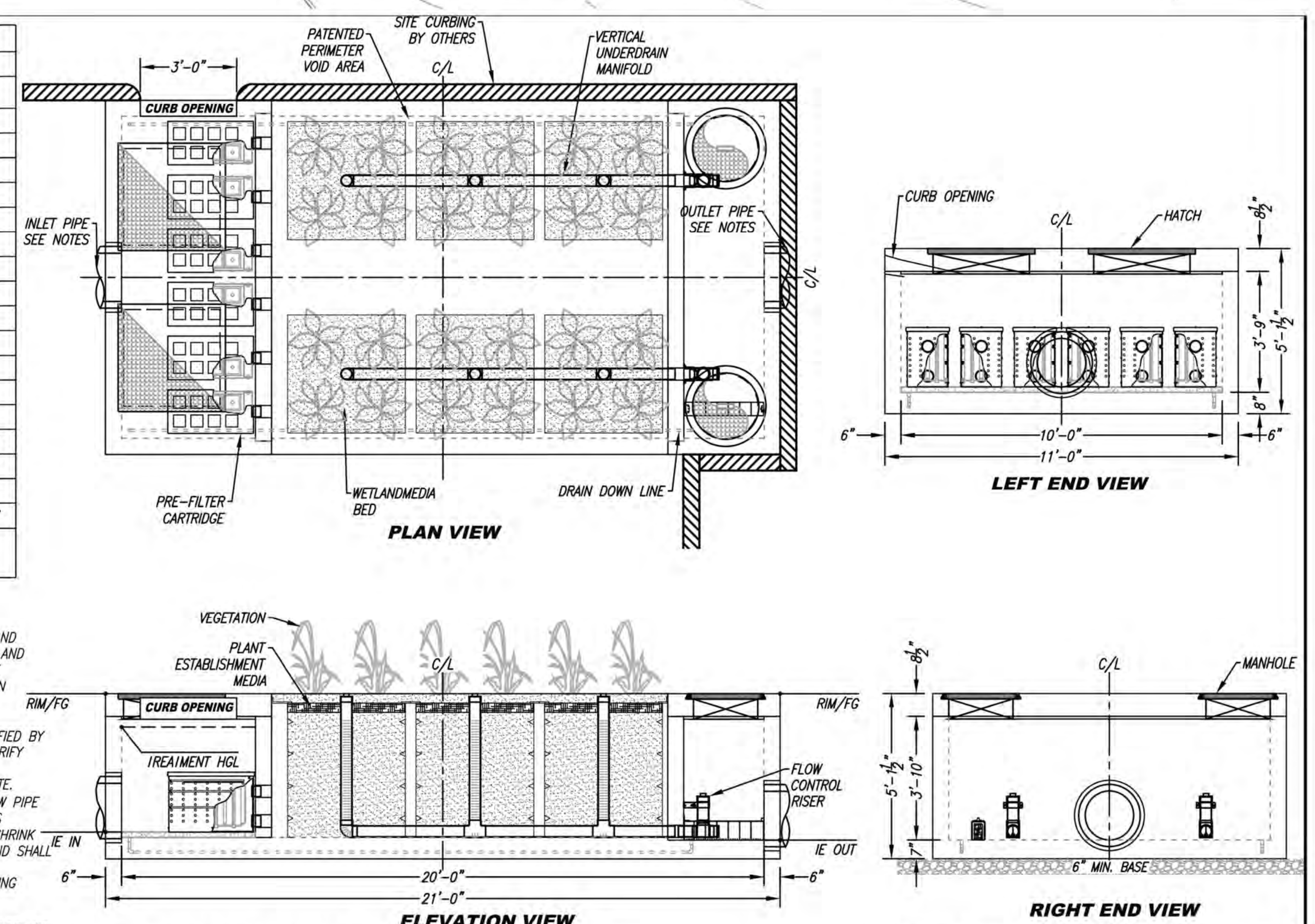
PROJECT HYDROGRAPH

GRAPHICAL SCALE: 1" = 40'
0 20 40 80 120

SITE SPECIFIC DATA

PROJECT NUMBER			
PROJECT NAME			
PROJECT LOCATION			
STRUCTURE ID			
TREATMENT REQUIRED			
VOLUME BASED (CF)		FLOW BASED (CFS)	
N/A		0.710	
TREATMENT HGL AVAILABLE (FT)			N/K
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			FLOW BY
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2			
OUTLET PIPE			
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION			
SURFACE LOAD	PEDESIRIAN	OPEN PLANIER	PEDESTRIAN
FRAME & COVER	2 EA 36" X 36"	N/A	2 EA ø24"
WETLANDMEDIA VOLUME (CY)			
ORIFICE SIZE (DIA. INCHES)			2 EA ø2.67"

NOTES: PRELIMINARY. NOT FOR CONSTRUCTION.



INSTALLATION NOTES

1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURERS SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURERS CONTRACT.
2. UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE TO VERIFY PROJECT ENGINEERS RECOMMENDED BASE SPECIFICATIONS.
3. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE. (PIPES CANNOT INTRUDE BEYOND FLUSH). INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR. ALL GAPS AROUND PIPES SHALL BE SEALED WATER TIGHT WITH A NON-SHRINK GROUT PER MANUFACTURERS STANDARD CONNECTION DETAIL AND SHALL MEET OR EXCEED REGIONAL PIPE CONNECTION STANDARDS.
4. CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES.
5. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL RISERS, MANHOLES, AND HATCHES. CONTRACTOR TO GROUT ALL MANHOLES AND HATCHES TO MATCH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.
6. DRIP OR SPRAY IRRIGATION REQUIRED ON ALL UNITS WITH VEGETATION.
7. CONTRACTOR RESPONSIBLE FOR CONTACTING MODULAR WETLANDS FOR ACTIVATION OF UNIT. MANUFACTURES WARRANTY IS VOID WITH OUT PROPER ACTIVATION BY A MODULAR WETLANDS REPRESENTATIVE.

GENERAL NOTES

1. MANUFACTURER TO PROVIDE ALL MATERIALS UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS, ELEVATIONS, SPECIFICATIONS AND CAPACITIES ARE SUBJECT TO CHANGE. FOR PROJECT SPECIFIC DRAWINGS DETAILING EXACT DIMENSIONS, WEIGHTS AND ACCESSORIES PLEASE CONTACT MANUFACTURER.

LOW INFLOW PIPE DISCLOSURE:

IT IS RECOMMENDED THAT A SUFFICIENT VARIATION IN ELEVATION BETWEEN THE INLET AND OUTLET BE PROVIDED TO ALLOW FOR ACCUMULATION OF SEDIMENT IN THE PRE-TREATMENT CHAMBER. FAILURE TO DO SO MAY RESULT IN BLOCKAGE AT INFLOW POINT(S) WHICH MAY CAUSE UPSTREAM FLOODING.

TREATMENT FLOW (CFS)	0.710
OPERATING HEAD (FT)	3.5
PRETREATMENT LOADING RATE (GPM/SF)	2.1
WETLAND MEDIA LOADING RATE (GPM/SF)	1.0

MODULAR WETLANDS

Bio Clean
A Forterra Company

MWS-L-10-20-4'-5.5"-C-HC
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

MODULAR WETLAND DETAIL

NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
SEAN M. SAVAGE
No.75677
CIVIL
STATE OF CALIFORNIA

FOR PLAN CHECK ONLY

SEAN M. SAVAGE R.C.E. 75677 DATE

PERRY STREET
CARSON STREET SS
CARSON, CA

JOB NUMBER: 20-817

DATE: 10/05/2021

JORDAN ARCHITECTS
131 CALLE IGLESIA, SUITE 100
SAN CLEMENTE, CA 92672
949.388.8090

FILENAME: P:\DWG OMEGA\0633 FARING SS CARSON\ACAD\DISCRETIONARY\0633-CGP-03-DMA.DWG
DATE:5/14/2021 11:41:32 AM

Attachment B

Geotechnical Investigation

GEOTECHNICAL INVESTIGATION

PROPOSED COMMERCIAL DEVELOPMENT
21611 SOUTH PERRY STREET
CARSON, CALIFORNIA
APN: 7327-010-014

PREPARED FOR
FARING CAPITAL, LLC
WEST HOLLYWOOD, CALIFORNIA

PROJECT NO. W1301-06-01

APRIL 23, 2021

GEOCON
WEST, INC.
GEOTECHNICAL
ENVIRONMENTAL
MATERIALS

GEOCON
WEST, INC.
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS

Project No. W1301-06-01
April 23, 2021

Faring Capital, LLC
659 North Robertson Boulevard,
West Hollywood, California 90069

Attention: Mr. Darren Embry

Subject: GEOTECHNICAL INVESTIGATION
PROPOSED COMMERCIAL DEVELOPMENT
21611 SOUTH PERRY STREET
CARSON, CALIFORNIA
APN: 7327-010-014

Dear Mr. Embry:

In accordance with your authorization of our proposal dated December 11, 2020, we have prepared this geotechnical investigation report for the proposed commercial development located at 21611 South Perry Street in the City of Carson, California. The accompanying report presents the findings of our study, and our conclusions and recommendations pertaining to the geotechnical aspects of proposed design and construction. Based on the results of our investigation, it is our opinion that the site can be developed as proposed, provided the recommendations of this report are followed and implemented during design and construction.

If you have any questions regarding this report, or if we may be of further service, please contact the undersigned.

Very truly yours,

GEOCON WEST, INC.

REGISTERED PROFESSIONAL ENGINEER
JELISA THOMAS ADAMS
GE3092
GEOTECHNICAL
STATE OF CALIFORNIA

PROFESSIONAL GEOLOGIST
SUSAN FRANZEN KIRKGARD
No. 1754
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

Joe Hicks	Jelisa Thomas Adams	Susan F. Kirkgard
Staff Engineer	GE 3092	CEG 1754

(EMAIL) Addressee

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GEOTECHNICAL INVESTIGATION

1. PURPOSE AND SCOPE

This report presents the results of a geotechnical investigation for the proposed commercial development located at 21611 South Perry Street in the City of Carson, California (see Vicinity Map, Figure 1). The purpose of the investigation was to evaluate subsurface soil and geologic conditions underlying the site and, based on conditions encountered, to provide conclusions and recommendations pertaining to the geotechnical aspects of design and construction.

The scope of this investigation included a review of prior environmental reports for the site provided by the client, a site reconnaissance, field exploration, laboratory testing, engineering analysis, and the preparation of this report. The site was explored on February 9, 2021 by drilling five 8-inch diameter borings using a truck-mounted hollow-stem auger drilling machine and advancing five cone penetrometer tests (CPTs). The borings were excavated to depths between approximately 20½ and 51 feet beneath the existing ground surface. The CPTs were advanced to depths of approximately 60 feet below existing ground surface. The approximate locations of the exploratory borings and CPTs are depicted on the Site Plan (see Figure 2). A detailed discussion of the field investigation, including the boring and CPT logs, is presented in Appendix A.

Laboratory tests were performed on selected soil samples obtained during the investigation to determine pertinent physical and chemical soil properties. Appendix B presents a summary of the laboratory test results.

The recommendations presented herein are based on analysis of the data obtained during the investigation and our experience with similar soil and geologic conditions. References reviewed to prepare this report are provided in the *List of References* section.

If project details vary significantly from those described herein, Geocon should be contacted to determine the necessity for review and possible revision of this report.

2. SITE AND PROJECT DESCRIPTION

The subject site is an approximately 2.6-acre irregularly shaped parcel located at 21611 South Perry Street in the City of Carson, California. The site is currently vacant. The site is bounded by South Perry Street on the east, by the Dominguez Channel to the west, by one- to two-story single-family homes to the north, and by East Carson Street to the south. The site is relatively level, with no pronounced highs or lows. Surface water drainage at the site appears to be by sheet flow along the existing ground contours to the city streets.

Based on the information provided by the Client, it is our understanding that the proposed development will consist of three 2-story self-storage structures. Based on preliminary plans it is anticipated that the development will be approximately 25 feet in height and will be constructed at or near present grade (see Figure 2).

Based on the preliminary nature of the design at this time, wall and column loads were not available. It is anticipated that column loads for the proposed structures will be up to 300 kips, and wall loads will be up to 3 kips per linear foot.

Once the design phase and foundation loading configuration proceeds to a more finalized plan, the recommendations within this report should be reviewed and revised, if necessary. Any changes in the design, location or elevation of any structure, as outlined in this report, should be reviewed by this office. Geocon should be contacted to determine the necessity for review and possible revision of this report.

3. BACKGROUND

Prior environmental reports were prepared for the site and provided for our review, and include the following:

Phase 1 Environmental Site Assessment, 21611 S. Perry Street, Carson, CA. 90745-1613, Prepared by Weis Environmental, dated January 25, 2021.

2020 First Semi-Annual Groundwater Monitoring Report, January Through June 2020, Dominguez Channel Release, Carson, California, Prepared by AECOM, dated July 14, 2020.

Based on the prior reports, petroleum hydrocarbon impacted soil and groundwater were previously identified at the site that originated from on-site underground storage tanks (USTs) and migration of contaminants from off-site sources. AECOM (formerly URS) developed a workplan that developed cleanup goals and excavation limits to remove impacted soils that was approved by the LARWQCB. In 2014, approximately 4,800 cubic yards of impacted soils were excavated from four areas and removed from the site. The excavations were approximately 5 to 8 feet deep and were backfilled with clean import soils (Weis Environmental, 2021). The approximate locations and depths of these areas are indicated on the Site Plan (see Figure 2). The backfill was reportedly placed, compacted, and tested as a certified backfill material; however, a copy of the compaction report was not included as an exhibit. Therefore, for the purposes of this report, the backfill is considered to be uncertified fill.

Also, as part of the prior site remediation, groundwater monitoring wells were installed at the site and the immediately surrounding area. The monitoring wells present at the site are limited to the eastern, western, and southern property boundaries. Groundwater monitoring is ongoing in these wells in compliance with a semi-annual groundwater monitoring program required by the LARWQCB.

Based on documents included in the referenced environmental reports, the known soil and groundwater impacts are within acceptable levels for commercial use and further assessment or remediation is not required. However, a soil management plan (SMP) is anticipated required for further development of the site. Development of a soil management plan is beyond the scope of the Geotechnical Investigation.

4. GEOLOGIC SETTING

The site is located in the southern portion of the Los Angeles Basin, a coastal plain bounded by the Santa Monica Mountains on the north, the Elysian Hills and Repetto Hills on the northeast, the Puente Hills and the Whittier Fault on the east, the Palos Verdes Peninsula and Pacific Ocean on the west and south, and the Santa Ana Mountains and San Joaquin Hills on the southeast. The basin is underlain by a deep structural depression which has been filled by both marine and continental sedimentary deposits underlain by a basement complex of igneous and metamorphic composition. Regionally, the site is located within the northern portion of the Peninsular Ranges geomorphic province. This geomorphic province is characterized by northwest-trending physiographic and geologic features such as the nearby Newport-Inglewood Fault Zone located approximately 2.7 miles to the east-northeast.

5. SOIL AND GEOLOGIC CONDITIONS

Based on our field investigation and published geologic maps of the area, the site is underlain by artificial fill and Holocene age alluvium consisting sand, silt, and clay (California Geological Survey, 2010). Detailed stratigraphic profiles of the materials encountered at the site are provided on the boring logs in Appendix A.

5.1 Artificial Fill

Artificial fill was encountered in our explorations to depths ranging from 3 to 9 feet below existing ground surface. The deep fill, observed in boring B3, is associated with an area of a former UST removal. The artificial generally consists of light brown to brown or grayish brown sand and silty sand. The artificial fill is characterized as fine-grained with some medium-grained, moist, and loose to dense. The fill is likely the result of past grading, UST removal and environmental remediation, and past construction activities at the site. Deeper fill may exist between excavations and in other portions of the site that were not directly explored.

5.2 Alluvium

Holocene age alluvium was encountered beneath the fill to the maximum depth explored (51 feet below the ground surface). The alluvium generally consists of light brown to brown, olive brown, or gray to dark gray interbedded clay, sandy clay, silt, sandy silt, silty sand and clayey sand. The alluvial soils are characterized as primarily fine-grained, moist to wet, and loose to dense or soft to stiff.

6. GROUNDWATER

A review of the Seismic Hazard Zone Report for the Torrance Quadrangle (California Division of Mines and Geology [CDMG], 1998) indicates the historically highest groundwater level in the area is approximately 9 feet beneath the ground surface. Groundwater information presented in this document is generated from data collected in the early 1900's to the late 1990s. Based on current groundwater basin management practices, it is unlikely that groundwater levels will ever exceed the historic high levels.

Groundwater was encountered in borings B1 and B3 at depths of 12.5 feet and 17.6 feet beneath the existing ground surface, respectively. Additionally, readings from groundwater monitoring wells established on the site were taken on February 23, 2021. The locations of the accessible monitoring wells are indicated on the site plan (see Figure 2) and a summary of groundwater levels at the time of the investigation is provided in the table below.

Monitoring Well Readings

Well ID	MW-3	MW-4	MW-5	MW-7A	MW-8A	MW-9B
Depth to GW (Below Ground Surface)	12.0'	13.17'	12.25'	12.33'	12.67'	14.67'

Based on the depth to groundwater and the on-grade nature of the development, groundwater is not expected to have a detrimental effect on the project. Groundwater may be encountered during construction in deep drilled excavations, such as for ground improvement or elevator pistons. It is not uncommon for groundwater levels to vary seasonally or for groundwater seepage conditions to develop where none previously existed, especially in impermeable fine-grained soils which are heavily irrigated or after seasonal rainfall. In addition, recent requirements for stormwater infiltration could result in shallower seepage conditions in the immediate site vicinity. Proper surface drainage of irrigation and precipitation will be critical for future performance of the project. Recommendations for drainage are provided in the S*urface Drainage* section of this report (see Section 8.20).

7. GEOLOGIC HAZARDS

7.1 Surface Fault Rupture

The numerous faults in Southern California include Holocene-active, pre-Holocene, and inactive faults. The criteria for these major groups are based on criteria developed by the California Geological Survey (CGS, formerly known as CDMG) for the Alquist-Priolo Earthquake Fault Zone Program (CGS, 2018). By definition, a Holocene-active fault is one that has had surface displacement within Holocene time (about the last 11,700 years). A pre-Holocene fault has demonstrated surface displacement during Quaternary time (approximately the last 1.6 million years) but has had no known Holocene movement. Faults that have not moved in the last 1.6 million years are considered inactive.

The site is not within a state-designated Alquist-Priolo Earthquake Fault Zone for surface fault rupture hazards (CGS, 2021a; CGS, 2021b; CDMG 1986). No Holocene-active or pre-Holocene active faults with the potential for surface fault rupture are known to pass directly beneath the site. Therefore, the potential for surface rupture due to faulting occurring beneath the site during the design life of the proposed development is considered low. However, the site is located in the seismically active Southern California region, and could be subjected to moderate to strong ground shaking in the event of an earthquake on one of the many active Southern California faults. The faults in the vicinity of the site are shown in Figure 3, Regional Fault Map.

The closest surface trace of an active fault to the site is the Newport-Inglewood Fault Zone located approximately 2.7 miles to the east-northeast (USGS, 2006; CDMG, 1986). Other nearby active faults are the Palos Verdes Fault, the Cabrillo Fault, and the Whittier Fault located approximately 4.2 miles south-southwest, 8.2 miles south, and 16 miles northeast of the site, respectively. The active San Andreas Fault Zone is located approximately 48 miles northeast of the site.

Several buried thrust faults, commonly referred to as blind thrusts, underlie the Los Angeles Basin at depth. These faults are not exposed at the ground surface and are typically identified at depths greater than 3.0 kilometers. The October 1, 1987, M_w 5.9 Whittier Narrows earthquake and the January 17, 1994, M_w 6.7 Northridge earthquake were a result of movement on the Puente Hills Blind Thrust and the Northridge Thrust, respectively. These thrust faults and others in the Los Angeles area are not exposed at the surface and do not present a potential surface fault rupture hazard at the site; however, these deep thrust faults are considered active features capable of generating future earthquakes that could result in moderate to significant ground shaking at the site.

7.2 Seismicity

As with all of Southern California, the site has experienced historic earthquakes from various regional faults. The seismicity of the region surrounding the site was formulated based on research of an electronic database of earthquake data. The epicenters of recorded earthquakes with magnitudes equal to or greater than 5.0 in the site vicinity are depicted on Figure 4, Regional Seismicity Map. A partial list of moderate to major magnitude earthquakes that have occurred in the Southern California area within the last 100 years is included in the following table.

LIST OF HISTORIC EARTHQUAKES

Earthquake (Oldest to Youngest)	Date of Earthquake	Magnitude	Distance to Epicenter (Miles)	Direction to Epicenter
Near Redlands	July 23, 1923	6.3	59	E
Long Beach	March 10, 1933	6.4	22	SE
Tehachapi	July 21, 1952	7.5	91	NW
San Fernando	February 9, 1971	6.6	41	NNW
Whittier Narrows	October 1, 1987	5.9	19	NE
Sierra Madre	June 28, 1991	5.8	33	NE
Landers	June 28, 1992	7.3	107	ENE
Big Bear	June 28, 1992	6.4	85	ENE
Northridge	January 17, 1994	6.7	31	NW
Hector Mine	October 16, 1999	7.1	125	ENE
Ridgecrest	July 5, 2019	7.1	138	NNE

The site could be subjected to strong ground shaking in the event of an earthquake. However, this hazard is common in Southern California and the effects of ground shaking can be mitigated if the proposed structures are designed and constructed in conformance with current building codes and engineering practices.

7.3 Seismic Design Criteria

The following table summarizes the site-specific design criteria obtained from the 2019 California Building Code (CBC; Based on the 2018 International Building Code [IBC] and NEHRP-2015), Chapter 16 Structural Design, Section 1613, Earthquake Loads. The data was calculated using the online application *Seismic Design Maps*, provided by OSHPD. The short spectral response uses a period of 0.2 second. We evaluated the Site Class based on the discussion in Section 1613.2.2 of the 2019 CBC and Section 11.4.3 of NEHRP-2015. The values presented on the following page are for the risk-targeted maximum considered earthquake (MCE_R).

2019 CBC SEISMIC DESIGN PARAMETERS

Parameter	Value	2019 CBC Reference
Site Class	D	Section 1613.2.2
MCE_R Ground Motion Spectral Response Acceleration – Class B (short), S_S	1.711g	Figure 1613.2.1(1)
MCE_R Ground Motion Spectral Response Acceleration – Class B (1 sec), S_1	0.618g	Figure 1613.2.1(2)
Site Coefficient, F_A	1	Table 1613.2.3(1)
Site Coefficient, F_V	1.7*	Table 1613.2.3(2)
Site Class Modified MCE_R Spectral Response Acceleration (short), S_{MS}	1.711g	Section 1613.2.3 (Eqn 16-36)
Site Class Modified MCE_R Spectral Response Acceleration – (1 sec), S_{M1}	1.05g*	Section 1613.2.3 (Eqn 16-37)
5% Damped Design Spectral Response Acceleration (short), S_{DS}	1.141g	Section 1613.2.4 (Eqn 16-38)
5% Damped Design Spectral Response Acceleration (1 sec), S_{D1}	0.7g*	Section 1613.2.4 (Eqn 16-39)

Note:

*Per Section 11.4.8 of ASCE/SEI 7-16, a ground motion hazard analysis shall be performed for projects for Site Class "E" sites with Ss greater than or equal to 1.0g and for Site Class "D" and "E" sites with S1 greater than 0.2g. Section 11.4.8 also provides exceptions which indicates that the ground motion hazard analysis may be waived provided the exceptions are followed. Using the code based values presented in the table above, in lieu of a performing a ground motion hazard analysis, requires the exceptions outlined in ASCE 7-16 Section 11.4.8 be followed.

The table below presents the mapped maximum considered geometric mean (MCE_G) seismic design parameters for projects located in Seismic Design Categories of D through F in accordance with NEHRP-2015.

ASCE 7-16 PEAK GROUND ACCELERATION

Parameter	Value	ASCE 7-16 Reference
Mapped MCE_G Peak Ground Acceleration, PGA	0.748g	Figure 22-7
Site Coefficient, F_{PGA}	1.1	Table 11.8-1
Site Class Modified MCE_G Peak Ground Acceleration, PGA_M	0.823g	Section 11.8.3 (Eqn 11.8-1)

The Maximum Considered Earthquake Ground Motion (MCE) is the level of ground motion that has a 2 percent chance of exceedance in 50 years, with a statistical return period of 2,475 years. According to the 2019 California Building Code and ASCE 7-16, the MCE is to be utilized for the evaluation of liquefaction, lateral spreading, seismic settlements, and it is our understanding that the intent of the Building code is to maintain "Life Safety" during a MCE event. The Design Earthquake Ground Motion (DE) is the level of ground motion that has a 10 percent chance of exceedance in 50 years, with a statistical return period of 475 years.

Deaggregation of the MCE peak ground acceleration was performed using the USGS online Unified Hazard Tool, 2014 Conterminous U.S. Dynamic edition (v4.2.0). The result of the deaggregation analysis indicates that the predominant earthquake contributing to the MCE peak ground acceleration is characterized as a 6.87 magnitude event occurring at a hypocentral distance of 8.35 kilometers from the site.

Deaggregation was also performed for the Design Earthquake (DE) peak ground acceleration, and the result of the analysis indicates that the predominant earthquake contributing to the DE peak ground acceleration is characterized as a 6.68 magnitude occurring at a hypocentral distance of 13.48 kilometers from the site.

Conformance to the criteria in the above tables for seismic design does not constitute any kind of guarantee or assurance that significant structural damage or ground failure will not occur if a large earthquake occurs. The primary goal of seismic design is to protect life, not to avoid all damage, since such design may be economically prohibitive.

7.4 Liquefaction Potential

Liquefaction is a phenomenon in which loose, saturated, relatively cohesionless soil deposits lose shear strength during strong ground motions. Primary factors controlling liquefaction include intensity and duration of ground motion, gradation characteristics of the subsurface soils, in-situ stress conditions, and the depth to groundwater. Liquefaction is typified by a loss of shear strength in the liquefied layers due to rapid increases in pore water pressure generated by earthquake accelerations.

The current standard of practice, as outlined in the "Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Liquefaction in California" and "Special Publication 117A, Guidelines for Evaluating and Mitigating Seismic Hazards in California" requires liquefaction analysis to a depth of 50 feet below the lowest portion of the proposed structure. Liquefaction typically occurs in areas where the soils below the water table are composed of poorly consolidated, fine to medium-grained, primarily sandy soil. In addition to the requisite soil conditions, the ground acceleration and duration of the earthquake must also be of a sufficient level to induce liquefaction.

A review of the State of California Seismic Hazard Zone Map for the Torrance Quadrangle (CDMG, 1999) indicates that the site is located in an area designated as having a potential for liquefaction. Also, the City of Carson (2002) indicates the site is located within an area that has a potential for liquefaction.

The Standard Penetration Test (SPT) blow counts obtained from boring B3 were compared with the blow counts estimated from the CPT soundings. SPTs were performed in boring B3 at intervals of approximately 5 feet. In order to supplement the SPT blow count data, select California Modified Sampler blow count data were converted to equivalent SPT blow counts based on a correlation factor of 0.55 (Rogers, 2006). The field collected blow counts were corrected for hammer efficiency to N60 blow count values. The boring N60 values were compared with the N60 values generated by the program CpetIT (Version 3.2.1.7). The comparison of CPT-3 and boring B3 are shown as Figure 5. It is our opinion that the boring and CPT N60 values show a very reasonable correlation and that analysis of the liquefaction potential may be based on the CPT data.

Liquefaction analyses of the CPT soundings were performed using the program CLiq (Version 3.0.3.2). This program utilizes the 2001 NCEER method of analysis. This semi-empirical method is based on correlations with the data collected from the CPT soundings.

The liquefaction analysis was performed for a Design Earthquake level by using a historic groundwater level of 9 feet below the ground surface, a magnitude 6.68 earthquake, and a peak horizontal acceleration of 0.549g (⅔PGAM). The results of the enclosed liquefaction analyses included herein for CPTs 1 through 5 indicate that the alluvial soils below the design groundwater level could be susceptible to the liquefaction induced settlements summarized in the table below during Design Earthquake ground motion. A summary of the anticipated liquefaction induced settlements is provided as Figure 6; calculations and output from CLiq are provided as Appendix C.

Liquefaction Induced Settlements (Design Earthquake)

CPT Number	CPT-1	CPT-2	CPT-3	CPT-4	CPT-5
Liquefaction Settlement (in)	0.43	0.11	0.20	0.00	0.28

It is our understanding that the intent of the Building Code is to maintain “Life Safety” during Maximum Considered Earthquake level events. Therefore, additional analysis was performed to evaluate the potential for liquefaction during a MCE event. The structural engineer should evaluate the proposed structure for the anticipated MCE liquefaction induced settlements and verify that anticipated deformations would not cause the foundation system to lose the ability to support the gravity loads and/or cause collapse of the structure.

The liquefaction analysis performed for the Maximum Considered Earthquake level by using a historic groundwater level of 9 feet below the ground surface, a magnitude 6.87 earthquake, and a peak horizontal acceleration of 0.823g (PGAM). The results of the enclosed liquefaction analyses included herein for CPTs 1 through 5 indicate that the alluvial soils below the design groundwater level could be susceptible to the liquefaction induced settlements summarized in the table below during Maximum Considered Earthquake ground motion. A summary of the anticipated liquefaction induced settlements is provided as Figure 7.

Liquefaction Induced Settlements (Maximum Considered Earthquake)

CPT Number	CPT-1	CPT-2	CPT-3	CPT-4	CPT-4
Liquefaction Settlement (in)	0.80	0.19	0.33	0.00	0.41

7.5 Seismically Induced Settlement

Dynamic compaction of dry and loose sands may occur during a major earthquake. Typically, settlements occur in thick beds of such soils. The seismically induced settlement calculations were performed in accordance with the American Society of Civil Engineers, Technical Engineering and Design Guides as adapted from the US Army Corps of Engineers, No. 9.

The calculations provided herein in Figures 8 and 9 indicate that the soil above the historic high groundwater level of 9 feet would not be susceptible to significant settlement as a result of the Design Earthquake peak ground acceleration ($\frac{2}{3}PGA_M$).

7.6 Lateral Spreading

Due to the presence of the Dominguez Channel located to the west of the site, the potential for lateral spread was evaluated. Lateral spread occurs as a result of liquefaction induced lateral ground movement and typically occurs due to the presence of a slope comprised of and/or underlain by liquefiable soils.

Analysis of the potential for lateral spread was performed using the program CLiq (Version 1.7). The program utilizes the method proposed by Zhang et. al. (2004) to evaluate the potential for lateral spread and the resulting lateral displacements.

This method of analysis recommends evaluating the potential for lateral displacements to a distance of 50H from the slope, where H is the height of the slope. Beyond a horizontal distance of 50H lateral displacements due to the presence of a slope are not anticipated to occur. This method of analysis considers soils to a depth of twice the total slope height as potentially subject to lateral spread, up to a distance of 50H away from the toe of the slope.

The drainage channel is trapezoidal in shape and consists of two slopes approximately 12 feet in height inclined at a gradient of approximately 2:1 (estimated via satellite images). The proposed improvements have a minimum setback of 90 feet from the toe of the drainage channel. Therefore, lateral displacements using a horizontal setback of 90 feet was utilized.

Based on the results of the analyses it is anticipated that up to 10 inches of lateral displacements towards the drainage channel could occur during a Design Earthquake ground motion. The lateral displacements are anticipated to occur between depths of 10 and 15 feet below the ground surface. Calculations and output from CLiq are provided as Appendix C.

The grading and foundation design recommendations presented in this report are intended to minimize the effects of lateral spread on the proposed improvements.

7.7 Slope Stability

The topography at the site is relatively level and the topography in the immediate site vicinity slopes gently to the west-southwest. The County of Los Angeles Safety Element (Leighton, 1990) indicates the site is not located within an area identified as a "hillside area" or having a potential for slope instability. Additionally, the site is not within an area identified as having a potential for seismic slope instability (CDMG, 1999). There are no known landslides near the site, nor is the site in the path of any known or potential landslides. Therefore, the potential for slope stability hazards to adversely affect the proposed development is considered low.

7.8 Earthquake-Induced Flooding

Earthquake-induced flooding is inundation caused by failure of dams or other water-retaining structures due to earthquakes. Based on a review of the County of Los Angeles Safety Element (Leighton, 1990), the site is not located within a potential inundation area for an earthquake-induced dam failure. Therefore, the probability of earthquake-induced flooding is considered very low.

7.9 Tsunamis, Seiches, and Flooding

The site is not located within a coastal area. Therefore, tsunamis are not considered a significant hazard at the site.

Seiches are large waves generated in enclosed bodies of water in response to ground shaking. No major water-retaining structures are located immediately up gradient from the project site. Therefore, flooding resulting from a seismic-induced seiche is considered unlikely.

The site is within an area of minimal flooding (Zone X) as defined by the Federal Emergency Management Agency (FEMA, 2021; LACDPW, 2021).

7.10 Oil Fields & Methane Potential

Based on a review of the California Geologic Energy Management Division (CalGEM) Well Finder Website, the site is not located within an oil field and oil or gas wells are not documented in the immediate site vicinity (CalGEM, 2021). However, due to the voluntary nature of record reporting by the oil well drilling companies, wells may be improperly located or not shown on the location map and undocumented wells could be encountered during construction. Any wells encountered during construction will need to be properly abandoned in accordance with the current requirements of the CalGEM.

Since the site is not located within an oil field, the potential for methane or other volatile gases associated with oil and gas fields to be present at the site is considered low. However, as discussed in the Background section of this report (see Section 3), due to the site history there is a potential for low levels of volatile gases to be present, particularly during site grading. Should it be determined that a methane study or further environmental studies are required for the proposed development, it is recommended that a qualified methane or environmental consultant be retained to perform the study and provide mitigation measures as necessary.

7.11 Subsidence

Subsidence occurs when a large portion of land is displaced vertically, usually due to the withdrawal of groundwater, oil, or natural gas. Soils that are particularly subject to subsidence include those with high silt or clay content. The site is not located within an area of known ground subsidence. No large-scale extraction of groundwater, gas, oil, or geothermal energy is occurring or planned at the site or in the general site vicinity. There appears to be little or no potential for ground subsidence due to withdrawal of fluids or gases at the site.

8. CONCLUSIONS AND RECOMMENDATIONS

8.1 General

8.1.1 It is our opinion that neither soil nor geologic conditions were encountered during the investigation that would preclude construction of the proposed development provided the recommendations presented herein are followed and implemented during design and construction.

8.1.2 Up to 5 feet of existing artificial fill was encountered during the site investigation with localized areas of deeper fill of to 9 feet in depth. The existing fill encountered is believed to be the result of past grading and construction activities at the site. Deeper fill may exist in other areas of the site that were not directly explored. It is our opinion that the existing fill, in its present condition, is not suitable for direct support of proposed foundations or slabs. The existing fill and site soils are suitable for re-use as engineered fill provided the recommendations in the Grading section of this report are followed (see Section 8.4).

8.1.3 The enclosed liquefaction and seismically-induced settlement analyses indicate that the site soils could be susceptible to approximately ½ inch of total settlement as a result of the Design Earthquake peak ground acceleration ($\frac{2}{3}PGA_M$). Differential settlement at the foundation level is anticipated to be less than ¼ inch over a distance of 20 feet.

8.1.4 The results of the field data and laboratory testing indicate that the upper alluvial soils are relatively soft and compressible in their current condition (see Figure B5 thru B17) and could yield excessive static and differential settlements upon application of foundation loads.

8.1.5 The foundation design recommendations presented herein are intended to minimize the effects of settlement from liquefaction and consolidation on the proposed improvements. Based on our discussions with you, we understand that the preferred foundation system is a reinforced concrete mat foundation deriving support in newly placed engineered fill. Recommendations for a reinforced mat foundation system is provided in Sections 8.7 of this report.

8.1.6 For support of a mat foundation, it is recommended that the upper 6 feet of existing earth materials within the proposed building footprint areas be excavated and properly compacted for foundation and slab support. Deeper excavations should be conducted as necessary to remove deeper artificial fill or soft alluvial soil at the direction of the Geotechnical Engineer (a representative of Geocon). Proposed building foundations should be underlain by a minimum of 4 feet of newly placed engineered fill. The excavation should extend laterally a minimum distance of 3 feet beyond the building footprint area, including building appurtenances, or a distance equal to the depth of fill below the foundation, whichever is greater. The contractor should be aware that up to 9 feet of artificial fill was encountered in Boring B3. The limits of existing fill and/or soft alluvial soils removal will be verified by the Geocon representative during site grading activities. All excavations must be observed and approved in writing by the Geotechnical Engineer (a representative of Geocon).

8.1.7 It is anticipated that the recommended grading can be achieved with sloping measures. However, if excavations in close proximity to an adjacent property line and/or structure are required, special excavation measures in order to maintain lateral support of existing adjacent improvements will be required. Excavation recommendations are provided in the *Temporary Excavations* section of this report (Section 8.18).

8.1.8 Based on the relatively shallow groundwater table, the upper alluvial soils have the potential to be very moist and the grading contractor should be aware that the soils may be above optimum moisture content. If the soils are more than 3 percent above the optimum moisture content at the time of construction the soils will likely require some spreading and drying activities in order to achieve proper compaction. Bottom stabilization may also be necessary. Recommendations for bottom stabilization and earthwork are provided in the *Grading* section of this report (see Section 8.4).

8.1.9 Foundations for small outlying structures, such as block walls up to 6 feet in height, planter walls or trash enclosures, which will not be tied to the proposed structure, may be supported on conventional foundations deriving support on a minimum of 12 inches of newly placed engineered fill which extends laterally at least 12 inches beyond the foundation area. Where excavation and compaction cannot be performed or is undesirable, foundations may derive support directly in the competent undisturbed alluvial soils and should be deepened as necessary to maintain a minimum 12 inch embedment into the recommended bearing materials. If the soils exposed in the excavation bottom are soft or loose, compaction of the soils will be required prior to placing steel or concrete. Compaction of the foundation excavation bottom is typically accomplished with a compaction wheel or mechanical whacker and must be observed and approved in writing by a Geocon representative.

8.1.10 Where new paving is to be placed, it is recommended that all existing fill and soft alluvial soils be excavated and properly compacted for paving support. The client should be aware that excavation and compaction of all existing fill and soft alluvial soils in the area of new paving is not required; however, paving constructed over existing uncertified fill or unsuitable alluvial soil may experience increased settlement and/or cracking, and may therefore have a shorter design life and increased maintenance costs. As a minimum, the upper 12 inches of subgrade soil should be scarified and properly compacted for paving support. Paving recommendations are provided in *Preliminary Pavement Recommendations* section of this report (see Section 8.13).

8.1.11 Based on the shallow groundwater and impermeable nature of the fine grained soils which underly the site, infiltration of stormwater at this site is not considered feasible. Infiltration of stormwater at this site would be considered detrimental to the project. It is recommended that stormwater be retained, filtered, and discharged in accordance with the requirements of the local governing agency.

8.1.12 It should be noted that implementation of the recommendations presented herein is not intended to completely prevent damage to the structure during the occurrence of strong ground shaking as a result of nearby earthquakes. It is intended that the structure be designed in such a way that the amount of damage incurred as a result of strong ground shaking be minimized.

8.1.13 It is recommended that flexible utility connections be utilized for all rigid utilities to minimize or prevent damage to utilities from minor differential movements.

8.1.14 Once the design and foundation loading configuration for the proposed structure proceeds to a more finalized plan, the recommendations within this report should be reviewed and revised, if necessary. Based on the final foundation loading configurations, the potential for settlement should be reevaluated by this office.

8.1.15 Any changes in the design, location or elevation of improvements, as outlined in this report, should be reviewed by this office. Geocon should be contacted to determine the necessity for review and possible revision of this report.

8.2 Soil and Excavation Characteristics

8.2.1 The in-situ soils can be excavated with moderate effort using conventional excavation equipment. Some caving should be anticipated in unshored excavations, especially where granular soils are encountered.

8.2.2 It is the responsibility of the contractor to ensure that all excavations and trenches are properly shored and maintained in accordance with applicable OSHA rules and regulations to maintain safety and maintain the stability of existing adjacent improvements.

8.2.3 All onsite excavations must be conducted in such a manner that potential surcharges from existing structures, construction equipment, and vehicle loads are resisted. The surcharge area may be defined by a 1:1 projection down and away from the bottom of an existing foundation or vehicle load. Penetrations below this 1:1 projection will require special excavation measures such as sloping or shoring. Excavation recommendations are provided in the *Temporary Excavations* section of this report (see Section 8.18).

8.2.4 The upper 5 feet of existing site soils encountered during the investigation are considered to have a “medium” expansive potential (EI = 63) and are classified as “expansive” in accordance with the 2019 California Building Code (CBC) Section 1803.5.3. The recommendations presented herein assume that the building foundations and slabs will derive support in these materials.

8.3 Minimum Resistivity, pH, and Water-Soluble Sulfate

8.3.1 Potential of Hydrogen (pH) and resistivity testing, as well as chloride content testing, were performed on representative samples of on-site material to generally evaluate the corrosion potential to surface utilities. The tests were performed in accordance with California Test Method Nos. 643 and 422 and indicate that the soils are considered "moderately corrosive" to "severely corrosive" with respect to corrosion of buried ferrous metals on site. The results are presented in Appendix B (Figure B23) and should be considered for design of underground structures. Due to the corrosive potential of the soils, it is suggested that ABS pipes be considered in lieu of cast-iron for subdrains and retaining wall drains beneath the structure.

8.3.2 Laboratory tests were performed on representative samples of the site materials to measure the percentage of water-soluble sulfate content. Results from the laboratory water-soluble sulfate tests are presented in Appendix B (Figure B23) and indicate that the on-site materials possess a sulfate exposure class of "S0" to concrete structures as defined by 2019 CBC Section 1904 and ACI 318-14 Table 19.3.1.1.

8.3.3 Geocon West, Inc. does not practice in the field of corrosion engineering and mitigation. If corrosion sensitive improvements are planned, it is recommended that a corrosion engineer be retained to evaluate corrosion test results and incorporate the necessary precautions to avoid premature corrosion of buried metal pipes and concrete structures in direct contact with the soils.

8.4 Grading

8.4.1 Grading is anticipated to include preparation of building pads and paving subgrade, excavation of site soils for proposed foundations and utility trenches, as well as placement of backfill for utility trenches.

8.4.2 A preconstruction conference should be held at the site prior to the beginning of grading operations with the owner, contractor, civil engineer and soil engineer in attendance. Special soil handling requirements can be discussed at that time.

8.4.3 Earthwork should be observed, and compacted fill tested by representatives of Geocon West, Inc. The existing fill and alluvial soils encountered during exploration are suitable for reuse as engineered fill, provided any encountered oversize material (greater than 6 inches) and any encountered deleterious debris is removed.

8.4.4 Grading should commence with the removal of all existing vegetation and existing improvements from the area to be graded. Deleterious debris such as wood and root structures should be exported from the site and should not be mixed with the fill soils. Asphalt and concrete should not be mixed with the fill soils unless approved by the Geotechnical Engineer. All existing underground improvements planned for removal should be completely excavated and the resulting depressions properly backfilled in accordance with the procedures described herein. Once a clean excavation bottom has been established it must be observed and approved in writing by the Geotechnical Engineer (a representative of Geocon West, Inc.).

8.4.5 For support of a mat foundation, it is recommended that the upper 6 feet of existing earth materials within the proposed building footprint areas be excavated and properly compacted for foundation and slab support. Deeper excavations should be conducted as necessary to remove deeper artificial fill or soft alluvial soil at the direction of the Geotechnical Engineer (a representative of Geocon). Proposed building foundations should be underlain by a minimum of 4 feet of newly placed engineered fill. The excavation should extend laterally a minimum distance of 3 feet beyond the building footprint area, including building appurtenances, or a distance equal to the depth of fill below the foundation, whichever is greater. The contractor should be aware that up to 9 feet of artificial fill was encountered in Boring B3. The limits of existing fill and/or soft alluvial soils removal will be verified by the Geocon representative during site grading activities.

8.4.6 All excavations must be observed and approved in writing by the Geotechnical Engineer (a representative of Geocon). If determined to be excessively soft, stabilization of the bottom of the excavation may be required in order to provide a firm working surface upon which engineered fill can be placed and heavy equipment can operate.

8.4.7 Prior to placing fill or constructing proposed improvements, a stable excavation bottom must be established. In areas where the subgrade is saturated or soft, proper compaction will likely not be possible or achieved in a timely manner without introducing stabilization measures. If subgrade stabilization is required at the excavation bottom, rubber tire equipment should not be allowed in the excavation bottom until it is stabilized or extensive soil disturbance could result. It is suggested that excavation and grading be performed during the summer season to promote moisture control of the soils. In addition, the use of track equipment should be used to minimize disturbance to the soils at the excavation bottom.

8.4.8 Bottom stabilization, if necessary, may be achieved placing a thin lift of 3- to 6-inch-diameter crushed angular rock into the soft excavation bottom. The use of crushed concrete will also be acceptable. The crushed rock should be spread thinly across the excavation bottom and pressed into the soils by track rolling or wheel rolling with heavy equipment. It is very important that voids between the rock fragments are not created so the rock must be thoroughly pressed or blended into the soils. All subgrade soils must be properly compacted and proof-rolled in the presence of the Geotechnical Engineer (a representative of Geocon West, Inc.).

8.4.9 An alternative method of subgrade stabilization may be accomplished by placing a one-foot-thick layer of washed, angular 3/4-inch gravel atop a stabilization fabric (Mirafi 500X or equivalent) subsequent to subgrade approval. Stabilization fabric should also be placed over the top of the gravel. This procedure should be conducted in sections until the entire excavation bottom has been blanketed by fabric and gravel. Heavy equipment may operate on the gravel once it has been placed. The gravel should be compacted to a dense state using a vibratory drum roller. It is recommended that the contractor meet with the Geotechnical Engineer to discuss this procedure in more detail.

8.4.10 The upper soils encountered during site exploration were moist to wet and the grading contractor should be aware that the existing soils are currently above optimum moisture content. Conditions could change seasonally. If the soils are more than 3 percent above the optimum moisture content at the time of construction the soils will likely require spreading, processing, and drying activities in order to achieve proper compaction.

8.4.11 All fill and backfill soils should be placed in horizontal loose layers approximately 6 to 8 inches thick, moisture conditioned to near 2 percent above optimum moisture content, and properly compacted to a minimum of 90 percent of the maximum dry density per ASTM D 1557 (latest edition).

8.4.12 It is anticipated that stable excavations for the recommended grading can be achieved with sloping measures. However, if excavations in close proximity to an adjacent property line and/or structure are required, special excavation measures may be necessary in order to maintain lateral support of offsite improvements. Excavation recommendations are provided in the *Temporary Excavations* section of this report (see Section 8.18).

8.4.13 Although not anticipated for this project, all imported fill shall be observed, tested, and approved by Geocon West, Inc. prior to bringing soil to the site. Rocks larger than 6 inches in diameter shall not be used in the fill. If necessary, import soils used as structural fill should have an expansion index less than 50 and corrosivity properties that are equally or less detrimental to that of the existing onsite soils (see Figure B23).

8.4.14. Where new paving is to be placed, it is recommended that all existing fill and soft alluvium be excavated and properly compacted for paving support. As a minimum, the upper 12 inches of soil should be scarified, moisture conditioned to near two percent over optimum moisture content, and compacted to at least 92 percent relative compaction, as determined by ASTM Test Method D 1557 (latest edition). Paving recommendations are provided in *Preliminary Pavement Recommendations* section of this report (see Section 8.13).

8.4.15 Foundations for small outlying structures, such as block walls up to 6 feet in height, planter walls or trash enclosures, which will not be tied to the proposed structure, may be supported on conventional foundations deriving support on a minimum of 12 inches of newly placed engineered fill which extends laterally at least 12 inches beyond the foundation area. Where excavation and compaction cannot be performed or is undesirable, foundations may derive support directly in the competent undisturbed alluvial soils and should be deepened as necessary to maintain a minimum 12 inch embedment into the recommended bearing materials. If the soils exposed in the excavation bottom are soft or loose, compaction of the soils will be required prior to placing steel or concrete. Compaction of the foundation excavation bottom is typically accomplished with a compaction wheel or mechanical whacker and must be observed and approved by a Geocon representative.

8.4.16 It is recommended that flexible utility connections be utilized for all rigid utilities to minimize or prevent damage to utilities from minor differential movements. Utility trenches should be properly backfilled in accordance with the requirements of the Green Book (latest edition). The pipe should be bedded with clean sands (Sand Equivalent greater than 30) to a depth of at least 1 foot over the pipe, and the bedding material must be inspected and approved in writing by the Geotechnical Engineer (a representative of Geocon). The use of gravel is not acceptable unless used in conjunction with filter fabric to prevent the gravel from having direct contact with soil. The remainder of the trench backfill may be derived from onsite soil or approved import soil, compacted as necessary, until the required compaction is obtained. The use of minimum 2-sack slurry as backfill is also acceptable. Prior to placing any bedding materials or pipes, the trench excavation bottom must be observed and approved in writing by the Geotechnical Engineer (a representative of Geocon).

8.4.17 All trench and foundation excavation bottoms must be observed and approved in writing by the Geotechnical Engineer (a representative of Geocon), prior to placing bedding sands, fill, steel, gravel, or concrete.

8.5 Shrinkage

8.5.1 Shrinkage results when a volume of material removed at one density is compacted to a higher density. A shrinkage factor between 10 and 15 percent should be anticipated when excavating and compacting the upper 5 feet of existing earth materials on the site to an average relative compaction of 92 percent.

8.5.2 If import soils will be utilized in the building pad, the soils must be placed uniformly and at equal thickness at the direction of the Geotechnical Engineer (a representative of Geocon West, Inc.). Soils can be borrowed from non-building pad areas and later replaced with imported soils.

8.6 Mat Foundation Design

8.6.1 Subsequent to the recommended grading, a reinforced concrete mat foundation may be utilized for support of the proposed structures. The reinforced concrete mat foundation should derive support in the newly placed engineered fill and be underlain by at least 4 feet of newly placed engineered fill.

8.6.2 Foundation excavations should be observed and approved in writing by the Geotechnical Engineer (a representative of Geocon West, Inc.), prior to the placement of reinforcing steel and concrete to verify that the excavations and exposed soil conditions are consistent with those anticipated. If unanticipated soil conditions are encountered, foundation modifications may be required.

8.6.3 It is anticipated that the mat foundation constructed for the on-grade structure will impart an average pressure between 2,000 psf to 3,500 psf. The recommended maximum allowable bearing value is 3,500 psf. The allowable bearing pressure may be increased by up to one-third for transient loads due to wind or seismic forces.

8.6.4 A vertical modulus of subgrade reaction of 100 pci may be used in the design of mat foundations deriving support in competent alluvial soils. This value is a unit value for use with a 1-foot square footing. The modulus should be reduced in accordance with the following equation when used with larger foundations:

$$K_R = K\left[\frac{B+1}{2B}\right]^2$$

where: K_R = reduced subgrade modulus
K = unit subgrade modulus
B = foundation width (in feet)

8.6.5 The thickness of and reinforcement for the mat foundation should be designed by the project structural engineer.

8.6.6 For seismic design purposes, a coefficient of friction of 0.35 may be utilized between the concrete mat and newly placed engineered fill without a moisture barrier, and 0.15 for slabs underlain by a moisture barrier.

8.6.7 The enclosed liquefaction settlement analyses indicate that the site soils could be susceptible to less than ½ inch of total seismic settlement as a result of the Design Earthquake peak ground acceleration ($⅔PGA_M$). Differential settlement at the foundation level is anticipated to be less than ¼ inches over a distance of 20 feet. The foundation design recommendations presented herein are intended to minimize the effects of settlement on proposed improvements.

8.6.8 The maximum expected total settlement for a structure support on a mat foundation system designed with the maximum allowable bearing value of 3,500 psf and deriving support in the recommended bearing materials is estimated to be approximately 2 inches and occur below the heaviest loaded structural element. A majority of the settlement of the foundation system is expected to occur on initial application of loading; however, additional settlements are expected within the first twelve months. Differential settlement is not expected to exceed 1 inch over a distance of 20 feet.

8.6.9 Based on these considerations is it recommended that the proposed structure, designed with a maximum allowable bearing value of 3,500 psf, be designed for a combined static and seismically induced differential settlement of 1 ½ inch over a distance of 20 feet.

8.6.10 This office should be provided a copy of the final construction plans so that the excavation recommendations presented herein could be properly reviewed and revised if necessary.

8.6.11 Once the design and foundation loading configurations for the proposed structures proceeds to a more finalized plan, the estimated settlements presented in this report should be reviewed and revised, if necessary. If the final foundation loading configurations are greater than the assumed loading conditions, the potential for settlement should be reevaluated by this office.

8.7 Miscellaneous Foundations

8.7.1 Foundations for small outlying structures, such as block walls up to 6 feet in height, planter walls or trash enclosures, which will not be tied to the proposed structure, may be supported on conventional foundations deriving support on a minimum of 12 inches of newly placed engineered fill which extends laterally at least 12 inches beyond the foundation area. Where excavation and compaction cannot be performed or is undesirable, foundations may derive support directly in the competent undisturbed alluvial soils, and should be deepened as necessary to maintain a minimum 12 inch embedment into the recommended bearing materials.

8.7.2 If the soils exposed in the excavation bottom are soft, compaction of the soft soils will be required prior to placing steel or concrete. Compaction of the foundation excavation bottom is typically accomplished with a compaction wheel or mechanical whacker and must be observed and approved by a Geocon representative. Miscellaneous foundations may be designed for a bearing value of 1,500 psf, and should be a minimum of 12 inches in width, 24 ,inches in depth below the lowest adjacent grade and 12 inches into the recommended bearing material. The allowable bearing pressure may be increased by up to one-third for transient loads due to wind or seismic forces.

8.7.3 Foundation excavations should be observed and approved in writing by the Geotechnical Engineer (a representative of Geocon West, Inc.), prior to the placement of reinforcing steel and concrete to verify that the excavations and exposed soil conditions are consistent with those anticipated.

8.8 Lateral Design

8.8.1 Resistance to lateral loading may be provided by friction acting at the base of foundations, slabs and by passive earth pressure. An allowable coefficient of friction of 0.35 may be used with the dead load forces in the undisturbed alluvial soils and newly placed engineered fill.

8.8.2 Passive earth pressure for the sides of foundations and slabs poured against newly placed engineered fill or undisturbed alluvial soils may be computed as an equivalent fluid having a density of 230 pounds per cubic foot (pcf) with a maximum earth pressure of 2,300 psf. When combining passive and friction for lateral resistance, the passive component should be reduced by one-third. A one-third increase in the passive value may be used for wind or seismic loads.

8.9 Concrete Slabs-on-Grade

8.9.1 Exterior concrete slabs-on-grade subject to vehicle loading should be designed in accordance with the recommendations in the *Preliminary Pavement Recommendations* section of this report (Section 8.10).

8.9.2 Slabs-on-grade at the ground surface that may receive moisture-sensitive floor coverings or may be used to store moisture-sensitive materials should be underlain by a vapor retarder placed directly beneath the slab. The vapor retarder and acceptable permeance should be specified by the project architect or developer based on the type of floor covering that will be installed. The vapor retarder design should be consistent with the guidelines presented in Section 9.3 of the American Concrete Institute's (ACI) Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials (ACI 302.2R-06) and should be installed in general conformance with ASTM E 1643 (latest edition) and the manufacturer's recommendations. A minimum thickness of 15 mils extruded polyolefin plastic is recommended; vapor retarders which contain recycled content or woven materials are not recommended. The vapor retarder should have a permeance of less than 0.01 perms demonstrated by testing before and after mandatory conditioning. The vapor retarder should be installed in direct contact with the concrete slab with proper perimeter seal. If the Los Angeles Green Building Code requirements apply to this project, the vapor retarder should be underlain by 4 inches of clean aggregate. It is important that the vapor retarder be puncture resistant since it will be in direct contact with angular gravel. As an alternative to the clean aggregate suggested in the Los Angeles Green Building Code, it is our opinion that the concrete slab-on-grade may be underlain by a vapor retarder over 4 inches of clean sand (sand equivalent greater than 30), since the sand will serve a capillary break and will minimize the potential for punctures and damage to the vapor barrier.

8.9.3 For seismic design purposes, a coefficient of friction of 0.35 may be utilized between concrete slabs and subgrade soils without a moisture barrier, and 0.15 for slabs underlain by a moisture barrier.

8.9.4 Exterior slabs, not subject to traffic loads, should be at least 4 inches thick and reinforced with No. 3 steel reinforcing bars placed 18 inches on center in both horizontal directions, positioned near the slab midpoint. Prior to construction of slabs, the upper 12 inches of subgrade should be moistened to optimum moisture content and properly compacted to at least 92 percent relative compaction, as determined by ASTM Test Method D 1557 (latest edition). Crack control joints should be spaced at intervals not greater than 10 feet and should be constructed using saw-cuts or other methods as soon as practical following concrete placement. Crack control joints should extend a minimum depth of one-fourth the slab thickness. The project structural engineer should design construction joints as necessary.

8.9.5 Due to the expansive potential of the anticipated subgrade soils, the moisture content of the slab subgrade should be maintained and sprinkled as necessary to maintain a moist condition as would be expected in any concrete placement. Furthermore, consideration should be given to doweling slabs into adjacent curbs and foundations to minimize movements and offsets which could lead to a potential tripping hazard.

8.9.6 The recommendations of this report are intended to reduce the potential for cracking of slabs due to settlement. However, even with the incorporation of the recommendations presented herein, foundations, stucco walls, and slabs-on-grade may exhibit some cracking due to minor soil movement and/or concrete shrinkage. The occurrence of concrete shrinkage cracks is independent of the supporting soil characteristics. Their occurrence may be reduced and/or controlled by limiting the slump of the concrete, proper concrete placement and curing, and by the placement of crack control joints at periodic intervals, in particular, where re-entrant slab corners occur.

8.10 Preliminary Paving Design

8.10.1 Where new paving is to be placed, it is recommended that all existing fill and soft alluvium materials be excavated and properly compacted for paving support. The client should be aware that excavation and compaction of all existing artificial fill and soft alluvium in the area of new paving is not required; however, paving constructed over existing uncertified fill or unsuitable alluvium material may experience increased settlement and/or cracking, and may therefore have a shorter design life and increased maintenance costs. As a minimum, the upper 12 inches of paving subgrade should be scarified, moisture conditioned to at least 2 percent above optimum moisture content, and properly compacted to at least 92 percent relative compaction, as determined by ASTM Test Method D 1557 (latest edition).

8.10.2 The following pavement sections are based on an assumed R-Value of 20. Once site grading activities are complete an R-Value should be obtained by laboratory testing to confirm the properties of the soils serving as paving subgrade, prior to placing pavement.

8.10.3 The Traffic Indices listed below are estimates. Geocon does not practice in the field of traffic engineering. The actual Traffic Index for each area should be determined by the project civil engineer. If pavement sections for Traffic Indices other than those listed below are required, Geocon should be contacted to provide additional recommendations. Pavement thicknesses were determined following procedures outlined in the *California Highway Design Manual* (Caltrans). It is anticipated that the majority of traffic will consist of automobile and large truck traffic.

PRELIMINARY PAVEMENT DESIGN SECTIONS

Location	Estimated Traffic Index (TI)	Asphalt Concrete (inches)	Class 2 Aggregate Base (inches)
Automobile Parking and Driveways	4.0	3.0	4.0
Trash Truck & Fire Lanes	7.0	4.0	12.0

8.10.4 Asphalt concrete should conform to Section 203-6 of the "*Standard Specifications for Public Works Construction"* (Green Book). Class 2 aggregate base materials should conform to Section 26-1.02A of the "*Standard Specifications of the State of California, Department of Transportation"* (Caltrans). The use of Crushed Miscellaneous Base (CMB) in lieu of Class 2 aggregate base is acceptable. Crushed Miscellaneous Base should conform to Section 200-2.4 of the "*Standard Specifications for Public Works Construction"* (Green Book).

8.10.5 Unless specifically designed and evaluated by the project structural engineer, where exterior concrete paving will be utilized for support of vehicles, it is recommended that the concrete be a minimum of 6 inches of concrete reinforced with No. 3 steel reinforcing bars placed 18 inches on center in both horizontal directions. Concrete paving supporting vehicular traffic should be underlain by a minimum of 4 inches of aggregate base and a properly compacted subgrade. As a minimum, the upper 12 inches of paving subgrade should be scarified, moisture conditioned to 2 percent above optimum moisture content, and properly compacted to at least 92 percent relative compaction, as determined by ASTM Test Method D 1557 (latest edition). The base material should be compacted to 95 percent relative compaction as determined by ASTM Test Method D 1557 (latest edition).

8.10.6 The performance of pavements is highly dependent upon providing positive surface drainage away from the edge of pavements. Ponding of water on or adjacent to the pavement will likely result in saturation of the subgrade materials and subsequent cracking, subsidence and pavement distress. If planters are planned adjacent to paving, it is recommended that the perimeter curb be extended at least 12 inches below the bottom of the aggregate base to minimize the introduction of water beneath the paving.

8.11 Retaining Wall Design

8.11.1 The recommendations presented below are generally applicable to the design of rigid concrete or masonry retaining walls having a maximum height of 5 feet. In the event that walls significantly higher than 5 feet are planned, Geocon should be contacted for additional recommendations.

8.11.2 Retaining wall foundations should be designed in accordance with the recommendations provided in the *Foundation Design* section of this report (see Sections 8.6 through 8.9).

8.11.3 Retaining walls with a level backfill surface that are not restrained at the top should be designed utilizing a triangular distribution of pressure (active pressure). Restrained walls are those that are not allowed to rotate more than 0.001H (where H equals the height of the retaining portion of the wall in feet) at the top of the wall. Where walls are restrained from movement at the top, walls may be designed utilizing a triangular distribution of pressure (at-rest pressure). The table on the following page presents recommended pressures to be used in retaining wall design.

RETAINING WALL WITH LEVEL BACKFILL SURFACE

HEIGHT OF RETAINING WALL (Feet)	ACTIVE PRESSURE EQUIVALENT FLUID PRESSURE (Pounds Per Cubic Foot)	AT-REST PRESSURE EQUIVALENT FLUID PRESSURE (Pounds Per Cubic Foot)
Up to 5	30	74

8.11.4 The wall pressures provided above assume that the proposed retaining walls will support a wedge of engineered fill derived from onsite soils. If import soil will be used to backfill proposed retaining walls, revised earth pressures may be required to account for the geotechnical properties of the import soil used as engineered fill. This should be evaluated once the use of import soil is established. All imported fill shall be observed, tested, and approved by Geocon West, Inc. prior to bringing soil to the site.

8.11.5 The wall pressures provided above assume that the retaining wall will be properly drained preventing the buildup of hydrostatic pressure. If retaining wall drainage is not implemented, the equivalent fluid pressure to be used in design of undrained walls is 100 pcf. The value includes hydrostatic pressures plus buoyant lateral earth pressures.

8.11.6 Additional active pressure should be added for a surcharge condition due to sloping ground, vehicular traffic or adjacent structures and should be designed for each condition as the project progresses. Surcharges may be evaluated using Section 8.19 of this report. Once the design becomes more finalized, an addendum letter can be prepared revising recommendations and addressing specific surcharge conditions throughout the project, if necessary.

8.12 Retaining Wall Drainage

8.12.1 Where not designed for hydrostatic pressure, retaining walls should be provided with a drainage system. At the base of the drain system, a subdrain covered with a minimum of 12 inches of gravel should be installed, and a compacted fill blanket or other seal placed at the surface (see Figure 10). The clean bottom and subdrain pipe, behind a retaining wall, should be observed by the Geotechnical Engineer (a representative of Geocon), prior to placement of gravel or compacting backfill.

8.12.2 As an alternative, a plastic drainage composite such as Miradrain or equivalent may be installed in continuous, 4-foot-wide columns along the entire back face of the wall, at 8 feet on center. The top of these drainage composite columns should terminate approximately 18 inches below the ground surface, where either hardscape or a minimum of 18 inches of relatively cohesive material should be placed as a cap (see Figure 11). These vertical columns of drainage material would then be connected at the bottom of the wall to a collection panel or a 1-cubic-foot rock pocket drained by a 4-inch subdrain pipe.

8.12.3 Subdrainage pipes at the base of the retaining wall drainage system should outlet to an acceptable location via controlled drainage structures.

8.12.4 Moisture affecting below grade walls is one of the most common post-construction complaints. Poorly applied or omitted waterproofing can lead to efflorescence or standing water. Particular care should be taken in the design and installation of waterproofing to avoid moisture problems, or actual water seepage into the structure through any normal shrinkage cracks which may develop in the concrete walls, floor slab, foundations and/or construction joints. The design and inspection of the waterproofing is not the responsibility of the geotechnical engineer. A waterproofing consultant should be retained in order to recommend a product or method, which would provide protection to subterranean walls, floor slabs and foundations.

8.13 Elevator Pit Design

8.13.1 The elevator pit slab and retaining wall should be designed by the project structural engineer. Elevator pit walls may be designed in accordance with the recommendations in the *Retaining Wall Design* section of this report (see Section 8.14).

8.13.2 Additional active pressure should be added for a surcharge condition due to sloping ground, vehicular traffic or adjacent foundations and should be designed for each condition as the project progresses.

8.13.3 If retaining wall drainage is to be provided, the drainage system should be designed in accordance with the *Retaining Wall Drainage* section of this report (see Section 8.15).

8.13.4 It is suggested that the exterior walls and slab be waterproofed to prevent excessive moisture inside of the elevator pit. Waterproofing design and installation is not the responsibility of the geotechnical engineer.

8.14 Elevator Piston

8.14.1 If a plunger-type elevator piston is installed for this project, a deep drilled excavation will be required. It is important to verify that the drilled excavation is not situated immediately adjacent to a foundation, or the drilled excavation could compromise the existing foundation support, especially if the drilling is performed subsequent to the foundation construction.

8.14.2 Due to the preliminary nature of the project at this time, it is unknown if a plunger-type elevator piston will be included for this project. If in the future it is determined that a plunger-type elevator piston will be constructed, the location of the proposed elevator should be reviewed by the Geotechnical Engineer to evaluate the setback from foundations. Additional recommendations will be provided as necessary.

8.14.3 Some caving is anticipated in the granular soils below a depth of 20 feet. The contractor should be prepared to use casing and should have it readily available at the commencement of drilling activities. Continuous observation of the drilling and installation of the elevator piston by the Geotechnical Engineer (a representative of Geocon West, Inc.) is required.

8.14.4 The annular space between the piston casing and drilled excavation wall should be filled with a minimum of 1½-sack slurry pumped from the bottom up. As an alternative, pea gravel may be utilized. The use of soil to backfill the annular space is not acceptable.

8.15 Temporary Excavations

8.15.1 Excavations on the order of 6 feet in height are generally anticipated during grading activities, and isolated excavations up to 9 feet in height may also be required. The excavations are expected to expose artificial fill and alluvial soils, which may be subject to some caving where granular soils are exposed. Temporary vertical excavations up to 5 feet in height may be attempted where not surcharged by adjacent traffic or structures.

8.15.2 Vertical excavations greater than 5 feet or where surcharged by existing structures will require sloping or shoring measures in order to provide a stable excavation. Where sufficient space is available, temporary unsurcharged embankments could be sloped back at a uniform 1:1 slope gradient or flatter up to a maximum of 9 feet in height. A uniform slope does not have a vertical portion. Where space is limited, shoring measures will be required. *Shoring* recommendations can be provided under separate cover if necessary.

8.15.3 If excavations in close proximity to an adjacent property line and/or structure are required, special excavation measures such as slot-cutting or shoring may be necessary in order to maintain lateral support of offsite improvements. Recommendations for slot-cutting and shoring can be provided under separate cover.

8.15.4 Where sloped embankments are utilized, the top of the slope should be barricaded to prevent vehicles and storage loads at the top of the slope within a horizontal distance equal to the height of the slope. If the temporary construction embankments are to be maintained during the rainy season, berms are suggested along the tops of the slopes where necessary to prevent runoff water from entering the excavation and eroding the slope faces. Geocon personnel should inspect the soils exposed in the cut slopes during excavation so that modifications of the slopes can be made if variations in the soil conditions occur. All excavations should be stabilized within 30 days of initial excavation.

8.16 Surcharge from Adjacent Structures and Improvements

8.16.1 Additional pressure should be added for a surcharge condition due to sloping ground, vehicular traffic or adjacent structures and should be designed for each condition as the project progresses.

8.16.2 It is recommended that line-load surcharges from adjacent wall footings, use horizontal pressures generated from NAV-FAC DM 7.2. The governing equations are:

$$For\ {}^{x}/_{H} \leq 0.4$$

$$\sigma_H(z) = \frac{0.20 \times \left(\frac{z}{H}\right)}{\left[0.16 + \left(\frac{z}{H}\right)^2\right]^2} \times \frac{Q_L}{H}$$

and

$$For\ {}^{x}/_{H} > 0.4$$

$$\sigma_H(z) = \frac{1.28 \times \left(\frac{x}{H}\right)^2 \times \left(\frac{z}{H}\right)}{\left[\left(\frac{x}{H}\right)^2 + \left(\frac{z}{H}\right)^2\right]^2} \times \frac{Q_L}{H}$$

where x is the distance from the face of the excavation or wall to the vertical line-load, H is the distance from the bottom of the footing to the bottom of excavation or wall, z is the depth at which the horizontal pressure is desired, Q_L is the vertical line-load and $\sigma_{H(z)}$ is the horizontal pressure at depth z.

8.16.3 It is recommended that vertical point-loads, from construction equipment outriggers or adjacent building columns use horizontal pressures generated from NAV-FAC DM 7.2. The governing equations are:

$$For\ {}^{x}/_{H} \leq 0.4$$

$$\sigma_H(z) = \frac{0.28 \times \left(\frac{z}{H}\right)^2}{\left[0.16 + \left(\frac{z}{H}\right)^2\right]^3} \times \frac{Q_P}{H^2}$$

and

$$For\ {}^{x}/_{H} > 0.4$$

$$\sigma_H(z) = \frac{1.77 \times \left(\frac{x}{H}\right)^2 \times \left(\frac{z}{H}\right)^2}{\left[\left(\frac{x}{H}\right)^2 + \left(\frac{z}{H}\right)^2\right]^3} \times \frac{Q_P}{H^2}$$

then

$$\sigma'_H(z) = \sigma_H(z) cos^2(1.1\theta)$$

where x is the distance from the face of the excavation/wall to the vertical point-load, H is distance from the outrigger/bottom of column footing to the bottom of excavation, z is the depth at which the horizontal pressure is desired, Qp is the vertical point-load, $\sigma_H(z)$ is the horizontal pressure at depth z, θ is the angle between a line perpendicular to the excavation/wall and a line from the point-load to location on the excavation/wall where the surcharge is being evaluated, and $\sigma_H(z)$ is the horizontal pressure at depth z.

8.17 Surface Drainage

8.17.1 Proper surface drainage is critical to the future performance of the project. Uncontrolled infiltration of irrigation excess and storm runoff into the soils can adversely affect the performance of the planned improvements. Saturation of a soil can cause it to lose internal shear strength and increase its compressibility, resulting in a change in the original designed engineering properties. Proper drainage should be maintained at all times.

8.17.2 All site drainage should be collected and controlled in non-erosive drainage devices. Drainage should not be allowed to pond anywhere on the site, and especially not against any foundation or retaining wall. The site should be graded and maintained such that surface drainage is directed away from structures in accordance with 2019 CBC 1804.4 or other applicable standards. In addition, drainage should not be allowed to flow uncontrolled over any descending slope. Discharge from downspouts, roof drains and scuppers are not recommended onto unprotected soils within 5 feet of the building perimeter. Planters which are located adjacent to foundations should be sealed to prevent moisture intrusion into the soils providing foundation support. Landscape irrigation is not recommended within 5 feet of the building perimeter footings except when enclosed in protected planters.

8.17.3 Positive site drainage should be provided away from structures, pavement, and the tops of slopes to swales or other controlled drainage structures. The building pad and pavement areas should be fine graded such that water is not allowed to pond.

8.17.4 Landscaping planters immediately adjacent to paved areas are not recommended due to the potential for surface or irrigation water to infiltrate the pavement's subgrade and base course. Either a subdrain, which collects excess irrigation water and transmits it to drainage structures, or impervious above-grade planter boxes should be used. In addition, where landscaping is planned adjacent to the pavement, it is recommended that consideration be given to providing a cutoff wall along the edge of the pavement that extends at least 12 inches below the base material.

8.18 Plan Review

8.18.1 Grading, foundation, and shoring plans should be reviewed by the Geotechnical Engineer (a representative of Geocon West, Inc.), prior to finalization to verify that the plans have been prepared in substantial conformance with the recommendations of this report and to provide additional analyses or recommendations.

LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. The recommendations of this report pertain only to the site investigated and are based upon the assumption that the soil conditions do not deviate from those disclosed in the investigation. If any variations or undesirable conditions are encountered during construction, or if the proposed construction will differ from that anticipated herein, Geocon West, Inc. should be notified so that supplemental recommendations can be given. The evaluation or identification of the potential presence of hazardous or corrosive materials was not part of the scope of services provided by Geocon West, Inc.

2. This report is issued with the understanding that it is the responsibility of the owner, or of his representative, to ensure that the information and recommendations contained herein are brought to the attention of the architect and engineer for the project and incorporated into the plans, and the necessary steps are taken to see that the contractor and subcontractors carry out such recommendations in the field.

3. The findings of this report are valid as of the date of this report. However, changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or the works of man on this or adjacent properties. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated wholly or partially by changes outside our control. Therefore, this report is subject to review and should not be relied upon after a period of three years.

4. The firm that performed the geotechnical investigation for the project should be retained to provide testing and observation services during construction to provide continuity of geotechnical interpretation and to check that the recommendations presented for geotechnical aspects of site development are incorporated during site grading, construction of improvements, and excavation of foundations. If another geotechnical firm is selected to perform the testing and observation services during construction operations, that firm should prepare a letter indicating their intent to assume the responsibilities of project geotechnical engineer of record. A copy of the letter should be provided to the regulatory agency for their records. In addition, that firm should provide revised recommendations concerning the geotechnical aspects of the proposed development, or a written acknowledgement of their concurrence with the recommendations presented in our report. They should also perform additional analyses deemed necessary to assume the role of Geotechnical Engineer of Record.

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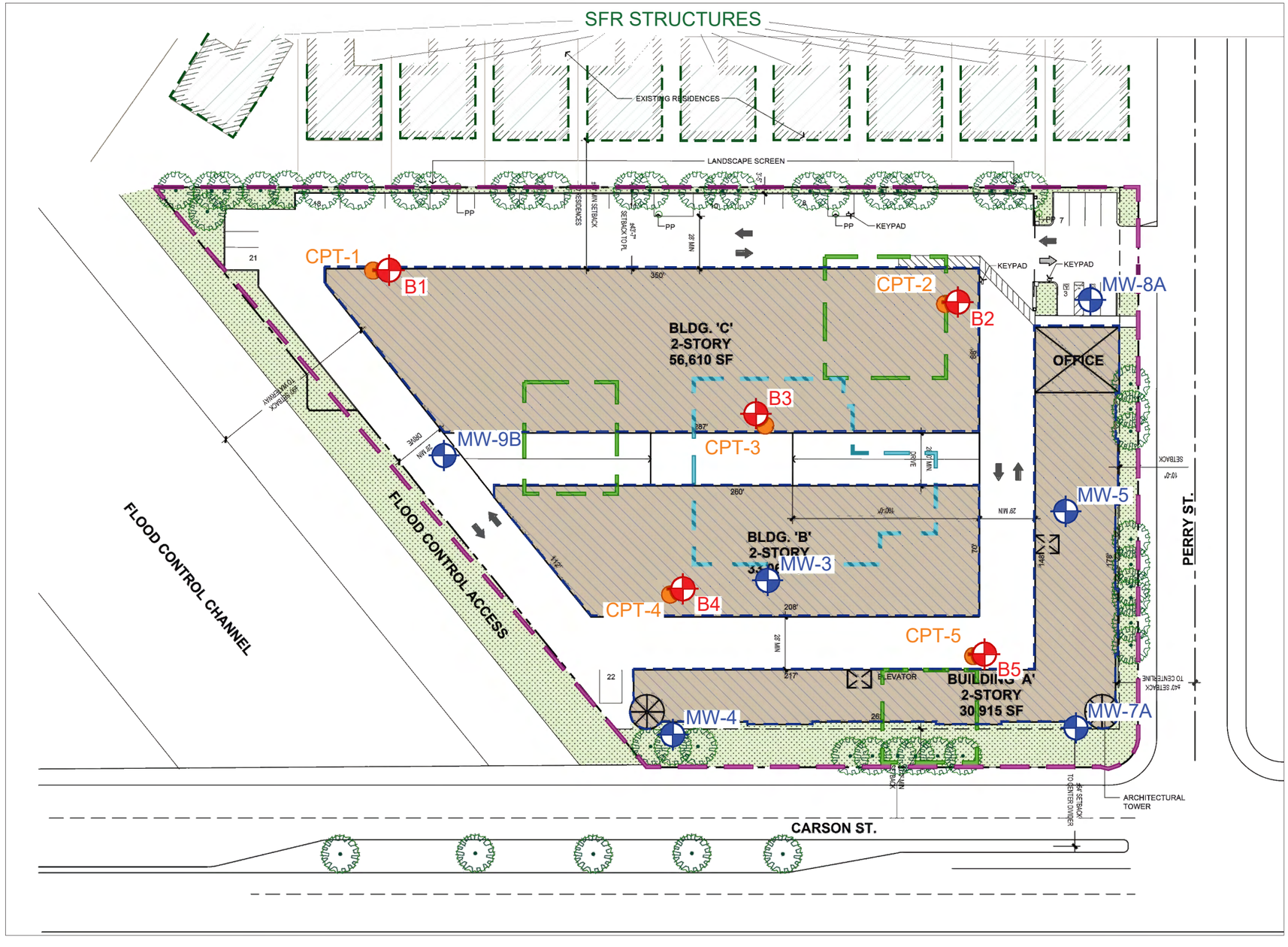

LEGEND

- B5 — Approximate Location of Boring
- CPT-5 — Approximate Location of CPT
- MW-9B — Approximate Location of Monitoring Well
- Property Limits
- Existing Off-Site Structures
- Proposed New Medical Office Building
- Extent of URS Removal and Recompaction (5 FT BGS)
- Extent of URS Removal and Recompaction (8 FT BGS)

North

0 60' 120'

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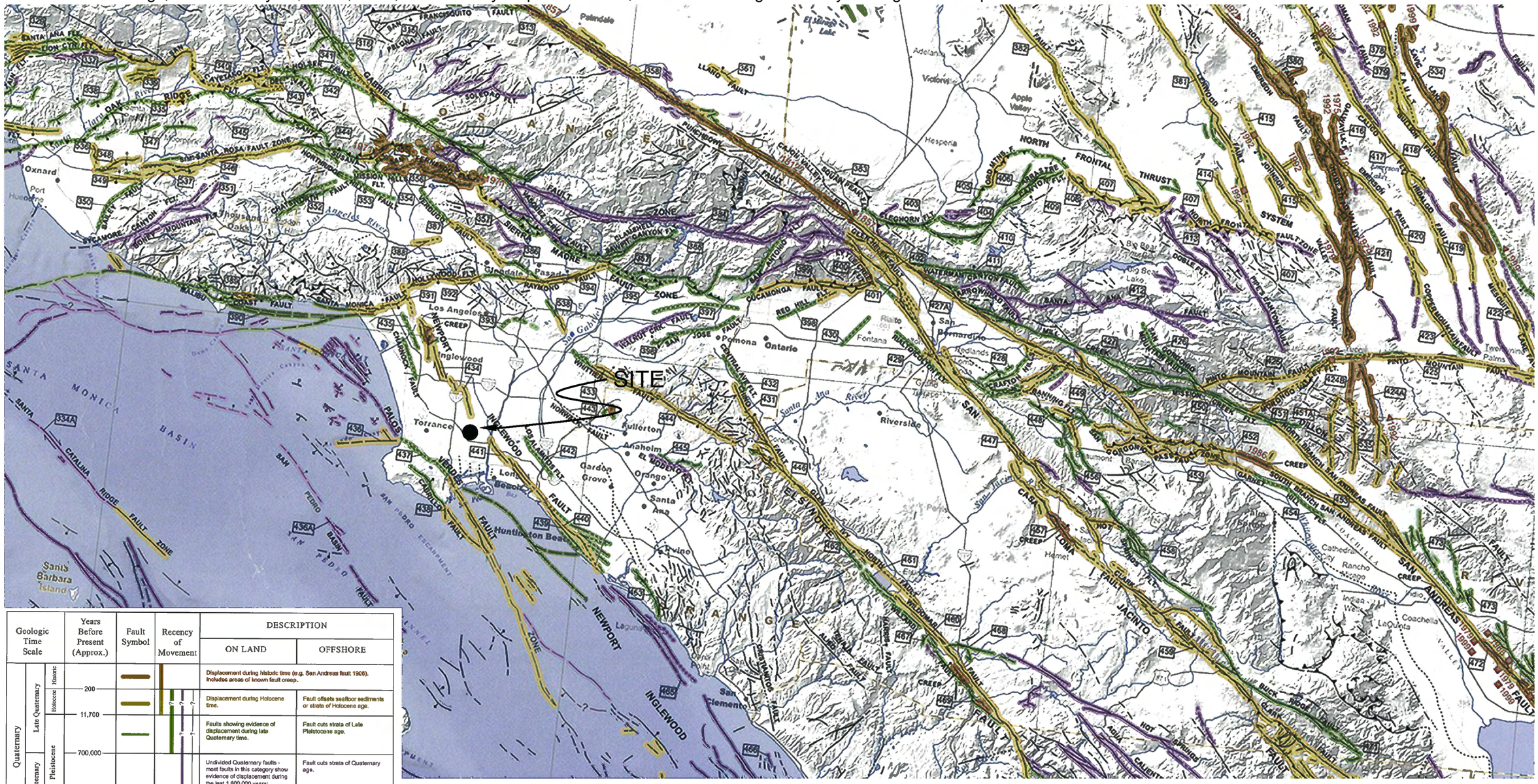
DRAFTED BY: JMH	CHECKED BY: JTA

SITE PLAN

21611 S PERRY STREET
CARSON, CALIFORNIA

APRIL 2021	PROJECT NO. W1301-06-01	FIG. 2

Reference: Jennings, C.W. and Bryant, W. A., 2010, Fault Activity Map of California, California Geological Survey Geologic Data Map No. 6.



Geologic Time Scale			Years Before Present (Approx.)	Fault Symbol	Recency of Movement	DESCRIPTION	
						ON LAND	OFFSHORE
Quaternary	Late Quaternary	Historic				Displacement during historic time (e.g. San Andreas fault 1906). Includes areas of known fault creep.	
		Holocene	200			Displacement during Holocene time.	Fault offsets seafloor sediments or strata of Holocene age.
			11,700			Faults showing evidence of displacement during late Quaternary time.	Fault cuts strata of Late Pleistocene age.
	Early Quaternary	Pleistocene	700,000			Undivided Quaternary faults - most faults in this category show evidence of displacement during the last 1,600,000 years; possible exceptions are faults which displace rocks of undifferentiated Plio-Pleistocene age.	Fault cuts strata of Quaternary age.
Pre-Quaternary			1,600,000*			Faults without recognized Quaternary displacement or showing evidence of no displacement during Quaternary time. Not necessarily inactive.	Fault cuts strata of Pliocene or older age.
			4.5 billion (Age of Earth)				

* Quaternary now recognized as extending to 2.6 Ma (Walker and Geissman, 2009). Quaternary faults in this map were established using the previous 1.8 Ma criterion.

0 12 24 Miles

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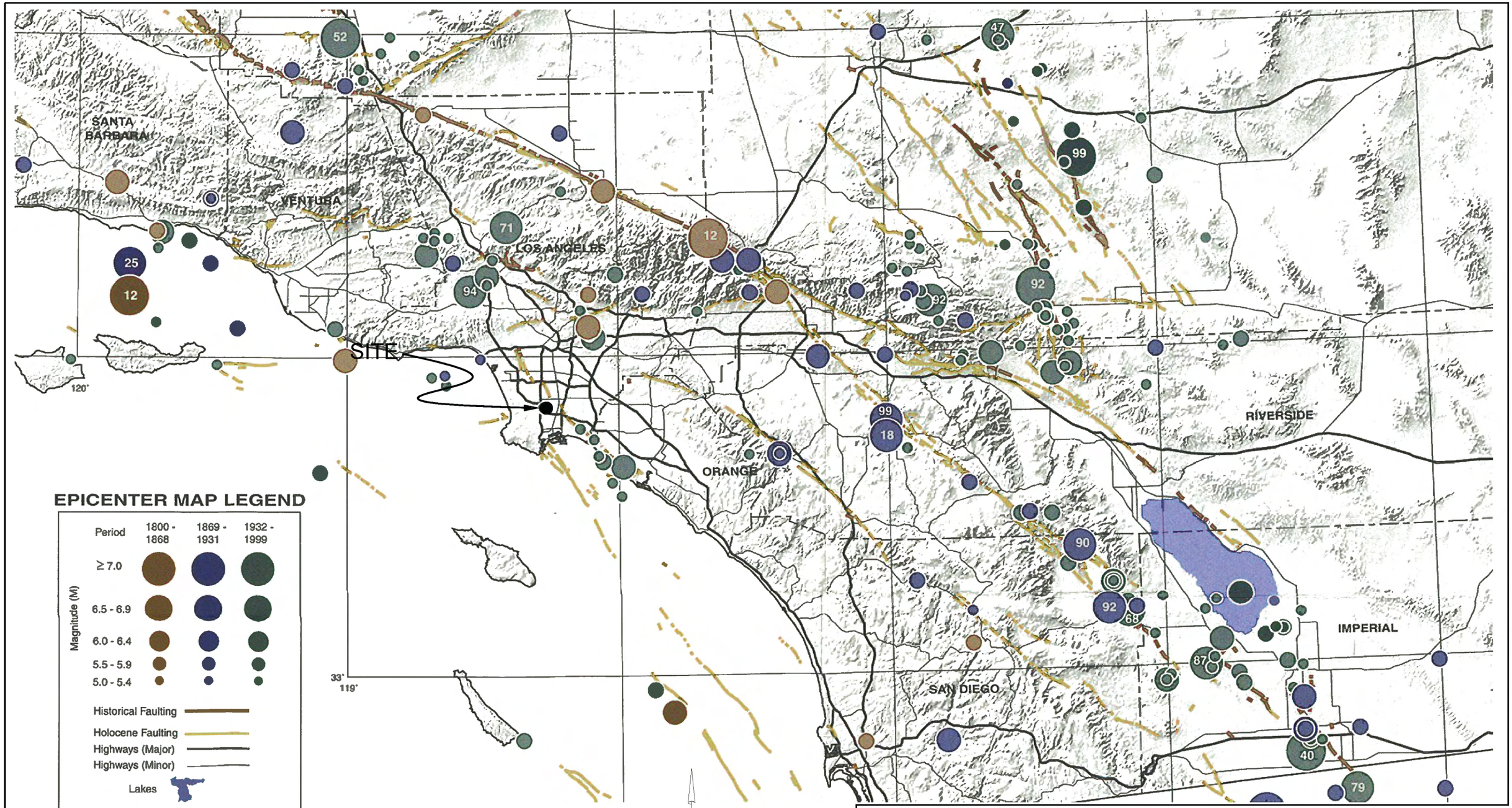
REGIONAL FAULT MAP

21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021 | PROJECT NO. W1301-06-01 | FIG. 3



EPICENTER MAP LEGEND

Period	1800 - 1868	1869 - 1931	1932 - 1999
Magnitude (M) ≥ 7.0			
6.5 - 6.9			
6.0 - 6.4			
5.5 - 5.9			
5.0 - 5.4			

Historical Faulting
Holocene Faulting
Highways (Major)
Highways (Minor)
Lakes
65 Last two digits of M ≥ 6.5 earthquake year

Reference: Toppozada, T., Branum, D., Petersen, M., Hallstrom, C., Cramer, C., and Reichle, M., 2000, Epicenters and Areas Damaged by M≥5 California Earthquakes, 1800 - 1999, California Geological Survey, Map Sheet 49.

0 20 40 Miles

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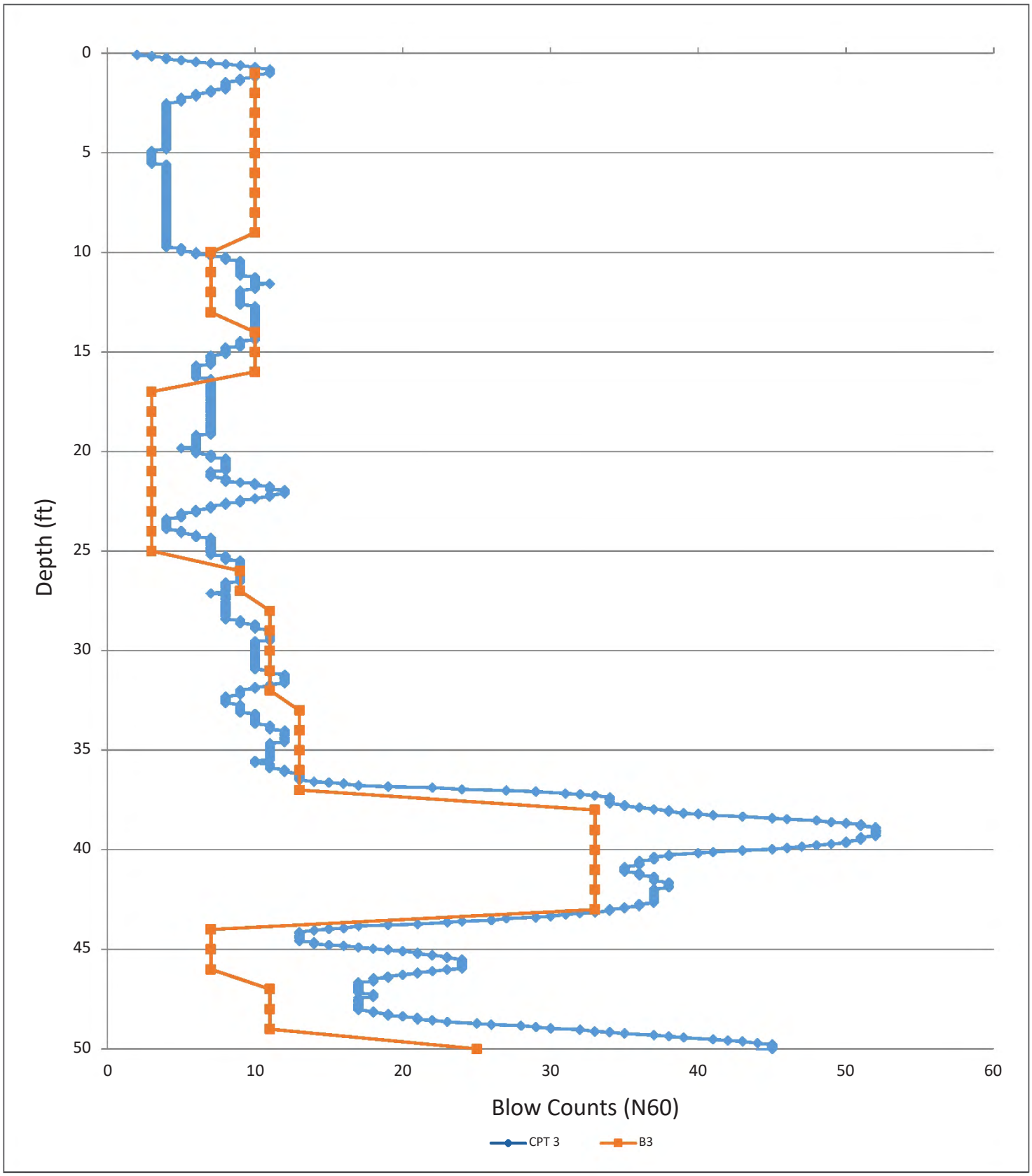
REGIONAL SEISMICITY MAP

21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021 | PROJECT NO. W1301-06-01 | FIG.4



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W E S T, I N C.

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JMH		

CORRELATION OF BORING & CPT N60

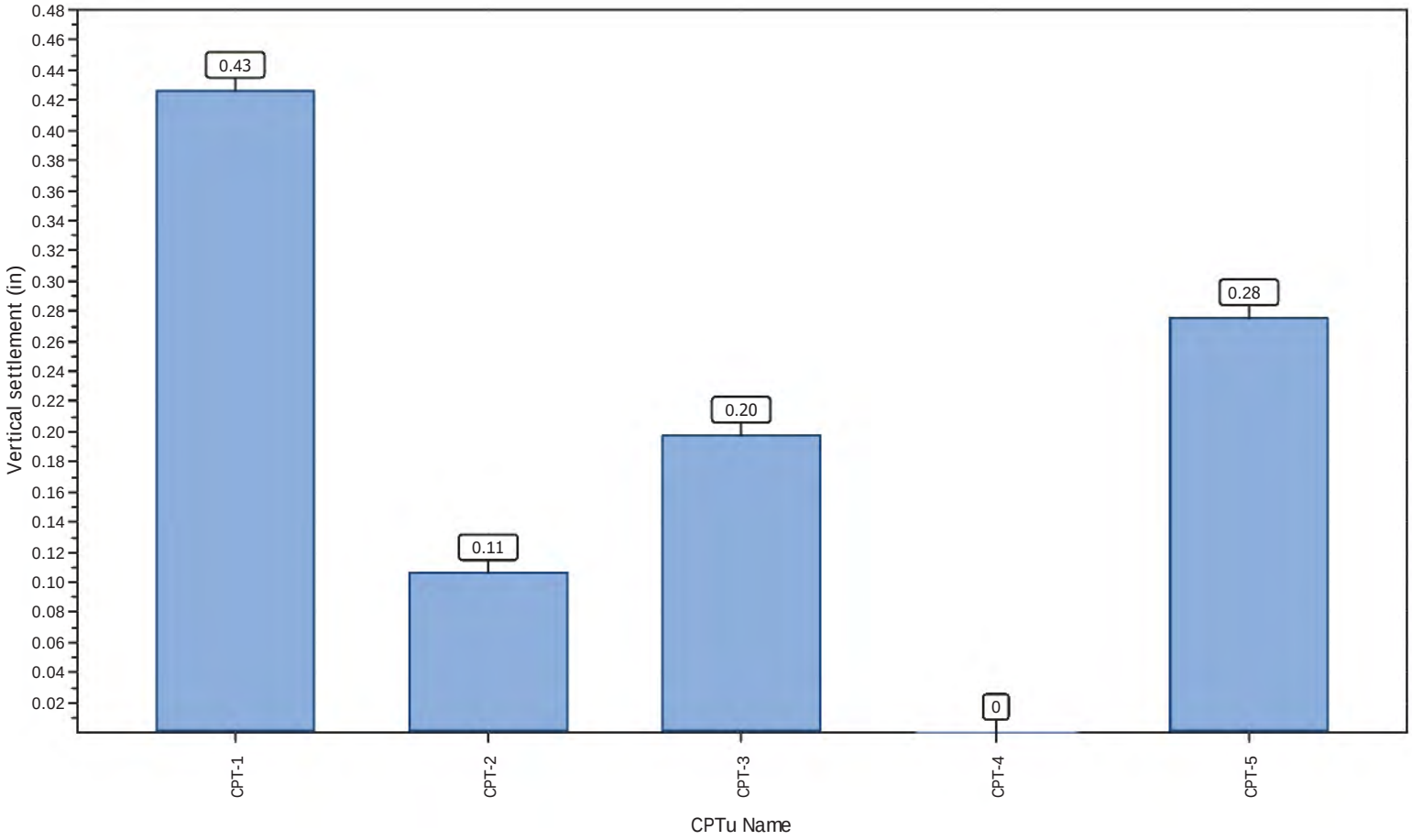
21611 SOUTH PERRY STREET
CARSON, CA

APRIL 2021	PROJECT NO. W1301-06-01	FIG.5

Project title : W1301-06-01

Location : Perry Street

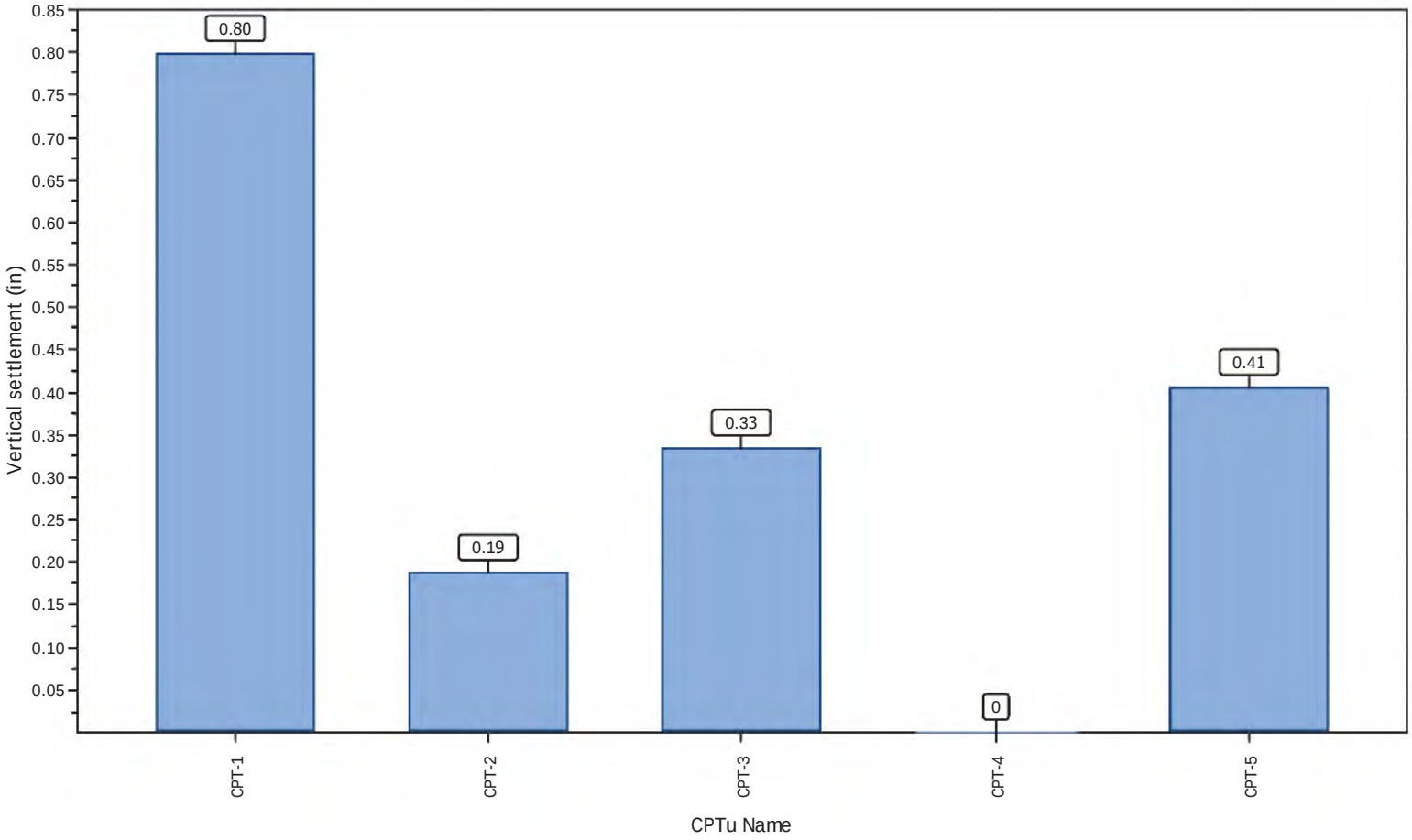
Overall vertical settlements report



Project title : W1301-06-01

Location : Perry Street

Overall vertical settlements report



GEOCON

Client : Perry Street
File No. : W1301-06-01
Boring : 3

TECHNICAL ENGINEERING AND DESIGN GUIDES AS ADAPTED FROM THE US ARMY CORPS OF ENGINEERS, NO. 9
EVALUATION OF EARTHQUAKE-INDUCED SETTLEMENTS IN DRY SANDY SOILS
DESIGN EARTHQUAKE

DE EARTHQUAKE INFORMATION:

Earthquake Magnitude:	6.68
Peak Horiz. Acceleration (g):	0.549

Fig 4.1 Fig 4.2 Fig 4.4

Depth of Base of Strata (ft)	Thickness of Layer (ft)	Depth of Mid-point of Layer (ft)	Soil Unit Weight (pcf)	Overburden Pressure at Mid-point (tsf)	Mean Effective Pressure at Mid-point (tsf)	Average Cyclic Shear Stress [Tav]	Field SPT [N]	Correction Factor [Cer]	Relative Density [Dr] (%)	Correction Factor [Cn]	Corrected [N1]60	rd Factor	Maximum Shear Mod. [Gmax] (tsf)	[yeff]*[Geff] [Gmax]	yeff Shear Strain	[yeff]*100%	Volumetric Strain M7.5 [E15] (%)	Number of Strain Cycles [Nc]	Corrected Vol. Strains [Ec]	Estimated Settlement [S] (inches)
1.0	1.0	0.5	120.0	0.03	0.02	0.011	10	1.25	76.6	1.7	19.1	1.0	169.475	6.25E-05	1.00E-04	0.010	1.06E-02	8.4928	8.17E-03	0.00
2.0	1.0	1.5	120.0	0.09	0.06	0.032	10	1.25	74.4	1.7	19.1	1.0	293.540	1.06E-04	2.30E-04	0.023	2.43E-02	8.4928	1.88E-02	0.00
3.0	1.0	2.5	120.0	0.15	0.10	0.053	10	1.25	72.5	1.7	19.1	1.0	378.958	1.34E-04	1.70E-04	0.017	1.79E-02	8.4928	1.39E-02	0.00
4.0	1.0	3.5	120.0	0.21	0.14	0.075	10	1.25	70.7	1.7	19.1	1.0	448.389	1.56E-04	1.70E-04	0.017	1.79E-02	8.4928	1.39E-02	0.00
5.0	1.0	4.5	120.0	0.27	0.18	0.096	10	1.25	69.0	1.7	19.1	1.0	508.425	1.74E-04	1.70E-04	0.017	1.79E-02	8.4928	1.39E-02	0.00
6.0	1.0	5.5	120.0	0.33	0.22	0.117	10	1.25	67.4	1.7	19.1	1.0	562.085	1.88E-04	1.50E-04	0.015	1.58E-02	8.4928	1.23E-02	0.00
7.0	1.0	6.5	120.0	0.39	0.26	0.139	10	1.25	65.9	1.6	18.4	1.0	603.301	2.03E-04	4.50E-04	0.045	4.97E-02	8.4928	3.85E-02	0.01
8.0	1.0	7.5	120.0	0.45	0.30	0.160	10	1.25	64.5	1.5	17.1	1.0	632.776	2.20E-04	4.50E-04	0.045	5.42E-02	8.4928	4.19E-02	0.01
9.0	1.0	8.5	120.0	0.51	0.34	0.181	10	1.25	63.3	1.4	16.1	1.0	659.735	2.34E-04	4.50E-04	0.045	5.84E-02	8.4928	4.52E-02	0.01
10.0	1.0	9.5	120.0	0.57	0.38	0.202	7	1.25	52.2	1.4	10.7	1.0	607.907	2.79E-04	4.50E-04	0.045	9.58E-02	8.4928	7.41E-02	0.00
11.0	1.0	10.5	120.0	0.63	0.42	0.222	7	1.25	52.2	1.3	10.1	1.0	628.529	2.93E-04	4.50E-04	0.045	1.02E-01	8.4928	7.87E-02	0.00
12.0	1.0	11.5	120.0	0.69	0.46	0.243	7	1.25	52.2	1.2	9.8	0.9	650.354	3.05E-04	1.00E-03	0.100	2.35E-01	8.4928	1.82E-01	0.00
13.0	1.0	12.5	120.0	0.75	0.50	0.263	7	1.25	52.2	1.2	9.6	0.9	673.332	3.14E-04	7.10E-04	0.071	1.71E-01	8.4928	1.33E-01	0.00
14.0	1.0	13.5	120.0	0.81	0.54	0.284	10	1.25	59.6	1.2	14.4	0.9	802.030	2.80E-04	3.70E-04	0.037	5.47E-02	8.4928	4.23E-02	0.00
15.0	1.0	14.5	120.0	0.87	0.58	0.304	10	1.25	59.6	1.2	14.2	0.9	825.875	2.87E-04	3.70E-04	0.037	5.59E-02	8.4928	4.33E-02	0.00
16.0	1.0	15.5	120.0	0.93	0.62	0.324	10	1.25	59.6	1.1	13.9	0.9	848.608	2.93E-04	3.70E-04	0.037	5.72E-02	8.4928	4.43E-02	0.00
17.0	1.0	16.5	120.0	0.99	0.66	0.344	3	1.25	31.4	1.1	4.5	0.9	603.195	4.31E-04	1.20E-03	0.120	7.10E-01	8.4928	5.49E-01	0.00
18.0	1.0	17.5	120.0	1.05	0.70	0.364	3	1.25	31.4	1.1	4.5	0.9	617.634	4.39E-04	1.20E-03	0.120	7.24E-01	8.4928	5.61E-01	0.00
19.0	1.0	18.5	120.0	1.11	0.74	0.383	3	1.25	31.4	1.1	4.4	0.9	631.508	4.47E-04	1.20E-03	0.120	7.39E-01	8.4928	5.72E-01	0.00
20.0	1.0	19.5	120.0	1.17	0.78	0.402	3	1.25	31.4	1.1	4.3	0.9	644.865	4.53E-04	1.20E-03	0.120	7.54E-01	8.4928	5.83E-01	0.00
21.0	1.0	20.5	120.0	1.23	0.82	0.421	3	1.25	31.4	1.1	4.3	0.9	657.749	4.60E-04	1.20E-03	0.120	7.68E-01	8.4928	5.94E-01	0.00
22.0	1.0	21.5	120.0	1.29	0.86	0.440	3	1.25	31.4	1.0	4.2	0.9	670.198	4.65E-04	1.20E-03	0.120	7.82E-01	8.4928	6.05E-01	0.00
23.0	1.0	22.5	120.0	1.35	0.90	0.458	3	1.25	31.4	1.0	4.1	0.9	682.246	4.70E-04	1.20E-03	0.120	7.96E-01	8.4928	6.16E-01	0.00
24.0	1.0	23.5	120.0	1.41	0.94	0.477	3	1.25	31.4	1.0	4.1	0.9	693.922	4.75E-04	1.20E-03	0.120	8.10E-01	8.4928	6.27E-01	0.00
25.0	1.0	24.5	120.0	1.47	0.98	0.495	3	1.25	31.4	1.0	4.0	0.9	705.252	4.80E-04	1.20E-03	0.120	8.23E-01	8.4928	6.37E-01	0.00
26.0	1.0	25.5	120.0	1.53	1.03	0.513	9	1.25	52.3	1.0	12.7	0.9	1055.741	3.28E-04	5.20E-04	0.052	8.97E-02	8.4928	6.95E-02	0.00
27.0	1.0	26.5	120.0	1.59	1.07	0.530	9	1.25	52.3	1.0	12.5	0.9	1071.522	3.31E-04	5.20E-04	0.052	9.12E-02	8.4928	7.06E-02	0.00
28.0	1.0	27.5	120.0	1.65	1.11	0.547	11	1.25	55.9	1.0	15.8	0.9	1179.921	3.07E-04	5.20E-04	0.052	6.89E-02	8.4928	5.33E-02	0.00
29.0	1.0	28.5	120.0	1.71	1.15	0.564	11	1.25	55.9	0.9	15.6	0.9	1196.177	3.09E-04	5.20E-04	0.052	6.99E-02	8.4928	5.41E-02	0.00
30.0	1.0	29.5	120.0	1.77	1.19	0.581	11	1.25	55.9	0.9	15.4	0.9	1212.035	3.11E-04	5.20E-04	0.052	7.10E-02	8.4928	5.49E-02	0.00
31.0	1.0	30.5	120.0	1.83	1.23	0.597	11	1.25	55.9	0.9	15.3	0.9	1227.516	3.12E-04	5.20E-04	0.052	7.20E-02	8.4928	5.57E-02	0.00
32.0	1.0	31.5	120.0	1.89	1.27	0.613	11	1.25	55.9	0.9	15.1	0.9	1242.641	3.14E-04	5.20E-04	0.052	7.30E-02	8.4928	5.65E-02	0.00
33.0	1.0	32.5	120.0	1.95	1.31	0.629	13	1.25	58.8	0.9	17.6	0.9	1329.436	2.98E-04	3.00E-04	0.030	3.49E-02	8.4928	2.70E-02	0.00
34.0	1.0	33.5	120.0	2.01	1.35	0.645	13	1.25	58.8	0.9	17.4	0.8	1344.735	2.99E-04	3.00E-04	0.030	3.54E-02	8.4928	2.74E-02	0.00
35.0	1.0	34.5	120.0	2.07	1.39	0.660	13	1.25	58.8	0.9	17.2	0.8	1359.713	3.00E-04	5.20E-04	0.052	6.22E-02	8.4928	4.81E-02	0.00
36.0	1.0	35.5	120.0	2.13	1.43	0.675	13	1.25	58.8	0.9	17.0	0.8	1374.387	3.01E-04	5.20E-04	0.052	6.30E-02	8.4928	4.88E-02	0.00
37.0	1.0	36.5	120.0	2.19	1.47	0.690	13	1.25	58.8	0.9	16.9	0.8	1388.771	3.02E-04	5.20E-04	0.052	6.38E-02	8.4928	4.94E-02	0.00
38.0	1.0	37.5	120.0	2.25	1.51	0.704	33	1.25	90.8	0.9	42.4	0.8	1913.714	2.22E-04	3.00E-04	0.030	1.22E-02	8.4928	9.43E-03	0.00
39.0	1.0	38.5	120.0	2.31	1.55	0.718	33	1.25	90.8	0.8	42.0	0.8	1932.598	2.22E-04	3.00E-04	0.030	1.23E-02	8.4928	9.54E-03	0.00
40.0	1.0	39.5	120.0	2.37	1.59	0.732	33	1.25	90.8	0.8	41.6	0.8	1951.139	2.23E-04	3.00E-04	0.030	1.25E-02	8.4928	9.65E-03	0.00
41.0	1.0	40.5	120.0	2.43	1.63	0.745	33	1.25	90.8	0.8	41.2	0.8	1969.350	2.23E-04	3.00E-04	0.030	1.26E-02	8.4928	9.77E-03	0.00
42.0	1.0	41.5	120.0	2.49	1.67	0.758	33	1.25	90.8	0.8	40.8	0.8	1987.246	2.23E-04	3.00E-04	0.030	1.28E-02	8.4928	9.88E-03	0.00
43.0	1.0	42.5	120.0	2.55	1.71	0.771	33	1.25	90.8	0.8	40.4	0.8	2004.839	2.23E-04	3.00E-04	0.030	1.29E-02	8.4928	9.99E-03	0.00
44.0	1.0	43.5	120.0	2.61	1.75	0.783	7	1.25	40.6	0.8	15.5	0.8	1473.568	3.07E-04	5.20E-04	0.052	7.06E-02	8.4928	5.47E-02	0.00
45.0	1.0	44.5	120.0	2.67	1.79	0.795	7	1.25	40.6	0.8	15.4	0.8	1487.981	3.07E-04	5.20E-04	0.052	7.11E-02	8.4928	5.50E-02	0.00
46.0	1.0	45.5	120.0	2.73	1.83	0.807	7	1.25	40.6	0.8	15.3	0.8	1502.208	3.06E-04	5.20E-04	0.052	7.15E-02	8.4928	5.53E-02	0.00
47.0	1.0	46.5	120.0	2.79	1.87	0.819	11	1.25	50.1	0.8	13.0	0.8	1436.934	3.23E-04	5.20E-04	0.052	8.72E-02	8.4928	6.75E-02	0.00
48.0	1.0	47.5	120.0	2.85	1.91	0.830	11	1.25	50.1	0.8	12.9	0.8	1448.200	3.23E-04	5.20E-04	0.052	8.81E-02	8.4928	6.82E-02	0.00
49.0	1.0	48.5	120.0	2.91	1.95	0.841	11	1.25	50.1	0.8	12.8	0.8	1459.300	3.23E-04	5.20E-04	0.052	8.90E-02	8.4928	6.89E-02	0.00
50.0	1.0	49.5	120.0	2.97	1.99	0.851	25	1.25	74.5	0.8	34.0	0.8	2042.085	2.32E-04	3.00E-04	0.030	1.59E-02	8.4928	1.23E-02	0.00

TOTAL SETTLEMENT = **0.05**

Figure 9

GEOCON

Client : Perry Street
File No. : W1301-06-01
Boring : 3

TECHNICAL ENGINEERING AND DESIGN GUIDES AS ADAPTED FROM THE US ARMY CORPS OF ENGINEERS, NO. 9
EVALUATION OF EARTHQUAKE-INDUCED SETTLEMENTS IN DRY SANDY SOILS
MAXIMUM CONSIDERED EARTHQUAKE

MCE EARTHQUAKE INFORMATION:

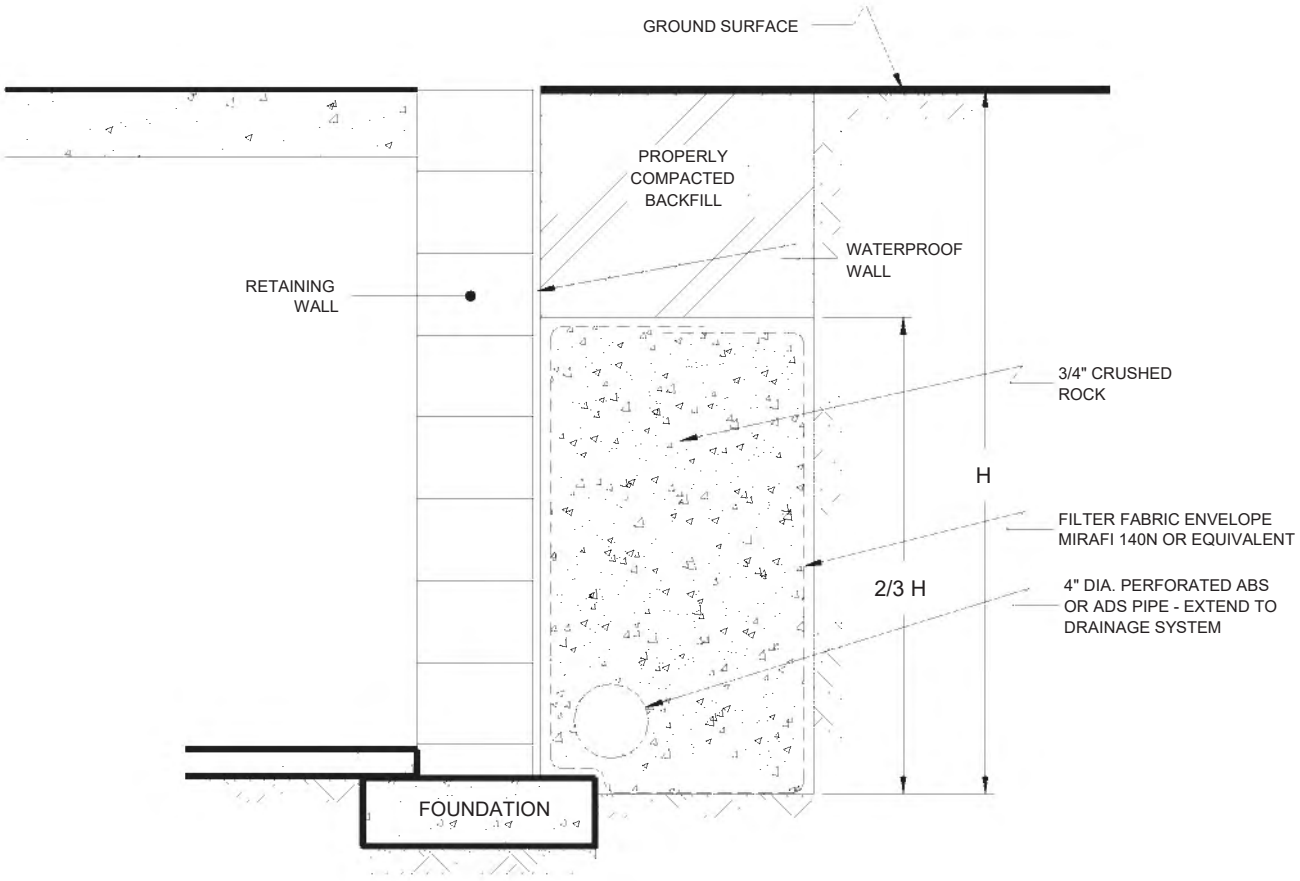
Earthquake Magnitude:	6.87
Peak Horiz. Acceleration (g):	0.823

Fig 4.1 Fig 4.2 Fig 4.4

Depth of Base of Strata (ft)	Thickness of Layer (ft)	Depth of Mid-point of Layer (ft)	Soil Unit Weight (pcf)	Overburden Pressure at Mid-point (tsf)	Mean Effective Pressure at Mid-point (tsf)	Average Cyclic Shear Stress [Tav]	Field SPT [N]	Correction Factor [Cer]	Relative Density [Dr] (%)	Correction Factor [Cn]	Corrected [N1]60	rd Factor	Maximum Shear Mod. [Gmax] (tsf)	[yeff]*[Geff] [Gmax]	yeff Shear Strain	[yeff]*100%	Volumetric Strain M7.5 [E15] (%)	Number of Strain Cycles [Nc]	Corrected Vol. Strains [Ec]	Estimated Settlement [S] (inches)
1.0	1.0	0.5	120.0	0.03	0.02	0.016	10	1.25	76.6	1.7	19.1	1.0	169.475	9.38E-05	1.90E-04	0.019	2.00E-02	9.8538	1.66E-02	0.00
2.0	1.0	1.5	120.0	0.09	0.06	0.048	10	1.25	74.4	1.7	19.1	1.0	293.540	1.59E-04	2.30E-04	0.023	2.43E-02	9.8538	2.01E-02	0.00
3.0	1.0	2.5	120.0	0.15	0.10	0.080	10	1.25	72.5	1.7	19.1	1.0	378.958	2.02E-04	8.10E-04	0.081	8.55E-02	9.8538	7.07E-02	0.02
4.0	1.0	3.5	120.0	0.21	0.14	0.112	10	1.25	70.7	1.7	19.1	1.0	448.389	2.34E-04	8.10E-04	0.081	8.55E-02	9.8538	7.07E-02	0.02
5.0	1.0	4.5	120.0	0.27	0.18	0.144	10	1.25	69.0	1.7	19.1	1.0	508.425	2.60E-04	8.10E-04	0.081	8.55E-02	9.8538	7.07E-02	0.02
6.0	1.0	5.5	120.0	0.33	0.22	0.176	10	1.25	67.4	1.7	19.1	1.0	562.085	2.82E-04	4.50E-04	0.045	4.75E-02	9.8538	3.93E-02	0.01
7.0	1.0	6.5	120.0	0.39	0.26	0.208	10	1.25	65.9	1.6	18.4	1.0	603.301	3.05E-04	1.00E-03	0.100	1.10E-01	9.8538	9.14E-02	0.02
8.0	1.0	7.5	120.0	0.45	0.30	0.239	10	1.25	64.5	1.5	17.1	1.0	632.776	3.29E-04	1.00E-03	0.100	1.20E-01	9.8538	9.96E-02	0.02
9.0	1.0	8.5	120.0	0.51	0.34	0.271	10	1.25	63.3	1.4	16.1	1.0	659.735	3.51E-04	1.00E-03	0.100	1.30E-01	9.8538	1.07E-01	0.03
10.0	1.0	9.5	120.0	0.57	0.38	0.302	7	1.25	52.2	1.4	10.7	1.0	607.907	4.18E-04	2.70E-03	0.270	5.75E-01	9.8538	4.76E-01	0.00
11.0	1.0	10.5	120.0	0.63	0.42	0.333	7	1.25	52.2	1.3	10.1	1.0	628.529	4.39E-04	2.70E-03	0.270	6.10E-01	9.8538	5.05E-01	0.00
12.0	1.0	11.5	120.0	0.69	0.46	0.364	7	1.25	52.2	1.2	9.8	0.9	650.354	4.57E-04	2.70E-03	0.270	6.36E-01	9.8538	5.26E-01	0.00
13.0	1.0	12.5	120.0	0.75	0.50	0.395	7	1.25	52.2	1.2	9.6	0.9	673.332	4.71E-04	1.20E-03	0.120	2.90E-01	9.8538	2.40E-01	0.00
14.0	1.0	13.5	120.0	0.81	0.54	0.426	10	1.25	59.6	1.2	14.4	0.9	802.030	4.19E-04	1.20E-03	0.120	1.77E-01	9.8538	1.47E-01	0.00
15.0	1.0	14.5	120.0	0.87	0.58	0.456	10	1.25	59.6	1.2	14.2	0.9	825.875	4.30E-04	1.20E-03	0.120	1.81E-01	9.8538	1.50E-01	0.00
16.0	1.0	15.5	120.0	0.93	0.62	0.486	10	1.25	59.6	1.1	13.9	0.9	848.608	4.39E-04	1.20E-03	0.120	1.86E-01	9.8538	1.54E-01	0.00
17.0	1.0	16.5	120.0	0.99	0.66	0.516	3	1.25	31.4	1.1	4.5	0.9	603.195	6.47E-04	4.10E-03	0.410	2.42E+00	9.8538	2.01E+00	0.00
18.0	1.0	17.5	120.0	1.05	0.70	0.545	3	1.25	31.4	1.1	4.5	0.9	617.634	6.59E-04	4.10E-03	0.410	2.47E+00	9.8538	2.05E+00	0.00
19.0	1.0	18.5	120.0	1.11	0.74	0.574	3	1.25	31.4	1.1	4.4	0.9	631.508	6.70E-04	4.10E-03	0.410	2.53E+00	9.8538	2.09E+00	0.00
20.0	1.0	19.5	120.0	1.17	0.78	0.603	3	1.25	31.4	1.1	4.3	0.9	644.865	6.80E-04	4.10E-03	0.410	2.57E+00	9.8538	2.13E+00	0.00
21.0	1.0	20.5	120.0	1.23	0.82	0.631	3	1.25	31.4	1.1	4.3	0.9	657.749	6.89E-04	4.10E-03	0.410	2.62E+00	9.8538	2.17E+00	0.00
22.0	1.0	21.5	120.0	1.29	0.86	0.660	3	1.25	31.4	1.0	4.2	0.9	670.198	6.98E-04	4.10E-03	0.410	2.67E+00	9.8538	2.21E+00	0.00
23.0	1.0	22.5	120.0	1.35	0.90	0.687	3	1.25	31.4	1.0	4.1	0.9	682.246	7.05E-04	1.00E-02	1.000	6.63E+00	9.8538	5.49E+00	0.00
24.0	1.0	23.5	120.0	1.41	0.94	0.715	3	1.25	31.4	1.0	4.1	0.9	693.922	7.13E-04	1.00E-02	1.000	6.75E+00	9.8538	5.59E+00	0.00
25.0	1.0	24.5	120.0	1.47	0.98	0.742	3	1.25	31.4	1.0	4.0	0.9	705.252	7.19E-04	1.00E-02	1.000	6.86E+00	9.8538	5.68E+00	0.00
26.0	1.0	25.5	120.0	1.53	1.03	0.769	9	1.25	52.3	1.0	12.7	0.9	1055.741	4.92E-04	8.10E-04	0.081	1.40E-01	9.8538	1.16E-01	0.00
27.0	1.0	26.5	120.0	1.59	1.07	0.795	9	1.25	52.3	1.0	12.5	0.9	1071.522	4.96E-04	8.10E-04	0.081	1.42E-01	9.8538	1.18E-01	0.00
28.0	1.0	27.5	120.0	1.65	1.11	0.821	11	1.25	55.9	1.0	15.8	0.9	1179.921	4.60E-04	8.10E-04	0.081	1.07E-01	9.8538	8.88E-02	0.00
29.0	1.0	28.5	120.0	1.71	1.15	0.846	11	1.25	55.9	0.9	15.6	0.9	1196.177	4.63E-04	8.10E-04	0.081	1.09E-01	9.8538	9.02E-02	0.00
30.0	1.0	29.5	120.0	1.77	1.19	0.871	11	1.25	55.9	0.9	15.4	0.9	1212.035	4.66E-04	8.10E-04	0.081	1.11E-01	9.8538	9.15E-02	0.00
31.0	1.0	30.5	120.0	1.83	1.23	0.896	11	1.25	55.9	0.9	15.3	0.9	1227.516	4.68E-04	8.10E-04	0.081	1.12E-01	9.8538	9.28E-02	0.00
32.0	1.0	31.5	120.0	1.89	1.27	0.920	11	1.25	55.9	0.9	15.1	0.9	1242.641	4.71E-04	8.10E-04	0.081	1.14E-01	9.8538	9.41E-02	0.00
33.0	1.0	32.5	120.0	1.95	1.31	0.943	13	1.25	58.8	0.9	17.6	0.9	1329.436	4.47E-04	8.10E-04	0.081	9.43E-02	9.8538	7.81E-02	0.00
34.0	1.0	33.5	120.0	2.01	1.35	0.967	13	1.25	58.8	0.9	17.4	0.8	1344.735	4.49E-04	8.10E-04	0.081	9.56E-02	9.8538	7.91E-02	0.00
35.0	1.0	34.5	120.0	2.07	1.39	0.990	13	1.25	58.8	0.9	17.2	0.8	1359.713	4.50E-04	8.10E-04	0.081	9.68E-02	9.8538	8.02E-02	0.00
36.0	1.0	35.5	120.0	2.13	1.43	1.012	13	1.25	58.8	0.9	17.0	0.8	1374.387	4.52E-04	8.10E-04	0.081	9.81E-02	9.8538	8.12E-02	0.00
37.0	1.0	36.5	120.0	2.19	1.47	1.034	13	1.25	58.8	0.9	16.9	0.8	1388.771	4.53E-04	8.10E-04	0.081	9.93E-02	9.8538	8.22E-02	0.00
38.0	1.0	37.5	120.0	2.25	1.51	1.055	33	1.25	90.8	0.9	42.4	0.8	1913.714	3.33E-04	5.20E-04	0.052	2.11E-02	9.8538	1.75E-02	0.00
39.0	1.0	38.5	120.0	2.31	1.55	1.076	33	1.25	90.8	0.8	42.0	0.8	1932.598	3.33E-04	5.20E-04	0.052	2.14E-02	9.8538	1.77E-02	0.00
40.0	1.0	39.5	120.0	2.37	1.59	1.097	33	1.25	90.8	0.8	41.6	0.8	1951.139	3.34E-04	5.20E-04	0.052	2.16E-02	9.8538	1.79E-02	0.00
41.0	1.0	40.5	120.0	2.43	1.63	1.117	33	1.25	90.8	0.8	41.2	0.8	1969.350	3.34E-04	5.20E-04	0.052	2.19E-02	9.8538	1.81E-02	0.00
42.0	1.0	41.5	120.0	2.49	1.67	1.136	33	1.25	90.8	0.8	40.8	0.8	1987.246	3.35E-04	5.20E-04	0.052	2.21E-02	9.8538	1.83E-02	0.00
43.0	1.0	42.5	120.0	2.55	1.71	1.155	33	1.25	90.8	0.8	40.4	0.8	2004.839	3.35E-04	5.20E-04	0.052	2.24E-02	9.8538	1.85E-02	0.00
44.0	1.0	43.5	120.0	2.61	1.75	1.174	7	1.25	40.6	0.8	15.5	0.8	1473.568	4.60E-04	8.10E-04	0.081	1.10E-01	9.8538	9.11E-02	0.00
45.0	1.0	44.5	120.0	2.67	1.79	1.192	7	1.25	40.6	0.8	15.4	0.8	1487.981	4.60E-04	8.10E-04	0.081	1.11E-01	9.8538	9.16E-02	0.00
46.0	1.0	45.5	120.0	2.73	1.83	1.210	7	1.25	40.6	0.8	15.3	0.8	1502.208	4.59E-04	8.10E-04	0.081	1.11E-01	9.8538	9.22E-02	0.00
47.0	1.0	46.5	120.0	2.79	1.87	1.227	11	1.25	50.1	0.8	13.0	0.8	1436.934	4.84E-04	8.10E-04	0.081	1.36E-01	9.8538	1.12E-01	0.00
48.0	1.0	47.5	120.0	2.85	1.91	1.244	11	1.25	50.1	0.8	12.9	0.8	1448.200	4.84E-04	8.10E-04	0.081	1.37E-01	9.8538	1.14E-01	0.00
49.0	1.0	48.5	120.0	2.91	1.95	1.260	11	1.25	50.1	0.8	12.8	0.8	1459.300	4.84E-04	8.10E-04	0.081	1.39E-01	9.8538	1.15E-01	0.00
50.0	1.0	49.5	120.0	2.97	1.99	1.276	25	1.25	74.5	0.8	34.0	0.8	2042.085	3.48E-04	5.20E-04	0.052	2.75E-02	9.8538	2.28E-02	0.00

TOTAL SETTLEMENT = **0.14**

Figure 10



NO SCALE

GEOCON WEST, INC.

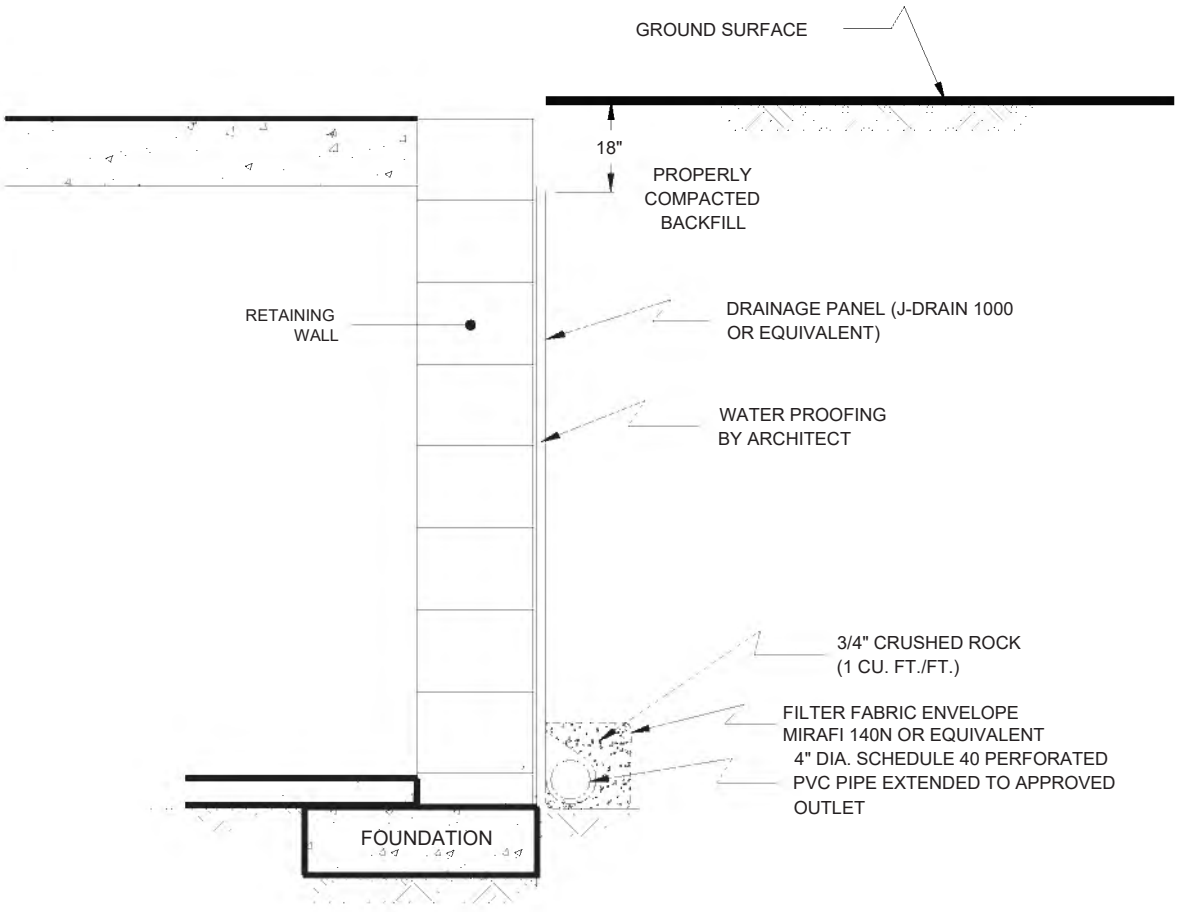
ENVIRONMENTAL GEOTECHNICAL MATERIALS
3303 N. SAN FERNANDO BLVD. - SUITE 100 - BURBANK, CA 91504
PHONE (818) 841-8388 - FAX (818) 841-1704

DRAFTED BY: JMH	CHECKED BY: JTA

RETAINING WALL DRAIN DETAIL

21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021	NO. W1301-06-01	FIG. 10



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GEOCON
W E S T, I N C.

ENVIRONMENTAL GEOTECHNICAL MATERIALS
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RETAINING WALL DRAIN DETAIL

21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021	NO. W1301-06-01	FIG. 11

APPENDIX A

APPENDIX A

FIELD INVESTIGATION

The site was explored on February 9, 2021 by drilling five 8-inch diameter borings using a truck-mounted hollow-stem auger drilling machine and advancing five cone penetrometer tests (CPTs). The borings were excavated to depths between approximately 20½ and 51 feet beneath the existing ground surface. The CPTs were advanced to depths of approximately 60 feet below existing ground surface. Representative and relatively undisturbed samples were obtained by driving a 4 inch, O. D., California Modified Sampler into the "undisturbed" soil mass with blows from a 140 pound hammer falling 30 inches. Bulk samples were also obtained. Standard Penetration Tests were performed in boring B3.

The soil conditions encountered in the borings were visually examined, classified and logged in general accordance with the Unified Soil Classification System (USCS). Logs of the borings are presented on Figures A1 through A5. The CPT data is presented as Figures A6 through A10. The logs depict the soil and geologic conditions encountered and the depth at which samples were obtained. The logs also include our interpretation of the conditions between sampling intervals. Therefore, the logs contain both observed and interpreted data. We determined the lines designating the interface between soil materials on the logs using visual observations, penetration rates, excavation characteristics and other factors. The transition between materials may be abrupt or gradual. Where applicable, the boring logs were revised based on subsequent laboratory testing. The approximate locations of the borings and CPTs are depicted on the Site Plan (see Figure 2)

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5	BULK 0-5'				**ARTIFICIAL FILL** Silty Sand, poorly graded, dense, moist, light brown, fine-grained, some medium-grained, some gravel.			
6								
7								
8	B1@5'				**ALLUVIUM** Clay, firm, moist, dark gray, high plasticity.	19	105.0	24.0
9	B1@7.5'			CH	- some sand	13	106.1	19.7
:5	B1@10'				- olive brown mottles	21	103.7	22.0
:6								
:7					Clayey Sand, poorly graded, loose, saturated, brown, fine-grained.			
:8	B1@15'			SC		10	111.6	19.8
:9					Silty Sand, poorly graded, medium dense, saturated, brown, fine-grained.			
65	B1@20'			SM		22	114.5	19.2
					Total depth of boring: 20.5 feet Fill to 4.5 feet. Groundwater encountered at 12.5 feet. Backfilled with grout. *Penetration resistance for 140-pound hammer falling 30 inches by auto-hammer. NOTE: The stratification lines presented herein represent the approximate boundary between earth types; the transitions may be gradual.			

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5	BULK 0-5'				**ARTIFICIAL FILL** Silty Sand, poorly graded, loose, moist, brown, fine-grained.			
6								
7	B2@3'			ML	**ALLUVIUM** Sandy Silt, firm, moist, dark gray.	14	73.4	29.6
8	B2@6'			CH	Clay, soft, wet, gray, high plasticity.	10	29.3	32.0
9								
:5	B2@9'				- firm, dark gray	15	73.9	49.8
:6	B2@12'					15	87.2	35.9
:7								
:8	B2@15'				- soft	8	75.1	45.2
:9								
65	B2@20'				- firm	17	101.7	27.4

Total depth of boring: 20.5 feet
Fill to 3 feet.
No groundwater encountered.
Backfilled with grout.

*Penetration resistance for 140-pound hammer falling 30 inches by auto-hammer.
NOTE: The stratification lines presented herein represent the approximate boundary between earth types; the transitions may be gradual.

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5	BULK 0-5'				**ARTIFICIAL FILL** Sand, poorly graded, dense, moist, light brown, fine-grained, some medium-grained.			
6	B3@1.5'					50 (6")	107.1	4.0
7								
8	B3@5'					50 (6")		
9	B3@7'				- grayish brown, some fine gravel	50 (3")	103.4	8.7
:5	B3@10'			MH	**ALLUVIUM** Silt, soft, moist, dark gray, high plasticity, some sand.	7		
:6	B3@12.5'				Clay, firm, moist, dark gray, high plasticity.	21	91.7	31.6
:7				CH				
:8	B3@15'					10		
:9	B3@17.5'				Clay, firm, moist, dark gray.	14	103.7	26.1
65	B3@20'			CL	- soft, wet	3		
66	B3@22.5'				- firm, light brown	11	105.7	27.3
67	B3@25'				Clay, firm, moist, olive brown, some sand, trace gravel, high plasticity.	9		
68				CH				
69	B3@27.5'				- mottled calcium deposits, increase in sand	21	89.9	32.6

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C5	B3@30'				- decrease in sand	11		
C6	B3@32.5'			CH	- stiff	22	98.4	27.3
C7	B3@35'				- firm, increase in sand	13		
C8								
C9	B3@37.5'				Silty Sand, poorly graded, dense, wet, olive brown, fine-grained.	67	117.6	16.4
75	B3@40'			SM		33		
76	B3@42.5'				- medium dense, trace shells	36	101.9	25.0
77				CL	Sandy Clay, soft, wet, olive brown.			
	B3@45'					7		
78					Clayey Sand, poorly graded, medium dense, saturated, olive brown with oxidation mottles, fine-grained.			
79	B3@47.5'			SC		20	100.0	25.4
					Silty Sand, poorly graded, medium dense, saturated, olive brown.			
F5	B3@50'			SM		25		
					Total depth of boring: 51 feet Fill to 9 feet. Groundwater encountered at 17.6 feet. Backfilled with grout. *Penetration resistance for 140-pound hammer falling 30 inches by auto-hammer. NOTE: The stratification lines presented herein represent the approximate boundary between earth types; the transitions may be gradual.			

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5	BULK 0-5'				**ARTIFICIAL FILL** Silty Sand, poorly graded, dense, moist, brown, fine-grained, some medium-grained, some gravel.			
6								
	B4@3'					50 (6")		
7								
	B4@5'			ML	**ALLUVIUM** Sandy Silt, soft, moist, dark gray.	10	78.1	31.1
8					Clay, soft, wet, dark gray, high plasticity.			
9	B4@7.5'					10	80.7	38.9
:5	B4@10'					8	77.8	42.4
:6				CH				
:7								
	B4@15'					10	85.0	38.5
:8								
:9								
65	B4@20'					4	80.0	42.3
					Total depth of boring: 20.5 feet Fill to 5 feet. No groundwater encountered. Backfilled with grout. *Penetration resistance for 140-pound hammer falling 30 inches by auto-hammer. NOTE: The stratification lines presented herein represent the approximate boundary between earth types; the transitions may be gradual.			

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5					**ARTIFICIAL FILL** Silty Sand, poorly graded, loose, moist, brown, fine-grained, some medium-grained.			
6								
7								
8	B5@5'				**ALLUVIUM** Clay, soft, moist, dark gray, high plasticity.	11	79.5	42.3
9	B5@7.5'				- wet	10	82.2	38.4
:5	B5@10'			CH		7	74.1	37.5
:6								
:7								
:8	B5@15'				- saturated	11	97.9	47.5
:9								
65	B5@20'				- firm, no recovery	17		
					Total depth of boring: 20.5 feet Fill to 5 feet. No groundwater encountered. Backfilled with grout. *Penetration resistance for 140-pound hammer falling 30 inches by auto-hammer. NOTE: The stratification lines presented herein represent the approx			

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Shear-Induced Building Settlement (Ds) calculation procedure

The shear-induced building settlement (Ds) due to liquefaction below the building can be estimated using the relationship developed by Bray and Macedo (2017):

$$Ln(Ds) = c1 + c2 * LBS + 0.58 * Ln\left(Tanh\left(\frac{HL}{6}\right)\right) + 4.59 * Ln(Q) - 0.42 * Ln(Q)^2 - 0.02 * B + 0.84 * Ln(CAVdp) + 0.41 * Ln(Sa1) + \varepsilon$$

where Ds is in the units of mm, c1= -8.35 and c2= 0.072 for LBS ≤ 16, and c1= -7.48 and c2= 0.014 otherwise. Q is the building contact pressure in units of kPa, HL is the cumulative thickness of the liquefiable layers in the units of m, B is the building width in the units of m, CAVdp is a standardized version of the cumulative absolute velocity in the units of g-s, Sa1 is 5%-damped pseudo-acceleration response spectral value at a period of 1 s in the units of g, and ε is a normal random variable with zero mean and 0.50 standard deviation in Ln units. The liquefaction-induced building settlement index (LBS) is:

$$LBS = \sum W * \frac{\varepsilon_{shear}}{z} dz$$

where z (m) is the depth measured from the ground surface > 0, W is a foundation-weighting factor wherein W = 0.0 for z less than Df, which is the embedment depth of the foundation, and W = 1.0 otherwise. The shear strain parameter (ε_shear) is the liquefaction-induced free-field shear strain (in %) estimated using Zhang et al. (2004). It is calculated based on the estimated Dr of the liquefied soil layer and the calculated safety factor against liquefaction triggering (FSL).

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Attachment C

City Forms

Attachment D

Master Covenant Agreement (MCA)

MCA will be provided in ministerial Review

Attachment E

Operations and Maintenance (O&M) Plan

Carson Self-Storage

21611 South Perry St., Carson, Ca 90745

Grading Plan Permit No.: Tbd

Apn: 7327-010-014

Required Permits

This section must list any permits required for the implementation, operation, and maintenance of the BMPs. Possible examples are:

- Permits for connection to sanitary sewer
- Permits from California Department of Fish and Game
- Encroachment permits

If no permits are required, a statement to that effect should be made.

Recordkeeping

All records must be made available for review upon request.

Responsible Party

The owner is aware of the maintenance responsibilities of the proposed BMPs. A funding mechanism is in place to maintain the BMPs at the frequency stated in the LID Plan. The contact information for the entity responsible is below:

Name:	
Company:	Faring Capital, LLC
Title:	
Address 1:	
Address 2:	
Phone Number:	
Email:	

BMP Name	BMP Implementation, Maintenance, and Inspection Procedures	Implementation, Maintenance, and Inspection Frequency and Schedule	Person or Entity with Operation & Maintenance Responsibility
Non-Structural Source Control BMPs			
Education for Property Owners, Tenants and Occupants	**Practical informational materials will be provided to employees on general good housekeeping practices that contribute to protection of storm water quality. Among other things, these materials will describe the use of chemicals (including household type) that should be limited to the property, with no discharge of specified wastes via hosing or other direct discharge to gutters, catch basins and storm drains. Faring Capital, LLC will provide these materials through an education program. This program must be maintained, enforced, and updated periodically by Faring Capital, LLC. Educational materials including, but not limited to, the materials included in Section VII of this plan will be made available to the employees, members and occupants periodically thereafter**	**On-going**	**Owner**
Activity Restriction	**Activities on this site will be limited to activities related to the transfer of solid waste.**	**On-going**	**Owner**

BMP Name	BMP Implementation, Maintenance, and Inspection Procedures	Implementation, Maintenance, and Inspection Frequency and Schedule	Person or Entity with Operation & Maintenance Responsibility
Common Area Landscape Management	**Management programs will be designed and established by Faring Capital, LLC who will maintain the common areas within the project site. These programs will include how to mitigate the potential dangers of fertilizer and pesticide usage (refer to the Maintenance and Frequency Table). Ongoing maintenance will be consistent with the State of California Model Water-Efficient Landscape Ordinance.**	**On-going**	**Owner**
Common Area Litter Control	**Faring Capital, LLC will be required to implement waste management and litter control procedures in the common areas aimed at reducing pollution of surface runoff. Faring Capital, LLC may also contract with their landscape maintenance firm to provide this service during regularly scheduled maintenance, which should consist of litter patrol, to prevent emptying of waste receptacles in common areas, and noting waste disposal violations and reporting the violations to Faring Capital, LLC for investigation**	**Inspected on a monthly basis**	**Owner**

BMP Name	BMP Implementation, Maintenance, and Inspection Procedures	Implementation, Maintenance, and Inspection Frequency and Schedule	Person or Entity with Operation & Maintenance Responsibility
Common Area Catch Basin Inspection	**Faring Capital, LLC will be required to have at least 80 percent of the catch basins and inlets inspected, cleaned and maintained on an annual basis and 100 percent of the basins and inlets included in a two-year period. Cleaning should take place in the late summer/early fall prior to the start of the rainy season**	**Prior to August 31 each year and weekly during rainy season or within 24 hours prior to rain forecasts.**	**Owner**
Street Sweeping Private Streets and Parking Lots	**Faring Capital, LLC shall have parking lots swept prior to the storm season, in late summer and early fall, prior to the start of the rainy season, as defined by the City of Carson**	**Prior to the storm season, in late summer and early fall, prior to the start of the rainy season**	**Owner**
Structural Source Control BMPs			
Provide Storm Drain System Stenciling and Signage	**All proposed catch basins and inlets will have either a stencil and/or placard with verbiage conforming to City of Carson requirements. Faring Capital, LLC will maintain the stenciling and labels.**	**Semi-annually, Prior to August 31 each year & monthly during rainy season. Repaint stenciling and/or replace signs Prior to August 31**	**Owner**
Design and Construct Trash and Waste Storage Areas to Reduce Pollutant Introduction	**The proposed Waste Management Areas will be within the building footprint**	**Inspected on a monthly basis**	**Owner**

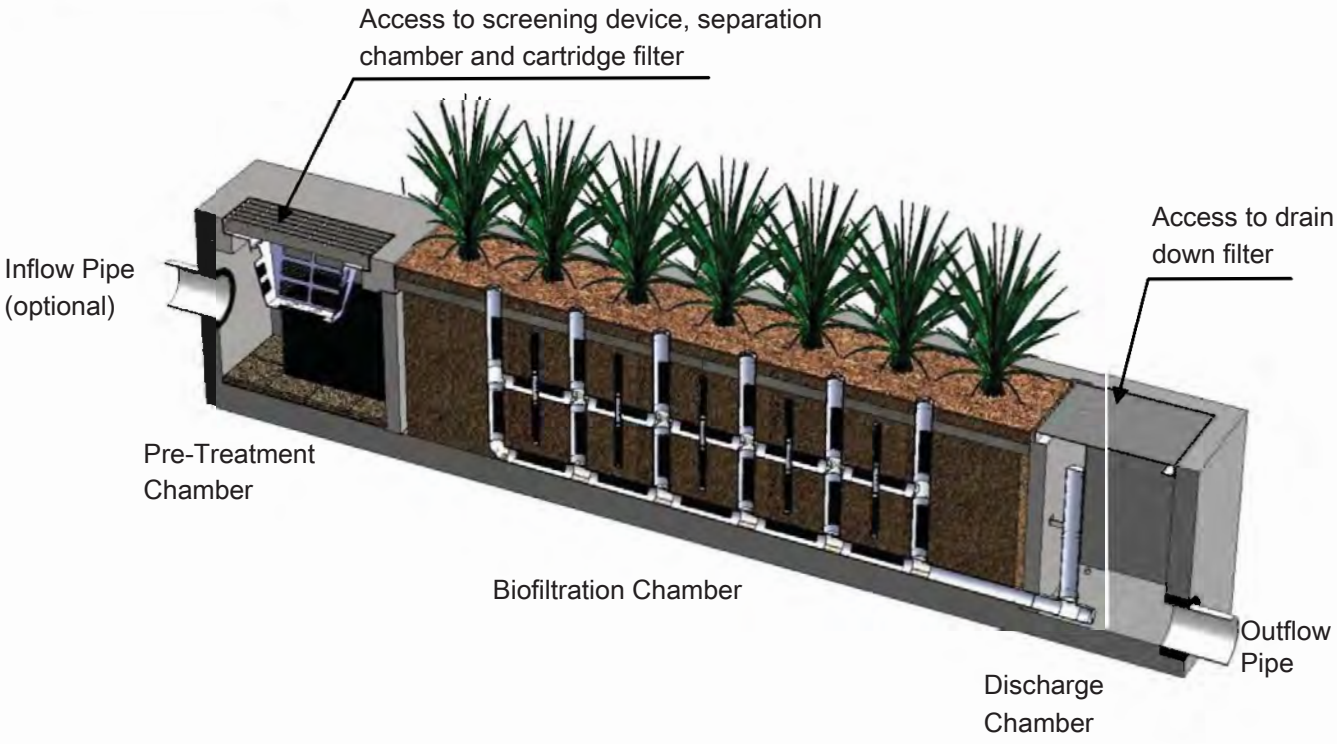
BMP Name	BMP Implementation, Maintenance, and Inspection Procedures	Implementation, Maintenance, and Inspection Frequency and Schedule	Person or Entity with Operation & Maintenance Responsibility
Use Efficient Irrigation Systems & Landscape Design	**Design of an effective irrigation system will reduce the amount of runoff from excess irrigation water into the storm drain system. The system design will incorporate the use of a centralized evapotranspiration-based irrigation controllers, rain shutdown devices, master valves, and low precipitation spray heads. The system will have the ability to run multiple programs with cycle and soak to prevent run-off, and emergency shut-off devices for excessive flow conditions to minimize water waste. The design will comply with the State Ordinance AB325 and City of Carson requirements for water conservation**	**Prior to August 31 each year and once during the rainy season (Prior to August 31st)**	**Owner**
Treatment Control BMPs			
10'20' Modular Wetland System	**Modular Wetland System – Linear Maintenance:** - **Removed trash from screening device.** - **Removed sediment from separation chamber.** - **Replace cartridge filter media.** - **Replace drain down filter media.** - **Trim vegetation.**	**As needed**	**Owner**

Maintenance Guidelines for Modular Wetland System - Linear

Maintenance Summary

- Remove Trash from Screening Device – average maintenance interval is 6 to 12 months.
  - (*5 minute average service time*).
- Remove Sediment from Separation Chamber – average maintenance interval is 12 to 24 months.
  - (*10 minute average service time*).
- Replace Cartridge Filter Media – average maintenance interval 12 to 24 months.
  - (*10-15 minute per cartridge average service time*).
- Replace Drain Down Filter Media – average maintenance interval is 12 to 24 months.
  - (*5 minute average service time*).
- Trim Vegetation – average maintenance interval is 6 to 12 months.
  - (*Service time varies*).

System Diagram



Maintenance Procedures

Screening Device

1. Remove grate or manhole cover to gain access to the screening device in the Pre-Treatment Chamber. Vault type units do not have screening device. Maintenance can be performed without entry.
2. Remove all pollutants collected by the screening device. Removal can be done manually or with the use of a vacuum truck. The hose of the vacuum truck will not damage the screening device.
3. Screening device can easily be removed from the Pre-Treatment Chamber to gain access to separation chamber and media filters below. Replace grate or manhole cover when completed.

Separation Chamber

1. Perform maintenance procedures of screening device listed above before maintaining the separation chamber.
2. With a pressure washer spray down pollutants accumulated on walls and cartridge filters.
3. Vacuum out Separation Chamber and remove all accumulated pollutants. Replace screening device, grate or manhole cover when completed.

Cartridge Filters

1. Perform maintenance procedures on screening device and separation chamber before maintaining cartridge filters.
2. Enter separation chamber.
3. Unscrew the two bolts holding the lid on each cartridge filter and remove lid.
4. Remove each of 4 to 8 media cages holding the media in place.
5. Spray down the cartridge filter to remove any accumulated pollutants.
6. Vacuum out old media and accumulated pollutants.
7. Reinstall media cages and fill with new media from manufacturer or outside supplier. Manufacturer will provide specification of media and sources to purchase.
8. Replace the lid and tighten down bolts. Replace screening device, grate or manhole cover when completed.

Drain Down Filter

1. Remove hatch or manhole cover over discharge chamber and enter chamber.
2. Unlock and lift drain down filter housing and remove old media block. Replace with new media block. Lower drain down filter housing and lock into place.
3. Exit chamber and replace hatch or manhole cover.

Maintenance Notes

1. Following maintenance and/or inspection, it is recommended the maintenance operator prepare a maintenance/inspection record. The record should include any maintenance activities performed, amount and description of debris collected, and condition of the system and its various filter mechanisms.

2. The owner should keep maintenance/inspection record(s) for a minimum of five years from the date of maintenance. These records should be made available to the governing municipality for inspection upon request at any time.

3. Transport all debris, trash, organics and sediments to approved facility for disposal in accordance with local and state requirements.

4. Entry into chambers may require confined space training based on state and local regulations.

5. No fertilizer shall be used in the Biofiltration Chamber.

6. Irrigation should be provided as recommended by manufacturer and/or landscape architect. Amount of irrigation required is dependent on plant species. Some plants may require irrigation.

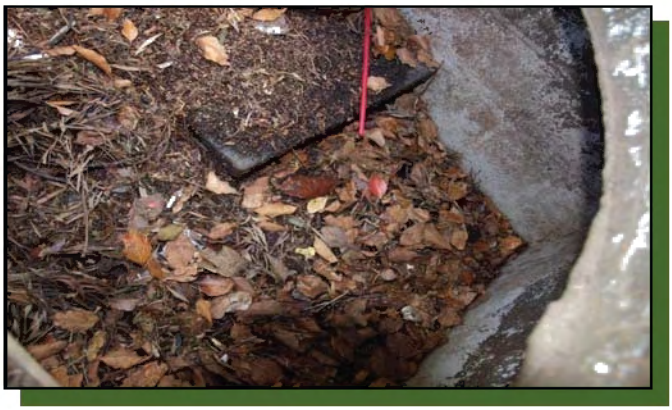
Maintenance Procedure Illustration

Screening Device

The screening device is located directly under the manhole or grate over the Pre-Treatment Chamber. It's mounted directly underneath for easy access and cleaning. Device can be cleaned by hand or with a vacuum truck.

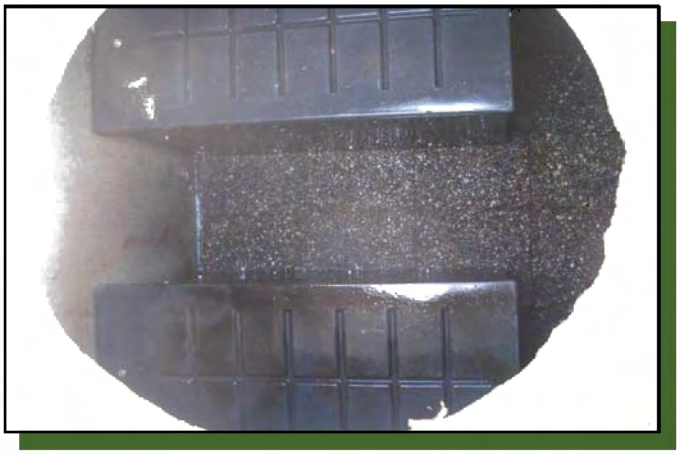
Separation Chamber

The separation chamber is located directly beneath the screening device. It can be quickly cleaned using a vacuum truck or by hand. A pressure washer is useful to assist in the cleaning process.



Cartridge Filters

The cartridge filters are located in the Pre-Treatment chamber connected to the wall adjacent to the biofiltration chamber. The cartridges have removable tops to access the individual media filters. Once the cartridge is open media can be easily removed and replaced by hand or a vacuum truck.

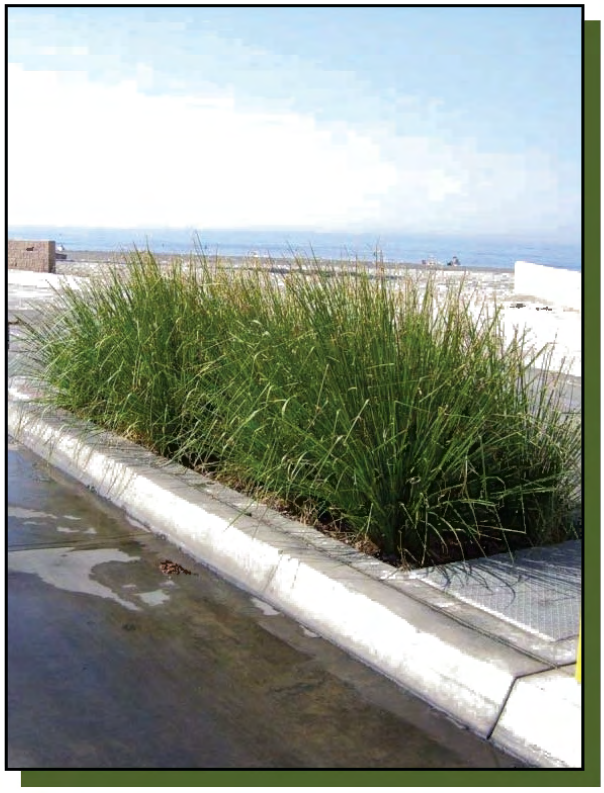


Drain Down Filter

The drain down filter is located in the Discharge Chamber. The drain filter unlocks from the wall mount and hinges up. Remove filter block and replace with new block.

Trim Vegetation

Vegetation should be maintained in the same manner as surrounding vegetation and trimmed as needed. No fertilizer shall be used on the plants. Irrigation per the recommendation of the manufacturer and or landscape architect. Different types of vegetation requires different amounts of irrigation.



Inspection Form

Modular Wetland System, Inc.
P. 760.433-7640
F. 760-433-3176
E. Info@modularwetlands.com

www.modularwetlands.com

Inspection Report
Modular Wetlands System

Project Name _____

Project Address _____ (city) (Zip Code)

Owner / Management Company _____

Contact _____ Phone ( ) –

Inspector Name _____ Date ___/___/___ Time _____ AM / PM

For Office Use Only
(Reviewed By)
(Date)
Office personnel to complete section to the left.

Type of Inspection ☐ Routine ☐ Follow Up ☐ Complaint ☐ Storm Storm Event in Last 72-hours? ☐ No ☐ Yes

Weather Condition _____ Additional Notes _____

Inspection Checklist

Modular Wetland System Type (Curb, Grate or UG Vault): _____ Size (22', 14' or etc.): _____

Structural Integrity:	**Yes**	**No**	**Comments**
Damage to pre-treatment access cover (manhole cover/grate) or cannot be opened using normal lifting pressure?			
Damage to discharge chamber access cover (manhole cover/grate) or cannot be opened using normal lifting pressure?			
Does the MWS unit show signs of structural deterioration (cracks in the wall, damage to frame)?			
Is the inlet/outlet pipe or drain down pipe damaged or otherwise not functioning properly?			
Working Condition:			
Is there evidence of illicit discharge or excessive oil, grease, or other automobile fluids entering and clogging the unit?			
Is there standing water in inappropriate areas after a dry period?			
Is the filter insert (if applicable) at capacity and/or is there an accumulation of debris/trash on the shelf system?			
Does the depth of sediment/trash/debris suggest a blockage of the inflow pipe, bypass or cartridge filter? If yes specify which one in the comments section. Note depth of accumulation in in pre-treatment chamber.			Depth:
Does the cartridge filter media need replacement in pre-treatment chamber and/or discharge chamber?			Chamber:
Any signs of improper functioning in the discharge chamber? Note issues in comments section.			
Other Inspection Items:			
Is there an accumulation of sediment/trash/debris in the wetland media (if applicable)?			
Is it evident that the plants are alive and healthy (if applicable)? Please note Plant Information below.			
Is there a septic or foul odor coming from inside the system?			

Waste:	**Yes**	**No**
Sediment / Silt / Clay		
Trash / Bags / Bottles		
Green Waste / Leaves / Foliage		

Recommended Maintenance	
No Cleaning Needed	
Schedule Maintenance as Planned	
Needs Immediate Maintenance	

Plant Information	
Damage to Plants	
Plant Replacement	
Plant Trimming	

Additional Notes:

2972 San Luis Rey Road, Oceanside, CA 92058 P (760) 433-7640 F (760) 433-3176

Maintenance Report

Modular Wetland System, Inc.
P. 760.433-7640
F. 760-433-3176
E. Info@modularwetlands.com

www.modularwetlands.com

Cleaning and Maintenance Report
Modular Wetlands System

Project Name _____

Project Address _____
(city) (Zip Code)

Owner / Management Company _____

Contact _____ Phone ( ) –

Inspector Name _____ Date ____/____/____ Time _____AM / PM

For Office Use Only
(Reviewed By)
(Date)
Office personnel to complete section to the left.

Type of Inspection ☐ Routine ☐ Follow Up ☐ Complaint ☐ Storm Storm Event in Last 72-hours? ☐ No ☐ Yes

Weather Condition _____ Additional Notes _____

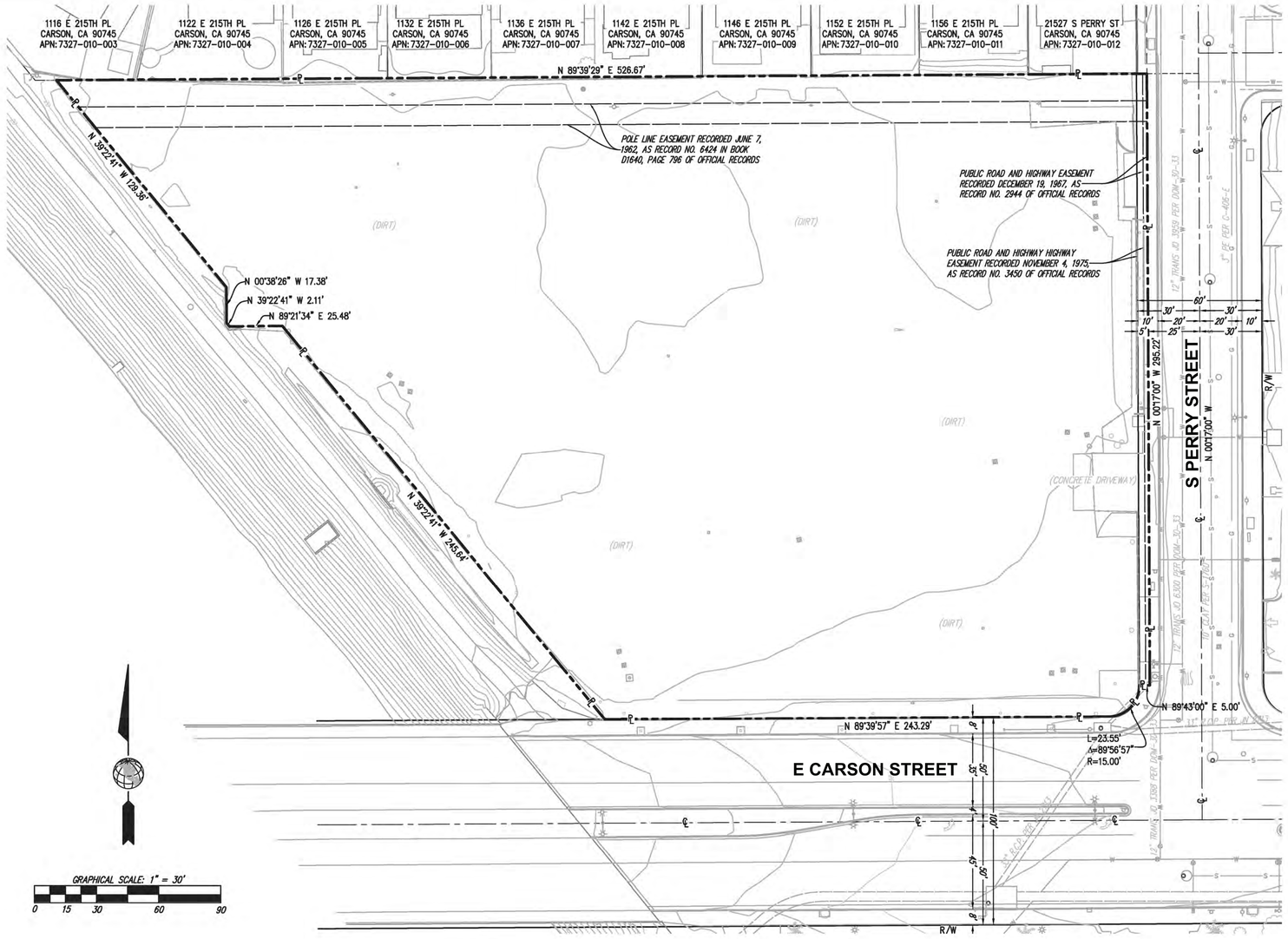
Site Map #	GPS Coordinates of Insert	Manufacturer / Description / Sizing	Trash Accumulation	Foliage Accumulation	Sediment Accumulation	Total Debris Accumulation	Condition of Media 25/50/75/100 (will be changed @ 75%)	Operational Per Manufactures' Specifications (If not, why?)
	Lat: Long:	MWS Catch Basins						
		MWS Sedimentation Basin						
		Media Filter Condition						
		Plant Condition						
		Drain Down Media Condition						
		Discharge Chamber Condition						
		Drain Down Pipe Condition						
		Inlet and Outlet Pipe Condition						

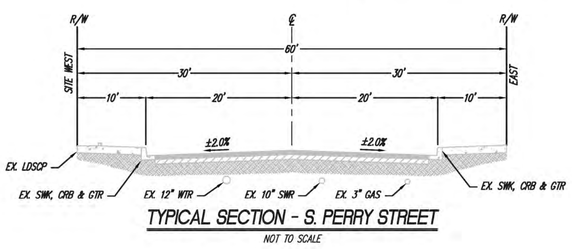
Comments:

2972 San Luis Rey Road, Oceanside, CA 92058 P. 760.433.7640 F. 760.433.3176

Attachment F

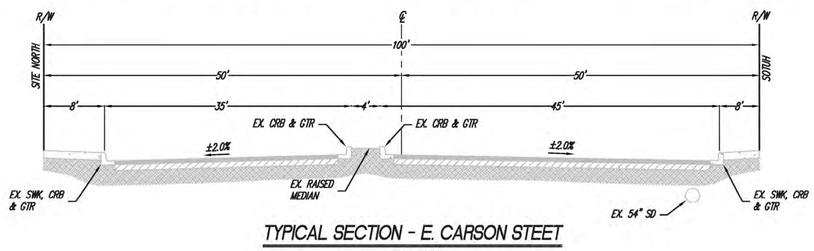
Plans





TYPICAL SECTION - S. PERRY STREET

NOT TO SCALE



TYPICAL SECTION - E. CARSON STEET

NOT TO SCALE

EXISTING LEGEND:

ITEM	SYMBOL
PROPERTY LINE	
CENTERLINE	
RIGHT-OF-WAY	
EASEMENT	
EX. CONTOUR	552
EX. CURB & GUTTER	

OWNER:

RECREATION ROAD LLC

SITE ADDRESS:

21611 SOUTH PERRY STREET
CARSON, CA 90745

ASSESSOR'S PARCEL NUMBER:

7327-010-014 & 7327-010-015

TITLE INFORMATION:

TITLE INFORMATION FOR THIS SURVEY BASED ON A PRELIMINARY REPORT PREPARED BY COMMONWEALTH LAND TITLE INSURANCE COMPANY AS ORDER NO. 09174014-917-EQ., DATED: AUGUST 4, 2020.

LEGAL DESCRIPTION:

THAT PORTION OF LOT 15 OF TRACT NO. 4054, IN THE CITY OF CARSON, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 44, PAGES 39 THROUGH 41 INCLUSIVE OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE NORTHERLY LINE OF THE SOUTHERLY 20 FEET OF SAID LOT WITH A LINE PARALLEL WITH AND NORTHEASTERLY 27 FEET, MEASURED AT RIGHT ANGLES, FROM THE SOUTHWESTERLY LINE OF SAID LOT; THENCE ALONG SAID PARALLEL LINE NORTH 39°21'48" WEST 245.64 FEET; THENCE SOUTH 89°22'27" WEST 25.48 FEET; THENCE NORTH 39°21'48" WEST 2.11 FEET; THENCE NORTH 00°37'33" WEST 17.38 FEET TO A LINE PARALLEL WITH AND NORTHEASTERLY 18 FEET, MEASURED AT RIGHT ANGLES, FROM SAID SOUTHWESTERLY LINE; THENCE ALONG SAID LAST MENTIONED PARALLEL LINE NORTH 39°21'48" WEST TO THE SOUTHERLY LINE OF TRACT NO. 29360, AS PER MAP RECORDED IN BOOK 734, PAGES 45 AND 46 OF MAPS; THENCE EASTERLY ALONG SAID SOUTHERLY LINE TO THE EASTERLY LINE OF SAID LOT 15; THENCE SOUTHERLY ALONG SAID EASTERLY LINE TO SAID NORTHERLY LINE; THENCE WESTERLY ALONG SAID NORTHERLY LINE TO THE POINT OF BEGINNING.

EXCEPT THEREFROM THAT PORTION OF SAID LAND DESIGNATED AS PARCELS 2-36 INCLUSIVE IN THE FINAL DECREE OF CONDEMNATION ENTERED IN SUPERIOR COURT, LOS ANGELES COUNTY, CASE NO. 909,461, A CERTIFIED COPY OF WHICH WAS RECORDED AUGUST 26, 1969 AS INSTRUMENT NO. 2734, IN BOOK D-4478, PAGE 350 OF OFFICIAL RECORDS OF SAID COUNTY AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE EASTERLY LINE OF SAID LOT WITH THE NORTHERLY LINE OF THE SOUTHERLY 20 FEET OF SAID LOT; THENCE WESTERLY ALONG SAID NORTHERLY LINE 19.99 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE NORTHWEST, HAVING A RADIUS OF 15 FEET, TANGENT TO SAID NORTHERLY LINE AND TANGENT TO THE WESTERLY LINE OF THE EASTERLY 5 FEET OF SAID LOT; THENCE NORTHEASTERLY ALONG SAID CURVE 23.55 FEET TO SAID WESTERLY LINE; THENCE EASTERLY AT RIGHT ANGLES FROM SAID WESTERLY LINE 5 FEET TO SAID EASTERLY LINE; THENCE SOUTHERLY ALONG SAID EASTERLY LINE 14.99 FEET TO THE POINT OF BEGINNING.

PLAN PREPARED BY:

OMEGA
ENGINEERING CONSULTANTS
4340 VIEWRIDGE AVE, SUITE B
SAN DIEGO, CA 92123
PH:(858) 634-8620 FAX:(858)-634-8627

VERTICAL BENCHMARK:

DESCRIPTION: LOS ANGELES COUNTY PUBLIC WORKS BENCHMARK NUMBER "Y 10545" IN TOP OF CURB ON SOUTH SIDE OF E 213TH STREET APPROXIMATELY 40 FEET WEST OF THE CENTERLINE OF PERRY STREET (APPROXIMATELY 1,010' NORTH OF SITE)

ELEVATION: 18.248' (NAVD88)

SOURCE OF TOPOGRAPHY:

TOPOGRAPHY SHOWN HEREON IS BASED ON AERIAL PHOTOGRAMMETRIC MAPPING CONDUCTED BY PRECISION UAV. HORIZONTAL AND VERTICAL GROUND CONTROL WERE ESTABLISHED BY OMEGA LAND SURVEYING, INC. ON FEBRUARY 01, 2021 WITH SUPPLEMENTAL DATA COLLECTED ON FEBRUARY 03, 2021.

BASIS OF BEARINGS:

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CENTERLINE OF PERRY STREET AS SHOWN ON SUBDIVISION MAP FOR TRACT NO. 29360 FILED IN BOOK 734, PAGE 46-47, OF MAP RECORDS, SAID BEARING BEING "N 00°17' W".

AREA SUMMARY:

TOTAL PARCEL AREA (NET)	110,643	SF
TOTAL PARCEL AREA (GROSS)	112,119	SF

GRADING INFORMATION:

CUT (TO FINISH SURFACE)	357	CY
FILL (TO FINISH SURFACE)	4,199	CY
UNDERCUTS	4,281	CY
REMEDIAL GRADING	15,037	CY
EXPORT (IMBALANCE)	725	CY

EASEMENTS:

(4) POLE LINE EASEMENT RECORDED JUNE 7, 1962, AS RECORD NO. 6424 IN BOOK D1640, PAGE 796 OF OFFICIAL RECORDS.

(5) PUBLIC ROAD AND HIGHWAY EASEMENT RECORDED DECEMBER 19, 1967, AS RECORD NO. 2944 OF OFFICIAL RECORDS.

(7) PUBLIC STREET OR HIGHWAY EASEMENT RECORDED NOVEMBER 4, 1975, AS RECORD NO. 3450 OF OFFICIAL RECORDS.

PERRY STREET
CARSON STREET SS
CARSON, CA

REGISTERED PROFESSIONAL ENGINEER
SEAN M. SAVAGE
No.75677
CIVIL
STATE OF CALIFORNIA

FOR PLAN CHECK ONLY

SEAN M. SAVAGE R.C.E. 75677 _____ DATE

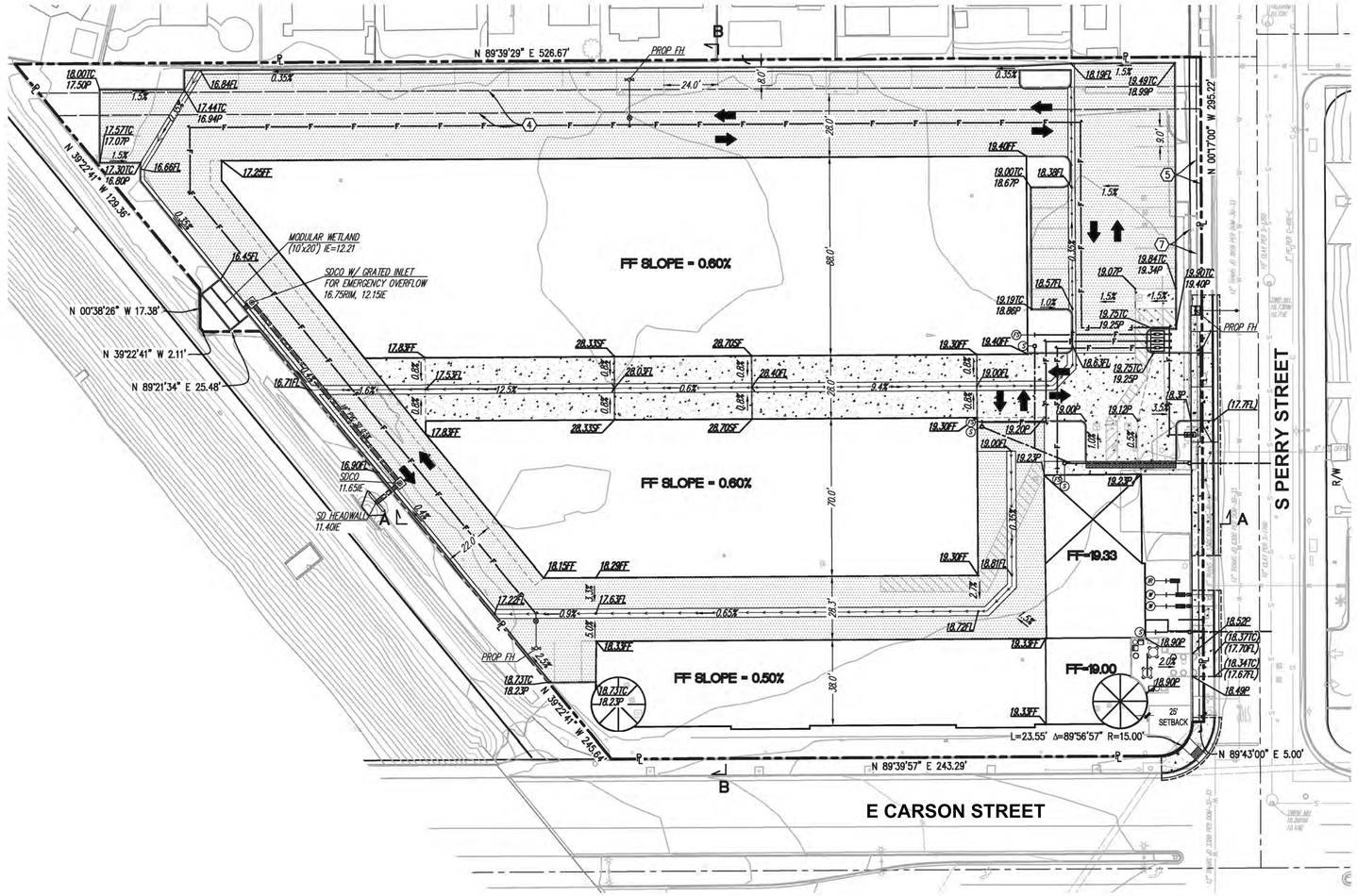
JOB NUMBER: 20-817

DATE: 10/05/2021

J. ORDAN
ARCHITECTS
131 CALLE IGLESIA, SUITE 100
SAN CLEMENTE, CA 92672
949.388.8090

FILENAME: P:\ENG OMEGA\0633 FARING SS CARSON\ACAD\DISCRETIONARY\0633-CDP-01-CONSTRAINTS.DWG DATE: 10/5/2021 11:20:02 AM

PRELIMINARY GRADING PLAN

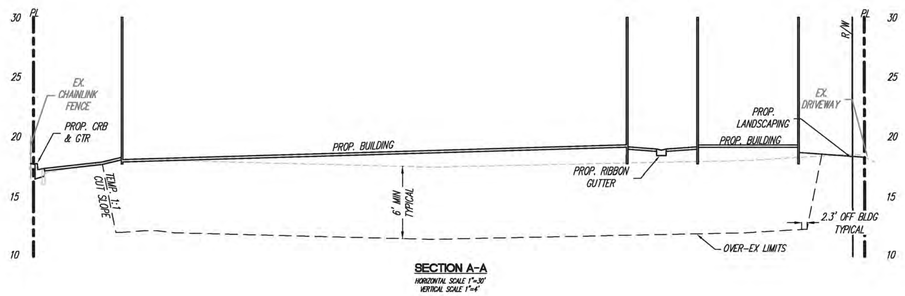


EXISTING LEGEND

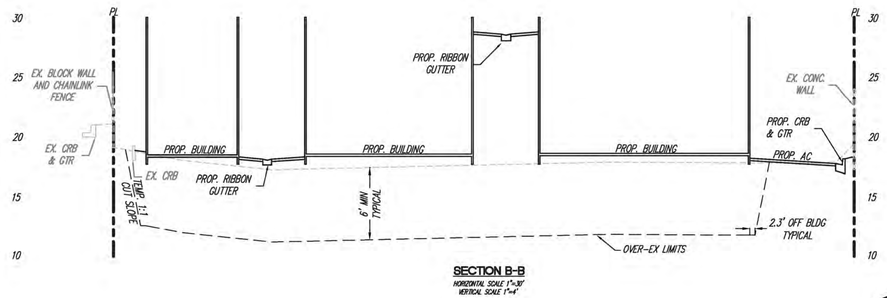
ITEM	SYMBOL
PROPERTY LINE	
CENTERLINE	
RIGHT-OF-WAY	
EX. CONTOUR	552
EX. CURB & GUTTER	

PROPOSED LEGEND

ITEM	SYMBOL
PROPOSED GRADE BREAK	
PROPOSED FINISH FLOOR SLOPE	FF SLOPE =0.5%
PROPOSED FINISH FLOOR ELEVATION	374.00FF
PROPOSED PAVEMENT ELEVATION	374.00P
PROPOSED FLOWLINE ELEVATION	374.00FL
PROPOSED GRADIANT	1.1%
PROPOSED 6" PCC CURB	
PROPOSED 6" PCC CURB & GUTTER	
PROPOSED FLOW LINE	
PROPOSED BUILDING	
PROPOSED PARKING STALL STRIPING	
PROPOSED HANDICAP STRIPING	
PROPOSED PVT. STORM DRAIN (SIZE PER PLAN)	
PROPOSED PVT. FIRE SERVICE LATERAL	
PROPOSED PVT. SEWER LATERAL	
PROPOSED SEWER POINT OF CONNECTION	S
PROPOSED FIRE POINT OF CONNECTION	FS
PROPOSED FIRE SERVICE BACKFLOW	DCDA
PROPOSED FDC/PIV	
PROPOSED FIRE HYDRANT	
PROPOSED PVT. STORM DRAIN CLEAN OUT/CONNECTION (SIZE AND TYPE PER PLAN)	
PROPOSED PVT. PCC PAVEMENT WALK	
PROPOSED PVT. ADA RAMP	
PROPOSED PVT. AC PAVEMENT HEAVY DRIVE AISLE	
PROPOSED PVT. MODULAR WETLAND	



SECTION A-A
HORIZONTAL SCALE 1"=30'
VERTICAL SCALE 1"=4'



SECTION B-B
HORIZONTAL SCALE 1"=30'
VERTICAL SCALE 1"=4'

PLAN PREPARED BY:

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PERRY STREET
CARSON STREET SS
CARSON, CA

REGISTERED PROFESSIONAL ENGINEER
SEAN M. SAVAGE
No.75677
CIVIL
STATE OF CALIFORNIA

FOR PLAN CHECK ONLY

SEAN M. SAVAGE R.C.E. 75677 _____ DATE

JOB NUMBER: 20-817

DATE: 10/05/2021

J. ORDAN
ARCHITECTS
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949.388.8090

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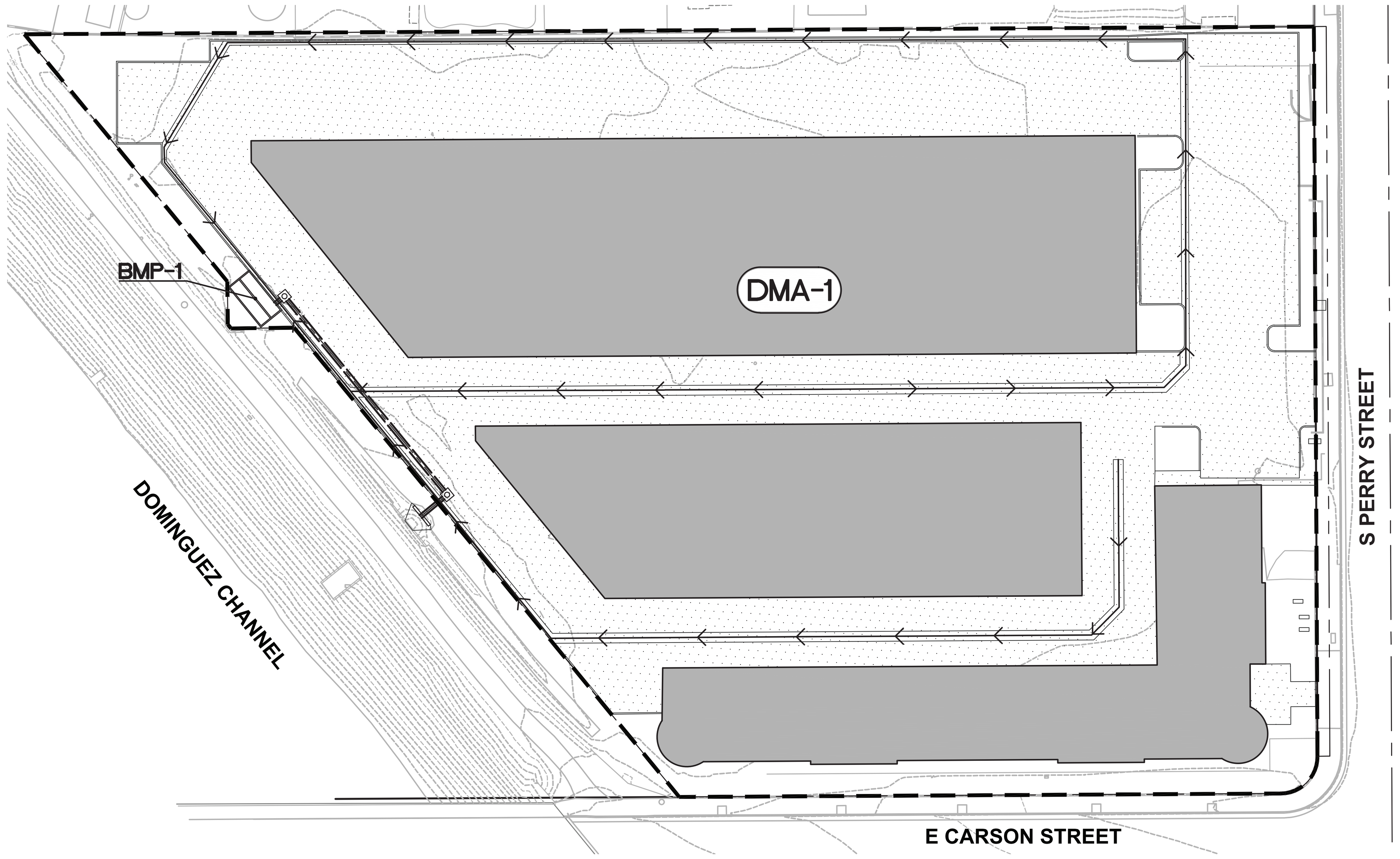

LEGEND

AREA LIMITS	
FLOW ARROWS	
BUILDING AREA	
PAVEMENT AREA	
DRAINAGE MGMT AREA (DMA) NUMBER	DMA-1

PLAN PREPARED BY:

OMEGA ENGINEERING CONSULTANTS
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PH:(858) 634-8620 FAX:(858)-634-8627

DMA DATA TABLE

DMA-NO.	TOT. AREA (SF)	IMPERVIOUS (%)	REQ'D FLOWRATE (CFS)	BMP FLOWRATE (CFS)	TYPE/TREATED BY
DMA-1	120,644	89.8	0.702	0.710	BMP-1/MODULAR WETLAND

GENERAL STORM WATER NOTES

1. GROUNDWATER IS ANTICIPATED AT APPROXIMATELY 12.5 FEET BELOW EXISTING GRADE ON SITE.
2. NO EXISTING NATURAL HYDROLOGIC FEATURES
3. NO SIGNIFICANT ECOLOGICAL AREAS ON SITE
4. ALL APPLICABLE SOURCE CONTROL BMPS SHALL BE IMPLEMENTED
   5A. SOURCE CONTROL NOTES TO COME IN MINISTERIAL REVIEW

Peak Flow Hydrologic Analysis

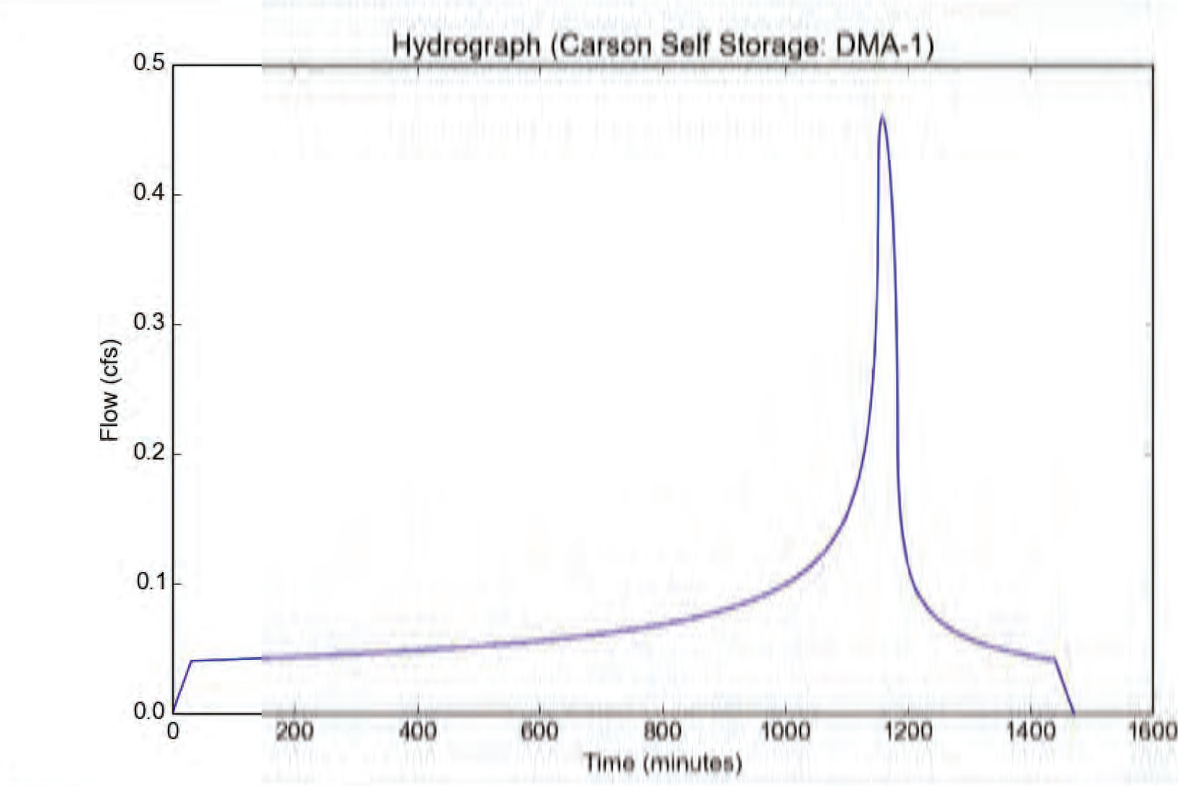
File location: P:/DWG OMEGA/0633 Faring SS Carson/STORMWATER REPORTS/Water Quality/ATTACHMENTS/85th Percentile Hydro
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Carson Self Storage
Subarea ID	DMA-1
Area (ac)	2.77
Flow Path Length (ft)	475.0
Flow Path Slope (vft/hft)	0.006
85th Percentile Rainfall Depth (in)	0.8
Percent Impervious	0.898
Soil Type	3
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	0.8
Peak Intensity (in/hr)	0.2025
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.8184
Time of Concentration (min)	31.0
Clear Peak Flow Rate (cfs)	0.459
Burned Peak Flow Rate (cfs)	0.459
24-Hr Clear Runoff Volume (ac-ft)	0.1499
24-Hr Clear Runoff Volume (cu-ft)	6528.9479



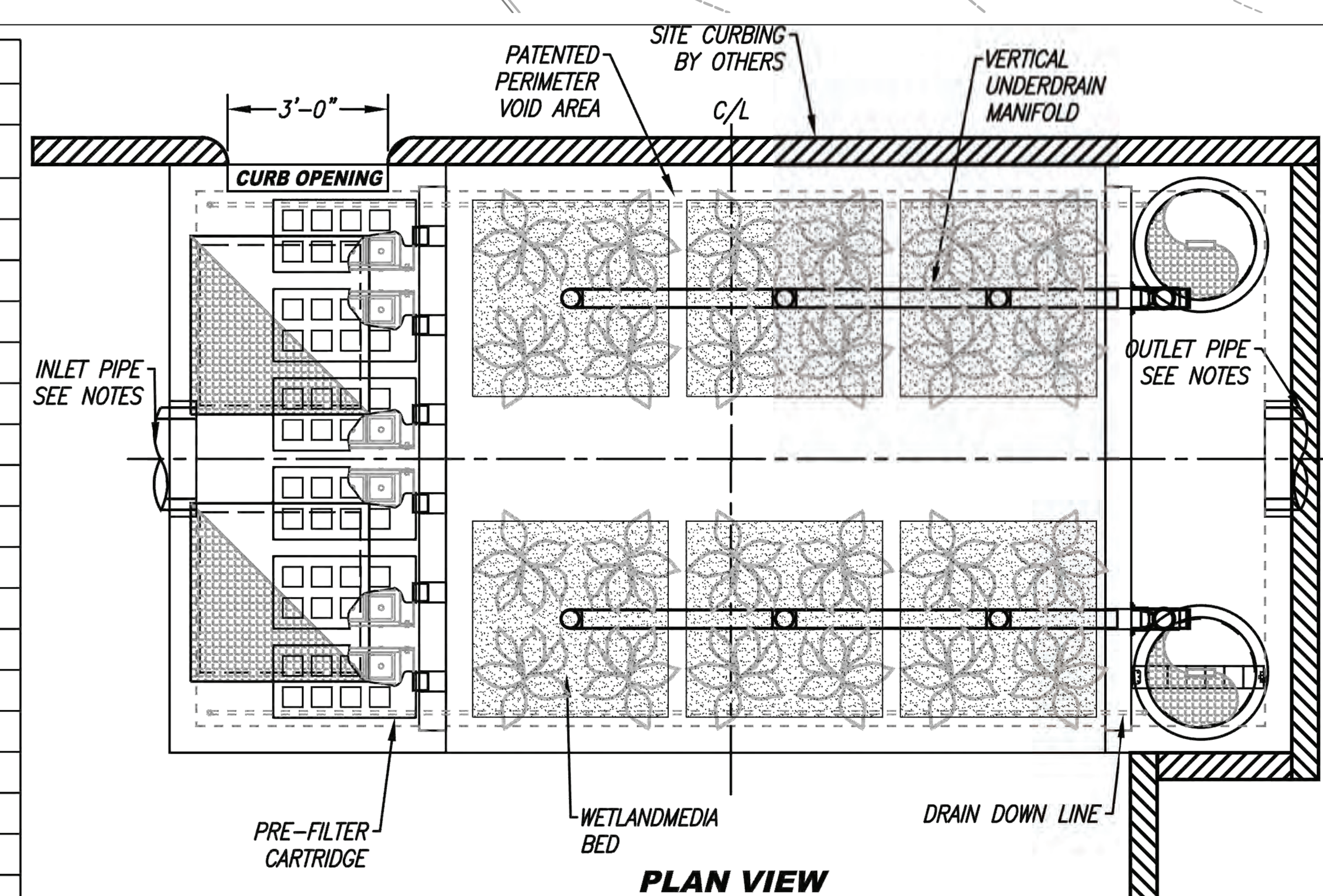
PROJECT HYDROGRAPH

GRAPHICAL SCALE: 1" = 40'
0 20 40 80 120

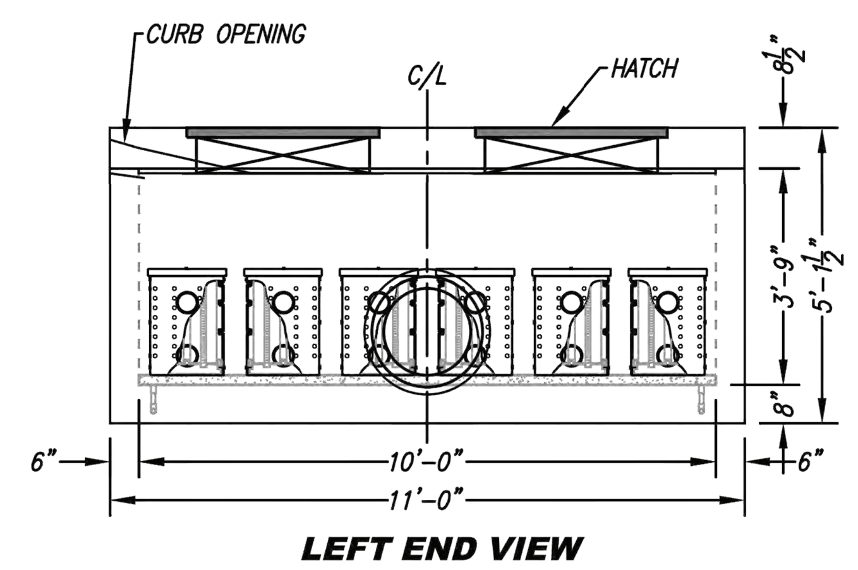
SITE SPECIFIC DATA

PROJECT NUMBER			
PROJECT NAME			
PROJECT LOCATION			
STRUCTURE ID			
TREATMENT REQUIRED			
VOLUME BASED (CF)		FLOW BASED (CFS)	
N/A		0.710	
TREATMENT HGL AVAILABLE (FT)			N/K
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			FLOW BY
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2			
OUTLET PIPE			
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION			
SURFACE LOAD	PEDESIRIAN	OPEN PLANIER	PEDESTRIAN
FRAME & COVER	2 EA 36" X 36"	N/A	2 EA ø24"
WETLANDMEDIA VOLUME (CY)			
ORIFICE SIZE (DIA. INCHES)			2 EA ø2.67"

NOTES: PRELIMINARY. NOT FOR CONSTRUCTION.



PLAN VIEW



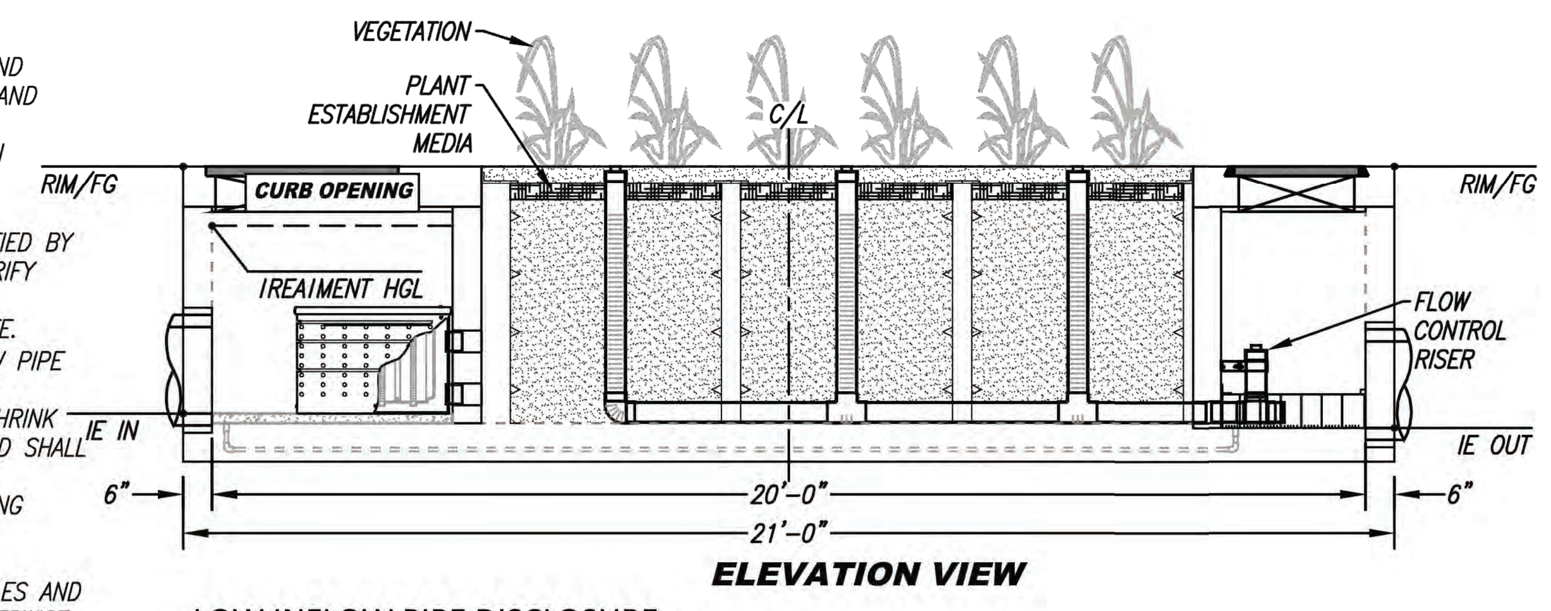
LEFT END VIEW

INSTALLATION NOTES

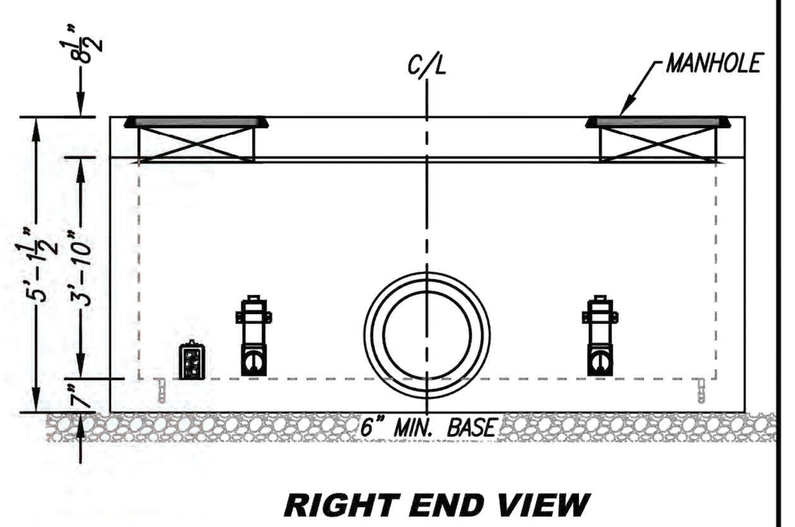
1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURERS SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURERS CONTRACT.
2. UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE TO VERIFY PROJECT ENGINEERS RECOMMENDED BASE SPECIFICATIONS.
3. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE. (PIPES CANNOT INTRUDE BEYOND FLUSH). INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR. ALL GAPS AROUND PIPES SHALL BE SEALED WATER TIGHT WITH A NON-SHRINK GROUT PER MANUFACTURERS STANDARD CONNECTION DETAIL AND SHALL MEET OR EXCEED REGIONAL PIPE CONNECTION STANDARDS.
4. CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES.
5. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL RISERS, MANHOLES, AND HATCHES. CONTRACTOR TO GROUT ALL MANHOLES AND HATCHES TO MATCH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.
6. DRIP OR SPRAY IRRIGATION REQUIRED ON ALL UNITS WITH VEGETATION.
7. CONTRACTOR RESPONSIBLE FOR CONTACTING MODULAR WETLANDS FOR ACTIVATION OF UNIT. MANUFACTURES WARRANTY IS VOID WITH OUT PROPER ACTIVATION BY A MODULAR WETLANDS REPRESENTATIVE.

GENERAL NOTES

1. MANUFACTURER TO PROVIDE ALL MATERIALS UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS, ELEVATIONS, SPECIFICATIONS AND CAPACITIES ARE SUBJECT TO CHANGE. FOR PROJECT SPECIFIC DRAWINGS DETAILING EXACT DIMENSIONS, WEIGHTS AND ACCESSORIES PLEASE CONTACT MANUFACTURER.



ELEVATION VIEW



RIGHT END VIEW

LOW INFLOW PIPE DISCLOSURE:

IT IS RECOMMENDED THAT A SUFFICIENT VARIATION IN ELEVATION BETWEEN THE INLET AND OUTLET BE PROVIDED TO ALLOW FOR ACCUMULATION OF SEDIMENT IN THE PRE-TREATMENT CHAMBER. FAILURE TO DO SO MAY RESULT IN BLOCKAGE AT INFLOW POINT(S) WHICH MAY CAUSE UPSTREAM FLOODING.

TREATMENT FLOW (CFS)	0.710
OPERATING HEAD (FT)	3.5
PRETREATMENT LOADING RATE (GPM/SF)	2.1
WETLAND MEDIA LOADING RATE (GPM/SF)	1.0

MODULAR WETLANDS
THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING US PATENTS: 7,425,262; 7,470,362; 7,674,378; 8,303,816; RELATED FOREIGN PATENTS OR OTHER PATENTS PENDING

Bio Clean
A Forterra Company

MWS-L-10-20-4'-5.5"-C-HC
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

MODULAR WETLAND DETAIL

NOT TO SCALE

PERRY STREET
CARSON STREET SS
CARSON, CA

REGISTERED PROFESSIONAL ENGINEER SEAN M. SAVAGE No.75677 CIVIL STATE OF CALIFORNIA

FOR PLAN CHECK ONLY

SEAN M. SAVAGE R.C.E. 75677 DATE

JOB NUMBER: 20-817

DATE: 10/05/2021

JORDAN ARCHITECTS
131 CALLE IGLESIA, SUITE 100
SAN CLEMENTE, CA 92672
949.388.8090

FILENAME: P:\DWG OMEGA\0633 FARING SS CARSON\ACAD\DISCRETIONARY\0633-CSP-03-DMA.DWG

DATE: 5/14/2021 11:41:32 AM

SEE DETAIL CROSS SECTION TYPE 3, SH. 17

SEE DETAIL CROSS SECTION-TYPE 4, SH. 18

SEE DETAIL CROSS SECTION-TYPE 5, SH. 18

Clay lining on side slopes

Clay lining not required

Clay lining on lower side slopes

Proposed relocation 33" steel water pipe Dominguez Water Co.

Gaging Station

Sta. 349+30

Sta. 350+19.55 ℄ Carson St.

Carson St. bridge

Sta. 351+29

Sta. 352+00

Sta. 352+30

Sta. 352+50

Sta. 351+61

Sta. 358+45

Sta. 359+15

El. 17.86

Top of access road surfacing.

Top of Levee

Water Surface

S=.00016836

Q=16,590 c.f.s.

Q=16,340 c.f.s.

S=.00022440

S=.00022637

El. 18.06

El. 11.41

El. 11.60

Grade Line

24" C.M.P.

Conc. pile Bent No. 3

Existing ground line along ℄ of Construction

12" pipe line Cheviot Hills Pipeline Co.

2-(8"&10") pipe lines Richfield Oil Corp.

18" R.C.P. - Vertical drain

N.E. Levee

60" R.C.P. Levee drain N.E. Levee, see Sh. 28

℄ Subdrainage Outlet South Levees, see Sh. 19 & 21

Reconst. 42" RCP Outlet (N.E. Levee) Plan 8, Sh. 23

60" R.C.P. Levee drain S.W. Levee, see Sh. 28

33" Steel Water pipe Dominguez Water Co.

Bond Issue Project No. 540

℄ Subdrainage Outlet S.W. Levee, see Sh. 19 & 21

℄ Subdrainage Outlet N.E. Levee, see Sh. 19 & 21

12" pipe line Cheviot Hills Pipeline Co.

4-(8",10",12"&12") pipe lines Shell Oil Co.

2-(8"&10") pipe lines Richfield Oil Corp.

12" pipe line Cheviot Hills Pipeline Co.

2-(8"&10") pipe lines Richfield Oil Corp.

Equation

348+62.10 Back

348+63.91 Ahead

SEE SH. 6

SEE SH. 8

STA. 348+00

STA. 359+00

MATCH LINE

20

0

-20

29.48'

29.47'

PROFILE

SCALES: HOR. 1"=40'

VERT. 1"= 8'

PROPOSALS 1 AND 2

348+00 349+00 350+00 351+00 352+00 353+00 354+00 355+00 356+00 357+00 358+00 359+00

Storm Drain B1 Project No. 540 Unit 1 - Line B, to be constructed under this contract for details, see Dwgs. 275-340-D1 to 3

Const. Type 1 R/W fence (2-D178)

6" Dominguez Water Co.

2-8" Amine lines Mobil Oil Co.

R/W

Sta. 349+50 60" R.C.P. Levee drain. See Sh. 28.

Sta. 350+19

33" Steel water pipe Dominguez Water Co.

Conc. block

36" R.C.P.

Corson St. bridge

Install 12' double drive gate

Const. Type 1 R/W fence (2-D178)

Sta. 350+19.55 ℄ Carson St.

Sta. 350+50

Sta. 351+00

Sta. 351+50

Sta. 352+00

Sta. 352+50

Sta. 352+67 - 358+19

Retaining wall weep holes modified to conform to C.O. #2

Freeway retaining wall to remain in place

NO. 4054

Freeway ramp

Freeway R/W

F.C. R/W

Access road

Fence along toe of freeway fill.

Relocate State R/W fence.

Sta. 358+19.76

Sta. 358+45

Sta. 359+15

Existing State R/W fence. (6'+/-)

Exist. State R/W fence (6'+/-)

3-30" Mg. Anodes 10' deep - Shell Oil Co.

Sta. 352+67.71

Sta. 352+38

Sta. 352+50

Sta. 351+00

Sta. 350+50

Sta. 349+50

Sta. 349+43

Sta. 348+61.18 Reconst. 42" R.C.P. Outlet, Plan 8, Sh. 23

Sta. 348+68

Sta. 348+90

Sta. 349+95

Sta. 350+20

Sta. 350+95

Sta. 351+25

Sta. 351+37

Sta. 352+62.5

Sta. 353+58

Sta. 355+10

Sta. 351+25 60" R.C.P. Levee drain See Sh. 28

Sta. 352+50 ℄ Subdrain manhole. See Sheets 19 & 21

Sta. 358+45 ℄ Subdrain manhole See Sh. 19 & 21.

Stone revetment

Toe of slope

Const. retaining wall. For details, see Sh. 45.

Valve box Richfield Oil Corp.

Delete 425'± R/W fence C.O. #16

Const. Type 1 R/W fence (2-D178)

Remove portions of 7' board fence within R/W

Proposed relocation, ℄ 33" steel water pipe Dominguez Water Co. (By others)

Gaging Station See note to right

24" C.M.P.-F.C.

Conc. pier

Bents

Wood piling

Abut.

No. 1

No. 2

No. 3

No. 4

No. 5

BORING NO. 213 B

BORING NO. 214

BORING NO. 214 A

BORING NO. 215

Wooden Bulkhead

Install 12' double drive gate

Dominguez Water Co.

CARSON ST.

EDGAR ST.

TRACT

Plan Hold Corp.

4'x6' Redwood vault - Dominguez Water Co. To be raised by others.

42" R.C.P. drain

6" Transite pipe Dominguez Water Corp.

3-30" Mg. Anodes 10' deep - Shell Oil Co.

60" R.C.P. Levee drain See Sh. 28

Const. Type 1 R/W fence (2-D178)

Note: For details of access roads @ Carson St., see Sh. 33.

PLAN

SCALE: 1"=40'

25 0 50 100

Note: Utilize existing 60" RCP storm drain located at Sta. 351+25.00 to discharge into Dominguez Channel.

18" R.C.P. drain (2D 602)

2-(8"&10") pipe lines Richfield Oil Corp.

12" pipe line Cheviot Hills Pipeline Co.

12" pipe line Cheviot Hills Pipeline Co.

2-(6"&10") pipe lines Richfield Oil Corp.

Const. Type 1 R/W fence (2-D178)

Varies

Varies

Varies

℄ Const.

Exist. ground line

20 Stone revetment

Grade line

Filter blanket 19

Clay lining (where req'd) not shown. See Sh. 17 & 18.

2:1

2'

15'

44'

98'

Note: Base width varies thru Carson St. bridge. See Plan.

TYPICAL SECTION

STA. 348+00 TO STA. 359+00

SCALE: 1" = 40'

Note: Gaging Station will be removed by District forces, during construction in this area.

"AS BUILT" DRAWING

LAGUNA DOMINGUEZ FLOOD CONTROL SYSTEM

REVISIONS		
MARK	DATE	DESCRIPTION
△	7-26-63	Relocated pipe lines-Richfield Oil Corp & Cheviot Hills Pipeline.
▲	7-26-63	Relocated subdrainage M.H.
2	12-21-66	Permit 64793-Dwg. 23-F897
■	8-28-67	"As Built" correction

DRAWN BY K.O. & N.B. DESIGNED BY

TRACED BY SUBMITTED BY D.N.M.

CHECKED BY G.J.M.

RECOMMENDED BY K.B. Keefer DIVISION ENGINEER (ACTING)

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT

DOMINGUEZ CHANNEL

WILMINGTON AVE. TO AVALON BLVD.

CHANNEL EXCAVATION, CLAY LINING AND STONE REVETMENT

PLAN AND PROFILE

STA. 348+00 TO STA. 359+00

APPROVED BY H.A. Faulkner CHIEF ENGINEER

SCALE	DATE	NO. 28-D169.7
AS SHOWN	MAY 1963	SHEET 7 OF 50

"PD004788"

K-E 278HH IMPERIAL TRACING CLOTH—K. & E. CO., N. Y.—REG. U. S. PAT. OFF.

DUEx
DRY UTILITY EXPERTS

DUE DILIGENCE REPORT

Perry St Storage
21611 Perry St
Carson, CA 90745
21611 Perry Street LLC

21611 Perry St
Carson, CA 90745
Attn: Darren Embry

DUEx
17291 Irvine Blvd, Suite 206
Tustin, CA 92780
Tel: (626) 319-3590
www.duexperts.com

E006-2101
Gabriel Camacho
2/21/2022

TABLE OF CONTENTS

- **PROJECT CONTACTS**
- **VICINITY MAP**
- **PROJECT SUMMARY**
- **EXISITING UTILITY EXHIBIT**
- **PROPOSED UTILITY EXHIBIT**
- **UTILITY RECORDS**

PROJECT CONTACTS

- **21611 Perry Street LLC**

  Darren Embry
  (323) 481.9178
  E: Darren@faring.com

- **DUEx**

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  Tustin, CA 92780
  Gabriel Camacho
  P: (626) 319-3590 | E: Gabriel@duexperts.com

- **SOUTHERN CALIFORNIA EDISON**

  P.O. Box 4699, Compton, CA 90224
  1924 Cashdan Street, Compton, CA 90224
  Tel: (310) 608-5023
  Planner to be determined when electrical loads are submitted.

- **SOUTHERN CALIFORNIA GAS**

  Planner to be determined when gas loads are submitted.

- **AT&T**

  Planner to be determined when service is requested.

- **CHARTER**

  Planner to be determined when service is requested.

VICINITY MAP

PROJECT SUMMARY

SITE SUMMARY

21611 Perry Street LLC is performing due diligence for their project in the city of Carson. DUEx has been retained to provide dry utility feasibility and a summary of findings. This report will summarize closest source and costs.

ELECTRIC: SOUTHERN CALIFORNIA EDISON

SCE will be the electric service provider for this project. Records are attached.

Title 24 of the California Code of Regulations regulates energy consumption in new construction. The standards regulate energy consumed in buildings for heating, cooling, ventilation, and lighting. Title 24 is implemented through the local plan check and permit process. The current (2016) standards effective date is January 1, 2017, and it applies for new construction of both residential and non-residential buildings.

Existing:

There is no apparent existing electrical structure or equipment on site but will be verified during the removal process.

Proposed:

- **Temporary Power:** There is overhead power available from the pole at the south-east corner of the property which can be a potential source, given that the temporary power is no more than 200A-600A Single Phase.

- **Permanent Power:** SCE will need to run primary cabling from the existing Edison manhole on Perry St. to the proposed onsite 10'x12' transformer pad approximately 175' away. Based off historical data provided by SCE, to service buildings of this size & expected usage in this climate zone, we anticipate a single transformer to feed the entire site. We've provided all estimated kVA's per building on the proposed utility exhibit.

GAS: SOUTHERN CALIFORNIA GAS COMPANY

SoCalGas will be the natural gas provider for this area. Records are attached.

As a public utility, the Southern California Gas Company (the Gas Co.) is under jurisdiction of the California Public Utilities Commission. As mentioned in section 3.2.3, Title 24 of the California Code of Regulations regulates energy consumption in new constructions. The standards regulate energy consumed in buildings for heating, cooling, ventilation, and lighting. Title 24 is implemented through the local plan check and permit process. The Gas Co.'s 2018 Gas Report that commercial and industrial demand is expected to increase at an annual rate of 0.2 percent. This is mainly due to increased efficiency of power plants and the statewide efforts to use renewable sources of energy for electricity generation.

Existing:

There is no apparent existing gas equipment on site but will be verified during the removal process.

Proposed:

The nearest gas mainline is located on Perry St. east of the property. SoCal Gas will need to obtain permits to conduct work in the public right of way.

Please note: Gas meters must be 3' from any open doors and windows, if under an opening window, window must be minimum 10' above. Gas meters must be easily accessible for emergencies & for maintenance.

TELEPHONE: AT&T

AT&T is the telephone and fiber provider for the project. Will Serve Letter attached.

As a private utility, telecommunications service providers operate jurisdiction of the California Public Utilities Commission. As mentioned in section 3.2.3, Title 24 of the California Code of Regulations regulates energy consumption in new constructions. The standards regulate energy consumed in buildings for heating, cooling, ventilation, and lighting. Title 24 is implemented through the local plan check and permit process.

Existing:

There is no apparent existing telephone structure or equipment on site but will be verified during the removal process.

Proposed:

The nearest existing telephone provider tie in point is located overhead on Carson St. AT&T will run their services to our proposed pull box located near Perry St.

The AT&T point of connection is pending confirmation. Development is responsible to route within the property to designed MPOE location.

- Typical AT&T marketing agreement will need to be executed for AT&T to bring fiber to the site.

CATV: CHARTER

Charter is the cable tv and fiber provider for the project. Records are attached.

As a private utility, telecommunications service providers operate jurisdiction of the California Public Utilities Commission. As mentioned in section 3.2.3, Title 24 of the California Code of Regulations regulates energy consumption in new constructions. The standards regulate energy consumed in buildings for heating, cooling, ventilation, and lighting. Title 24 is implemented through the local plan check and permit process.

Existing:

There is no apparent existing cable TV structure or equipment on site but will be verified during the removal process.

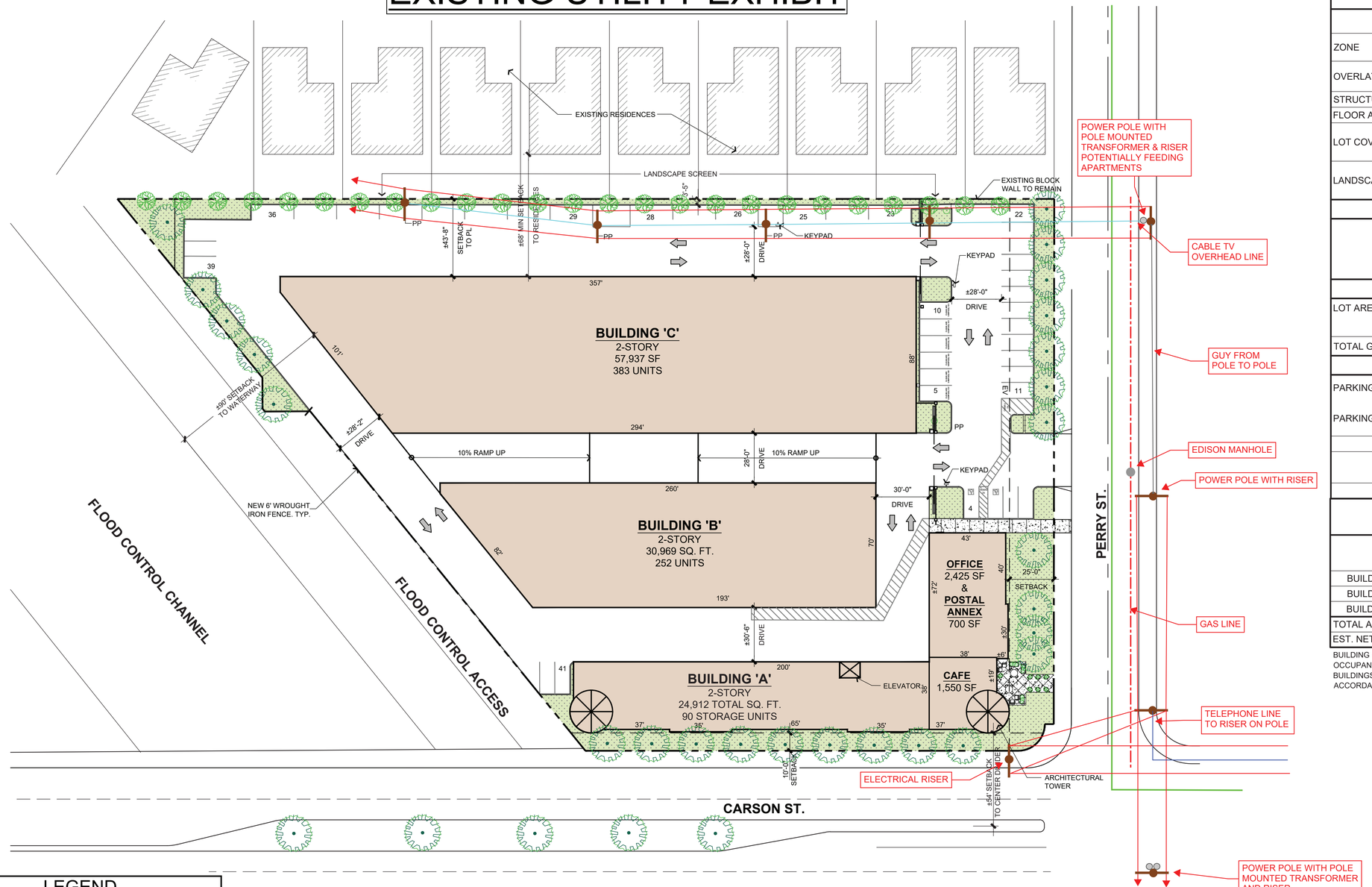
Proposed:

The nearest existing cable provider tie in point is located overhead on the north side of the property near Perry St. Charter will run their services to our proposed pull box located near Perry St.

The Charter point of connection is pending confirmation. Development is responsible to route within the property to designed MPOE location.

- Typical Charter marketing agreement will need to be executed for Charter to bring fiber to the site.

EXISTING UTILITY EXHIBIT



BASIS OF DESIGN

	REQUIRED / EXISTING	PROVIDED / PROPOSED
ZONE	ML - MANUFACTURING, LIGHT	TBD
OVERLAY	D OVERLAY	
STRUCTURE HEIGHT	N/A	TBD
FLOOR AREA RATIO	.5 (GP)	.99 (118,928)
LOT COVERAGE	-	46.6% (56,906 S.F.)
LANDSCAPE	-	±23,000 S.F. (18.8%) LANDSCAPE AREA

SETBACKS

FRONT	25'	25 FT. MIN.
STREET SIDE	10 FT.	10 FT. MIN
REAR (RESIDENTIAL)	10 FT.	40 FT. MIN
INTERIOR SIDE	10 FT.	28' FT. MIN.

SITE DATA

LOT AREA	121,968	SQ. FT.
	2.8	ACRES
TOTAL GROSS BLDG. AREA	113,805	SQ. FT.

PARKING

PARKING SPACES	1 SPACE PER 20 UNITS 725/20 = ±36 STALLS	41 SPACES
PARKING SIZE	STANDARD: 8.5' X 18' PARALLEL: 8' X 24'	STANDARD: 8.5' X 18' PARALLEL: 8' X 24'

PARKING PROVIDED		
STANDARDS	39	
ACCESSIBLE	2	
TOTAL	41	

BUILDING AREA TABULATIONS (Square Feet)

	SELF STORAGE	OFFICE/POSTAL ANNEX/CAFE	TOTAL
BUILDING A 2-STORY	20,133	4,675	24,808
BUILDING B 2-STORY	30,969		30,969
BUILDING C 2-STORY	57,937		57,937
TOTAL AREA:	109,039	4,675	113,714
EST. NET STORAGE AREA = 81,840 S.F.			

BUILDING CONSTRUCTION TYPE: IIB
OCCUPANCY CLASSIFICATION: S-1. TOP STORAGE IN NOT GRATER THAN 8' BUILDINGS ARE EQUIPPED WITH AUTOMATIC FIRE SPRINKLER SYSTEM IN ACCORDANCE WITH NFPA 13.

LEGEND

- ELECTRIC
- CATV
- TEL
- GAS

NORTH

SCHEME I

PERRY STREET STORAGE

CARSON, CA

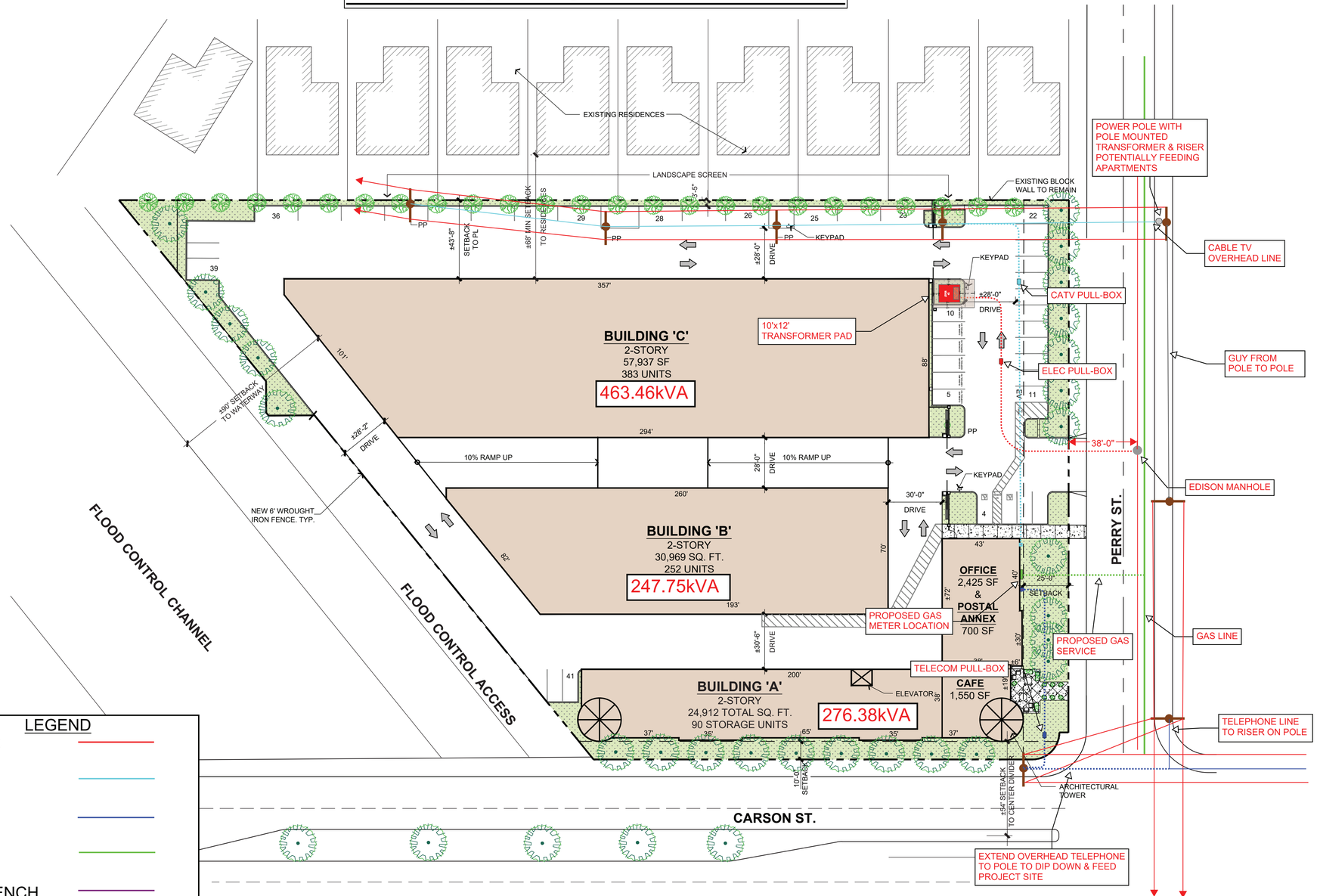
PRELIM. SITE PLAN

JOB NUMBER: 20-817
SCALE: 1"=30'-0"
DATE: 12/16/2021

JORDAN ARCHITECTS
131 CALLE IGLESIA, SUITE 100
SAN CLEMENTE, CA 92672
949.388.8090

SHEET A1

PROPOSED UTILITY EXHIBIT



LEGEND

- ELECTRIC
- CATV
- TEL
- GAS
- JOINT TRENCH
- PROPOSED ELEC
- PROPOSED CATV
- PROPOSED TEL
- PROPOSED GAS

BASIS OF DESIGN

	REQUIRED / EXISTING	PROVIDED / PROPOSED
ZONE	ML - MANUFACTURING, LIGHT	TBD
OVERLAY	D OVERLAY	
STRUCTURE HEIGHT	N/A	TBD
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LOT COVERAGE	-	46.6% (56,906 S.F.)
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NORTH

PERRY STREET STORAGE

CARSON, CA

SCHEME I

PRELIM. SITE PLAN

JOB NUMBER: 20-817
SCALE: 1"=30'-0"
DATE: 12/16/2021

JORDAN
ARCHITECTS
131 CALLE IGLESIA, SUITE 100
SAN CLEMENTE, CA 92672
949.388.8090

SHEET A1

Upper Left: 118°15'33"W 33°50'4"N

Page to the North: LT-8344-D

Upper Right: 118°15'13"W 33°50'4"N

Page to the West: LT-8344-E

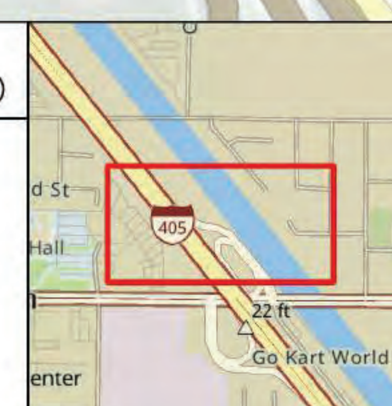
Page to the East: LT-8444-E

Facility Map

UNDERGROUND SERVICE ALERT DIAL 811
CALL USA FOR UNDERGROUND LOCATING

Grid Name: LT-8344-F (US National Grid)

SUBSTATION_BOUNDARY	OH Conductor 0 - 750 volts	UG Conductor 750-22,500 volts
DIST BURD	OH Conductor 750 - 22,500 volts	UG Conductor 22.5 - 300 kV
DIST HANDHOLE	OH Conductor 22.5 - 300 kV	UG Conductor 66 - 300 kV
DIST PAD	OH Conductor 66 - 300 kV	UG Conductor 300 - 500 kV (mm)
DIST POLE	OH Conductor 300 - 500 kV (mm)	DUCT DIA in inches
DIST STREET LIGHTS	UG Conductor 0-750 volts	Parcels



Date: 1/28/2022
Geomatics | Central Field Services

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National Geographic Style Base: Sources: Esri, USGS
World Hillshade: Esri, NASA, NGA, USGS, FEMA

0 35 70 140 Feet
1 inch equals 107 feet

SOUTHERN CALIFORNIA EDISON
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Page to the South: LT-8344-H

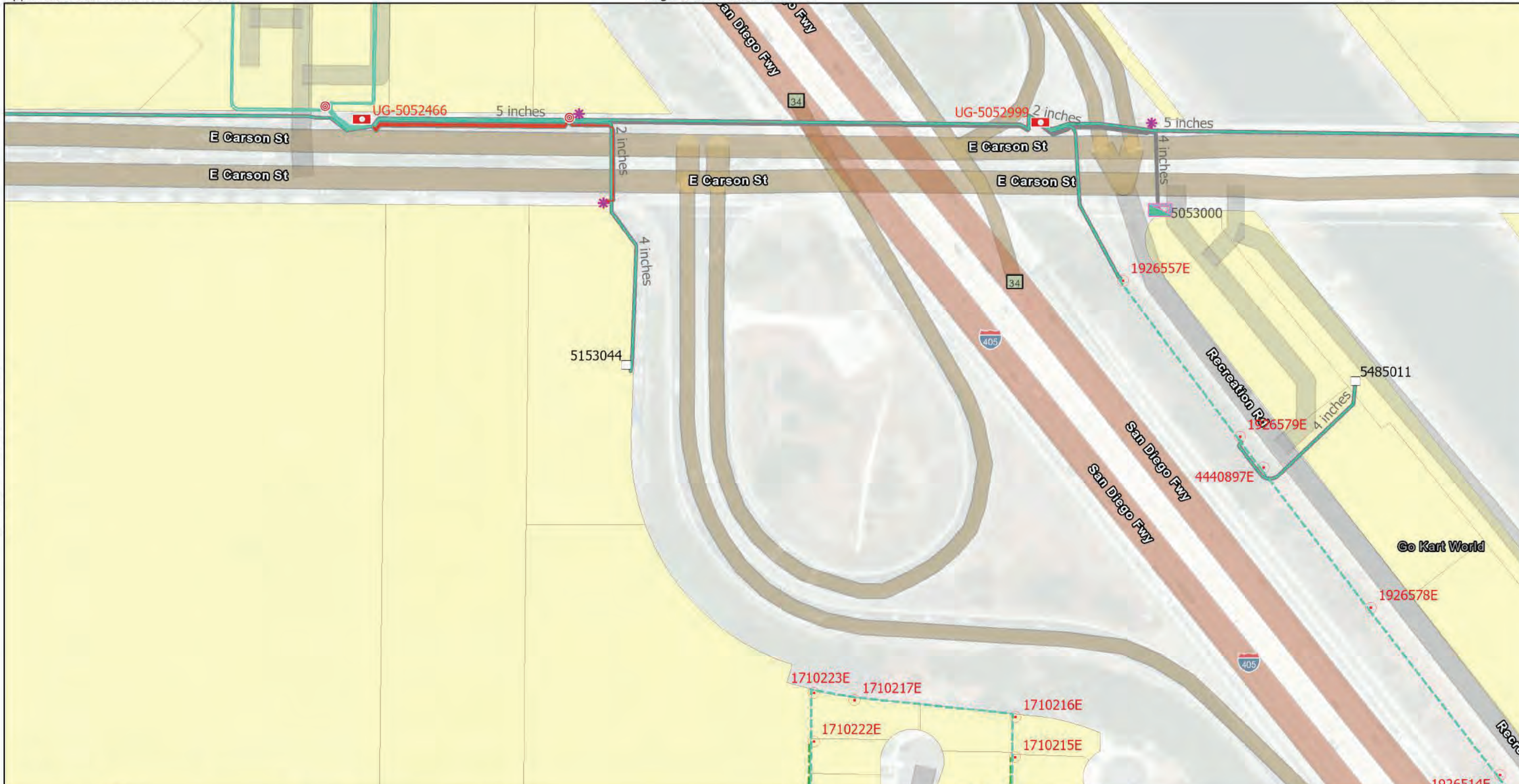
Upper Left: 118°15'33"W 33°49'56"N

Page to the North: LT-8344-F

Upper Right: 118°15'13"W 33°49'56"N

Page to the West: LT-8344-G

Page to the East: LT-8344-G



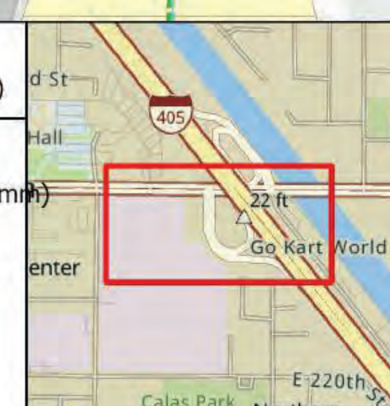
Facility Map

UNDERGROUND SERVICE ALERT DIAL 811
CALL USA FOR UNDERGROUND LOCATING

Grid Name: LT-8344-H (US National Grid)

SUBSTATION_BOUNDARY	DIST SPLICEBOX	OH Conductor 66 - 300 kV	UG Conductor 66 - 300 kV
DIST PAD	DIST VAULT	OH Conductor 300 - 500 kV (mm)	UG Conductor 300 - 500 kV (mm)
DIST PEDESTAL	OH Conductor 0 - 750 volts	UG Conductor 0-750 volts	DUCT DIA in inches
DIST POLE	OH Conductor 750 - 22,500 volts	UG Conductor 750-22,500 volts	Parcels
DIST PULLBOX	OH Conductor 22.5 - 300 kV	UG Conductor 22.5 - 300 kV	

NO CHARGE



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National Geographic Style Base: Sources: Esri, USGS
World Hillshade: Esri, NASA, NGA, USGS, FEMA

0 35 70 140 Feet
1 inch equals 107 feet

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Page to the South: LT-8343-B

Billing department; SCE only charges for maps that include SCE infrastructure.

Upper Left: 118°15'13"W 33°50'4"N
Page to the North: LT-8444-C
Upper Right: 118°14'53"W 33°50'4"N
Page to the West: LT-8344-F
Page to the East: LT-8444-F
Page to the South: LT-8444-G

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4075099E
4075095E
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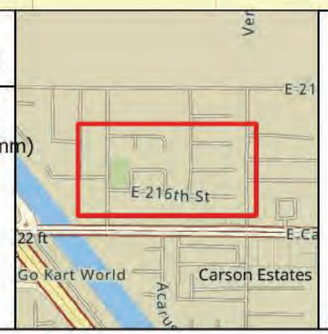
1489174E
1489173E
1489171E
1489170E
1493622E
1489172E
1493621E
E 216th St
1731806E
1731807E
1489169E
1489168E
1489166E
1489165E
1493620E
1489167E
E 215th Pl
1731813E
1731812E
1493619E
1489164E
1489163E
1489161E
1489160E
1493618E
1489162E
Weiser Ave
1493617E
1493616E
1978635E
753090H
1185881E
4440869E
4441106E
1058490E
1908273E
Vara St

Facility Map

UNDERGROUND SERVICE ALERT DIAL 811
CALL USA FOR UNDERGROUND LOCATING

Grid Name: LT-8444-E (US National Grid)

- SUBSTATION_BOUNDARY
- DIST HANDHOLE
- DIST MANHOLE
- DIST PAD
- DIST PEDESTAL
- DIST POLE
- DIST PULLBOX
- DIST SPLICEBOX
- DIST STREET LIGHTS
- TRNS POLE
- OH Conductor 0 - 750 volts
- OH Conductor 750 - 22,500 volts
- OH Conductor 22.5 - 300 kV
- OH Conductor 66 - 300 kV
- OH Conductor 300 - 500 kV (mm)
- UG Conductor 0-750 volts
- UG Conductor 750-22,500 volts
- UG Conductor 22.5 - 300 kV
- UG Conductor 66 - 300 kV
- UG Conductor 300 - 500 kV (mm)
- DUCT DIA in inches
- Parcels



Date: 1/28/2022
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0 35 70 140 Feet
1 inch equals 107 feet

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Upper Left: 118°15'13"W 33°49'56"N

Page to the North: LT-8444-E

Upper Right: 118°14'53"W 33°49'56"N

Page to the West: LT-8444-H

Page to the East: LT-8444-H

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1619181E
1619180E
1619183E
4025118E
1619185E
5539161
4467430E
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4442531E
5166991
1860183E
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1860181E
1860180E
5610707
415572E
415571E
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415570E
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4753708E
415568E
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415567E
1621661E
768431H
1638227E
638246E
2304013E
1638226E
1651780E
5603501
1638222E
4444494E
1638225E
1638229E
1651781E
1638220E
2036122E
1651782E
1651783E
1638224E
1638228E
1638219E
1651785E
1651784E
1638223E
1920514E
4219737E
5706903
5706901
5706900
UG-5046591
UG-5046590
UG-5046592
4 inches
5 inches
3 inches
E Carson St
Park Villa Mobile Homes Est
Vera Carson Mobile Home Est
Acarus Ave
Vera St
Dominguez Channel
Recreation P

Facility Map

UNDERGROUND SERVICE ALERT DIAL 811
CALL USA FOR UNDERGROUND LOCATING

Grid Name: LT-8444-G (US National Grid)

- SUBSTATION_BOUNDARY
- DIST BURD
- DIST HANDHOLE
- DIST MANHOLE
- DIST PAD
- DIST PEDESTAL
- DIST POLE
- DIST PULLBOX
- DIST STREET LIGHTS
- TRNS POLE
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- UG Conductor 66 - 300 kV
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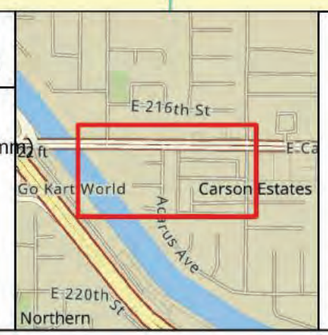
- DUCT DIA in inches
- Parcels



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National Geographic Style Base Sources: Esri, USGS World Hillshade, Esri, NASA, NGA, USGS, FEMA

0 35 70 140 Feet

1 inch equals 107 feet

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Page to the South: LT-8443-A

701 N. Bullis Rd.
Compton, CA 90224-9099

February 7, 2022

Duex
17291 Irvine Blvd, Suite 206
Tustin, CA 92780
Attn: Nick Molina

Subject: Maps & Will Serve - 21611 S. Perry St, Carson, CA 90745

Thank you for inquiring about the availability of natural gas service for your project. We are pleased to inform you that Southern California Gas Company (SoCalGas) has facilities in the area where the above named project is being proposed. The service would be in accordance with SoCalGas' policies and extension rules on file with the California Public Utilities Commission (CPUC) at the time contractual arrangements are made.

This letter should not be considered a contractual commitment to serve the proposed project, and is only provided for informational purposes only. The availability of natural gas service is based upon natural gas supply conditions and is subject to changes in law or regulation. As a public utility, SoCalGas is under the jurisdiction of the Commission and certain federal regulatory agencies, and gas service will be provided in accordance with the rules and regulations in effect at the time service is provided. Natural gas service is also subject to environmental regulations, which could affect the construction of a main or service line extension (for example, if hazardous wastes were encountered in the process of installing the line). Applicable regulations will be determined once a contract with SoCalGas is executed.

If you need assistance choosing the appropriate gas equipment for your project, or would like to discuss the most effective applications of energy efficiency techniques, please contact our area Service Center at 800-427-2200.

Thank you again for choosing clean, reliable, and safe natural gas, your best energy value.

Sincerely,

Jason Sum

Jason Sum
Pipeline Planning Assistant
SoCalGas-Compton HQ

C-410-E

C-638-E

C-411-E

C-407-E

Map Number: C-406-E

Map Type: Gas Asset Map

Printed By: Sum, Jason

Printed Date: 2/7/2022

LIABILITY STATEMENT
The facilities and their depiction on these maps are believed to be reasonably accurate, but the maps are not to be used in lieu of field verification or calling USA at 800-422-4133. NO WARRANTY expressed or implied (including of merchantability or of fitness for particular purpose) is made as to any matter, including but not limited to, the design, size, type or location of the facilities, their presence of absence, the accuracy of the maps, the means used to transmit the data, absence of viruses (if transmitted electronically by disk or diskette), data translation or transmission errors or omissions, compatibility with the user's system or its ability to interpret the data correctly or at all, or any other matter. The Gas Company has no liability for damages (direct, indirect, consequential, incidental or punitive) arising from the transmission, receipt or use by others of the maps or information contained in the maps.

SoCalGas
Sempra Energy utility

50m
100 ft

Will Serve Letter

2/22/2022

Nick Molina
DUEx (Dry Utility Experts)
17291 Irvine Blvd, Suite 206
Tustin, CA 92780

Project Name: WSL - 21611 S Perry St, Carson, CA 90745
LOCATION: 21611 S Perry St, Carson, CA 90745

Re: May Serve Letter by Charter Communications or an affiliate authorized to provide service ("Charter")

Thank you for your interest in receiving Charter service. The purpose of this letter is to confirm that the Property is within an area that Charter may lawfully serve. However, it is not a commitment to provide service to the Property. Prior to any determination as to whether service can or will be provided to the Property, Charter will conduct a survey of the Property and will need the following information from you:

- Exact site address and legal description
- Is this an existing building or new construction?
- Site plans, blue prints, plat maps or any similar data
- The location of any existing utilities or utility easements
- _____

Please forward this information to the construction manager listed below. Upon receipt, a Charter representative will be assigned to you to work through the process. Ultimately, a mutually acceptable service agreement for the Property will be required and your cooperation in the process is appreciated.

Construction Manager Contact:
Diaz, Ana
Director, Enterprise Service Delivery
17777 Center Court Drive North, 8th Floor
Cerritos CA 90703
562-677-0325
DL-Enterprise-MET-West@charter.com

Sincerely,

DocuSigned by:
Ana Diaz
311326782FB0483...

Green-existing charter underground facilities within project limits.

21611 S Perry St,
MAP
Carson, CA 90745

Red-existing charter aerial facilities within project limits.

AT&T California
17200 S Vermont Ave,
Floor 2nd
Gardena, CA 90247 USA

01/31/2022

Attn: Nick Molina

RE: 21611 S Perry St, Carson, CA 90745

Dear Applicant:

Under its present plans, AT&T California expects to be in a position to provide telephone service to applicants in the above project upon request, in accordance with requirements of, and at rates and charges specified in its tariffs on file with the California Public Utilities Commission.

This project will be served with AT&T facilities. In accordance with the above-mentioned tariffs, the applicant or customer, on his property will be responsible for furnishing, installing, and maintaining the conduit AT&T requires for the service connection.

Please do not hesitate to contact me if you have any further questions.

Respectfully,

Kosal Sieng
17200 S Vermont Ave,
Floor 2nd
Gardena, CA 90247 USA
Cell Phone: (310) 200-7228

Appendix J
Low Impact Development Plan

ESA

Low Impact Development Plan
(LID Plan)

Project Name:

Carson Self-Storage

21611 South Perry St.

Carson, CA 90745

Prepared for:

21611 PERRY STREET LLC

4132 Katella Avenue, #205b

Los Alamitos, Ca 90720

Prepared by:

Omega Engineering Consultants

4340 Viewridge Avenue, Suite B

San Diego, Ca 92123

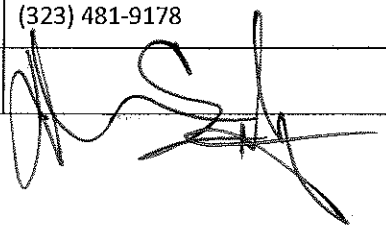
(858) 634-8620

PE Stamp & Sign Here

October 5, 2021

Project Owner's Certification

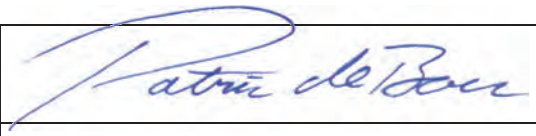
I certify under penalty of law that this document and all attachments were prepared under my jurisdiction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathered the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Applicant's Name:	Darren Embry		
Applicant's Title:	VP of Community Development		
Company:	21611 Perry Street, LLC		
Address:	4132 Katella Avenue, #205B Los Alamitos, CA 90720		
Email:	darren@faring.com		
Telephone No:	(323) 481-9178		
Signature:		Date:	10/12/21

Preparer (Engineer) Certification

Engineer's Name:	Patric de Boer
Engineer's Title:	Project Engineer
Company:	Omega Engineering Consultants
Address:	4340 Viewridge Avenue, Suite B, San Diego, CA 90069
Email:	patric@omega-consultants.com
Telephone No:	(858) 634-8620

I hereby certify that this Low Impact Development Plan is in compliance with, and meets the requirements set forth in, Order No. R4-2012-0175, of the Los Angeles Regional Water Quality Control Board.

Engineer's Signature		Date	5/20/2021
Place Stamp Here			

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1. PROJECT DESCRIPTION

1.1. PROJECT CATEGORY

Category	YES	NO
1. Development [a] of a new project equal to 1 acre or greater of disturbed area and adding more than 10,000 square feet of impervious area [b]	☒	☐
2. Development [a] of a new industrial park with 10,000 square feet or more of surface area [c]	☐	☒
3. Development [a] of a new commercial mall with 10,000 square feet or more surface area [c]	☐	☒
4. Development [a] of a new retail gasoline outlet with 5,000 square feet or more of surface area [c]	☐	☒
5. Development [a] of a new restaurant (SIC 5812) with 5,000 square feet or more of surface area [c]	☐	☒
6. Development [a] of a new parking lot with either 5,000 ft^2 or more of impervious area [b] or with 25 or more parking spaces	☐	☒
7. Development [a] of a new automotive service facility (SIC 5013, 5014, 5511, 5541, 7532-7534 and 7536-7539) with 5,000 square feet or more of surface area [c]	☐	☒
8. Projects located in or directly adjacent to, or discharging directly to a Significant Ecological Area (SEA),[d] where the development will: a. Discharge stormwater runoff that is likely to impact a sensitive biological species or habitat; and b. Create 2,500 square feet or more of impervious area [b]	☐	☒
9. Redevelopment [e] of 5,000 square feet or more in one of the categories listed above **If yes, list redevelopment category here:**	☐	☒
10. Redevelopment [e] of 10,000 square feet or more to a Single Family Home, without a change in landuse.	☐	☒

a Development includes any construction or demolition activity, clearing, grading, grubbing, or excavation or any other activity that results in land disturbance.

b Surfaces that do not allow stormwater runoff to percolate into the ground. Typical impervious surfaces include: concrete, asphalt, roofing materials, etc.

c The surface area is the total footprint of an area. Not to include the cumulative area above or below the ground surface.

d An area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and would be disturbed or degraded by human activities and developments. Also, an area designated by the City as approved by the Regional Water Quality Control Board.

e Land-disturbing activities that result in the creation, addition, or replacement of a certain amount of impervious surface area on an already developed site. If the activity results in an alteration to more than 50% of the impervious surface area on the already developed site and the existing site was not subject to post-construction storm water quality control requirements, then the entire site must be mitigated.

1.2. PROJECT DESCRIPTION

Total Project Area (ft^2): 120,644

Total Project Area (Ac): 2.77

EXISTING CONDITIONS

Condition	Area (ft^2)	Percentage (%)
Pervious Area:	4,322	3.6
Impervious Area:	116,322	96.4

PROPOSED CONDITIONS

Condition	Area (ft^2)	Percentage (%)
Pervious Area:	12,359	10.2
Impervious Area:	108,285	89.8

SITE CHARACTERISTICS

DRAINAGE PATTERNS/CONNECTIONS	Existing: The site is currently a vacant, mass graded lot. The site is relatively level with drainage consisting of surface flow. The site drains towards the west to an existing 5' storm drain inlet that outlets directly to the Dominguez Channel thence to Long Beach Harbor and ultimately to the Pacific Ocean.
	Proposed: The site will drain from east to west via gutters that wrap around the proposed self-storage facilities. The runoff generated from the entire site will be treated by a proposed 10'x20' Modular Wetland System that will discharge via an 18" pipe to the existing 5' storm drain inlet. The discharge point will remain the same as the existing conditions.
NARRATIVE PROJECT DESCRIPTION:	The project consists of the construction of a two-story self-storage facility with asphalt drive aisles. The site address is 21611 South Perry St. in Carson, CA 90745.

OFFSITE RUNON	No off-site run-on is anticipated to be received by the site.
UTILITY AND INFRASTRUCTURE INFORMATION	Site is currenly a vacant lot. No utilities are anticipated on-site.
SIGNIFICANT ECOLOGICAL AREAS (SEAS)	N/A

1.3. HYDROMODIFICATION ANALYSIS

DOES THE PROPOSED PROJECT FALL INTO ONE OF THE FOLLOWING CATEGORIES? CHECK YES/NO.	YES	NO
1. *Project is a redevelopment that decreases the effective impervious area compared to the pre-project conditions.*	☐	☒
Describe:		
2. *Project is a redevelopment that increases the infiltration capacity of pervious areas compared to the pre-project conditions.*	☐	☒
Describe:		
3. *Project discharges directly or via a storm drain to a sump, lake, area under tidal influence, into a waterway that has a 100-year peak flow (Q_{100}) of 25,000 cfs or more.*	☒	☐
Describe:		
4. *Project discharges directly or via a storm drain into concrete or otherwise engineered (not natural) channels (e.g., channelized or armored with rip rap, shotcrete, etc.), which, in turn, discharge into receiving water that is not susceptible to hydromodification impacts.*	☒	☐
Describe: Project discharges directly to the Dominguez channel, a concrete-lined channel.		

HYDROMODIFICATION ANALYSIS

Project is hydromodification exempt.

1.4. PROPERTY OWNERSHIP/MANAGEMENT

	Faring Capital, LLC 659 North Robertson Blvd. West Hollywood, CA 90069

2. BEST MANAGEMENT PRACTICES (BMPS)

2.1. SITE DESIGN

85TH PERCENTILE, 24-HOUR STORM DEPTH	0.80"
SITE DESIGN	The project proposes a 10'x20' Modular Wetland System to treat the entire site prior to discharging to the Dominguez Channel.

BMP LIST

DMA DESIGNATION	SQUARE FOOTAGE (SF)	ACREAGE (AC)	STORM WATER QUALITY DESIGN FLOWRATE (SWQDQ, CFS)	BMP TYPE	BMP PROVIDED FLOWRATE (CFS)	GPS COORDINATES
DMA-1	120,644	2.77	0.702	10'X20' MWS	0.710	33°49'56.58"N 118°15'15.60"W

2.2. BMP SELECTION

2.2.1. INFILTRATION BMPS

NAME	INCLUDED
Bioretention without underdrains	☐
Infiltration Trench	☐
Infiltration Basin	☐
Drywell	☐
Proprietary Subsurface Infiltration Gallery	☐
Permeable Pavement (concrete, asphalt, pavers)	☐
Other:	☐
Other:	☐

DESCRIPTION	Per the Geotechnical Report, "Based on the shallow groundwater and impermeable nature of the fine grained soils which underly the site, infiltration of stormwater at this site is not considered feasible. Infiltration of stormwater at this site would be considered detrimental to the project."
CALCULATIONS	N/A

2.2.2. RAINWATER HARVEST AND USE BMPS

NAME	INCLUDED
Above-ground cisterns and basins	☐
Underground detention	☐
Other:	☐
Other:	☐
Other:	☐

DESCRIPTION	The proposed site has a low demand for harvested rainwater…
CALCULATIONS	N/A

2.2.3. ALTERNATIVE COMPLIANCE BMPS

BIOFILTRATION BMPS

(If Infiltration BMPs and Rainwater Harvest and Use BMPs are Infeasible)

NAME	INCLUDED
Bioretention with underdrains (i.e. planter box, rain garden, etc.)	☐
Constructed Wetland	☐
Vegetated Swale	☐
Vegetated Filter Strip	☐
Tree-Well Filter	☐
Other:	☐
Other:	☐

DESCRIPTION	N/A
CALCULATIONS	N/A

OFFSITE BMPS

(If Infiltration BMPs, Rainwater Harvest and Use BMPs, and Biofiltration BMPs are Infeasible)

NAME	INCLUDED
Offsite Infiltration	☐
Ground Water Replenishment Projects	☐
Offsite Project - Retrofit Existing Development	☐
Regional Storm Water Mitigation Program	☐
Other:	☐
Other:	☐

DESCRIPTION	N/A
CALCULATIONS	N/A

2.2.4. TREATMENT CONTROL BMPS

NAME	INCLUDED
Media Filter	☐
Filter Insert	☐
CDS Unit	☐
Other: Flow-through modular treatment system	☒
Other:	☐

DESCRIPTION	Project proposes a 10'x20' Modular Wetland System to treat the entire site. See below for calculations regarding the sizing of the Modular Wetland System. BMP Sizing Calculations: Tributary Area: 2.77 acres $Intensity_{1yr,\ 1hr}$: 0.31" Runoff Coefficient: 0.818 Required Flowrate/Discharge rate: Q=C*I*A = 0.702 cfs BMP Flowrate: 0.710 cfs

2.2.5. HYDROMODIFICATION CONTROL BMPS

NAME	INCLUDED
Infiltration System	☐
Above-ground Cistern	☐
Above-ground Basin	☐
Underground Detention	☐
Other:	☐
Other:	☐

DESCRIPTION	N/A
CALCULATIONS	N/A

2.2.6. NON-STRUCTURAL SOURCE CONTROL BMPS

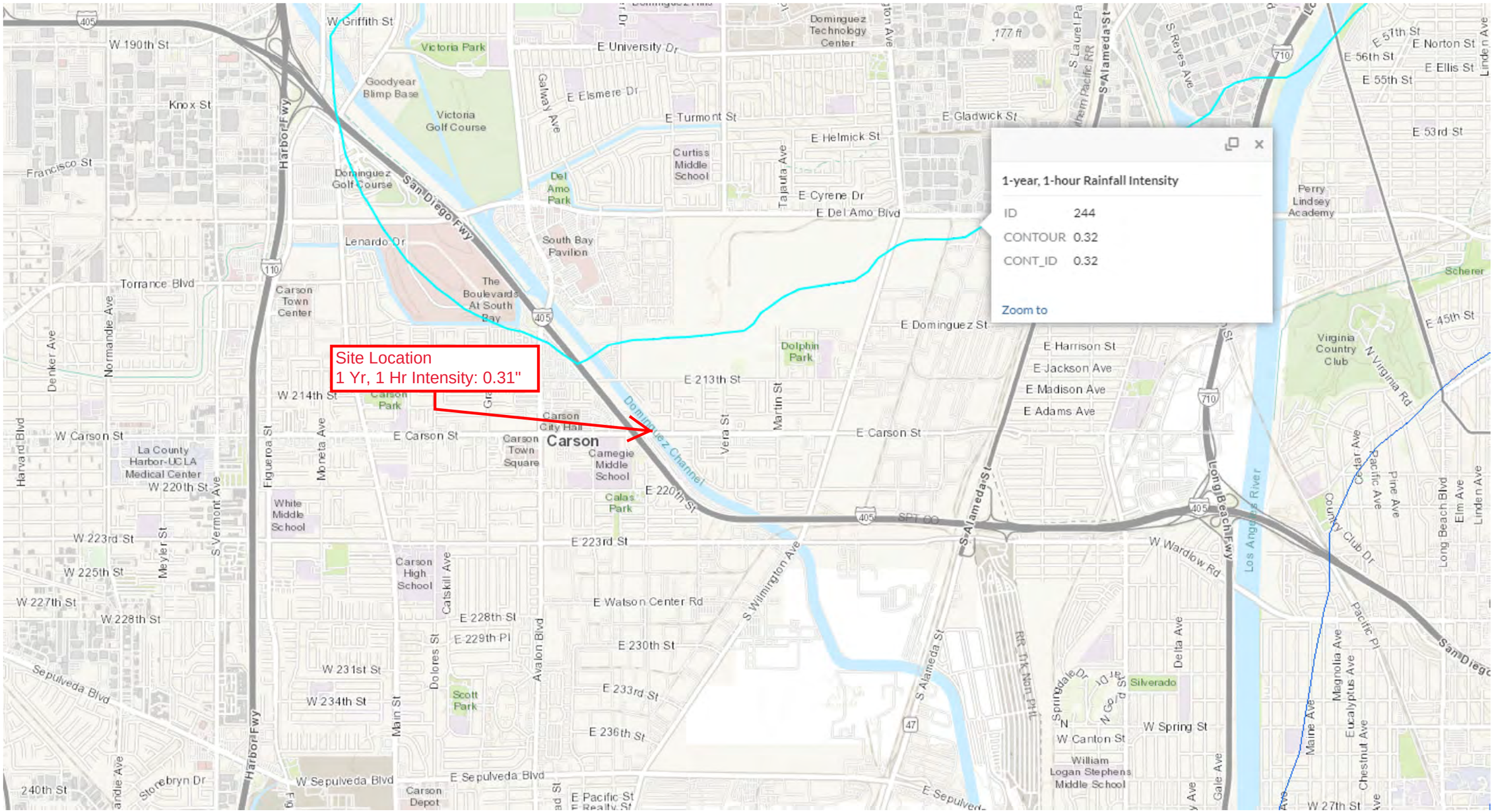
NAME	CHECK ONE	
	Included	**Not Applicable**
Education for Property Owners, Tenants and Occupants	☒	☐
Activity Restrictions	☒	☐
Common Area Landscape Management	☒	☐
Common Area Litter Control	☒	☐
Housekeeping of Loading Docks	☐	☒
Common Area Catch Basin Inspection	☒	☐
Street Sweeping Private Streets and Parking Lots	☒	☐

2.2.7. STRUCTURAL SOURCE CONTROL BMPS

NAME	CHECK ONE	
	Included	**Not Applicable**
Provide storm drain system stenciling and signage	☒	☐
Design and construct outdoor material storage areas to reduce pollution introduction	☐	☒
Design and construct trash and waste storage areas to reduce pollution introduction	☒	☐
Use efficient irrigation systems & landscape design, water conservation, smart controllers, and source control	☒	☐
Protect slopes and channels and provide energy dissipation	☐	☒
Loading docks	☐	☒
Maintenance bays	☐	☒
Vehicle wash areas	☐	☒
Outdoor processing areas	☐	☒
Equipment wash areas/racks	☐	☒
Fueling areas	☐	☒
Hillside landscaping	☐	☒

Attachment A

Calculations


Site Location
1 Yr, 1 Hr Intensity: 0.31"
1-year, 1-hour Rainfall Intensity
ID 244
CONTOUR 0.32
CONT_ID 0.32
Zoom to
Dominguez Technology Center
177 ft
E University Dr
Victoria Park
Goodyear Blimp Base
Victoria Golf Course
Galway Ave
E Elsmere Dr
E Turmont St
E Gladwick St
E Helmick St
Curtiss Middle School
Tajauta Ave
E Cyrene Dr
E Del Amo Blvd
Del Amo Park
Dominguez Golf Course
San Diego Fwy
Harbor Fwy
Lenardo Dr
South Bay Pavilion
The Boulevards At South Bay
Carson Town Center
Torrance Blvd
Knox St
Francisco St
W 190th St
W Griffith St
Perry Lindsey Academy
Scherer
E 45th St
Virginia Country Club
N Virginia Rd
E 51th St
E Norton St
E 56th St
E Ellis St
E 55th St
E 53rd St
Linden Ave
S Reyes Ave
S Alameda St
S Laurel Pa
Southern Pacific RR
E Dominguez St
E Harrison St
E Jackson Ave
E Madison Ave
E Adams Ave
Dolphin Park
E 213th St
W 214th St
Carson Park
Carson City Hall
Carson
Carson Town Square
Camegie Middle School
E Carson St
Dominguez Channel
Vera St
Martin St
E 220th St
Calas Park
E 223rd St
W Carson St
La County Harbor-UCLA Medical Center
W 220th St
White Middle School
Figueroa St
Moneta Ave
S Vermont Ave
Meyler St
W 223rd St
W 225th St
W 227th St
W 228th St
Carson High School
Catskill Ave
E 228th St
E 229th Pl
Dolores St
Avalon Blvd
E Watson Center Rd
E 230th St
E 233rd St
E 236th St
W 231st St
W 234th St
Scott Park
Main St
Sepulveda Blvd
W Sepulveda Blvd
E Sepulveda Blvd
Carson Depot
E Pacific St
240th St
Normandie Ave
Denker Ave
Harvard Blvd
Harbor Fwy
S Wilmington Ave
S Alameda St
RR - Dk Nom PHL
Long Beach Fwy
Los Angeles River
W Wardlow Rd
Silverado
Delta Ave
W Spring St
W Canton St
William Logan Stephens Middle School
Gale Ave
Maine Ave
Magnolia Ave
Eucalyptus Ave
Chestnut Ave
Cedar Ave
Pacific Ave
Pine Ave
Long Beach Blvd
Elm Ave
Linden Ave
W 27th St
SR-91
405
110
710
47

LA County Hydrology Map

Find address or place

Site Location
85th Percentile: 0.80"

Final 85th Percentile, 24-hr Rainfall

ID 34

CONTOUR 0.80

Zoom to

Imagery with Labels

28 ft

22 ft

0.8

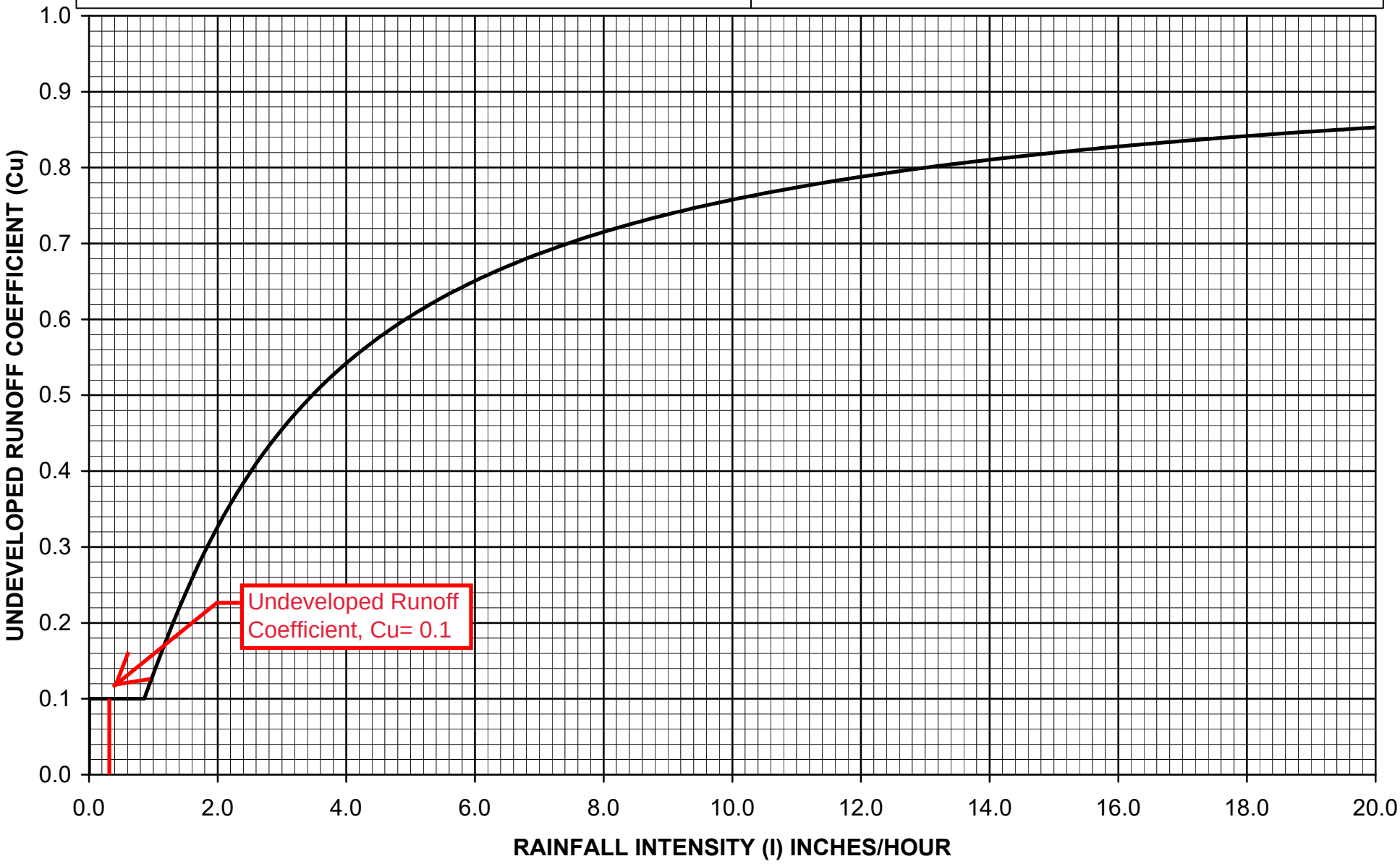
E Dominguez St
Avalon Blvd
San Diego Fwy
405
Imperial-Avalon Mobile Est
Chico St
Vera
E Balard St
Del Amo Elementary School
Dolphin Park
Water St
Oakfort Ave
Wilmington Ave
Grace Ave
E 213th St
North Ln
Middle Ln
South Ln
Garston Ave
Selwyn Ave
S Troylon Ln
Thomas Dr
Alvar Pl
S Perry St
Susan Dr
E 214th St
E 215th St
E 215th Pl
Perry St Mini Park
Lostine Ave
Legend Ave
Martin St
E Albreda St
E Califon St
Millpoint Ave
E 214th St
E 215th St
Carson City Hall
Civic Center Dr
Carson
E Carson St
Carson Town Square
Colorado Cir
Civic Center
E Calbas St
Carnegie Middle School
Bonita Street School
Hansom Ave
Newkirk Ave
E 220th St
E Hadler St
E Fiat St
E 221st St
Calas Park
E Jay St
Jay St
S Edgar St
Northern Neighborhood
Go Kart World
Recreation Rd
Acarus Ave
Dalton Ave
220th St
E 218th St
E Abila St
Paradise Trailer Park
E Bach St
E Abri St
Pontine Ave
Mobile Homes

$C_D = (0.9 * IMP) + (1.0 - IMP) * C_U$

Where: C_D = Developed Runoff Coefficient
IMP = Proportion Impervious
C_U = Undeveloped runoff coefficient

Los Angeles County Department of Public Works

RUNOFF COEFFICIENT CURVE
SOIL TYPE NO. 003

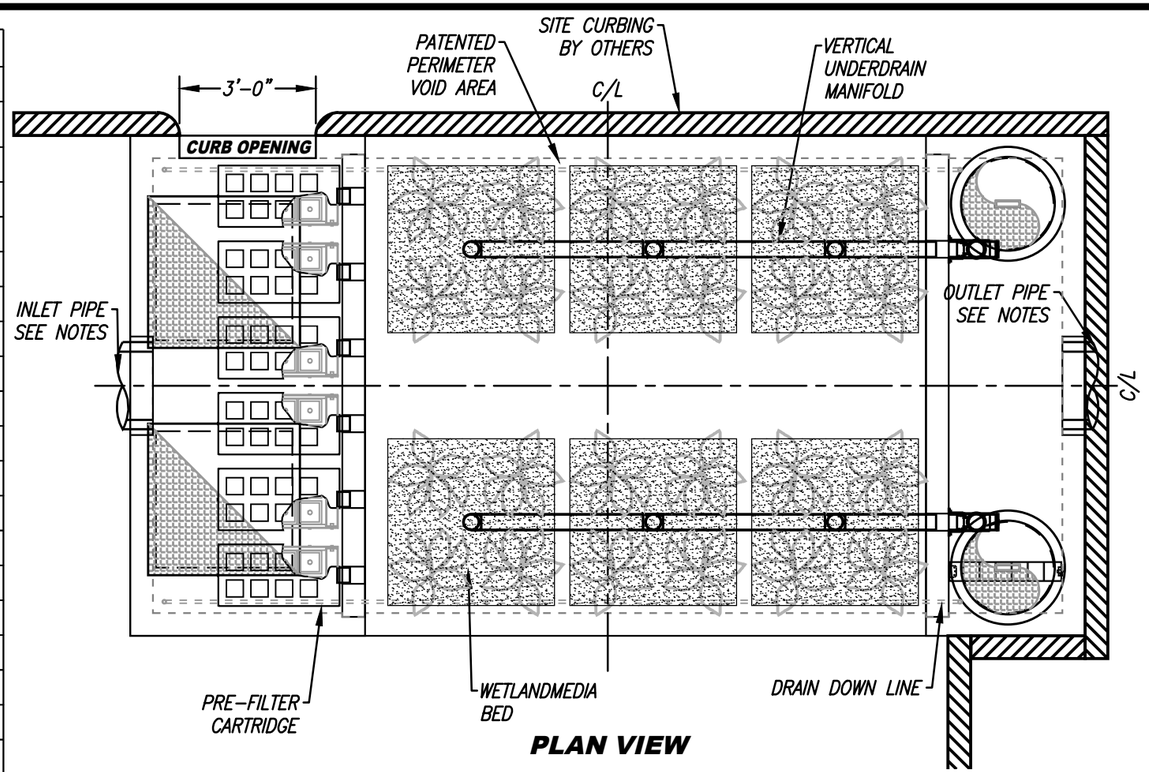


Flow Based BMP's

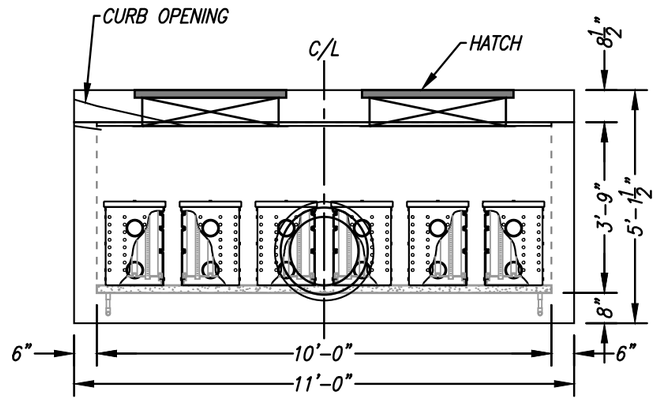
BMP-#	BMP type	BMP size	Tributary Area (ac)	Intensity (in/hr)	Runoff Coefficient (c)	Req'd flowrate/Discharge rate (cfs) Q=C*I*A	BMP Flowrate (cfs)	Notes
BMP-1	Modular wetland	10'x20'	2.77	0.31	0.818	0.702	0.710	BMP flowrate given by mfr

BASIN	AREA (SF)	AREA (AC)	% Imp	"C" Value
DMA-1	120,644	2.77	89.8%	0.818

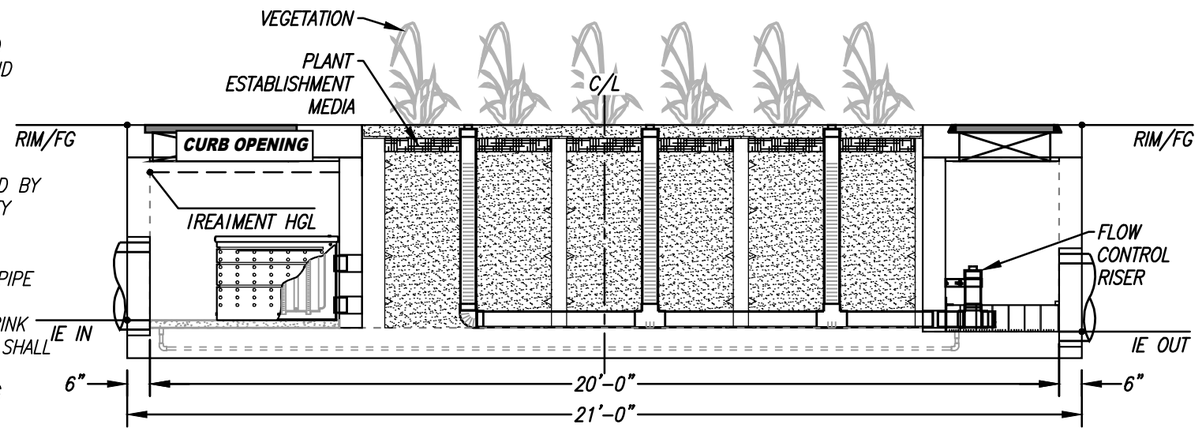
SITE SPECIFIC DATA			
PROJECT NUMBER			
PROJECT NAME			
PROJECT LOCATION			
STRUCTURE ID			
TREATMENT REQUIRED			
VOLUME BASED (CF)		FLOW BASED (CFS)	
N/A		0.710	
TREATMENT HGL AVAILABLE (FT)			N/K
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			FLOW BY
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2			
OUTLET PIPE			
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION			
SURFACE LOAD	PEDESIRIAN	OPEN PLANIER	PEDESTRIAN
FRAME & COVER	2 EA 36" X 36"	N/A	2 EA ø24"
WETLANDMEDIA VOLUME (CY)			
ORIFICE SIZE (DIA. INCHES)			2 EA ø2.67"
NOTES: PRELIMINARY. NOT FOR CONSTRUCTION.			



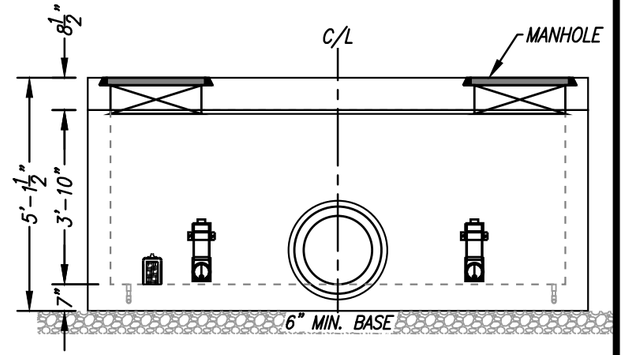
PLAN VIEW



LEFT END VIEW



ELEVATION VIEW



RIGHT END VIEW

INSTALLATION NOTES

1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURERS SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURERS CONTRACT.
2. UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE TO VERIFY PROJECT ENGINEERS RECOMMENDED BASE SPECIFICATIONS.
3. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE. (PIPES CANNOT INTRUDE BEYOND FLUSH). INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR. ALL GAPS AROUND PIPES SHALL BE SEALED WATER TIGHT WITH A NON-SHRINK GROUT PER MANUFACTURERS STANDARD CONNECTION DETAIL AND SHALL MEET OR EXCEED REGIONAL PIPE CONNECTION STANDARDS.
4. CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES.
5. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL RISERS, MANHOLES, AND HATCHES. CONTRACTOR TO GROUT ALL MANHOLES AND HATCHES TO MATCH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.
6. DRIP OR SPRAY IRRIGATION REQUIRED ON ALL UNITS WITH VEGETATION.
7. CONTRACTOR RESPONSIBLE FOR CONTACTING MODULAR WETLANDS FOR ACTIVATION OF UNIT. MANUFACTURES WARRANTY IS VOID WITH OUT PROPER ACTIVATION BY A MODULAR WETLANDS REPRESENTATIVE.

GENERAL NOTES

1. MANUFACTURER TO PROVIDE ALL MATERIALS UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS, ELEVATIONS, SPECIFICATIONS AND CAPACITIES ARE SUBJECT TO CHANGE. FOR PROJECT SPECIFIC DRAWINGS DETAILING EXACT DIMENSIONS, WEIGHTS AND ACCESSORIES PLEASE CONTACT MANUFACTURER.

LOW INFLOW PIPE DISCLOSURE:

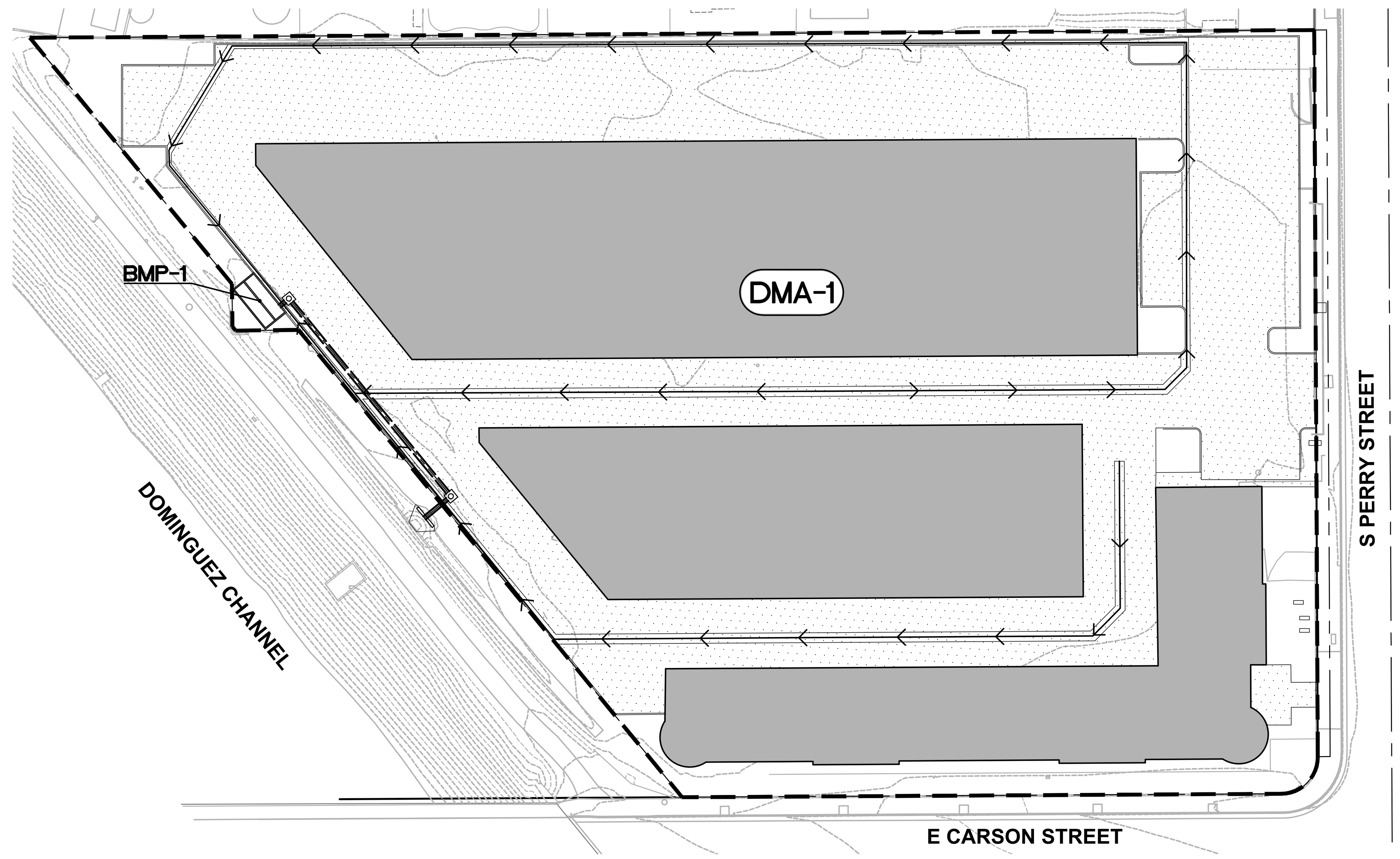
IT IS RECOMMENDED THAT A SUFFICIENT VARIATION IN ELEVATION BETWEEN THE INLET AND OUTLET BE PROVIDED TO ALLOW FOR ACCUMULATION OF SEDIMENT IN THE PRE-TREATMENT CHAMBER. FAILURE TO DO SO MAY RESULT IN BLOCKAGE AT INFLOW POINT(S) WHICH MAY CAUSE UPSTREAM FLOODING.

TREATMENT FLOW (CFS)	0.710
OPERATING HEAD (FT)	3.5
PRETREATMENT LOADING RATE (GPM/SF)	2.1
WETLAND MEDIA LOADING RATE (GPM/SF)	1.0

Bio Clean
A Forterra Company

MWS-L-10-20-4'-5.5"-C-HC
STORMWATER BIOFILTRATION SYSTEM STANDARD DETAIL

1/23/2020SMITH



LEGEND

AREA LIMITS	
FLOW ARROWS	
BUILDING AREA	
PAVEMENT AREA	
DRAINAGE MGMT AREA (DMA) NUMBER	DMA-1

DMA DATA TABLE

DMA-NO.	TOT. AREA (SF)	IMPERVIOUS (%)	REQ'D FLOWRATE (CFS)	BMP FLOWRATE (CFS)	TYPE/TREATED BY
DMA-1	120,644	89.8	0.702	0.710	BMP-1/MODULAR WETLAND

PLAN PREPARED BY:

OMEGA ENGINEERING CONSULTANTS
4340 VIEWRIDGE AVE. SUITE B
SAN DIEGO, CA 92123
PH:(858) 634-8620 FAX:(858)-634-8627

GENERAL STORM WATER NOTES

1. GROUNDWATER IS ANTICIPATED AT APPROXIMATELY 12.5 FEET BELOW EXISTING GRADE ON SITE.
2. NO EXISTING NATURAL HYDROLOGIC FEATURES
3. NO SIGNIFICANT ECOLOGICAL AREAS ON SITE
4. ALL APPLICABLE SOURCE CONTROL BMPS SHALL BE IMPLEMENTED
   5A. SOURCE CONTROL NOTES TO COME IN MINISTERIAL REVIEW

Peak Flow Hydrologic Analysis

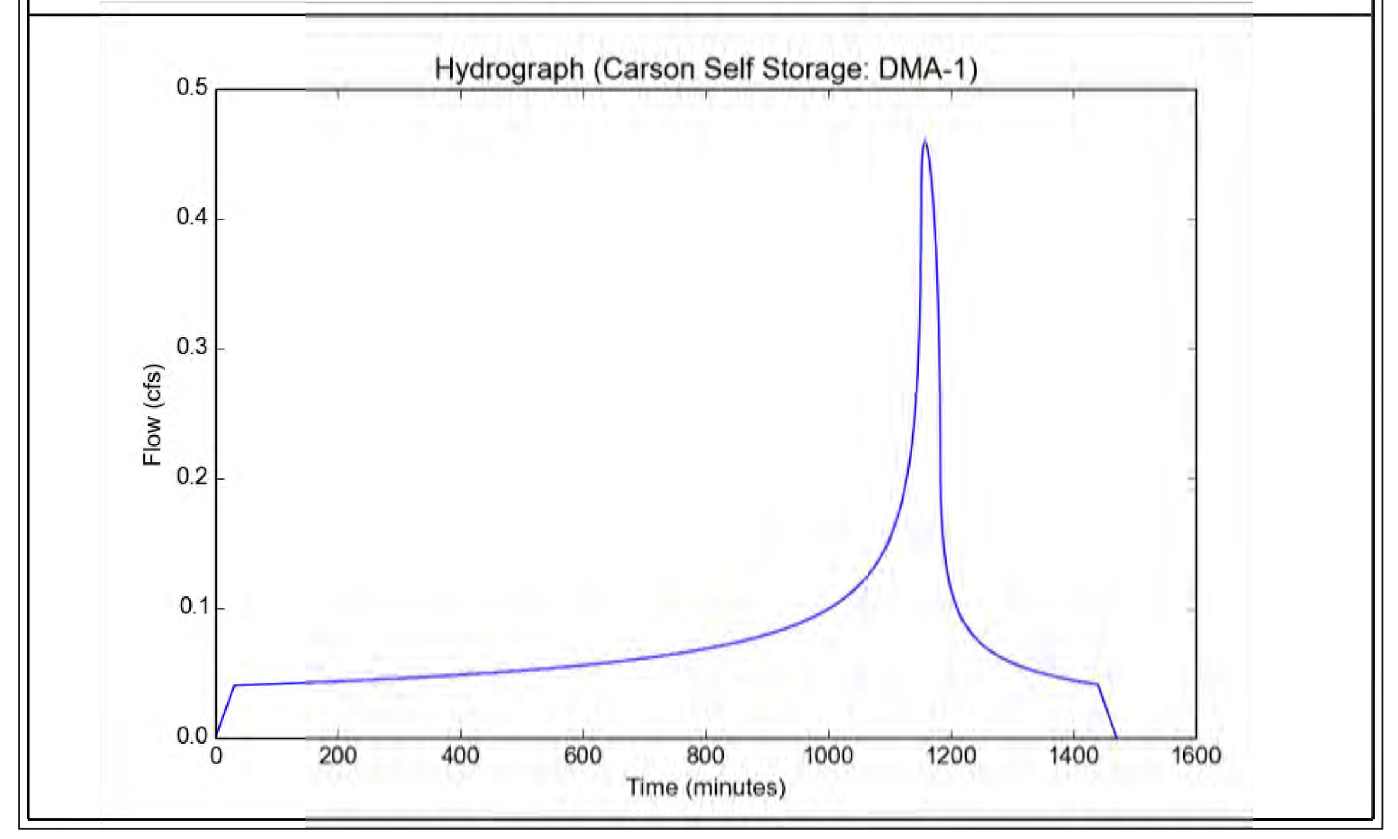
File location: P:/DWG OMEGA/0633 Faring SS Carson/STORMWATER REPORTS/Water Quality/ATTACHMENTS/85th Percentile Hydro
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Carson Self Storage
Subarea ID	DMA-1
Area (ac)	2.77
Flow Path Length (ft)	475.0
Flow Path Slope (vft/hft)	0.006
85th Percentile Rainfall Depth (in)	0.8
Percent Impervious	0.898
Soil Type	3
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

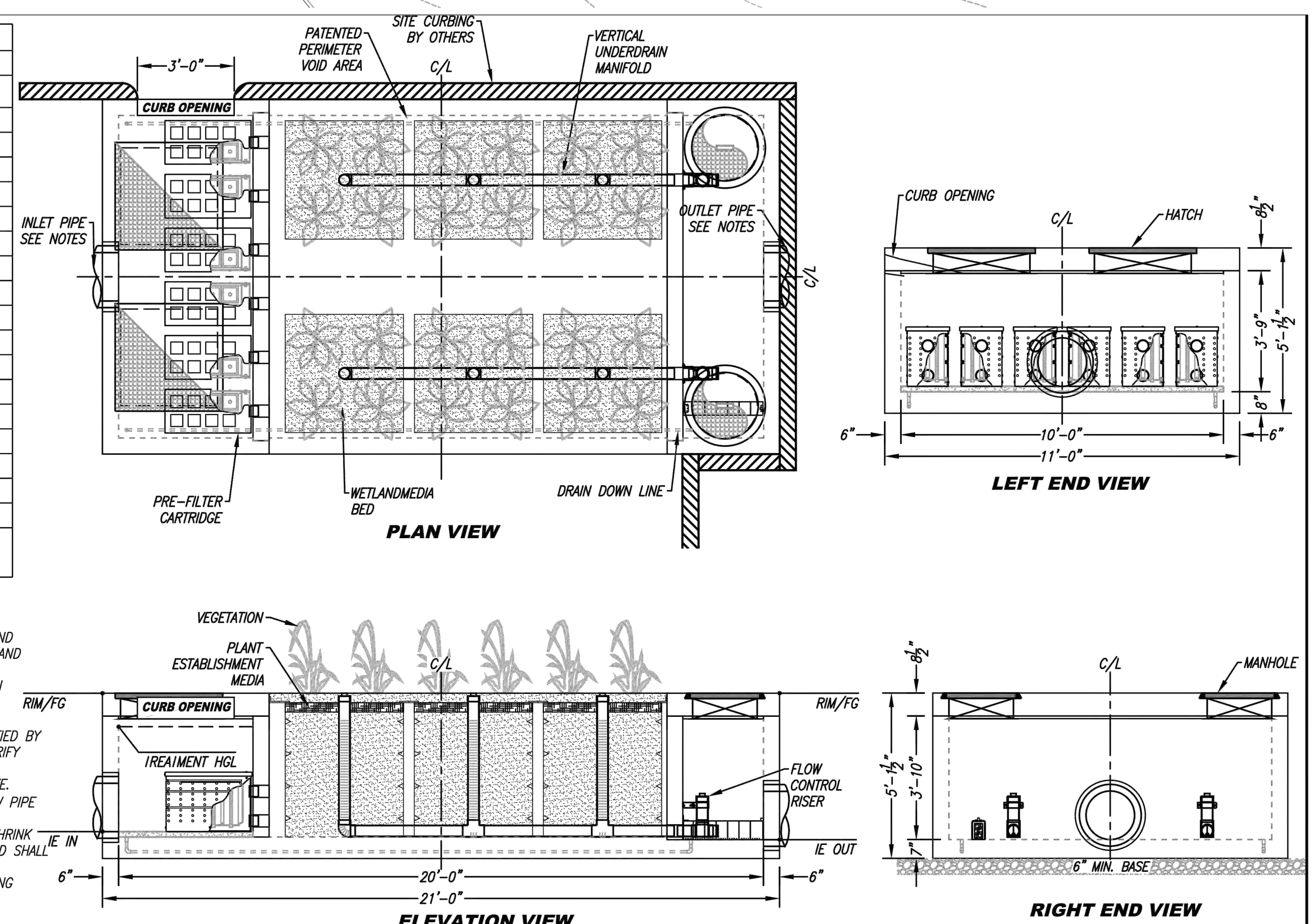
Modeled (85th percentile storm) Rainfall Depth (in)	0.8
Peak Intensity (in/hr)	0.2025
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.8184
Time of Concentration (min)	31.0
Clear Peak Flow Rate (cfs)	0.459
Burned Peak Flow Rate (cfs)	0.459
24-Hr Clear Runoff Volume (ac-ft)	0.1499
24-Hr Clear Runoff Volume (cu-ft)	6528.9479



PROJECT HYDROGRAPH

SITE SPECIFIC DATA			
PROJECT NUMBER			
PROJECT NAME			
PROJECT LOCATION			
STRUCTURE ID			
TREATMENT REQUIRED			
VOLUME BASED (CF)		FLOW BASED (CFS)	
N/A		0.710	
TREATMENT HGL AVAILABLE (FT)			N/K
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			FLOW BY
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2			
OUTLET PIPE			
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION			
SURFACE LOAD	PEDESIRIAN	OPEN PLANIER	PEDESTRIAN
FRAME & COVER	2 EA 36" X 36"	N/A	2 EA ø24"
WETLANDMEDIA VOLUME (CY)			
ORIFICE SIZE (DIA. INCHES)			2 EA ø2.67"

NOTES: PRELIMINARY. NOT FOR CONSTRUCTION.



INSTALLATION NOTES

1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURERS SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURERS CONTRACT.
2. UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE TO VERIFY PROJECT ENGINEERS RECOMMENDED BASE SPECIFICATIONS.
3. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE. (PIPES CANNOT INTRUDE BEYOND FLUSH). INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR. ALL GAPS AROUND PIPES SHALL BE SEALED WATER TIGHT WITH A NON-SHRINK GROUT PER MANUFACTURERS STANDARD CONNECTION DETAIL AND SHALL MEET OR EXCEED REGIONAL PIPE CONNECTION STANDARDS.
4. CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES.
5. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL RISERS, MANHOLES, AND HATCHES. CONTRACTOR TO GROUT ALL MANHOLES AND HATCHES TO MATCH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.
6. DRIP OR SPRAY IRRIGATION REQUIRED ON ALL UNITS WITH VEGETATION.
7. CONTRACTOR RESPONSIBLE FOR CONTACTING MODULAR WETLANDS FOR ACTIVATION OF UNIT. MANUFACTURES WARRANTY IS VOID WITH OUT PROPER ACTIVATION BY A MODULAR WETLANDS REPRESENTATIVE.

GENERAL NOTES

1. MANUFACTURER TO PROVIDE ALL MATERIALS UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS, ELEVATIONS, SPECIFICATIONS AND CAPACITIES ARE SUBJECT TO CHANGE. FOR PROJECT SPECIFIC DRAWINGS DETAILING EXACT DIMENSIONS, WEIGHTS AND ACCESSORIES PLEASE CONTACT MANUFACTURER.

LOW INFLOW PIPE DISCLOSURE:

IT IS RECOMMENDED THAT A SUFFICIENT VARIATION IN ELEVATION BETWEEN THE INLET AND OUTLET BE PROVIDED TO ALLOW FOR ACCUMULATION OF SEDIMENT IN THE PRE-TREATMENT CHAMBER. FAILURE TO DO SO MAY RESULT IN BLOCKAGE AT INFLOW POINT(S) WHICH MAY CAUSE UPSTREAM FLOODING.

TREATMENT FLOW (CFS)	0.710
OPERATING HEAD (FT)	3.5
PRETREATMENT LOADING RATE (GPM/SF)	2.1
WETLAND MEDIA LOADING RATE (GPM/SF)	1.0

MODULAR WETLANDS

Bio Clean
A Forterra Company

MWS-L-10-20-4'-5.5"-C-HC
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

MODULAR WETLAND DETAIL

NOT TO SCALE

GRAPHICAL SCALE: 1" = 40'
0 20 40 80 120

PERRY STREET
CARSON STREET SS
CARSON, CA

REGISTERED PROFESSIONAL ENGINEER
SEAN M. SAVAGE
No.75677
CIVIL
STATE OF CALIFORNIA

FOR PLAN CHECK ONLY

SEAN M. SAVAGE R.C.E. 75677   DATE

JOB NUMBER: 20-817

DATE: 10/05/2021

ja. JORDAN ARCHITECTS
131 CALLE IGLESIA, SUITE 100
SAN CLEMENTE, CA 92672
949.388.8090

FILENAME: P:\DWG OMEGA\0633 FARING SS CARSON\ACAD\DISCRETIONARY\0633-CSP-03-DMA.DWG

DATE: 5/14/2021 11:41:32 AM

Attachment B

Geotechnical Investigation

GEOTECHNICAL INVESTIGATION

PROPOSED COMMERCIAL DEVELOPMENT
21611 SOUTH PERRY STREET
CARSON, CALIFORNIA
APN: 7327-010-014

GEOCON
WEST, INC.
GEOTECHNICAL
ENVIRONMENTAL
MATERIALS

PREPARED FOR
FARING CAPITAL, LLC
WEST HOLLYWOOD, CALIFORNIA

PROJECT NO. W1301-06-01

APRIL 23, 2021

GEOCON
WEST, INC.
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS

Project No. W1301-06-01
April 23, 2021

Faring Capital, LLC
659 North Robertson Boulevard,
West Hollywood, California 90069

Attention: Mr. Darren Embry

Subject: GEOTECHNICAL INVESTIGATION
PROPOSED COMMERCIAL DEVELOPMENT
21611 SOUTH PERRY STREET
CARSON, CALIFORNIA
APN: 7327-010-014

Dear Mr. Embry:

In accordance with your authorization of our proposal dated December 11, 2020, we have prepared this geotechnical investigation report for the proposed commercial development located at 21611 South Perry Street in the City of Carson, California. The accompanying report presents the findings of our study, and our conclusions and recommendations pertaining to the geotechnical aspects of proposed design and construction. Based on the results of our investigation, it is our opinion that the site can be developed as proposed, provided the recommendations of this report are followed and implemented during design and construction.

If you have any questions regarding this report, or if we may be of further service, please contact the undersigned.

Very truly yours,

GEOCON WEST, INC.

REGISTERED PROFESSIONAL ENGINEER
JELISA THOMAS ADAMS
GE3092
GEOTECHNICAL
STATE OF CALIFORNIA

PROFESSIONAL GEOLOGIST
SUSAN FRANZEN KIRKGARD
No. 1754
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

Joe Hicks	Jelisa Thomas Adams	Susan F. Kirkgard
Staff Engineer	GE 3092	CEG 1754

(EMAIL) Addressee

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GEOTECHNICAL INVESTIGATION

1. PURPOSE AND SCOPE

This report presents the results of a geotechnical investigation for the proposed commercial development located at 21611 South Perry Street in the City of Carson, California (see Vicinity Map, Figure 1). The purpose of the investigation was to evaluate subsurface soil and geologic conditions underlying the site and, based on conditions encountered, to provide conclusions and recommendations pertaining to the geotechnical aspects of design and construction.

The scope of this investigation included a review of prior environmental reports for the site provided by the client, a site reconnaissance, field exploration, laboratory testing, engineering analysis, and the preparation of this report. The site was explored on February 9, 2021 by drilling five 8-inch diameter borings using a truck-mounted hollow-stem auger drilling machine and advancing five cone penetrometer tests (CPTs). The borings were excavated to depths between approximately 20½ and 51 feet beneath the existing ground surface. The CPTs were advanced to depths of approximately 60 feet below existing ground surface. The approximate locations of the exploratory borings and CPTs are depicted on the Site Plan (see Figure 2). A detailed discussion of the field investigation, including the boring and CPT logs, is presented in Appendix A.

Laboratory tests were performed on selected soil samples obtained during the investigation to determine pertinent physical and chemical soil properties. Appendix B presents a summary of the laboratory test results.

The recommendations presented herein are based on analysis of the data obtained during the investigation and our experience with similar soil and geologic conditions. References reviewed to prepare this report are provided in the *List of References* section.

If project details vary significantly from those described herein, Geocon should be contacted to determine the necessity for review and possible revision of this report.

2. SITE AND PROJECT DESCRIPTION

The subject site is an approximately 2.6-acre irregularly shaped parcel located at 21611 South Perry Street in the City of Carson, California. The site is currently vacant. The site is bounded by South Perry Street on the east, by the Dominguez Channel to the west, by one- to two-story single-family homes to the north, and by East Carson Street to the south. The site is relatively level, with no pronounced highs or lows. Surface water drainage at the site appears to be by sheet flow along the existing ground contours to the city streets.

Based on the information provided by the Client, it is our understanding that the proposed development will consist of three 2-story self-storage structures. Based on preliminary plans it is anticipated that the development will be approximately 25 feet in height and will be constructed at or near present grade (see Figure 2).

Based on the preliminary nature of the design at this time, wall and column loads were not available. It is anticipated that column loads for the proposed structures will be up to 300 kips, and wall loads will be up to 3 kips per linear foot.

Once the design phase and foundation loading configuration proceeds to a more finalized plan, the recommendations within this report should be reviewed and revised, if necessary. Any changes in the design, location or elevation of any structure, as outlined in this report, should be reviewed by this office. Geocon should be contacted to determine the necessity for review and possible revision of this report.

3. BACKGROUND

Prior environmental reports were prepared for the site and provided for our review, and include the following:

Phase 1 Environmental Site Assessment, 21611 S. Perry Street, Carson, CA. 90745-1613, Prepared by Weis Environmental, dated January 25, 2021.

2020 First Semi-Annual Groundwater Monitoring Report, January Through June 2020, Dominguez Channel Release, Carson, California, Prepared by AECOM, dated July 14, 2020.

Based on the prior reports, petroleum hydrocarbon impacted soil and groundwater were previously identified at the site that originated from on-site underground storage tanks (USTs) and migration of contaminants from off-site sources. AECOM (formerly URS) developed a workplan that developed cleanup goals and excavation limits to remove impacted soils that was approved by the LARWQCB. In 2014, approximately 4,800 cubic yards of impacted soils were excavated from four areas and removed from the site. The excavations were approximately 5 to 8 feet deep and were backfilled with clean import soils (Weis Environmental, 2021). The approximate locations and depths of these areas are indicated on the Site Plan (see Figure 2). The backfill was reportedly placed, compacted, and tested as a certified backfill material; however, a copy of the compaction report was not included as an exhibit. Therefore, for the purposes of this report, the backfill is considered to be uncertified fill.

Also, as part of the prior site remediation, groundwater monitoring wells were installed at the site and the immediately surrounding area. The monitoring wells present at the site are limited to the eastern, western, and southern property boundaries. Groundwater monitoring is ongoing in these wells in compliance with a semi-annual groundwater monitoring program required by the LARWQCB.

Based on documents included in the referenced environmental reports, the known soil and groundwater impacts are within acceptable levels for commercial use and further assessment or remediation is not required. However, a soil management plan (SMP) is anticipated required for further development of the site. Development of a soil management plan is beyond the scope of the Geotechnical Investigation.

4. GEOLOGIC SETTING

The site is located in the southern portion of the Los Angeles Basin, a coastal plain bounded by the Santa Monica Mountains on the north, the Elysian Hills and Repetto Hills on the northeast, the Puente Hills and the Whittier Fault on the east, the Palos Verdes Peninsula and Pacific Ocean on the west and south, and the Santa Ana Mountains and San Joaquin Hills on the southeast. The basin is underlain by a deep structural depression which has been filled by both marine and continental sedimentary deposits underlain by a basement complex of igneous and metamorphic composition. Regionally, the site is located within the northern portion of the Peninsular Ranges geomorphic province. This geomorphic province is characterized by northwest-trending physiographic and geologic features such as the nearby Newport-Inglewood Fault Zone located approximately 2.7 miles to the east-northeast.

5. SOIL AND GEOLOGIC CONDITIONS

Based on our field investigation and published geologic maps of the area, the site is underlain by artificial fill and Holocene age alluvium consisting sand, silt, and clay (California Geological Survey, 2010). Detailed stratigraphic profiles of the materials encountered at the site are provided on the boring logs in Appendix A.

5.1 Artificial Fill

Artificial fill was encountered in our explorations to depths ranging from 3 to 9 feet below existing ground surface. The deep fill, observed in boring B3, is associated with an area of a former UST removal. The artificial generally consists of light brown to brown or grayish brown sand and silty sand. The artificial fill is characterized as fine-grained with some medium-grained, moist, and loose to dense. The fill is likely the result of past grading, UST removal and environmental remediation, and past construction activities at the site. Deeper fill may exist between excavations and in other portions of the site that were not directly explored.

5.2 Alluvium

Holocene age alluvium was encountered beneath the fill to the maximum depth explored (51 feet below the ground surface). The alluvium generally consists of light brown to brown, olive brown, or gray to dark gray interbedded clay, sandy clay, silt, sandy silt, silty sand and clayey sand. The alluvial soils are characterized as primarily fine-grained, moist to wet, and loose to dense or soft to stiff.

6. GROUNDWATER

A review of the Seismic Hazard Zone Report for the Torrance Quadrangle (California Division of Mines and Geology [CDMG], 1998) indicates the historically highest groundwater level in the area is approximately 9 feet beneath the ground surface. Groundwater information presented in this document is generated from data collected in the early 1900's to the late 1990s. Based on current groundwater basin management practices, it is unlikely that groundwater levels will ever exceed the historic high levels.

Groundwater was encountered in borings B1 and B3 at depths of 12.5 feet and 17.6 feet beneath the existing ground surface, respectively. Additionally, readings from groundwater monitoring wells established on the site were taken on February 23, 2021. The locations of the accessible monitoring wells are indicated on the site plan (see Figure 2) and a summary of groundwater levels at the time of the investigation is provided in the table below.

Monitoring Well Readings

Well ID	MW-3	MW-4	MW-5	MW-7A	MW-8A	MW-9B
Depth to GW (Below Ground Surface)	12.0'	13.17'	12.25'	12.33'	12.67'	14.67'

Based on the depth to groundwater and the on-grade nature of the development, groundwater is not expected to have a detrimental effect on the project. Groundwater may be encountered during construction in deep drilled excavations, such as for ground improvement or elevator pistons. It is not uncommon for groundwater levels to vary seasonally or for groundwater seepage conditions to develop where none previously existed, especially in impermeable fine-grained soils which are heavily irrigated or after seasonal rainfall. In addition, recent requirements for stormwater infiltration could result in shallower seepage conditions in the immediate site vicinity. Proper surface drainage of irrigation and precipitation will be critical for future performance of the project. Recommendations for drainage are provided in the S*urface Drainage* section of this report (see Section 8.20).

7. GEOLOGIC HAZARDS

7.1 Surface Fault Rupture

The numerous faults in Southern California include Holocene-active, pre-Holocene, and inactive faults. The criteria for these major groups are based on criteria developed by the California Geological Survey (CGS, formerly known as CDMG) for the Alquist-Priolo Earthquake Fault Zone Program (CGS, 2018). By definition, a Holocene-active fault is one that has had surface displacement within Holocene time (about the last 11,700 years). A pre-Holocene fault has demonstrated surface displacement during Quaternary time (approximately the last 1.6 million years) but has had no known Holocene movement. Faults that have not moved in the last 1.6 million years are considered inactive.

The site is not within a state-designated Alquist-Priolo Earthquake Fault Zone for surface fault rupture hazards (CGS, 2021a; CGS, 2021b; CDMG 1986). No Holocene-active or pre-Holocene active faults with the potential for surface fault rupture are known to pass directly beneath the site. Therefore, the potential for surface rupture due to faulting occurring beneath the site during the design life of the proposed development is considered low. However, the site is located in the seismically active Southern California region, and could be subjected to moderate to strong ground shaking in the event of an earthquake on one of the many active Southern California faults. The faults in the vicinity of the site are shown in Figure 3, Regional Fault Map.

The closest surface trace of an active fault to the site is the Newport-Inglewood Fault Zone located approximately 2.7 miles to the east-northeast (USGS, 2006; CDMG, 1986). Other nearby active faults are the Palos Verdes Fault, the Cabrillo Fault, and the Whittier Fault located approximately 4.2 miles south-southwest, 8.2 miles south, and 16 miles northeast of the site, respectively. The active San Andreas Fault Zone is located approximately 48 miles northeast of the site.

Several buried thrust faults, commonly referred to as blind thrusts, underlie the Los Angeles Basin at depth. These faults are not exposed at the ground surface and are typically identified at depths greater than 3.0 kilometers. The October 1, 1987, M_w 5.9 Whittier Narrows earthquake and the January 17, 1994, M_w 6.7 Northridge earthquake were a result of movement on the Puente Hills Blind Thrust and the Northridge Thrust, respectively. These thrust faults and others in the Los Angeles area are not exposed at the surface and do not present a potential surface fault rupture hazard at the site; however, these deep thrust faults are considered active features capable of generating future earthquakes that could result in moderate to significant ground shaking at the site.

7.2 Seismicity

As with all of Southern California, the site has experienced historic earthquakes from various regional faults. The seismicity of the region surrounding the site was formulated based on research of an electronic database of earthquake data. The epicenters of recorded earthquakes with magnitudes equal to or greater than 5.0 in the site vicinity are depicted on Figure 4, Regional Seismicity Map. A partial list of moderate to major magnitude earthquakes that have occurred in the Southern California area within the last 100 years is included in the following table.

LIST OF HISTORIC EARTHQUAKES

Earthquake (Oldest to Youngest)	Date of Earthquake	Magnitude	Distance to Epicenter (Miles)	Direction to Epicenter
Near Redlands	July 23, 1923	6.3	59	E
Long Beach	March 10, 1933	6.4	22	SE
Tehachapi	July 21, 1952	7.5	91	NW
San Fernando	February 9, 1971	6.6	41	NNW
Whittier Narrows	October 1, 1987	5.9	19	NE
Sierra Madre	June 28, 1991	5.8	33	NE
Landers	June 28, 1992	7.3	107	ENE
Big Bear	June 28, 1992	6.4	85	ENE
Northridge	January 17, 1994	6.7	31	NW
Hector Mine	October 16, 1999	7.1	125	ENE
Ridgecrest	July 5, 2019	7.1	138	NNE

The site could be subjected to strong ground shaking in the event of an earthquake. However, this hazard is common in Southern California and the effects of ground shaking can be mitigated if the proposed structures are designed and constructed in conformance with current building codes and engineering practices.

7.3 Seismic Design Criteria

The following table summarizes the site-specific design criteria obtained from the 2019 California Building Code (CBC; Based on the 2018 International Building Code [IBC] and NEHRP-2015), Chapter 16 Structural Design, Section 1613, Earthquake Loads. The data was calculated using the online application *Seismic Design Maps*, provided by OSHPD. The short spectral response uses a period of 0.2 second. We evaluated the Site Class based on the discussion in Section 1613.2.2 of the 2019 CBC and Section 11.4.3 of NEHRP-2015. The values presented on the following page are for the risk-targeted maximum considered earthquake (MCE_R).

2019 CBC SEISMIC DESIGN PARAMETERS

Parameter	Value	2019 CBC Reference
Site Class	D	Section 1613.2.2
MCE_R Ground Motion Spectral Response Acceleration – Class B (short), S_S	1.711g	Figure 1613.2.1(1)
MCE_R Ground Motion Spectral Response Acceleration – Class B (1 sec), S_1	0.618g	Figure 1613.2.1(2)
Site Coefficient, F_A	1	Table 1613.2.3(1)
Site Coefficient, F_V	1.7*	Table 1613.2.3(2)
Site Class Modified MCE_R Spectral Response Acceleration (short), S_{MS}	1.711g	Section 1613.2.3 (Eqn 16-36)
Site Class Modified MCE_R Spectral Response Acceleration – (1 sec), S_{M1}	1.05g*	Section 1613.2.3 (Eqn 16-37)
5% Damped Design Spectral Response Acceleration (short), S_{DS}	1.141g	Section 1613.2.4 (Eqn 16-38)
5% Damped Design Spectral Response Acceleration (1 sec), S_{D1}	0.7g*	Section 1613.2.4 (Eqn 16-39)
Note: *Per Section 11.4.8 of ASCE/SEI 7-16, a ground motion hazard analysis shall be performed for projects for Site Class "E" sites with Ss greater than or equal to 1.0g and for Site Class "D" and "E" sites with S1 greater than 0.2g. Section 11.4.8 also provides exceptions which indicates that the ground motion hazard analysis may be waived provided the exceptions are followed. Using the code based values presented in the table above, in lieu of a performing a ground motion hazard analysis, requires the exceptions outlined in ASCE 7-16 Section 11.4.8 be followed.		

The table below presents the mapped maximum considered geometric mean (MCE_G) seismic design parameters for projects located in Seismic Design Categories of D through F in accordance with NEHRP-2015.

ASCE 7-16 PEAK GROUND ACCELERATION

Parameter	Value	ASCE 7-16 Reference
Mapped MCE_G Peak Ground Acceleration, PGA	0.748g	Figure 22-7
Site Coefficient, F_{PGA}	1.1	Table 11.8-1
Site Class Modified MCE_G Peak Ground Acceleration, PGA_M	0.823g	Section 11.8.3 (Eqn 11.8-1)

The Maximum Considered Earthquake Ground Motion (MCE) is the level of ground motion that has a 2 percent chance of exceedance in 50 years, with a statistical return period of 2,475 years. According to the 2019 California Building Code and ASCE 7-16, the MCE is to be utilized for the evaluation of liquefaction, lateral spreading, seismic settlements, and it is our understanding that the intent of the Building code is to maintain "Life Safety" during a MCE event. The Design Earthquake Ground Motion (DE) is the level of ground motion that has a 10 percent chance of exceedance in 50 years, with a statistical return period of 475 years.

Deaggregation of the MCE peak ground acceleration was performed using the USGS online Unified Hazard Tool, 2014 Conterminous U.S. Dynamic edition (v4.2.0). The result of the deaggregation analysis indicates that the predominant earthquake contributing to the MCE peak ground acceleration is characterized as a 6.87 magnitude event occurring at a hypocentral distance of 8.35 kilometers from the site.

Deaggregation was also performed for the Design Earthquake (DE) peak ground acceleration, and the result of the analysis indicates that the predominant earthquake contributing to the DE peak ground acceleration is characterized as a 6.68 magnitude occurring at a hypocentral distance of 13.48 kilometers from the site.

Conformance to the criteria in the above tables for seismic design does not constitute any kind of guarantee or assurance that significant structural damage or ground failure will not occur if a large earthquake occurs. The primary goal of seismic design is to protect life, not to avoid all damage, since such design may be economically prohibitive.

7.4 Liquefaction Potential

Liquefaction is a phenomenon in which loose, saturated, relatively cohesionless soil deposits lose shear strength during strong ground motions. Primary factors controlling liquefaction include intensity and duration of ground motion, gradation characteristics of the subsurface soils, in-situ stress conditions, and the depth to groundwater. Liquefaction is typified by a loss of shear strength in the liquefied layers due to rapid increases in pore water pressure generated by earthquake accelerations.

The current standard of practice, as outlined in the "Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Liquefaction in California" and "Special Publication 117A, Guidelines for Evaluating and Mitigating Seismic Hazards in California" requires liquefaction analysis to a depth of 50 feet below the lowest portion of the proposed structure. Liquefaction typically occurs in areas where the soils below the water table are composed of poorly consolidated, fine to medium-grained, primarily sandy soil. In addition to the requisite soil conditions, the ground acceleration and duration of the earthquake must also be of a sufficient level to induce liquefaction.

A review of the State of California Seismic Hazard Zone Map for the Torrance Quadrangle (CDMG, 1999) indicates that the site is located in an area designated as having a potential for liquefaction. Also, the City of Carson (2002) indicates the site is located within an area that has a potential for liquefaction.

The Standard Penetration Test (SPT) blow counts obtained from boring B3 were compared with the blow counts estimated from the CPT soundings. SPTs were performed in boring B3 at intervals of approximately 5 feet. In order to supplement the SPT blow count data, select California Modified Sampler blow count data were converted to equivalent SPT blow counts based on a correlation factor of 0.55 (Rogers, 2006). The field collected blow counts were corrected for hammer efficiency to N60 blow count values. The boring N60 values were compared with the N60 values generated by the program CpetIT (Version 3.2.1.7). The comparison of CPT-3 and boring B3 are shown as Figure 5. It is our opinion that the boring and CPT N60 values show a very reasonable correlation and that analysis of the liquefaction potential may be based on the CPT data.

Liquefaction analyses of the CPT soundings were performed using the program CLiq (Version 3.0.3.2). This program utilizes the 2001 NCEER method of analysis. This semi-empirical method is based on correlations with the data collected from the CPT soundings.

The liquefaction analysis was performed for a Design Earthquake level by using a historic groundwater level of 9 feet below the ground surface, a magnitude 6.68 earthquake, and a peak horizontal acceleration of 0.549g (⅔PGAM). The results of the enclosed liquefaction analyses included herein for CPTs 1 through 5 indicate that the alluvial soils below the design groundwater level could be susceptible to the liquefaction induced settlements summarized in the table below during Design Earthquake ground motion. A summary of the anticipated liquefaction induced settlements is provided as Figure 6; calculations and output from CLiq are provided as Appendix C.

Liquefaction Induced Settlements (Design Earthquake)

CPT Number	CPT-1	CPT-2	CPT-3	CPT-4	CPT-5
Liquefaction Settlement (in)	0.43	0.11	0.20	0.00	0.28

It is our understanding that the intent of the Building Code is to maintain "Life Safety" during Maximum Considered Earthquake level events. Therefore, additional analysis was performed to evaluate the potential for liquefaction during a MCE event. The structural engineer should evaluate the proposed structure for the anticipated MCE liquefaction induced settlements and verify that anticipated deformations would not cause the foundation system to lose the ability to support the gravity loads and/or cause collapse of the structure.

The liquefaction analysis performed for the Maximum Considered Earthquake level by using a historic groundwater level of 9 feet below the ground surface, a magnitude 6.87 earthquake, and a peak horizontal acceleration of 0.823g (PGAM). The results of the enclosed liquefaction analyses included herein for CPTs 1 through 5 indicate that the alluvial soils below the design groundwater level could be susceptible to the liquefaction induced settlements summarized in the table below during Maximum Considered Earthquake ground motion. A summary of the anticipated liquefaction induced settlements is provided as Figure 7.

Liquefaction Induced Settlements (Maximum Considered Earthquake)

CPT Number	CPT-1	CPT-2	CPT-3	CPT-4	CPT-4
Liquefaction Settlement (in)	0.80	0.19	0.33	0.00	0.41

7.5 Seismically Induced Settlement

Dynamic compaction of dry and loose sands may occur during a major earthquake. Typically, settlements occur in thick beds of such soils. The seismically induced settlement calculations were performed in accordance with the American Society of Civil Engineers, Technical Engineering and Design Guides as adapted from the US Army Corps of Engineers, No. 9.

The calculations provided herein in Figures 8 and 9 indicate that the soil above the historic high groundwater level of 9 feet would not be susceptible to significant settlement as a result of the Design Earthquake peak ground acceleration ($\frac{2}{3}PGA_M$).

7.6 Lateral Spreading

Due to the presence of the Dominguez Channel located to the west of the site, the potential for lateral spread was evaluated. Lateral spread occurs as a result of liquefaction induced lateral ground movement and typically occurs due to the presence of a slope comprised of and/or underlain by liquefiable soils.

Analysis of the potential for lateral spread was performed using the program CLiq (Version 1.7). The program utilizes the method proposed by Zhang et. al. (2004) to evaluate the potential for lateral spread and the resulting lateral displacements.

This method of analysis recommends evaluating the potential for lateral displacements to a distance of 50H from the slope, where H is the height of the slope. Beyond a horizontal distance of 50H lateral displacements due to the presence of a slope are not anticipated to occur. This method of analysis considers soils to a depth of twice the total slope height as potentially subject to lateral spread, up to a distance of 50H away from the toe of the slope.

The drainage channel is trapezoidal in shape and consists of two slopes approximately 12 feet in height inclined at a gradient of approximately 2:1 (estimated via satellite images). The proposed improvements have a minimum setback of 90 feet from the toe of the drainage channel. Therefore, lateral displacements using a horizontal setback of 90 feet was utilized.

Based on the results of the analyses it is anticipated that up to 10 inches of lateral displacements towards the drainage channel could occur during a Design Earthquake ground motion. The lateral displacements are anticipated to occur between depths of 10 and 15 feet below the ground surface. Calculations and output from CLiq are provided as Appendix C.

The grading and foundation design recommendations presented in this report are intended to minimize the effects of lateral spread on the proposed improvements.

7.7 Slope Stability

The topography at the site is relatively level and the topography in the immediate site vicinity slopes gently to the west-southwest. The County of Los Angeles Safety Element (Leighton, 1990) indicates the site is not located within an area identified as a "hillside area" or having a potential for slope instability. Additionally, the site is not within an area identified as having a potential for seismic slope instability (CDMG, 1999). There are no known landslides near the site, nor is the site in the path of any known or potential landslides. Therefore, the potential for slope stability hazards to adversely affect the proposed development is considered low.

7.8 Earthquake-Induced Flooding

Earthquake-induced flooding is inundation caused by failure of dams or other water-retaining structures due to earthquakes. Based on a review of the County of Los Angeles Safety Element (Leighton, 1990), the site is not located within a potential inundation area for an earthquake-induced dam failure. Therefore, the probability of earthquake-induced flooding is considered very low.

7.9 Tsunamis, Seiches, and Flooding

The site is not located within a coastal area. Therefore, tsunamis are not considered a significant hazard at the site.

Seiches are large waves generated in enclosed bodies of water in response to ground shaking. No major water-retaining structures are located immediately up gradient from the project site. Therefore, flooding resulting from a seismic-induced seiche is considered unlikely.

The site is within an area of minimal flooding (Zone X) as defined by the Federal Emergency Management Agency (FEMA, 2021; LACDPW, 2021).

7.10 Oil Fields & Methane Potential

Based on a review of the California Geologic Energy Management Division (CalGEM) Well Finder Website, the site is not located within an oil field and oil or gas wells are not documented in the immediate site vicinity (CalGEM, 2021). However, due to the voluntary nature of record reporting by the oil well drilling companies, wells may be improperly located or not shown on the location map and undocumented wells could be encountered during construction. Any wells encountered during construction will need to be properly abandoned in accordance with the current requirements of the CalGEM.

Since the site is not located within an oil field, the potential for methane or other volatile gases associated with oil and gas fields to be present at the site is considered low. However, as discussed in the Background section of this report (see Section 3), due to the site history there is a potential for low levels of volatile gases to be present, particularly during site grading. Should it be determined that a methane study or further environmental studies are required for the proposed development, it is recommended that a qualified methane or environmental consultant be retained to perform the study and provide mitigation measures as necessary.

7.11 Subsidence

Subsidence occurs when a large portion of land is displaced vertically, usually due to the withdrawal of groundwater, oil, or natural gas. Soils that are particularly subject to subsidence include those with high silt or clay content. The site is not located within an area of known ground subsidence. No large-scale extraction of groundwater, gas, oil, or geothermal energy is occurring or planned at the site or in the general site vicinity. There appears to be little or no potential for ground subsidence due to withdrawal of fluids or gases at the site.

8. CONCLUSIONS AND RECOMMENDATIONS

8.1 General

8.1.1 It is our opinion that neither soil nor geologic conditions were encountered during the investigation that would preclude construction of the proposed development provided the recommendations presented herein are followed and implemented during design and construction.

8.1.2 Up to 5 feet of existing artificial fill was encountered during the site investigation with localized areas of deeper fill of to 9 feet in depth. The existing fill encountered is believed to be the result of past grading and construction activities at the site. Deeper fill may exist in other areas of the site that were not directly explored. It is our opinion that the existing fill, in its present condition, is not suitable for direct support of proposed foundations or slabs. The existing fill and site soils are suitable for re-use as engineered fill provided the recommendations in the Grading section of this report are followed (see Section 8.4).

8.1.3 The enclosed liquefaction and seismically-induced settlement analyses indicate that the site soils could be susceptible to approximately ½ inch of total settlement as a result of the Design Earthquake peak ground acceleration ($\frac{2}{3}PGA_M$). Differential settlement at the foundation level is anticipated to be less than ¼ inch over a distance of 20 feet.

8.1.4 The results of the field data and laboratory testing indicate that the upper alluvial soils are relatively soft and compressible in their current condition (see Figure B5 thru B17) and could yield excessive static and differential settlements upon application of foundation loads.

8.1.5 The foundation design recommendations presented herein are intended to minimize the effects of settlement from liquefaction and consolidation on the proposed improvements. Based on our discussions with you, we understand that the preferred foundation system is a reinforced concrete mat foundation deriving support in newly placed engineered fill. Recommendations for a reinforced mat foundation system is provided in Sections 8.7 of this report.

8.1.6 For support of a mat foundation, it is recommended that the upper 6 feet of existing earth materials within the proposed building footprint areas be excavated and properly compacted for foundation and slab support. Deeper excavations should be conducted as necessary to remove deeper artificial fill or soft alluvial soil at the direction of the Geotechnical Engineer (a representative of Geocon). Proposed building foundations should be underlain by a minimum of 4 feet of newly placed engineered fill. The excavation should extend laterally a minimum distance of 3 feet beyond the building footprint area, including building appurtenances, or a distance equal to the depth of fill below the foundation, whichever is greater. The contractor should be aware that up to 9 feet of artificial fill was encountered in Boring B3. The limits of existing fill and/or soft alluvial soils removal will be verified by the Geocon representative during site grading activities. All excavations must be observed and approved in writing by the Geotechnical Engineer (a representative of Geocon).

8.1.7 It is anticipated that the recommended grading can be achieved with sloping measures. However, if excavations in close proximity to an adjacent property line and/or structure are required, special excavation measures in order to maintain lateral support of existing adjacent improvements will be required. Excavation recommendations are provided in the *Temporary Excavations* section of this report (Section 8.18).

8.1.8 Based on the relatively shallow groundwater table, the upper alluvial soils have the potential to be very moist and the grading contractor should be aware that the soils may be above optimum moisture content. If the soils are more than 3 percent above the optimum moisture content at the time of construction the soils will likely require some spreading and drying activities in order to achieve proper compaction. Bottom stabilization may also be necessary. Recommendations for bottom stabilization and earthwork are provided in the *Grading* section of this report (see Section 8.4).

8.1.9 Foundations for small outlying structures, such as block walls up to 6 feet in height, planter walls or trash enclosures, which will not be tied to the proposed structure, may be supported on conventional foundations deriving support on a minimum of 12 inches of newly placed engineered fill which extends laterally at least 12 inches beyond the foundation area. Where excavation and compaction cannot be performed or is undesirable, foundations may derive support directly in the competent undisturbed alluvial soils and should be deepened as necessary to maintain a minimum 12 inch embedment into the recommended bearing materials. If the soils exposed in the excavation bottom are soft or loose, compaction of the soils will be required prior to placing steel or concrete. Compaction of the foundation excavation bottom is typically accomplished with a compaction wheel or mechanical whacker and must be observed and approved in writing by a Geocon representative.

8.1.10 Where new paving is to be placed, it is recommended that all existing fill and soft alluvial soils be excavated and properly compacted for paving support. The client should be aware that excavation and compaction of all existing fill and soft alluvial soils in the area of new paving is not required; however, paving constructed over existing uncertified fill or unsuitable alluvial soil may experience increased settlement and/or cracking, and may therefore have a shorter design life and increased maintenance costs. As a minimum, the upper 12 inches of subgrade soil should be scarified and properly compacted for paving support. Paving recommendations are provided in *Preliminary Pavement Recommendations* section of this report (see Section 8.13).

8.1.11 Based on the shallow groundwater and impermeable nature of the fine grained soils which underly the site, infiltration of stormwater at this site is not considered feasible. Infiltration of stormwater at this site would be considered detrimental to the project. It is recommended that stormwater be retained, filtered, and discharged in accordance with the requirements of the local governing agency.

8.1.12 It should be noted that implementation of the recommendations presented herein is not intended to completely prevent damage to the structure during the occurrence of strong ground shaking as a result of nearby earthquakes. It is intended that the structure be designed in such a way that the amount of damage incurred as a result of strong ground shaking be minimized.

8.1.13 It is recommended that flexible utility connections be utilized for all rigid utilities to minimize or prevent damage to utilities from minor differential movements.

8.1.14 Once the design and foundation loading configuration for the proposed structure proceeds to a more finalized plan, the recommendations within this report should be reviewed and revised, if necessary. Based on the final foundation loading configurations, the potential for settlement should be reevaluated by this office.

8.1.15 Any changes in the design, location or elevation of improvements, as outlined in this report, should be reviewed by this office. Geocon should be contacted to determine the necessity for review and possible revision of this report.

8.2 Soil and Excavation Characteristics

8.2.1 The in-situ soils can be excavated with moderate effort using conventional excavation equipment. Some caving should be anticipated in unshored excavations, especially where granular soils are encountered.

8.2.2 It is the responsibility of the contractor to ensure that all excavations and trenches are properly shored and maintained in accordance with applicable OSHA rules and regulations to maintain safety and maintain the stability of existing adjacent improvements.

8.2.3 All onsite excavations must be conducted in such a manner that potential surcharges from existing structures, construction equipment, and vehicle loads are resisted. The surcharge area may be defined by a 1:1 projection down and away from the bottom of an existing foundation or vehicle load. Penetrations below this 1:1 projection will require special excavation measures such as sloping or shoring. Excavation recommendations are provided in the *Temporary Excavations* section of this report (see Section 8.18).

8.2.4 The upper 5 feet of existing site soils encountered during the investigation are considered to have a "medium" expansive potential (EI = 63) and are classified as "expansive" in accordance with the 2019 California Building Code (CBC) Section 1803.5.3. The recommendations presented herein assume that the building foundations and slabs will derive support in these materials.

8.3 Minimum Resistivity, pH, and Water-Soluble Sulfate

8.3.1 Potential of Hydrogen (pH) and resistivity testing, as well as chloride content testing, were performed on representative samples of on-site material to generally evaluate the corrosion potential to surface utilities. The tests were performed in accordance with California Test Method Nos. 643 and 422 and indicate that the soils are considered "moderately corrosive" to "severely corrosive" with respect to corrosion of buried ferrous metals on site. The results are presented in Appendix B (Figure B23) and should be considered for design of underground structures. Due to the corrosive potential of the soils, it is suggested that ABS pipes be considered in lieu of cast-iron for subdrains and retaining wall drains beneath the structure.

8.3.2 Laboratory tests were performed on representative samples of the site materials to measure the percentage of water-soluble sulfate content. Results from the laboratory water-soluble sulfate tests are presented in Appendix B (Figure B23) and indicate that the on-site materials possess a sulfate exposure class of "S0" to concrete structures as defined by 2019 CBC Section 1904 and ACI 318-14 Table 19.3.1.1.

8.3.3 Geocon West, Inc. does not practice in the field of corrosion engineering and mitigation. If corrosion sensitive improvements are planned, it is recommended that a corrosion engineer be retained to evaluate corrosion test results and incorporate the necessary precautions to avoid premature corrosion of buried metal pipes and concrete structures in direct contact with the soils.

8.4 Grading

8.4.1 Grading is anticipated to include preparation of building pads and paving subgrade, excavation of site soils for proposed foundations and utility trenches, as well as placement of backfill for utility trenches.

8.4.2 A preconstruction conference should be held at the site prior to the beginning of grading operations with the owner, contractor, civil engineer and soil engineer in attendance. Special soil handling requirements can be discussed at that time.

8.4.3 Earthwork should be observed, and compacted fill tested by representatives of Geocon West, Inc. The existing fill and alluvial soils encountered during exploration are suitable for reuse as engineered fill, provided any encountered oversize material (greater than 6 inches) and any encountered deleterious debris is removed.

8.4.4 Grading should commence with the removal of all existing vegetation and existing improvements from the area to be graded. Deleterious debris such as wood and root structures should be exported from the site and should not be mixed with the fill soils. Asphalt and concrete should not be mixed with the fill soils unless approved by the Geotechnical Engineer. All existing underground improvements planned for removal should be completely excavated and the resulting depressions properly backfilled in accordance with the procedures described herein. Once a clean excavation bottom has been established it must be observed and approved in writing by the Geotechnical Engineer (a representative of Geocon West, Inc.).

8.4.5 For support of a mat foundation, it is recommended that the upper 6 feet of existing earth materials within the proposed building footprint areas be excavated and properly compacted for foundation and slab support. Deeper excavations should be conducted as necessary to remove deeper artificial fill or soft alluvial soil at the direction of the Geotechnical Engineer (a representative of Geocon). Proposed building foundations should be underlain by a minimum of 4 feet of newly placed engineered fill. The excavation should extend laterally a minimum distance of 3 feet beyond the building footprint area, including building appurtenances, or a distance equal to the depth of fill below the foundation, whichever is greater. The contractor should be aware that up to 9 feet of artificial fill was encountered in Boring B3. The limits of existing fill and/or soft alluvial soils removal will be verified by the Geocon representative during site grading activities.

8.4.6 All excavations must be observed and approved in writing by the Geotechnical Engineer (a representative of Geocon). If determined to be excessively soft, stabilization of the bottom of the excavation may be required in order to provide a firm working surface upon which engineered fill can be placed and heavy equipment can operate.

8.4.7 Prior to placing fill or constructing proposed improvements, a stable excavation bottom must be established. In areas where the subgrade is saturated or soft, proper compaction will likely not be possible or achieved in a timely manner without introducing stabilization measures. If subgrade stabilization is required at the excavation bottom, rubber tire equipment should not be allowed in the excavation bottom until it is stabilized or extensive soil disturbance could result. It is suggested that excavation and grading be performed during the summer season to promote moisture control of the soils. In addition, the use of track equipment should be used to minimize disturbance to the soils at the excavation bottom.

8.4.8 Bottom stabilization, if necessary, may be achieved placing a thin lift of 3- to 6-inch-diameter crushed angular rock into the soft excavation bottom. The use of crushed concrete will also be acceptable. The crushed rock should be spread thinly across the excavation bottom and pressed into the soils by track rolling or wheel rolling with heavy equipment. It is very important that voids between the rock fragments are not created so the rock must be thoroughly pressed or blended into the soils. All subgrade soils must be properly compacted and proof-rolled in the presence of the Geotechnical Engineer (a representative of Geocon West, Inc.).

8.4.9 An alternative method of subgrade stabilization may be accomplished by placing a one-foot-thick layer of washed, angular 3/4-inch gravel atop a stabilization fabric (Mirafi 500X or equivalent) subsequent to subgrade approval. Stabilization fabric should also be placed over the top of the gravel. This procedure should be conducted in sections until the entire excavation bottom has been blanketed by fabric and gravel. Heavy equipment may operate on the gravel once it has been placed. The gravel should be compacted to a dense state using a vibratory drum roller. It is recommended that the contractor meet with the Geotechnical Engineer to discuss this procedure in more detail.

8.4.10 The upper soils encountered during site exploration were moist to wet and the grading contractor should be aware that the existing soils are currently above optimum moisture content. Conditions could change seasonally. If the soils are more than 3 percent above the optimum moisture content at the time of construction the soils will likely require spreading, processing, and drying activities in order to achieve proper compaction.

8.4.11 All fill and backfill soils should be placed in horizontal loose layers approximately 6 to 8 inches thick, moisture conditioned to near 2 percent above optimum moisture content, and properly compacted to a minimum of 90 percent of the maximum dry density per ASTM D 1557 (latest edition).

8.4.12 It is anticipated that stable excavations for the recommended grading can be achieved with sloping measures. However, if excavations in close proximity to an adjacent property line and/or structure are required, special excavation measures may be necessary in order to maintain lateral support of offsite improvements. Excavation recommendations are provided in the *Temporary Excavations* section of this report (see Section 8.18).

8.4.13 Although not anticipated for this project, all imported fill shall be observed, tested, and approved by Geocon West, Inc. prior to bringing soil to the site. Rocks larger than 6 inches in diameter shall not be used in the fill. If necessary, import soils used as structural fill should have an expansion index less than 50 and corrosivity properties that are equally or less detrimental to that of the existing onsite soils (see Figure B23).

8.4.14. Where new paving is to be placed, it is recommended that all existing fill and soft alluvium be excavated and properly compacted for paving support. As a minimum, the upper 12 inches of soil should be scarified, moisture conditioned to near two percent over optimum moisture content, and compacted to at least 92 percent relative compaction, as determined by ASTM Test Method D 1557 (latest edition). Paving recommendations are provided in *Preliminary Pavement Recommendations* section of this report (see Section 8.13).

8.4.15 Foundations for small outlying structures, such as block walls up to 6 feet in height, planter walls or trash enclosures, which will not be tied to the proposed structure, may be supported on conventional foundations deriving support on a minimum of 12 inches of newly placed engineered fill which extends laterally at least 12 inches beyond the foundation area. Where excavation and compaction cannot be performed or is undesirable, foundations may derive support directly in the competent undisturbed alluvial soils and should be deepened as necessary to maintain a minimum 12 inch embedment into the recommended bearing materials. If the soils exposed in the excavation bottom are soft or loose, compaction of the soils will be required prior to placing steel or concrete. Compaction of the foundation excavation bottom is typically accomplished with a compaction wheel or mechanical whacker and must be observed and approved by a Geocon representative.

8.4.16 It is recommended that flexible utility connections be utilized for all rigid utilities to minimize or prevent damage to utilities from minor differential movements. Utility trenches should be properly backfilled in accordance with the requirements of the Green Book (latest edition). The pipe should be bedded with clean sands (Sand Equivalent greater than 30) to a depth of at least 1 foot over the pipe, and the bedding material must be inspected and approved in writing by the Geotechnical Engineer (a representative of Geocon). The use of gravel is not acceptable unless used in conjunction with filter fabric to prevent the gravel from having direct contact with soil. The remainder of the trench backfill may be derived from onsite soil or approved import soil, compacted as necessary, until the required compaction is obtained. The use of minimum 2-sack slurry as backfill is also acceptable. Prior to placing any bedding materials or pipes, the trench excavation bottom must be observed and approved in writing by the Geotechnical Engineer (a representative of Geocon).

8.4.17 All trench and foundation excavation bottoms must be observed and approved in writing by the Geotechnical Engineer (a representative of Geocon), prior to placing bedding sands, fill, steel, gravel, or concrete.

8.5 Shrinkage

8.5.1 Shrinkage results when a volume of material removed at one density is compacted to a higher density. A shrinkage factor between 10 and 15 percent should be anticipated when excavating and compacting the upper 5 feet of existing earth materials on the site to an average relative compaction of 92 percent.

8.5.2 If import soils will be utilized in the building pad, the soils must be placed uniformly and at equal thickness at the direction of the Geotechnical Engineer (a representative of Geocon West, Inc.). Soils can be borrowed from non-building pad areas and later replaced with imported soils.

8.6 Mat Foundation Design

8.6.1 Subsequent to the recommended grading, a reinforced concrete mat foundation may be utilized for support of the proposed structures. The reinforced concrete mat foundation should derive support in the newly placed engineered fill and be underlain by at least 4 feet of newly placed engineered fill.

8.6.2 Foundation excavations should be observed and approved in writing by the Geotechnical Engineer (a representative of Geocon West, Inc.), prior to the placement of reinforcing steel and concrete to verify that the excavations and exposed soil conditions are consistent with those anticipated. If unanticipated soil conditions are encountered, foundation modifications may be required.

8.6.3 It is anticipated that the mat foundation constructed for the on-grade structure will impart an average pressure between 2,000 psf to 3,500 psf. The recommended maximum allowable bearing value is 3,500 psf. The allowable bearing pressure may be increased by up to one-third for transient loads due to wind or seismic forces.

8.6.4 A vertical modulus of subgrade reaction of 100 pci may be used in the design of mat foundations deriving support in competent alluvial soils. This value is a unit value for use with a 1-foot square footing. The modulus should be reduced in accordance with the following equation when used with larger foundations:

$$K_R = K\left[\frac{B+1}{2B}\right]^2$$

where: K_R = reduced subgrade modulus
K = unit subgrade modulus
B = foundation width (in feet)

8.6.5 The thickness of and reinforcement for the mat foundation should be designed by the project structural engineer.

8.6.6 For seismic design purposes, a coefficient of friction of 0.35 may be utilized between the concrete mat and newly placed engineered fill without a moisture barrier, and 0.15 for slabs underlain by a moisture barrier.

8.6.7 The enclosed liquefaction settlement analyses indicate that the site soils could be susceptible to less than ½ inch of total seismic settlement as a result of the Design Earthquake peak ground acceleration ($⅔PGA_M$). Differential settlement at the foundation level is anticipated to be less than ¼ inches over a distance of 20 feet. The foundation design recommendations presented herein are intended to minimize the effects of settlement on proposed improvements.

8.6.8 The maximum expected total settlement for a structure support on a mat foundation system designed with the maximum allowable bearing value of 3,500 psf and deriving support in the recommended bearing materials is estimated to be approximately 2 inches and occur below the heaviest loaded structural element. A majority of the settlement of the foundation system is expected to occur on initial application of loading; however, additional settlements are expected within the first twelve months. Differential settlement is not expected to exceed 1 inch over a distance of 20 feet.

8.6.9 Based on these considerations is it recommended that the proposed structure, designed with a maximum allowable bearing value of 3,500 psf, be designed for a combined static and seismically induced differential settlement of 1 ½ inch over a distance of 20 feet.

8.6.10 This office should be provided a copy of the final construction plans so that the excavation recommendations presented herein could be properly reviewed and revised if necessary.

8.6.11 Once the design and foundation loading configurations for the proposed structures proceeds to a more finalized plan, the estimated settlements presented in this report should be reviewed and revised, if necessary. If the final foundation loading configurations are greater than the assumed loading conditions, the potential for settlement should be reevaluated by this office.

8.7 Miscellaneous Foundations

8.7.1 Foundations for small outlying structures, such as block walls up to 6 feet in height, planter walls or trash enclosures, which will not be tied to the proposed structure, may be supported on conventional foundations deriving support on a minimum of 12 inches of newly placed engineered fill which extends laterally at least 12 inches beyond the foundation area. Where excavation and compaction cannot be performed or is undesirable, foundations may derive support directly in the competent undisturbed alluvial soils, and should be deepened as necessary to maintain a minimum 12 inch embedment into the recommended bearing materials.

8.7.2 If the soils exposed in the excavation bottom are soft, compaction of the soft soils will be required prior to placing steel or concrete. Compaction of the foundation excavation bottom is typically accomplished with a compaction wheel or mechanical whacker and must be observed and approved by a Geocon representative. Miscellaneous foundations may be designed for a bearing value of 1,500 psf, and should be a minimum of 12 inches in width, 24 ,inches in depth below the lowest adjacent grade and 12 inches into the recommended bearing material. The allowable bearing pressure may be increased by up to one-third for transient loads due to wind or seismic forces.

8.7.3 Foundation excavations should be observed and approved in writing by the Geotechnical Engineer (a representative of Geocon West, Inc.), prior to the placement of reinforcing steel and concrete to verify that the excavations and exposed soil conditions are consistent with those anticipated.

8.8 Lateral Design

8.8.1 Resistance to lateral loading may be provided by friction acting at the base of foundations, slabs and by passive earth pressure. An allowable coefficient of friction of 0.35 may be used with the dead load forces in the undisturbed alluvial soils and newly placed engineered fill.

8.8.2 Passive earth pressure for the sides of foundations and slabs poured against newly placed engineered fill or undisturbed alluvial soils may be computed as an equivalent fluid having a density of 230 pounds per cubic foot (pcf) with a maximum earth pressure of 2,300 psf. When combining passive and friction for lateral resistance, the passive component should be reduced by one-third. A one-third increase in the passive value may be used for wind or seismic loads.

8.9 Concrete Slabs-on-Grade

8.9.1 Exterior concrete slabs-on-grade subject to vehicle loading should be designed in accordance with the recommendations in the *Preliminary Pavement Recommendations* section of this report (Section 8.10).

8.9.2 Slabs-on-grade at the ground surface that may receive moisture-sensitive floor coverings or may be used to store moisture-sensitive materials should be underlain by a vapor retarder placed directly beneath the slab. The vapor retarder and acceptable permeance should be specified by the project architect or developer based on the type of floor covering that will be installed. The vapor retarder design should be consistent with the guidelines presented in Section 9.3 of the American Concrete Institute's (ACI) Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials (ACI 302.2R-06) and should be installed in general conformance with ASTM E 1643 (latest edition) and the manufacturer's recommendations. A minimum thickness of 15 mils extruded polyolefin plastic is recommended; vapor retarders which contain recycled content or woven materials are not recommended. The vapor retarder should have a permeance of less than 0.01 perms demonstrated by testing before and after mandatory conditioning. The vapor retarder should be installed in direct contact with the concrete slab with proper perimeter seal. If the Los Angeles Green Building Code requirements apply to this project, the vapor retarder should be underlain by 4 inches of clean aggregate. It is important that the vapor retarder be puncture resistant since it will be in direct contact with angular gravel. As an alternative to the clean aggregate suggested in the Los Angeles Green Building Code, it is our opinion that the concrete slab-on-grade may be underlain by a vapor retarder over 4 inches of clean sand (sand equivalent greater than 30), since the sand will serve a capillary break and will minimize the potential for punctures and damage to the vapor barrier.

8.9.3 For seismic design purposes, a coefficient of friction of 0.35 may be utilized between concrete slabs and subgrade soils without a moisture barrier, and 0.15 for slabs underlain by a moisture barrier.

8.9.4 Exterior slabs, not subject to traffic loads, should be at least 4 inches thick and reinforced with No. 3 steel reinforcing bars placed 18 inches on center in both horizontal directions, positioned near the slab midpoint. Prior to construction of slabs, the upper 12 inches of subgrade should be moistened to optimum moisture content and properly compacted to at least 92 percent relative compaction, as determined by ASTM Test Method D 1557 (latest edition). Crack control joints should be spaced at intervals not greater than 10 feet and should be constructed using saw-cuts or other methods as soon as practical following concrete placement. Crack control joints should extend a minimum depth of one-fourth the slab thickness. The project structural engineer should design construction joints as necessary.

8.9.5 Due to the expansive potential of the anticipated subgrade soils, the moisture content of the slab subgrade should be maintained and sprinkled as necessary to maintain a moist condition as would be expected in any concrete placement. Furthermore, consideration should be given to doweling slabs into adjacent curbs and foundations to minimize movements and offsets which could lead to a potential tripping hazard.

8.9.6 The recommendations of this report are intended to reduce the potential for cracking of slabs due to settlement. However, even with the incorporation of the recommendations presented herein, foundations, stucco walls, and slabs-on-grade may exhibit some cracking due to minor soil movement and/or concrete shrinkage. The occurrence of concrete shrinkage cracks is independent of the supporting soil characteristics. Their occurrence may be reduced and/or controlled by limiting the slump of the concrete, proper concrete placement and curing, and by the placement of crack control joints at periodic intervals, in particular, where re-entrant slab corners occur.

8.10 Preliminary Paving Design

8.10.1 Where new paving is to be placed, it is recommended that all existing fill and soft alluvium materials be excavated and properly compacted for paving support. The client should be aware that excavation and compaction of all existing artificial fill and soft alluvium in the area of new paving is not required; however, paving constructed over existing uncertified fill or unsuitable alluvium material may experience increased settlement and/or cracking, and may therefore have a shorter design life and increased maintenance costs. As a minimum, the upper 12 inches of paving subgrade should be scarified, moisture conditioned to at least 2 percent above optimum moisture content, and properly compacted to at least 92 percent relative compaction, as determined by ASTM Test Method D 1557 (latest edition).

8.10.2 The following pavement sections are based on an assumed R-Value of 20. Once site grading activities are complete an R-Value should be obtained by laboratory testing to confirm the properties of the soils serving as paving subgrade, prior to placing pavement.

8.10.3 The Traffic Indices listed below are estimates. Geocon does not practice in the field of traffic engineering. The actual Traffic Index for each area should be determined by the project civil engineer. If pavement sections for Traffic Indices other than those listed below are required, Geocon should be contacted to provide additional recommendations. Pavement thicknesses were determined following procedures outlined in the *California Highway Design Manual* (Caltrans). It is anticipated that the majority of traffic will consist of automobile and large truck traffic.

PRELIMINARY PAVEMENT DESIGN SECTIONS

Location	Estimated Traffic Index (TI)	Asphalt Concrete (inches)	Class 2 Aggregate Base (inches)
Automobile Parking and Driveways	4.0	3.0	4.0
Trash Truck & Fire Lanes	7.0	4.0	12.0

8.10.4 Asphalt concrete should conform to Section 203-6 of the "*Standard Specifications for Public Works Construction"* (Green Book). Class 2 aggregate base materials should conform to Section 26-1.02A of the "*Standard Specifications of the State of California, Department of Transportation"* (Caltrans). The use of Crushed Miscellaneous Base (CMB) in lieu of Class 2 aggregate base is acceptable. Crushed Miscellaneous Base should conform to Section 200-2.4 of the "*Standard Specifications for Public Works Construction"* (Green Book).

8.10.5 Unless specifically designed and evaluated by the project structural engineer, where exterior concrete paving will be utilized for support of vehicles, it is recommended that the concrete be a minimum of 6 inches of concrete reinforced with No. 3 steel reinforcing bars placed 18 inches on center in both horizontal directions. Concrete paving supporting vehicular traffic should be underlain by a minimum of 4 inches of aggregate base and a properly compacted subgrade. As a minimum, the upper 12 inches of paving subgrade should be scarified, moisture conditioned to 2 percent above optimum moisture content, and properly compacted to at least 92 percent relative compaction, as determined by ASTM Test Method D 1557 (latest edition). The base material should be compacted to 95 percent relative compaction as determined by ASTM Test Method D 1557 (latest edition).

8.10.6 The performance of pavements is highly dependent upon providing positive surface drainage away from the edge of pavements. Ponding of water on or adjacent to the pavement will likely result in saturation of the subgrade materials and subsequent cracking, subsidence and pavement distress. If planters are planned adjacent to paving, it is recommended that the perimeter curb be extended at least 12 inches below the bottom of the aggregate base to minimize the introduction of water beneath the paving.

8.11 Retaining Wall Design

8.11.1 The recommendations presented below are generally applicable to the design of rigid concrete or masonry retaining walls having a maximum height of 5 feet. In the event that walls significantly higher than 5 feet are planned, Geocon should be contacted for additional recommendations.

8.11.2 Retaining wall foundations should be designed in accordance with the recommendations provided in the *Foundation Design* section of this report (see Sections 8.6 through 8.9).

8.11.3 Retaining walls with a level backfill surface that are not restrained at the top should be designed utilizing a triangular distribution of pressure (active pressure). Restrained walls are those that are not allowed to rotate more than 0.001H (where H equals the height of the retaining portion of the wall in feet) at the top of the wall. Where walls are restrained from movement at the top, walls may be designed utilizing a triangular distribution of pressure (at-rest pressure). The table on the following page presents recommended pressures to be used in retaining wall design.

RETAINING WALL WITH LEVEL BACKFILL SURFACE

HEIGHT OF RETAINING WALL (Feet)	ACTIVE PRESSURE EQUIVALENT FLUID PRESSURE (Pounds Per Cubic Foot)	AT-REST PRESSURE EQUIVALENT FLUID PRESSURE (Pounds Per Cubic Foot)
Up to 5	30	74

8.11.4 The wall pressures provided above assume that the proposed retaining walls will support a wedge of engineered fill derived from onsite soils. If import soil will be used to backfill proposed retaining walls, revised earth pressures may be required to account for the geotechnical properties of the import soil used as engineered fill. This should be evaluated once the use of import soil is established. All imported fill shall be observed, tested, and approved by Geocon West, Inc. prior to bringing soil to the site.

8.11.5 The wall pressures provided above assume that the retaining wall will be properly drained preventing the buildup of hydrostatic pressure. If retaining wall drainage is not implemented, the equivalent fluid pressure to be used in design of undrained walls is 100 pcf. The value includes hydrostatic pressures plus buoyant lateral earth pressures.

8.11.6 Additional active pressure should be added for a surcharge condition due to sloping ground, vehicular traffic or adjacent structures and should be designed for each condition as the project progresses. Surcharges may be evaluated using Section 8.19 of this report. Once the design becomes more finalized, an addendum letter can be prepared revising recommendations and addressing specific surcharge conditions throughout the project, if necessary.

8.12 Retaining Wall Drainage

8.12.1 Where not designed for hydrostatic pressure, retaining walls should be provided with a drainage system. At the base of the drain system, a subdrain covered with a minimum of 12 inches of gravel should be installed, and a compacted fill blanket or other seal placed at the surface (see Figure 10). The clean bottom and subdrain pipe, behind a retaining wall, should be observed by the Geotechnical Engineer (a representative of Geocon), prior to placement of gravel or compacting backfill.

8.12.2 As an alternative, a plastic drainage composite such as Miradrain or equivalent may be installed in continuous, 4-foot-wide columns along the entire back face of the wall, at 8 feet on center. The top of these drainage composite columns should terminate approximately 18 inches below the ground surface, where either hardscape or a minimum of 18 inches of relatively cohesive material should be placed as a cap (see Figure 11). These vertical columns of drainage material would then be connected at the bottom of the wall to a collection panel or a 1-cubic-foot rock pocket drained by a 4-inch subdrain pipe.

8.12.3 Subdrainage pipes at the base of the retaining wall drainage system should outlet to an acceptable location via controlled drainage structures.

8.12.4 Moisture affecting below grade walls is one of the most common post-construction complaints. Poorly applied or omitted waterproofing can lead to efflorescence or standing water. Particular care should be taken in the design and installation of waterproofing to avoid moisture problems, or actual water seepage into the structure through any normal shrinkage cracks which may develop in the concrete walls, floor slab, foundations and/or construction joints. The design and inspection of the waterproofing is not the responsibility of the geotechnical engineer. A waterproofing consultant should be retained in order to recommend a product or method, which would provide protection to subterranean walls, floor slabs and foundations.

8.13 Elevator Pit Design

8.13.1 The elevator pit slab and retaining wall should be designed by the project structural engineer. Elevator pit walls may be designed in accordance with the recommendations in the *Retaining Wall Design* section of this report (see Section 8.14).

8.13.2 Additional active pressure should be added for a surcharge condition due to sloping ground, vehicular traffic or adjacent foundations and should be designed for each condition as the project progresses.

8.13.3 If retaining wall drainage is to be provided, the drainage system should be designed in accordance with the *Retaining Wall Drainage* section of this report (see Section 8.15).

8.13.4 It is suggested that the exterior walls and slab be waterproofed to prevent excessive moisture inside of the elevator pit. Waterproofing design and installation is not the responsibility of the geotechnical engineer.

8.14 Elevator Piston

8.14.1 If a plunger-type elevator piston is installed for this project, a deep drilled excavation will be required. It is important to verify that the drilled excavation is not situated immediately adjacent to a foundation, or the drilled excavation could compromise the existing foundation support, especially if the drilling is performed subsequent to the foundation construction.

8.14.2 Due to the preliminary nature of the project at this time, it is unknown if a plunger-type elevator piston will be included for this project. If in the future it is determined that a plunger-type elevator piston will be constructed, the location of the proposed elevator should be reviewed by the Geotechnical Engineer to evaluate the setback from foundations. Additional recommendations will be provided as necessary.

8.14.3 Some caving is anticipated in the granular soils below a depth of 20 feet. The contractor should be prepared to use casing and should have it readily available at the commencement of drilling activities. Continuous observation of the drilling and installation of the elevator piston by the Geotechnical Engineer (a representative of Geocon West, Inc.) is required.

8.14.4 The annular space between the piston casing and drilled excavation wall should be filled with a minimum of 1½-sack slurry pumped from the bottom up. As an alternative, pea gravel may be utilized. The use of soil to backfill the annular space is not acceptable.

8.15 Temporary Excavations

8.15.1 Excavations on the order of 6 feet in height are generally anticipated during grading activities, and isolated excavations up to 9 feet in height may also be required. The excavations are expected to expose artificial fill and alluvial soils, which may be subject to some caving where granular soils are exposed. Temporary vertical excavations up to 5 feet in height may be attempted where not surcharged by adjacent traffic or structures.

8.15.2 Vertical excavations greater than 5 feet or where surcharged by existing structures will require sloping or shoring measures in order to provide a stable excavation. Where sufficient space is available, temporary unsurcharged embankments could be sloped back at a uniform 1:1 slope gradient or flatter up to a maximum of 9 feet in height. A uniform slope does not have a vertical portion. Where space is limited, shoring measures will be required. *Shoring* recommendations can be provided under separate cover if necessary.

8.15.3 If excavations in close proximity to an adjacent property line and/or structure are required, special excavation measures such as slot-cutting or shoring may be necessary in order to maintain lateral support of offsite improvements. Recommendations for slot-cutting and shoring can be provided under separate cover.

8.15.4 Where sloped embankments are utilized, the top of the slope should be barricaded to prevent vehicles and storage loads at the top of the slope within a horizontal distance equal to the height of the slope. If the temporary construction embankments are to be maintained during the rainy season, berms are suggested along the tops of the slopes where necessary to prevent runoff water from entering the excavation and eroding the slope faces. Geocon personnel should inspect the soils exposed in the cut slopes during excavation so that modifications of the slopes can be made if variations in the soil conditions occur. All excavations should be stabilized within 30 days of initial excavation.

8.16 Surcharge from Adjacent Structures and Improvements

8.16.1 Additional pressure should be added for a surcharge condition due to sloping ground, vehicular traffic or adjacent structures and should be designed for each condition as the project progresses.

8.16.2 It is recommended that line-load surcharges from adjacent wall footings, use horizontal pressures generated from NAV-FAC DM 7.2. The governing equations are:

$$For\ {}^{x}/_{H} \leq 0.4$$

$$\sigma_H(z) = \frac{0.20 \times \left(\frac{z}{H}\right)}{\left[0.16 + \left(\frac{z}{H}\right)^2\right]^2} \times \frac{Q_L}{H}$$

and

$$For\ {}^{x}/_{H} > 0.4$$

$$\sigma_H(z) = \frac{1.28 \times \left(\frac{x}{H}\right)^2 \times \left(\frac{z}{H}\right)}{\left[\left(\frac{x}{H}\right)^2 + \left(\frac{z}{H}\right)^2\right]^2} \times \frac{Q_L}{H}$$

where x is the distance from the face of the excavation or wall to the vertical line-load, H is the distance from the bottom of the footing to the bottom of excavation or wall, z is the depth at which the horizontal pressure is desired, Q_L is the vertical line-load and $\sigma_{H(z)}$ is the horizontal pressure at depth z.

8.16.3 It is recommended that vertical point-loads, from construction equipment outriggers or adjacent building columns use horizontal pressures generated from NAV-FAC DM 7.2. The governing equations are:

$$For\ {}^{x}/_{H} \leq 0.4$$

$$\sigma_H(z) = \frac{0.28 \times \left(\frac{z}{H}\right)^2}{\left[0.16 + \left(\frac{z}{H}\right)^2\right]^3} \times \frac{Q_P}{H^2}$$

and

$$For\ {}^{x}/_{H} > 0.4$$

$$\sigma_H(z) = \frac{1.77 \times \left(\frac{x}{H}\right)^2 \times \left(\frac{z}{H}\right)^2}{\left[\left(\frac{x}{H}\right)^2 + \left(\frac{z}{H}\right)^2\right]^3} \times \frac{Q_P}{H^2}$$

then

$$\sigma'_H(z) = \sigma_H(z) cos^2(1.1\theta)$$

where x is the distance from the face of the excavation/wall to the vertical point-load, H is distance from the outrigger/bottom of column footing to the bottom of excavation, z is the depth at which the horizontal pressure is desired, Qp is the vertical point-load, $\sigma_H(z)$ is the horizontal pressure at depth z, θ is the angle between a line perpendicular to the excavation/wall and a line from the point-load to location on the excavation/wall where the surcharge is being evaluated, and $\sigma_H(z)$ is the horizontal pressure at depth z.

8.17 Surface Drainage

8.17.1 Proper surface drainage is critical to the future performance of the project. Uncontrolled infiltration of irrigation excess and storm runoff into the soils can adversely affect the performance of the planned improvements. Saturation of a soil can cause it to lose internal shear strength and increase its compressibility, resulting in a change in the original designed engineering properties. Proper drainage should be maintained at all times.

8.17.2 All site drainage should be collected and controlled in non-erosive drainage devices. Drainage should not be allowed to pond anywhere on the site, and especially not against any foundation or retaining wall. The site should be graded and maintained such that surface drainage is directed away from structures in accordance with 2019 CBC 1804.4 or other applicable standards. In addition, drainage should not be allowed to flow uncontrolled over any descending slope. Discharge from downspouts, roof drains and scuppers are not recommended onto unprotected soils within 5 feet of the building perimeter. Planters which are located adjacent to foundations should be sealed to prevent moisture intrusion into the soils providing foundation support. Landscape irrigation is not recommended within 5 feet of the building perimeter footings except when enclosed in protected planters.

8.17.3 Positive site drainage should be provided away from structures, pavement, and the tops of slopes to swales or other controlled drainage structures. The building pad and pavement areas should be fine graded such that water is not allowed to pond.

8.17.4 Landscaping planters immediately adjacent to paved areas are not recommended due to the potential for surface or irrigation water to infiltrate the pavement's subgrade and base course. Either a subdrain, which collects excess irrigation water and transmits it to drainage structures, or impervious above-grade planter boxes should be used. In addition, where landscaping is planned adjacent to the pavement, it is recommended that consideration be given to providing a cutoff wall along the edge of the pavement that extends at least 12 inches below the base material.

8.18 Plan Review

8.18.1 Grading, foundation, and shoring plans should be reviewed by the Geotechnical Engineer (a representative of Geocon West, Inc.), prior to finalization to verify that the plans have been prepared in substantial conformance with the recommendations of this report and to provide additional analyses or recommendations.

LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. The recommendations of this report pertain only to the site investigated and are based upon the assumption that the soil conditions do not deviate from those disclosed in the investigation. If any variations or undesirable conditions are encountered during construction, or if the proposed construction will differ from that anticipated herein, Geocon West, Inc. should be notified so that supplemental recommendations can be given. The evaluation or identification of the potential presence of hazardous or corrosive materials was not part of the scope of services provided by Geocon West, Inc.

2. This report is issued with the understanding that it is the responsibility of the owner, or of his representative, to ensure that the information and recommendations contained herein are brought to the attention of the architect and engineer for the project and incorporated into the plans, and the necessary steps are taken to see that the contractor and subcontractors carry out such recommendations in the field.

3. The findings of this report are valid as of the date of this report. However, changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or the works of man on this or adjacent properties. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated wholly or partially by changes outside our control. Therefore, this report is subject to review and should not be relied upon after a period of three years.

4. The firm that performed the geotechnical investigation for the project should be retained to provide testing and observation services during construction to provide continuity of geotechnical interpretation and to check that the recommendations presented for geotechnical aspects of site development are incorporated during site grading, construction of improvements, and excavation of foundations. If another geotechnical firm is selected to perform the testing and observation services during construction operations, that firm should prepare a letter indicating their intent to assume the responsibilities of project geotechnical engineer of record. A copy of the letter should be provided to the regulatory agency for their records. In addition, that firm should provide revised recommendations concerning the geotechnical aspects of the proposed development, or a written acknowledgement of their concurrence with the recommendations presented in our report. They should also perform additional analyses deemed necessary to assume the role of Geotechnical Engineer of Record.

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U.S. Geological Survey and California Geological Survey, 2006, *Quaternary Fault and Fold Database for the United States,* accessed March 4, 2021 from USGS web site: http//earthquake.usgs.gov/hazards/qfaults/.

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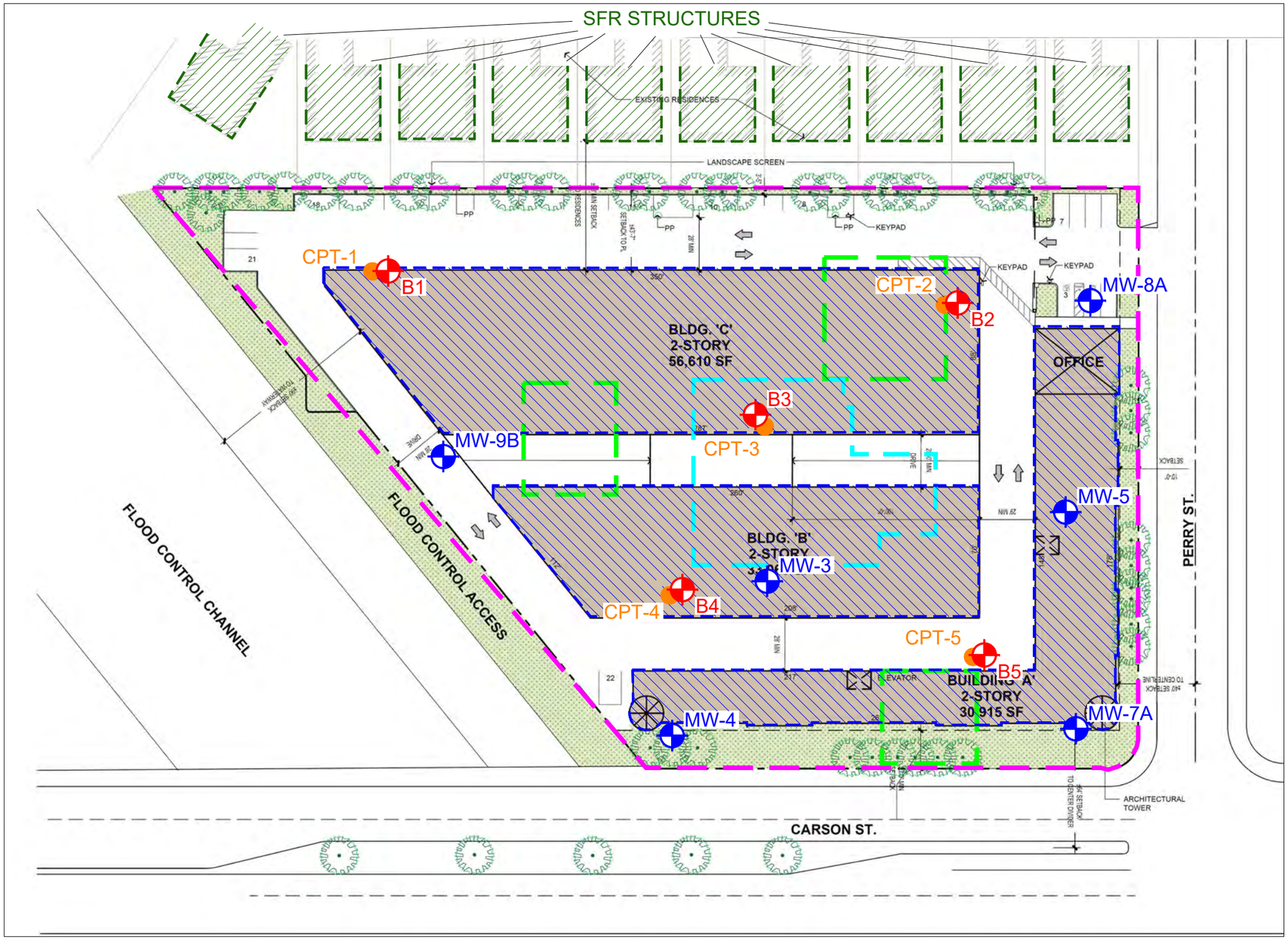
Ziony, J. I., and Jones, L. M., 1989, *Map Showing Late Quaternary Faults and 1978–1984 Seismicity of the Los Angeles Region, California*, U.S. Geological Survey Miscellaneous Field Studies Map MF-1964.



LEGEND

- B5 — Approximate Location of Boring
- CPT-5 — Approximate Location of CPT
- MW-9B — Approximate Location of Monitoring Well
- Property Limits
- Existing Off-Site Structures
- Proposed New Medical Office Building
- Extent of URS Removal and Recompaction (5 FT BGS)
- Extent of URS Removal and Recompaction (8 FT BGS)

North

0 60' 120'

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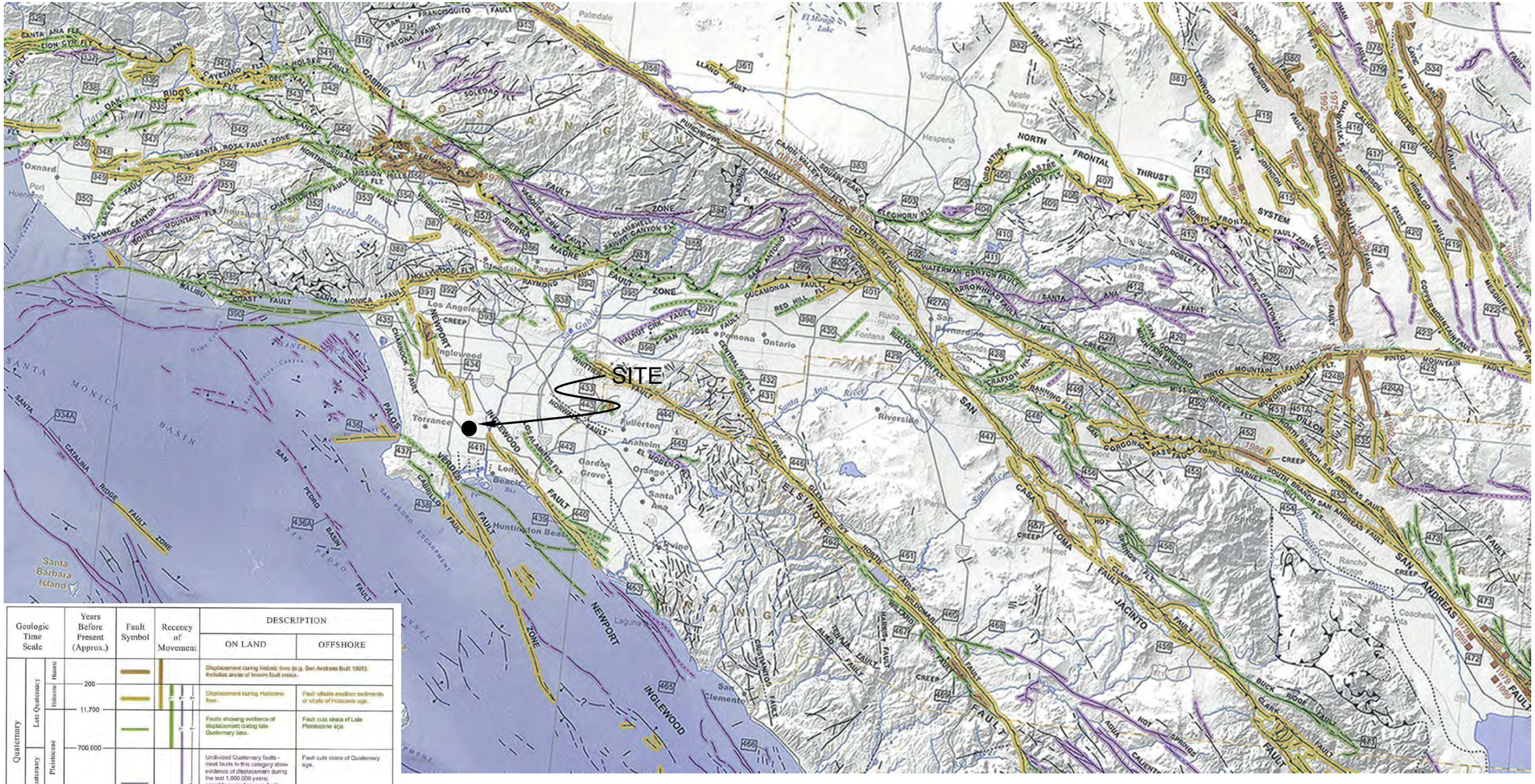
DRAFTED BY: JMH	CHECKED BY: JTA

SITE PLAN

21611 S PERRY STREET
CARSON, CALIFORNIA

APRIL 2021	PROJECT NO. W1301-06-01	FIG. 2

Reference: Jennings, C.W. and Bryant, W. A., 2010, Fault Activity Map of California, California Geological Survey Geologic Data Map No. 6.



Geologic Time Scale			Years Before Present (Approx.)	Fault Symbol	Recency of Movement	DESCRIPTION: ON LAND	DESCRIPTION: OFFSHORE
Quaternary	Late Quaternary	Historic				Displacement during historic time (e.g. San Andreas fault 1906). Includes areas of known fault creep.	
		Holocene	200			Displacement during Holocene time.	Fault offsets seafloor sediments or strata of Holocene age.
			11,700			Faults showing evidence of displacement during late Quaternary time.	Fault cuts strata of Late Pleistocene age.
	Early Quaternary	Pleistocene	700,000			Undivided Quaternary faults - most faults in this category show evidence of displacement during the last 1,600,000 years; possible exceptions are faults which displace rocks of undifferentiated Plio-Pleistocene age.	Fault cuts strata of Quaternary age.
Pre-Quaternary			1,600,000*			Faults without recognized Quaternary displacement or showing evidence of no displacement during Quaternary time. Not necessarily inactive.	Fault cuts strata of Pliocene or older age.
			4.5 billion (Age of Earth)				

* Quaternary now recognized as extending to 2.6 Ma (Walker and Geissman, 2009). Quaternary faults in this map were established using the previous 1.6 Ma criterion.

N

0 12 24 Miles

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DRAFTED BY: CB | CHECKED BY: SFK

REGIONAL FAULT MAP

21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021 | PROJECT NO. W1301-06-01 | FIG. 3

SANTA BARBARA
VENTURA
LOS ANGELES
ORANGE
RIVERSIDE
IMPERIAL
SAN DIEGO
SITE
120°
33°
119°

EPICENTER MAP LEGEND

Period	1800 - 1868	1869 - 1931	1932 - 1999
≥ 7.0			
6.5 - 6.9			
6.0 - 6.4			
5.5 - 5.9			
5.0 - 5.4			

Magnitude (M)

Historical Faulting
Holocene Faulting
Highways (Major)
Highways (Minor)
Lakes

65 Last two digits of M ≥ 6.5 earthquake year

Reference: Toppozada, T., Branum, D., Petersen, M., Hallstrom, C., Cramer, C., and Reichle, M., 2000, Epicenters and Areas Damaged by M≥5 California Earthquakes, 1800 - 1999, California Geological Survey, Map Sheet 49.

0 20 40 Miles

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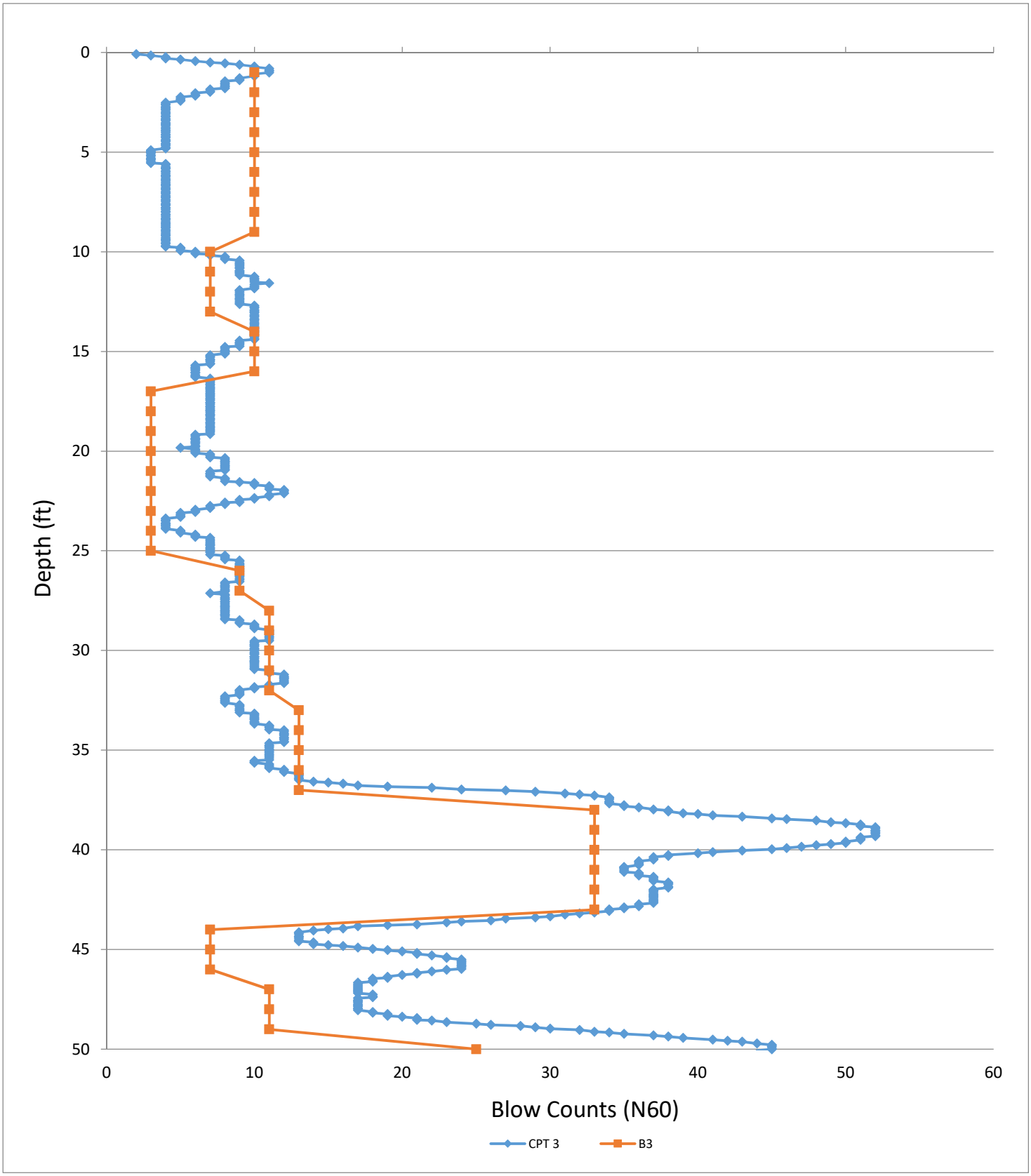
REGIONAL SEISMICITY MAP

21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021 | PROJECT NO. W1301-06-01 | FIG.4



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JMH		

CORRELATION OF BORING & CPT N60

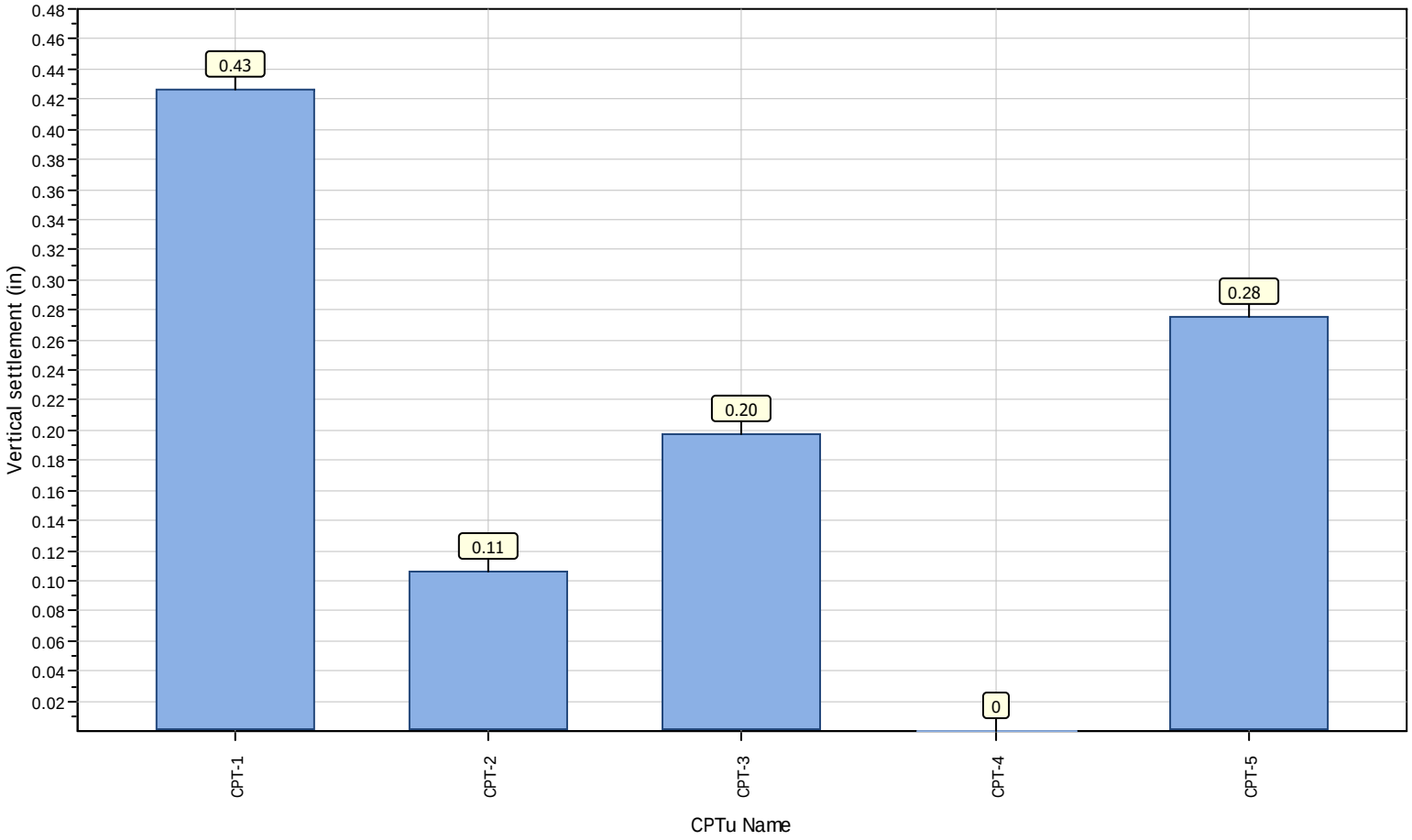
21611 SOUTH PERRY STREET
CARSON, CA

APRIL 2021	PROJECT NO. W1301-06-01	FIG.5

Project title : W1301-06-01

Location : Perry Street

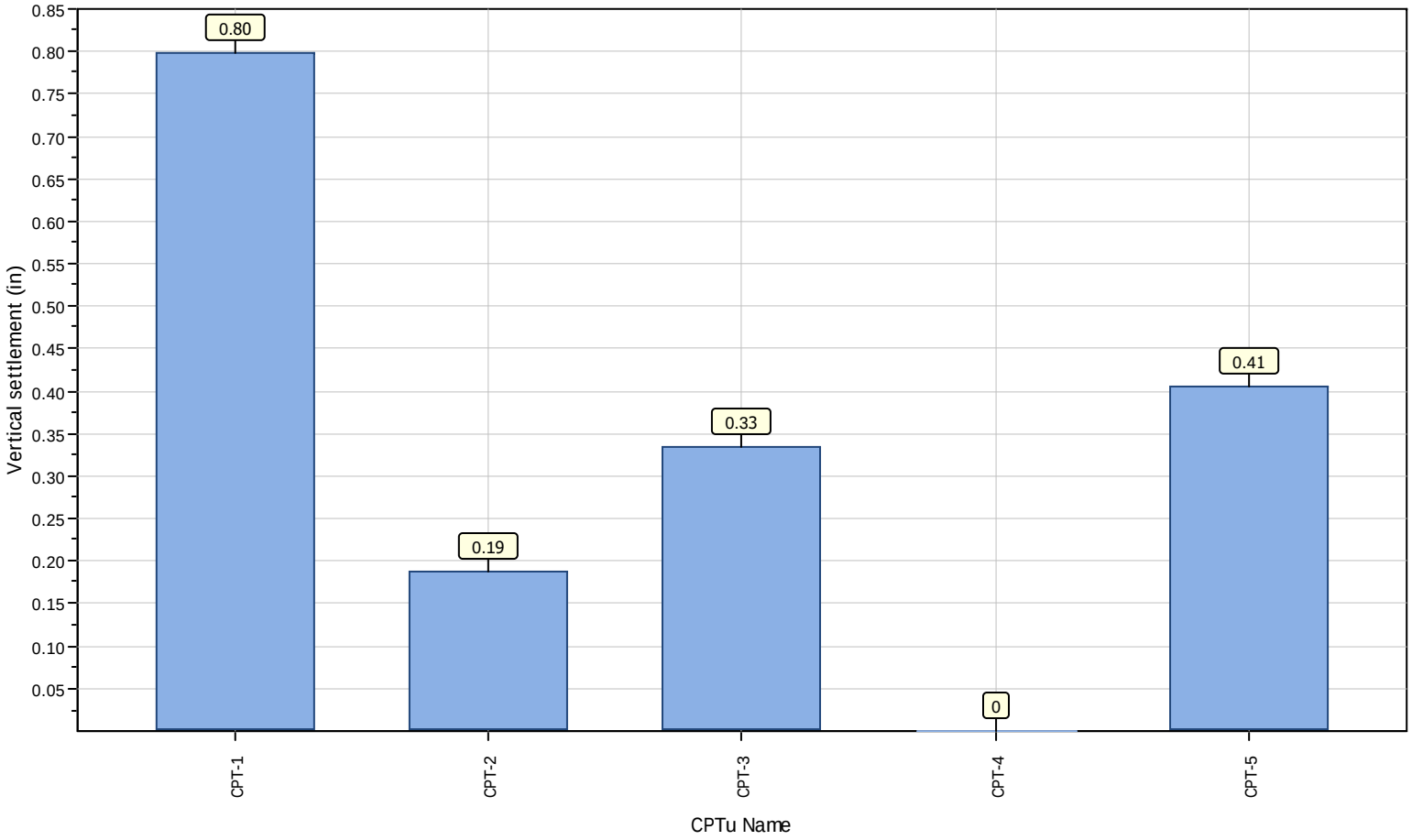
Overall vertical settlements report



Project title : W1301-06-01

Location : Perry Street

Overall vertical settlements report



GEOCON

Client : Perry Street
File No. : W1301-06-01
Boring : 3

TECHNICAL ENGINEERING AND DESIGN GUIDES AS ADAPTED FROM THE US ARMY CORPS OF ENGINEERS, NO. 9
EVALUATION OF EARTHQUAKE-INDUCED SETTLEMENTS IN DRY SANDY SOILS
DESIGN EARTHQUAKE

DE EARTHQUAKE INFORMATION:

Earthquake Magnitude:	6.68
Peak Horiz. Acceleration (g):	0.549

Fig 4.1 Fig 4.2 Fig 4.4

Depth of Base of Strata (ft)	Thickness of Layer (ft)	Depth of Mid-point of Layer (ft)	Soil Unit Weight (pcf)	Overburden Pressure at Mid-point (tsf)	Mean Effective Pressure at Mid-point (tsf)	Average Cyclic Shear Stress [Tav]	Field SPT [N]	Correction Factor [Cer]	Relative Density [Dr] (%)	Correction Factor [Cn]	Corrected [N1]60	rd Factor	Maximum Shear Mod. [Gmax] (tsf)	[yeff]*[Geff] [Gmax]	yeff Shear Strain	[yeff]*100%	Volumetric Strain M7.5 [E15] (%)	Number of Strain Cycles [Nc]	Corrected Vol. Strains [Ec]	Estimated Settlement [S] (inches)
1.0	1.0	0.5	120.0	0.03	0.02	0.011	10	1.25	76.6	1.7	19.1	1.0	169.475	6.25E-05	1.00E-04	0.010	1.06E-02	8.4928	8.17E-03	0.00
2.0	1.0	1.5	120.0	0.09	0.06	0.032	10	1.25	74.4	1.7	19.1	1.0	293.540	1.06E-04	2.30E-04	0.023	2.43E-02	8.4928	1.88E-02	0.00
3.0	1.0	2.5	120.0	0.15	0.10	0.053	10	1.25	72.5	1.7	19.1	1.0	378.958	1.34E-04	1.70E-04	0.017	1.79E-02	8.4928	1.39E-02	0.00
4.0	1.0	3.5	120.0	0.21	0.14	0.075	10	1.25	70.7	1.7	19.1	1.0	448.389	1.56E-04	1.70E-04	0.017	1.79E-02	8.4928	1.39E-02	0.00
5.0	1.0	4.5	120.0	0.27	0.18	0.096	10	1.25	69.0	1.7	19.1	1.0	508.425	1.74E-04	1.70E-04	0.017	1.79E-02	8.4928	1.39E-02	0.00
6.0	1.0	5.5	120.0	0.33	0.22	0.117	10	1.25	67.4	1.7	19.1	1.0	562.085	1.88E-04	1.50E-04	0.015	1.58E-02	8.4928	1.23E-02	0.00
7.0	1.0	6.5	120.0	0.39	0.26	0.139	10	1.25	65.9	1.6	18.4	1.0	603.301	2.03E-04	4.50E-04	0.045	4.97E-02	8.4928	3.85E-02	0.01
8.0	1.0	7.5	120.0	0.45	0.30	0.160	10	1.25	64.5	1.5	17.1	1.0	632.776	2.20E-04	4.50E-04	0.045	5.42E-02	8.4928	4.19E-02	0.01
9.0	1.0	8.5	120.0	0.51	0.34	0.181	10	1.25	63.3	1.4	16.1	1.0	659.735	2.34E-04	4.50E-04	0.045	5.84E-02	8.4928	4.52E-02	0.01
10.0	1.0	9.5	120.0	0.57	0.38	0.202	7	1.25	52.2	1.4	10.7	1.0	607.907	2.79E-04	4.50E-04	0.045	9.58E-02	8.4928	7.41E-02	0.00
11.0	1.0	10.5	120.0	0.63	0.42	0.222	7	1.25	52.2	1.3	10.1	1.0	628.529	2.93E-04	4.50E-04	0.045	1.02E-01	8.4928	7.87E-02	0.00
12.0	1.0	11.5	120.0	0.69	0.46	0.243	7	1.25	52.2	1.2	9.8	0.9	650.354	3.05E-04	1.00E-03	0.100	2.35E-01	8.4928	1.82E-01	0.00
13.0	1.0	12.5	120.0	0.75	0.50	0.263	7	1.25	52.2	1.2	9.6	0.9	673.332	3.14E-04	7.10E-04	0.071	1.71E-01	8.4928	1.33E-01	0.00
14.0	1.0	13.5	120.0	0.81	0.54	0.284	10	1.25	59.6	1.2	14.4	0.9	802.030	2.80E-04	3.70E-04	0.037	5.47E-02	8.4928	4.23E-02	0.00
15.0	1.0	14.5	120.0	0.87	0.58	0.304	10	1.25	59.6	1.2	14.2	0.9	825.875	2.87E-04	3.70E-04	0.037	5.59E-02	8.4928	4.33E-02	0.00
16.0	1.0	15.5	120.0	0.93	0.62	0.324	10	1.25	59.6	1.1	13.9	0.9	848.608	2.93E-04	3.70E-04	0.037	5.72E-02	8.4928	4.43E-02	0.00
17.0	1.0	16.5	120.0	0.99	0.66	0.344	3	1.25	31.4	1.1	4.5	0.9	603.195	4.31E-04	1.20E-03	0.120	7.10E-01	8.4928	5.49E-01	0.00
18.0	1.0	17.5	120.0	1.05	0.70	0.364	3	1.25	31.4	1.1	4.5	0.9	617.634	4.39E-04	1.20E-03	0.120	7.24E-01	8.4928	5.61E-01	0.00
19.0	1.0	18.5	120.0	1.11	0.74	0.383	3	1.25	31.4	1.1	4.4	0.9	631.508	4.47E-04	1.20E-03	0.120	7.39E-01	8.4928	5.72E-01	0.00
20.0	1.0	19.5	120.0	1.17	0.78	0.402	3	1.25	31.4	1.1	4.3	0.9	644.865	4.53E-04	1.20E-03	0.120	7.54E-01	8.4928	5.83E-01	0.00
21.0	1.0	20.5	120.0	1.23	0.82	0.421	3	1.25	31.4	1.1	4.3	0.9	657.749	4.60E-04	1.20E-03	0.120	7.68E-01	8.4928	5.94E-01	0.00
22.0	1.0	21.5	120.0	1.29	0.86	0.440	3	1.25	31.4	1.0	4.2	0.9	670.198	4.65E-04	1.20E-03	0.120	7.82E-01	8.4928	6.05E-01	0.00
23.0	1.0	22.5	120.0	1.35	0.90	0.458	3	1.25	31.4	1.0	4.1	0.9	682.246	4.70E-04	1.20E-03	0.120	7.96E-01	8.4928	6.16E-01	0.00
24.0	1.0	23.5	120.0	1.41	0.94	0.477	3	1.25	31.4	1.0	4.1	0.9	693.922	4.75E-04	1.20E-03	0.120	8.10E-01	8.4928	6.27E-01	0.00
25.0	1.0	24.5	120.0	1.47	0.98	0.495	3	1.25	31.4	1.0	4.0	0.9	705.252	4.80E-04	1.20E-03	0.120	8.23E-01	8.4928	6.37E-01	0.00
26.0	1.0	25.5	120.0	1.53	1.03	0.513	9	1.25	52.3	1.0	12.7	0.9	1055.741	3.28E-04	5.20E-04	0.052	8.97E-02	8.4928	6.95E-02	0.00
27.0	1.0	26.5	120.0	1.59	1.07	0.530	9	1.25	52.3	1.0	12.5	0.9	1071.522	3.31E-04	5.20E-04	0.052	9.12E-02	8.4928	7.06E-02	0.00
28.0	1.0	27.5	120.0	1.65	1.11	0.547	11	1.25	55.9	1.0	15.8	0.9	1179.921	3.07E-04	5.20E-04	0.052	6.89E-02	8.4928	5.33E-02	0.00
29.0	1.0	28.5	120.0	1.71	1.15	0.564	11	1.25	55.9	0.9	15.6	0.9	1196.177	3.09E-04	5.20E-04	0.052	6.99E-02	8.4928	5.41E-02	0.00
30.0	1.0	29.5	120.0	1.77	1.19	0.581	11	1.25	55.9	0.9	15.4	0.9	1212.035	3.11E-04	5.20E-04	0.052	7.10E-02	8.4928	5.49E-02	0.00
31.0	1.0	30.5	120.0	1.83	1.23	0.597	11	1.25	55.9	0.9	15.3	0.9	1227.516	3.12E-04	5.20E-04	0.052	7.20E-02	8.4928	5.57E-02	0.00
32.0	1.0	31.5	120.0	1.89	1.27	0.613	11	1.25	55.9	0.9	15.1	0.9	1242.641	3.14E-04	5.20E-04	0.052	7.30E-02	8.4928	5.65E-02	0.00
33.0	1.0	32.5	120.0	1.95	1.31	0.629	13	1.25	58.8	0.9	17.6	0.9	1329.436	2.98E-04	3.00E-04	0.030	3.49E-02	8.4928	2.70E-02	0.00
34.0	1.0	33.5	120.0	2.01	1.35	0.645	13	1.25	58.8	0.9	17.4	0.8	1344.735	2.99E-04	3.00E-04	0.030	3.54E-02	8.4928	2.74E-02	0.00
35.0	1.0	34.5	120.0	2.07	1.39	0.660	13	1.25	58.8	0.9	17.2	0.8	1359.713	3.00E-04	5.20E-04	0.052	6.22E-02	8.4928	4.81E-02	0.00
36.0	1.0	35.5	120.0	2.13	1.43	0.675	13	1.25	58.8	0.9	17.0	0.8	1374.387	3.01E-04	5.20E-04	0.052	6.30E-02	8.4928	4.88E-02	0.00
37.0	1.0	36.5	120.0	2.19	1.47	0.690	13	1.25	58.8	0.9	16.9	0.8	1388.771	3.02E-04	5.20E-04	0.052	6.38E-02	8.4928	4.94E-02	0.00
38.0	1.0	37.5	120.0	2.25	1.51	0.704	33	1.25	90.8	0.9	42.4	0.8	1913.714	2.22E-04	3.00E-04	0.030	1.22E-02	8.4928	9.43E-03	0.00
39.0	1.0	38.5	120.0	2.31	1.55	0.718	33	1.25	90.8	0.8	42.0	0.8	1932.598	2.22E-04	3.00E-04	0.030	1.23E-02	8.4928	9.54E-03	0.00
40.0	1.0	39.5	120.0	2.37	1.59	0.732	33	1.25	90.8	0.8	41.6	0.8	1951.139	2.23E-04	3.00E-04	0.030	1.25E-02	8.4928	9.65E-03	0.00
41.0	1.0	40.5	120.0	2.43	1.63	0.745	33	1.25	90.8	0.8	41.2	0.8	1969.350	2.23E-04	3.00E-04	0.030	1.26E-02	8.4928	9.77E-03	0.00
42.0	1.0	41.5	120.0	2.49	1.67	0.758	33	1.25	90.8	0.8	40.8	0.8	1987.246	2.23E-04	3.00E-04	0.030	1.28E-02	8.4928	9.88E-03	0.00
43.0	1.0	42.5	120.0	2.55	1.71	0.771	33	1.25	90.8	0.8	40.4	0.8	2004.839	2.23E-04	3.00E-04	0.030	1.29E-02	8.4928	9.99E-03	0.00
44.0	1.0	43.5	120.0	2.61	1.75	0.783	7	1.25	40.6	0.8	15.5	0.8	1473.568	3.07E-04	5.20E-04	0.052	7.06E-02	8.4928	5.47E-02	0.00
45.0	1.0	44.5	120.0	2.67	1.79	0.795	7	1.25	40.6	0.8	15.4	0.8	1487.981	3.07E-04	5.20E-04	0.052	7.11E-02	8.4928	5.50E-02	0.00
46.0	1.0	45.5	120.0	2.73	1.83	0.807	7	1.25	40.6	0.8	15.3	0.8	1502.208	3.06E-04	5.20E-04	0.052	7.15E-02	8.4928	5.53E-02	0.00
47.0	1.0	46.5	120.0	2.79	1.87	0.819	11	1.25	50.1	0.8	13.0	0.8	1436.934	3.23E-04	5.20E-04	0.052	8.72E-02	8.4928	6.75E-02	0.00
48.0	1.0	47.5	120.0	2.85	1.91	0.830	11	1.25	50.1	0.8	12.9	0.8	1448.200	3.23E-04	5.20E-04	0.052	8.81E-02	8.4928	6.82E-02	0.00
49.0	1.0	48.5	120.0	2.91	1.95	0.841	11	1.25	50.1	0.8	12.8	0.8	1459.300	3.23E-04	5.20E-04	0.052	8.90E-02	8.4928	6.89E-02	0.00
50.0	1.0	49.5	120.0	2.97	1.99	0.851	25	1.25	74.5	0.8	34.0	0.8	2042.085	2.32E-04	3.00E-04	0.030	1.59E-02	8.4928	1.23E-02	0.00

TOTAL SETTLEMENT = **0.05**

Figure 9

GEOCON

Client : Perry Street
File No. : W1301-06-01
Boring : 3

TECHNICAL ENGINEERING AND DESIGN GUIDES AS ADAPTED FROM THE US ARMY CORPS OF ENGINEERS, NO. 9
EVALUATION OF EARTHQUAKE-INDUCED SETTLEMENTS IN DRY SANDY SOILS
MAXIMUM CONSIDERED EARTHQUAKE

MCE EARTHQUAKE INFORMATION:

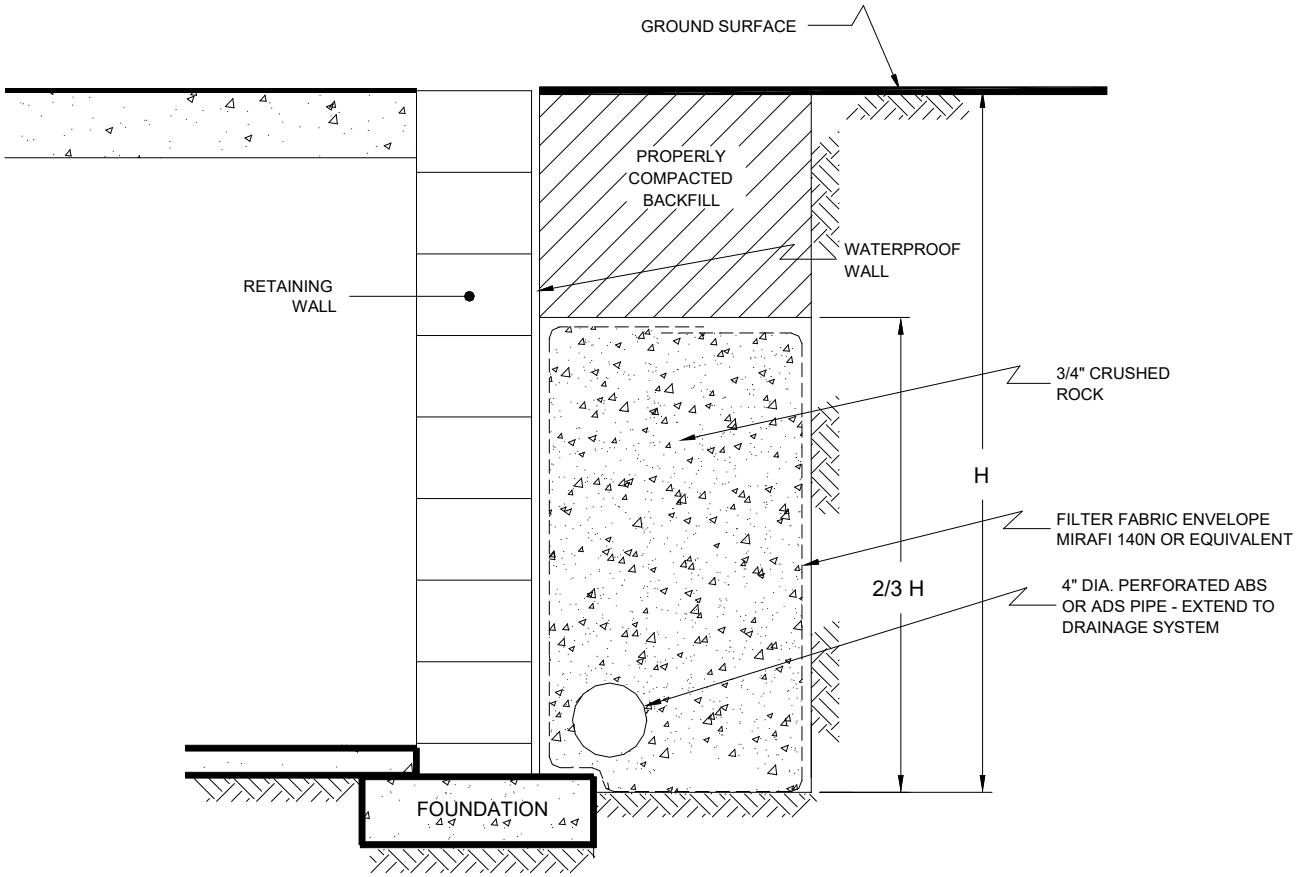
Earthquake Magnitude:	6.87
Peak Horiz. Acceleration (g):	0.823

Fig 4.1 Fig 4.2 Fig 4.4

Depth of Base of Strata (ft)	Thickness of Layer (ft)	Depth of Mid-point of Layer (ft)	Soil Unit Weight (pcf)	Overburden Pressure at Mid-point (tsf)	Mean Effective Pressure at Mid-point (tsf)	Average Cyclic Shear Stress [Tav]	Field SPT [N]	Correction Factor [Cer]	Relative Density [Dr] (%)	Correction Factor [Cn]	Corrected [N1]60	rd Factor	Maximum Shear Mod. [Gmax] (tsf)	[yeff]*[Geff] [Gmax]	yeff Shear Strain	[yeff]*100%	Volumetric Strain M7.5 [E15] (%)	Number of Strain Cycles [Nc]	Corrected Vol. Strains [Ec]	Estimated Settlement [S] (inches)
1.0	1.0	0.5	120.0	0.03	0.02	0.016	10	1.25	76.6	1.7	19.1	1.0	169.475	9.38E-05	1.90E-04	0.019	2.00E-02	9.8538	1.66E-02	0.00
2.0	1.0	1.5	120.0	0.09	0.06	0.048	10	1.25	74.4	1.7	19.1	1.0	293.540	1.59E-04	2.30E-04	0.023	2.43E-02	9.8538	2.01E-02	0.00
3.0	1.0	2.5	120.0	0.15	0.10	0.080	10	1.25	72.5	1.7	19.1	1.0	378.958	2.02E-04	8.10E-04	0.081	8.55E-02	9.8538	7.07E-02	0.02
4.0	1.0	3.5	120.0	0.21	0.14	0.112	10	1.25	70.7	1.7	19.1	1.0	448.389	2.34E-04	8.10E-04	0.081	8.55E-02	9.8538	7.07E-02	0.02
5.0	1.0	4.5	120.0	0.27	0.18	0.144	10	1.25	69.0	1.7	19.1	1.0	508.425	2.60E-04	8.10E-04	0.081	8.55E-02	9.8538	7.07E-02	0.02
6.0	1.0	5.5	120.0	0.33	0.22	0.176	10	1.25	67.4	1.7	19.1	1.0	562.085	2.82E-04	4.50E-04	0.045	4.75E-02	9.8538	3.93E-02	0.01
7.0	1.0	6.5	120.0	0.39	0.26	0.208	10	1.25	65.9	1.6	18.4	1.0	603.301	3.05E-04	1.00E-03	0.100	1.10E-01	9.8538	9.14E-02	0.02
8.0	1.0	7.5	120.0	0.45	0.30	0.239	10	1.25	64.5	1.5	17.1	1.0	632.776	3.29E-04	1.00E-03	0.100	1.20E-01	9.8538	9.96E-02	0.02
9.0	1.0	8.5	120.0	0.51	0.34	0.271	10	1.25	63.3	1.4	16.1	1.0	659.735	3.51E-04	1.00E-03	0.100	1.30E-01	9.8538	1.07E-01	0.03
10.0	1.0	9.5	120.0	0.57	0.38	0.302	7	1.25	52.2	1.4	10.7	1.0	607.907	4.18E-04	2.70E-03	0.270	5.75E-01	9.8538	4.76E-01	0.00
11.0	1.0	10.5	120.0	0.63	0.42	0.333	7	1.25	52.2	1.3	10.1	1.0	628.529	4.39E-04	2.70E-03	0.270	6.10E-01	9.8538	5.05E-01	0.00
12.0	1.0	11.5	120.0	0.69	0.46	0.364	7	1.25	52.2	1.2	9.8	0.9	650.354	4.57E-04	2.70E-03	0.270	6.36E-01	9.8538	5.26E-01	0.00
13.0	1.0	12.5	120.0	0.75	0.50	0.395	7	1.25	52.2	1.2	9.6	0.9	673.332	4.71E-04	1.20E-03	0.120	2.90E-01	9.8538	2.40E-01	0.00
14.0	1.0	13.5	120.0	0.81	0.54	0.426	10	1.25	59.6	1.2	14.4	0.9	802.030	4.19E-04	1.20E-03	0.120	1.77E-01	9.8538	1.47E-01	0.00
15.0	1.0	14.5	120.0	0.87	0.58	0.456	10	1.25	59.6	1.2	14.2	0.9	825.875	4.30E-04	1.20E-03	0.120	1.81E-01	9.8538	1.50E-01	0.00
16.0	1.0	15.5	120.0	0.93	0.62	0.486	10	1.25	59.6	1.1	13.9	0.9	848.608	4.39E-04	1.20E-03	0.120	1.86E-01	9.8538	1.54E-01	0.00
17.0	1.0	16.5	120.0	0.99	0.66	0.516	3	1.25	31.4	1.1	4.5	0.9	603.195	6.47E-04	4.10E-03	0.410	2.42E+00	9.8538	2.01E+00	0.00
18.0	1.0	17.5	120.0	1.05	0.70	0.545	3	1.25	31.4	1.1	4.5	0.9	617.634	6.59E-04	4.10E-03	0.410	2.47E+00	9.8538	2.05E+00	0.00
19.0	1.0	18.5	120.0	1.11	0.74	0.574	3	1.25	31.4	1.1	4.4	0.9	631.508	6.70E-04	4.10E-03	0.410	2.53E+00	9.8538	2.09E+00	0.00
20.0	1.0	19.5	120.0	1.17	0.78	0.603	3	1.25	31.4	1.1	4.3	0.9	644.865	6.80E-04	4.10E-03	0.410	2.57E+00	9.8538	2.13E+00	0.00
21.0	1.0	20.5	120.0	1.23	0.82	0.631	3	1.25	31.4	1.1	4.3	0.9	657.749	6.89E-04	4.10E-03	0.410	2.62E+00	9.8538	2.17E+00	0.00
22.0	1.0	21.5	120.0	1.29	0.86	0.660	3	1.25	31.4	1.0	4.2	0.9	670.198	6.98E-04	4.10E-03	0.410	2.67E+00	9.8538	2.21E+00	0.00
23.0	1.0	22.5	120.0	1.35	0.90	0.687	3	1.25	31.4	1.0	4.1	0.9	682.246	7.05E-04	1.00E-02	1.000	6.63E+00	9.8538	5.49E+00	0.00
24.0	1.0	23.5	120.0	1.41	0.94	0.715	3	1.25	31.4	1.0	4.1	0.9	693.922	7.13E-04	1.00E-02	1.000	6.75E+00	9.8538	5.59E+00	0.00
25.0	1.0	24.5	120.0	1.47	0.98	0.742	3	1.25	31.4	1.0	4.0	0.9	705.252	7.19E-04	1.00E-02	1.000	6.86E+00	9.8538	5.68E+00	0.00
26.0	1.0	25.5	120.0	1.53	1.03	0.769	9	1.25	52.3	1.0	12.7	0.9	1055.741	4.92E-04	8.10E-04	0.081	1.40E-01	9.8538	1.16E-01	0.00
27.0	1.0	26.5	120.0	1.59	1.07	0.795	9	1.25	52.3	1.0	12.5	0.9	1071.522	4.96E-04	8.10E-04	0.081	1.42E-01	9.8538	1.18E-01	0.00
28.0	1.0	27.5	120.0	1.65	1.11	0.821	11	1.25	55.9	1.0	15.8	0.9	1179.921	4.60E-04	8.10E-04	0.081	1.07E-01	9.8538	8.88E-02	0.00
29.0	1.0	28.5	120.0	1.71	1.15	0.846	11	1.25	55.9	0.9	15.6	0.9	1196.177	4.63E-04	8.10E-04	0.081	1.09E-01	9.8538	9.02E-02	0.00
30.0	1.0	29.5	120.0	1.77	1.19	0.871	11	1.25	55.9	0.9	15.4	0.9	1212.035	4.66E-04	8.10E-04	0.081	1.11E-01	9.8538	9.15E-02	0.00
31.0	1.0	30.5	120.0	1.83	1.23	0.896	11	1.25	55.9	0.9	15.3	0.9	1227.516	4.68E-04	8.10E-04	0.081	1.12E-01	9.8538	9.28E-02	0.00
32.0	1.0	31.5	120.0	1.89	1.27	0.920	11	1.25	55.9	0.9	15.1	0.9	1242.641	4.71E-04	8.10E-04	0.081	1.14E-01	9.8538	9.41E-02	0.00
33.0	1.0	32.5	120.0	1.95	1.31	0.943	13	1.25	58.8	0.9	17.6	0.9	1329.436	4.47E-04	8.10E-04	0.081	9.43E-02	9.8538	7.81E-02	0.00
34.0	1.0	33.5	120.0	2.01	1.35	0.967	13	1.25	58.8	0.9	17.4	0.8	1344.735	4.49E-04	8.10E-04	0.081	9.56E-02	9.8538	7.91E-02	0.00
35.0	1.0	34.5	120.0	2.07	1.39	0.990	13	1.25	58.8	0.9	17.2	0.8	1359.713	4.50E-04	8.10E-04	0.081	9.68E-02	9.8538	8.02E-02	0.00
36.0	1.0	35.5	120.0	2.13	1.43	1.012	13	1.25	58.8	0.9	17.0	0.8	1374.387	4.52E-04	8.10E-04	0.081	9.81E-02	9.8538	8.12E-02	0.00
37.0	1.0	36.5	120.0	2.19	1.47	1.034	13	1.25	58.8	0.9	16.9	0.8	1388.771	4.53E-04	8.10E-04	0.081	9.93E-02	9.8538	8.22E-02	0.00
38.0	1.0	37.5	120.0	2.25	1.51	1.055	33	1.25	90.8	0.9	42.4	0.8	1913.714	3.33E-04	5.20E-04	0.052	2.11E-02	9.8538	1.75E-02	0.00
39.0	1.0	38.5	120.0	2.31	1.55	1.076	33	1.25	90.8	0.8	42.0	0.8	1932.598	3.33E-04	5.20E-04	0.052	2.14E-02	9.8538	1.77E-02	0.00
40.0	1.0	39.5	120.0	2.37	1.59	1.097	33	1.25	90.8	0.8	41.6	0.8	1951.139	3.34E-04	5.20E-04	0.052	2.16E-02	9.8538	1.79E-02	0.00
41.0	1.0	40.5	120.0	2.43	1.63	1.117	33	1.25	90.8	0.8	41.2	0.8	1969.350	3.34E-04	5.20E-04	0.052	2.19E-02	9.8538	1.81E-02	0.00
42.0	1.0	41.5	120.0	2.49	1.67	1.136	33	1.25	90.8	0.8	40.8	0.8	1987.246	3.35E-04	5.20E-04	0.052	2.21E-02	9.8538	1.83E-02	0.00
43.0	1.0	42.5	120.0	2.55	1.71	1.155	33	1.25	90.8	0.8	40.4	0.8	2004.839	3.35E-04	5.20E-04	0.052	2.24E-02	9.8538	1.85E-02	0.00
44.0	1.0	43.5	120.0	2.61	1.75	1.174	7	1.25	40.6	0.8	15.5	0.8	1473.568	4.60E-04	8.10E-04	0.081	1.10E-01	9.8538	9.11E-02	0.00
45.0	1.0	44.5	120.0	2.67	1.79	1.192	7	1.25	40.6	0.8	15.4	0.8	1487.981	4.60E-04	8.10E-04	0.081	1.11E-01	9.8538	9.16E-02	0.00
46.0	1.0	45.5	120.0	2.73	1.83	1.210	7	1.25	40.6	0.8	15.3	0.8	1502.208	4.59E-04	8.10E-04	0.081	1.11E-01	9.8538	9.22E-02	0.00
47.0	1.0	46.5	120.0	2.79	1.87	1.227	11	1.25	50.1	0.8	13.0	0.8	1436.934	4.84E-04	8.10E-04	0.081	1.36E-01	9.8538	1.12E-01	0.00
48.0	1.0	47.5	120.0	2.85	1.91	1.244	11	1.25	50.1	0.8	12.9	0.8	1448.200	4.84E-04	8.10E-04	0.081	1.37E-01	9.8538	1.14E-01	0.00
49.0	1.0	48.5	120.0	2.91	1.95	1.260	11	1.25	50.1	0.8	12.8	0.8	1459.300	4.84E-04	8.10E-04	0.081	1.39E-01	9.8538	1.15E-01	0.00
50.0	1.0	49.5	120.0	2.97	1.99	1.276	25	1.25	74.5	0.8	34.0	0.8	2042.085	3.48E-04	5.20E-04	0.052	2.75E-02	9.8538	2.28E-02	0.00

TOTAL SETTLEMENT = **0.14**

Figure 10



NO SCALE

GEOCON WEST, INC.

ENVIRONMENTAL GEOTECHNICAL MATERIALS
3303 N. SAN FERNANDO BLVD. - SUITE 100 - BURBANK, CA 91504
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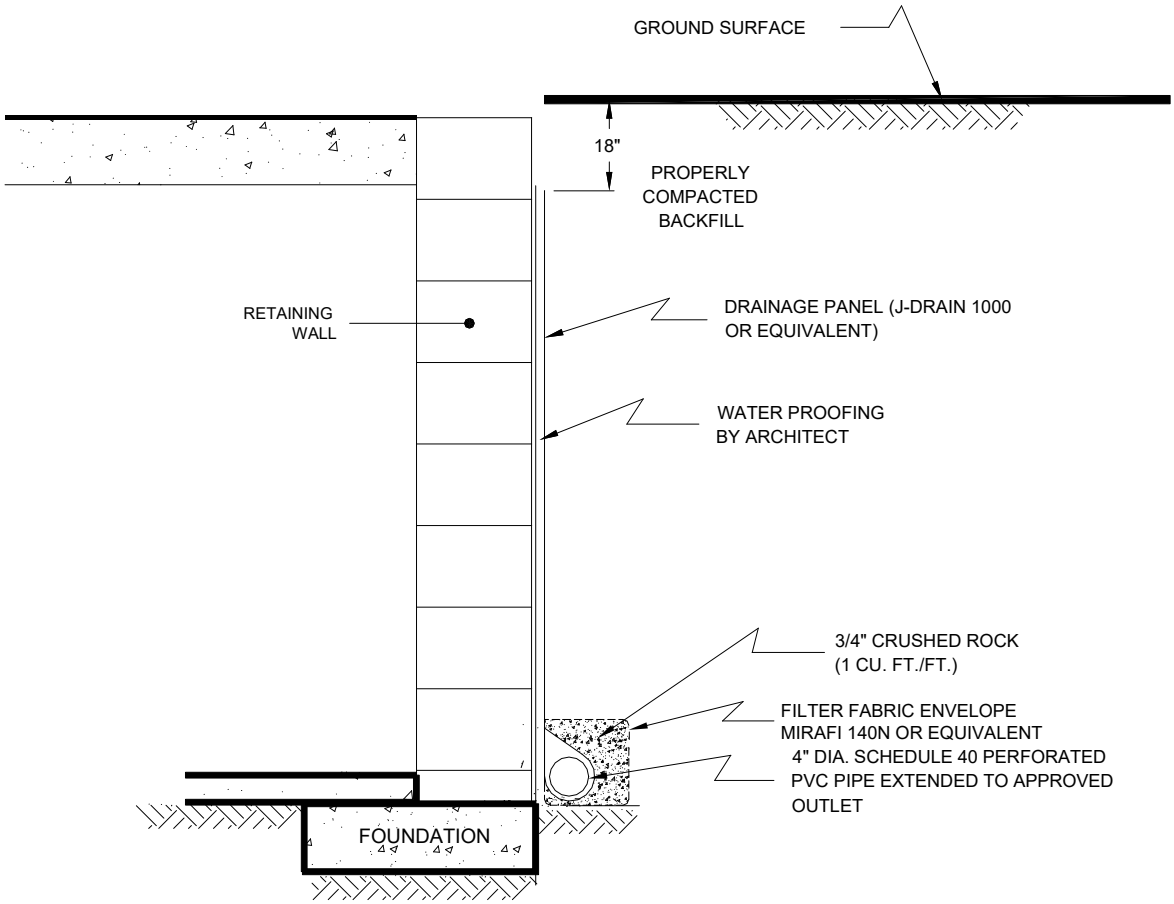
DRAFTED BY: JMH	CHECKED BY: JTA

RETAINING WALL DRAIN DETAIL

21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021	NO. W1301-06-01	FIG. 10



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21611 SOUTH PERRY STREET
CARSON, CALIFORNIA

APRIL 2021	NO. W1301-06-01	FIG. 11

APPENDIX A

APPENDIX A

FIELD INVESTIGATION

The site was explored on February 9, 2021 by drilling five 8-inch diameter borings using a truck-mounted hollow-stem auger drilling machine and advancing five cone penetrometer tests (CPTs). The borings were excavated to depths between approximately 20½ and 51 feet beneath the existing ground surface. The CPTs were advanced to depths of approximately 60 feet below existing ground surface. Representative and relatively undisturbed samples were obtained by driving a 4 inch, O. D., California Modified Sampler into the "undisturbed" soil mass with blows from a 140 pound hammer falling 30 inches. Bulk samples were also obtained. Standard Penetration Tests were performed in boring B3.

The soil conditions encountered in the borings were visually examined, classified and logged in general accordance with the Unified Soil Classification System (USCS). Logs of the borings are presented on Figures A1 through A5. The CPT data is presented as Figures A6 through A10. The logs depict the soil and geologic conditions encountered and the depth at which samples were obtained. The logs also include our interpretation of the conditions between sampling intervals. Therefore, the logs contain both observed and interpreted data. We determined the lines designating the interface between soil materials on the logs using visual observations, penetration rates, excavation characteristics and other factors. The transition between materials may be abrupt or gradual. Where applicable, the boring logs were revised based on subsequent laboratory testing. The approximate locations of the borings and CPTs are depicted on the Site Plan (see Figure 2)

PROJECT NO. W1301-06-01

BORING 1

ELEV. (MSL.) -- DATE COMPLETED **2/9/2021**

EQUIPMENT **HOLLOW STEM AUGER** BY: **JMH**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT*)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	BULK 0-5'				**ARTIFICIAL FILL** Silty Sand, poorly graded, dense, moist, light brown, fine-grained, some medium-grained, some gravel.			
2								
4								
6	B1@5'			CH	**ALLUVIUM** Clay, firm, moist, dark gray, high plasticity.	19	105.0	24.0
8	B1@7.5'				- some sand	13	106.1	19.7
10	B1@10'				- olive brown mottles	21	103.7	22.0
12			▼					
14					Clayey Sand, poorly graded, loose, saturated, brown, fine-grained.			
16	B1@15'			SC		10	111.6	19.8
18					Silty Sand, poorly graded, medium dense, saturated, brown, fine-grained.			
20	B1@20'			SM		22	114.5	19.2

Total depth of boring: 20.5 feet
Fill to 4.5 feet.
Groundwater encountered at 12.5 feet.
Backfilled with grout.

*Penetration resistance for 140-pound hammer falling 30 inches by auto-hammer.
NOTE: The stratification lines presented herein represent the approximate boundary between earth types; the transitions may be gradual.

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Figure A1,
Log of Boring 1, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

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PROJECT NO. W1301-06-01

BORING 2

ELEV. (MSL.) -- DATE COMPLETED **2/9/2021**

EQUIPMENT **HOLLOW STEM AUGER** BY: **JMH**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT*)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	BULK 0-5'				**ARTIFICIAL FILL** Silty Sand, poorly graded, loose, moist, brown, fine-grained.			
2								
4	B2@3'			ML	**ALLUVIUM** Sandy Silt, firm, moist, dark gray.	14	73.4	29.6
6	B2@6'				Clay, soft, wet, gray, high plasticity.	10	29.3	32.0
8								
10	B2@9'			CH	- firm, dark gray	15	73.9	49.8
12	B2@12'					15	87.2	35.9
14								
16	B2@15'				- soft	8	75.1	45.2
18								
20	B2@20'				- firm	17	101.7	27.4

Total depth of boring: 20.5 feet
Fill to 3 feet.
No groundwater encountered.
Backfilled with grout.

*Penetration resistance for 140-pound hammer falling 30 inches by auto-hammer.
NOTE: The stratification lines presented herein represent the approximate boundary between earth types; the transitions may be gradual.

W1301-06-01 BORING LOGS.GPJ

Figure A2,
Log of Boring 2, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. W1301-06-01

BORING 3

ELEV. (MSL.) -- DATE COMPLETED **2/9/2021**

EQUIPMENT **HOLLOW STEM AUGER** BY: **JMH**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT*)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	BULK 0-5'				**ARTIFICIAL FILL** Sand, poorly graded, dense, moist, light brown, fine-grained, some medium-grained.			
2	B3@1.5'					50 (6")	107.1	4.0
4								
6	B3@5'					50 (6")		
8	B3@7'				- grayish brown, some fine gravel	50 (3")	103.4	8.7
10	B3@10'			MH	**ALLUVIUM** Silt, soft, moist, dark gray, high plasticity, some sand.	7		
12	B3@12.5'			CH	Clay, firm, moist, dark gray, high plasticity.	21	91.7	31.6
14								
16	B3@15'					10		
18	B3@17.5'		▼		Clay, firm, moist, dark gray.	14	103.7	26.1
20	B3@20'			CL	- soft, wet	3		
22	B3@22.5'				- firm, light brown	11	105.7	27.3
24								
26	B3@25'			CH	Clay, firm, moist, olive brown, some sand, trace gravel, high plasticity.	9		
28	B3@27.5'				- mottled calcium deposits, increase in sand	21	89.9	32.6

W1301-06-01 BORING LOGS.GPJ

Figure A3,
Log of Boring 3, Page 1 of 2

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

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PROJECT NO. W1301-06-01

BORING 3

ELEV. (MSL.) -- DATE COMPLETED **2/9/2021**

EQUIPMENT **HOLLOW STEM AUGER** BY: **JMH**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT*)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
30	B3@30'				- decrease in sand	11		
32	B3@32.5'			CH	- stiff	22	98.4	27.3
34	B3@35'				- firm, increase in sand	13		
36								
38	B3@37.5'				Silty Sand, poorly graded, dense, wet, olive brown, fine-grained.	67	117.6	16.4
40	B3@40'			SM		33		
42	B3@42.5'				- medium dense, trace shells	36	101.9	25.0
44				CL	Sandy Clay, soft, wet, olive brown.			
46	B3@45'					7		
48	B3@47.5'			SC	Clayey Sand, poorly graded, medium dense, saturated, olive brown with oxidation mottles, fine-grained.	20	100.0	25.4
50	B3@50'			SM	Silty Sand, poorly graded, medium dense, saturated, olive brown.	25		
					Total depth of boring: 51 feet Fill to 9 feet. Groundwater encountered at 17.6 feet. Backfilled with grout. *Penetration resistance for 140-pound hammer falling 30 inches by auto-hammer. NOTE: The stratification lines presented herein represent the approximate boundary between earth types; the transitions may be gradual.			

W1301-06-01 BORING LOGS.GPJ

Figure A3,
Log of Boring 3, Page 2 of 2

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. W1301-06-01

BORING 4

ELEV. (MSL.) -- DATE COMPLETED **2/9/2021**

EQUIPMENT **HOLLOW STEM AUGER** BY: **JMH**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT*)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	BULK 0-5'				**ARTIFICIAL FILL** Silty Sand, poorly graded, dense, moist, brown, fine-grained, some medium-grained, some gravel.			
2								
4	B4@3'					50 (6")		
6	B4@5'			ML	**ALLUVIUM** Sandy Silt, soft, moist, dark gray.	10	78.1	31.1
8	B4@7.5'				Clay, soft, wet, dark gray, high plasticity.	10	80.7	38.9
10	B4@10'					8	77.8	42.4
12				CH				
14								
16	B4@15'					10	85.0	38.5
18								
20	B4@20'					4	80.0	42.3

Total depth of boring: 20.5 feet
Fill to 5 feet.
No groundwater encountered.
Backfilled with grout.

*Penetration resistance for 140-pound hammer falling 30 inches by auto-hammer.
NOTE: The stratification lines presented herein represent the approximate boundary between earth types; the transitions may be gradual.

W1301-06-01 BORING LOGS.GPJ

Figure A4,
Log of Boring 4, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◹ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. W1301-06-01

BORING 5

ELEV. (MSL.) -- DATE COMPLETED **2/9/2021**

EQUIPMENT **HOLLOW STEM AUGER** BY: **JMH**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT*)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**ARTIFICIAL FILL** Silty Sand, poorly graded, loose, moist, brown, fine-grained, some medium-grained.			
2								
4								
6	B5@5'				**ALLUVIUM** Clay, soft, moist, dark gray, high plasticity.	11	79.5	42.3
8	B5@7.5'				- wet	10	82.2	38.4
10	B5@10'			CH		7	74.1	37.5
12								
14								
16	B5@15'				- saturated	11	97.9	47.5
18								
20	B5@20'				- firm, no recovery	17		

Total depth of boring: 20.5 feet
Fill to 5 feet.
No groundwater encountered.
Backfilled with grout.

*Penetration resistance for 140-pound hammer falling 30 inches by auto-hammer.
NOTE: The stratification lines presented herein represent the approx

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Figure A5,
Log of Boring 5, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

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Shear-Induced Building Settlement (Ds) calculation procedure

The shear-induced building settlement (Ds) due to liquefaction below the building can be estimated using the relationship developed by Bray and Macedo (2017):

$$Ln(Ds) = c1 + c2 * LBS + 0.58 * Ln\left(Tanh\left(\frac{HL}{6}\right)\right) + 4.59 * Ln(Q) - 0.42 * Ln(Q)^2 - 0.02 * B + 0.84 * Ln(CAVdp) + 0.41 * Ln(Sa1) + \varepsilon$$

where Ds is in the units of mm, c1= -8.35 and c2= 0.072 for LBS ≤ 16, and c1= -7.48 and c2= 0.014 otherwise. Q is the building contact pressure in units of kPa, HL is the cumulative thickness of the liquefiable layers in the units of m, B is the building width in the units of m, CAVdp is a standardized version of the cumulative absolute velocity in the units of g-s, Sa1 is 5%-damped pseudo-acceleration response spectral value at a period of 1 s in the units of g, and ε is a normal random variable with zero mean and 0.50 standard deviation in Ln units. The liquefaction-induced building settlement index (LBS) is:

$$LBS = \sum W * \frac{\varepsilon_{shear}}{z} dz$$

where z (m) is the depth measured from the ground surface > 0, W is a foundation-weighting factor wherein W = 0.0 for z less than Df, which is the embedment depth of the foundation, and W = 1.0 otherwise. The shear strain parameter (ε_shear) is the liquefaction-induced free-field shear strain (in %) estimated using Zhang et al. (2004). It is calculated based on the estimated Dr of the liquefied soil layer and the calculated safety factor against liquefaction triggering (FSL).

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- Robertson, P.K. and Lisheng, S., 2010, “Estimation of seismic compression in dry soils using the CPT” FIFTH INTERNATIONAL CONFERENCE ON RECENT ADVANCES IN GEOTECHNICAL EARTHQUAKE ENGINEERING AND SOIL DYNAMICS, *Symposium in honor of professor I. M. Idriss,* SAN diego, CA
- R. E. S. Moss, R. B. Seed, R. E. Kayen, J. P. Stewart, A. Der Kiureghian, K. O. Cetin, CPT-Based Probabilistic and Deterministic Assessment of In Situ Seismic Soil Liquefaction Potential, Journal of Geotechnical and Geoenvironmental Engineering, Vol. 132, No. 8, August 1, 2006
- I. M. Idriss and R. W. Boulanger, 2008. Soil liquefaction during earthquakes, Earthquake Engineering Research Institute MNO-12
- Jonathan D. Bray & Jorge Macedo, Department of Civil & Environmental Engineering, Univ. of California, Berkeley, CA, USA, Simplified procedure for estimating liquefaction-induced building settlement, *Proceedings of the 19th International Conference on Soil Mechanics and Geotechnical Engineering, Seoul 201*

Attachment C

City Forms

Attachment D

Master Covenant Agreement (MCA)

MCA will be provided in ministerial Review

Attachment E

Operations and Maintenance (O&M) Plan

Carson Self-Storage

21611 South Perry St., Carson, Ca 90745

Grading Plan Permit No.: Tbd

Apn: 7327-010-014

REQUIRED PERMITS

This section must list any permits required for the implementation, operation, and maintenance of the BMPs. Possible examples are:

- Permits for connection to sanitary sewer
- Permits from California Department of Fish and Game
- Encroachment permits

If no permits are required, a statement to that effect should be made.

RECORDKEEPING

All records must be made available for review upon request.

RESPONSIBLE PARTY

The owner is aware of the maintenance responsibilities of the proposed BMPs. A funding mechanism is in place to maintain the BMPs at the frequency stated in the LID Plan. The contact information for the entity responsible is below:

Name:	
Company:	Faring Capital, LLC
Title:	
Address 1:	
Address 2:	
Phone Number:	
Email:	

BMP Name	BMP Implementation, Maintenance, and Inspection Procedures	Implementation, Maintenance, and Inspection Frequency and Schedule	Person or Entity with Operation & Maintenance Responsibility
Non-Structural Source Control BMPs			
Education for Property Owners, Tenants and Occupants	**Practical informational materials will be provided to employees on general good housekeeping practices that contribute to protection of storm water quality. Among other things, these materials will describe the use of chemicals (including household type) that should be limited to the property, with no discharge of specified wastes via hosing or other direct discharge to gutters, catch basins and storm drains. Faring Capital, LLC will provide these materials through an education program. This program must be maintained, enforced, and updated periodically by Faring Capital, LLC. Educational materials including, but not limited to, the materials included in Section VII of this plan will be made available to the employees, members and occupants periodically thereafter**	**On-going**	**Owner**
Activity Restriction	**Activities on this site will be limited to activities related to the transfer of solid waste.**	**On-going**	**Owner**

BMP Name	BMP Implementation, Maintenance, and Inspection Procedures	Implementation, Maintenance, and Inspection Frequency and Schedule	Person or Entity with Operation & Maintenance Responsibility
Common Area Landscape Management	**Management programs will be designed and established by Faring Capital, LLC who will maintain the common areas within the project site. These programs will include how to mitigate the potential dangers of fertilizer and pesticide usage (refer to the Maintenance and Frequency Table). Ongoing maintenance will be consistent with the State of California Model Water-Efficient Landscape Ordinance.**	**On-going**	**Owner**
Common Area Litter Control	**Faring Capital, LLC will be required to implement waste management and litter control procedures in the common areas aimed at reducing pollution of surface runoff. Faring Capital, LLC may also contract with their landscape maintenance firm to provide this service during regularly scheduled maintenance, which should consist of litter patrol, to prevent emptying of waste receptacles in common areas, and noting waste disposal violations and reporting the violations to Faring Capital, LLC for investigation**	**Inspected on a monthly basis**	**Owner**

BMP Name	BMP Implementation, Maintenance, and Inspection Procedures	Implementation, Maintenance, and Inspection Frequency and Schedule	Person or Entity with Operation & Maintenance Responsibility
Common Area Catch Basin Inspection	**Faring Capital, LLC will be required to have at least 80 percent of the catch basins and inlets inspected, cleaned and maintained on an annual basis and 100 percent of the basins and inlets included in a two-year period. Cleaning should take place in the late summer/early fall prior to the start of the rainy season**	**Prior to August 31 each year and weekly during rainy season or within 24 hours prior to rain forecasts.**	**Owner**
Street Sweeping Private Streets and Parking Lots	**Faring Capital, LLC shall have parking lots swept prior to the storm season, in late summer and early fall, prior to the start of the rainy season, as defined by the City of Carson**	**Prior to the storm season, in late summer and early fall, prior to the start of the rainy season**	**Owner**
Structural Source Control BMPs			
Provide Storm Drain System Stenciling and Signage	**All proposed catch basins and inlets will have either a stencil and/or placard with verbiage conforming to City of Carson requirements. Faring Capital, LLC will maintain the stenciling and labels.**	**Semi-annually, Prior to August 31 each year & monthly during rainy season. Repaint stenciling and/or replace signs Prior to August 31**	**Owner**
Design and Construct Trash and Waste Storage Areas to Reduce Pollutant Introduction	**The proposed Waste Management Areas will be within the building footprint**	**Inspected on a monthly basis**	**Owner**

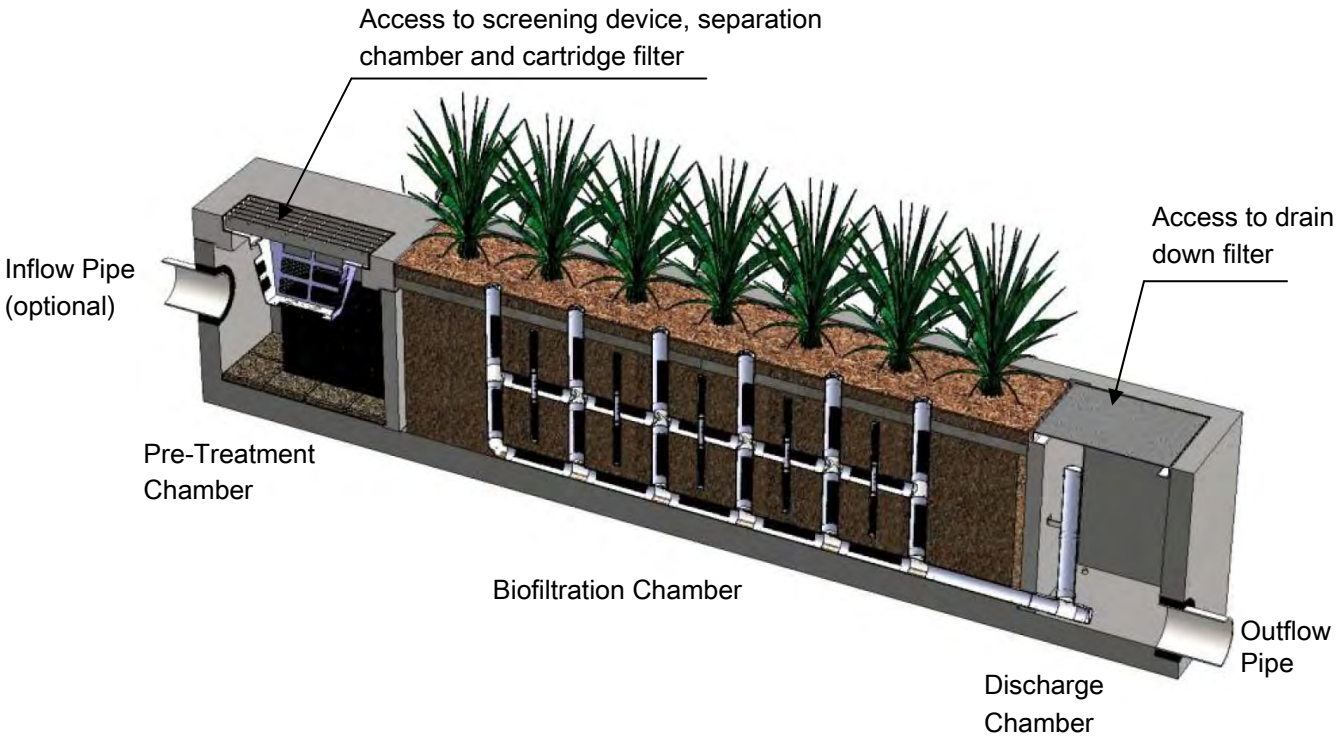
BMP Name	BMP Implementation, Maintenance, and Inspection Procedures	Implementation, Maintenance, and Inspection Frequency and Schedule	Person or Entity with Operation & Maintenance Responsibility
Use Efficient Irrigation Systems & Landscape Design	**Design of an effective irrigation system will reduce the amount of runoff from excess irrigation water into the storm drain system. The system design will incorporate the use of a centralized evapotranspiration-based irrigation controllers, rain shutdown devices, master valves, and low precipitation spray heads. The system will have the ability to run multiple programs with cycle and soak to prevent run-off, and emergency shut-off devices for excessive flow conditions to minimize water waste. The design will comply with the State Ordinance AB325 and City of Carson requirements for water conservation**	**Prior to August 31 each year and once during the rainy season (Prior to August 31st)**	**Owner**
Treatment Control BMPs			
10'20' Modular Wetland System	**Modular Wetland System – Linear Maintenance:** - **Removed trash from screening device.** - **Removed sediment from separation chamber.** - **Replace cartridge filter media.** - **Replace drain down filter media.** - **Trim vegetation.**	**As needed**	**Owner**

Maintenance Guidelines for Modular Wetland System - Linear

Maintenance Summary

- Remove Trash from Screening Device – average maintenance interval is 6 to 12 months.
  - (*5 minute average service time*).
- Remove Sediment from Separation Chamber – average maintenance interval is 12 to 24 months.
  - (*10 minute average service time*).
- Replace Cartridge Filter Media – average maintenance interval 12 to 24 months.
  - (*10-15 minute per cartridge average service time*).
- Replace Drain Down Filter Media – average maintenance interval is 12 to 24 months.
  - (*5 minute average service time*).
- Trim Vegetation – average maintenance interval is 6 to 12 months.
  - (*Service time varies*).

System Diagram



Maintenance Procedures

Screening Device

1. Remove grate or manhole cover to gain access to the screening device in the Pre-Treatment Chamber. Vault type units do not have screening device. Maintenance can be performed without entry.
2. Remove all pollutants collected by the screening device. Removal can be done manually or with the use of a vacuum truck. The hose of the vacuum truck will not damage the screening device.
3. Screening device can easily be removed from the Pre-Treatment Chamber to gain access to separation chamber and media filters below. Replace grate or manhole cover when completed.

Separation Chamber

1. Perform maintenance procedures of screening device listed above before maintaining the separation chamber.
2. With a pressure washer spray down pollutants accumulated on walls and cartridge filters.
3. Vacuum out Separation Chamber and remove all accumulated pollutants. Replace screening device, grate or manhole cover when completed.

Cartridge Filters

1. Perform maintenance procedures on screening device and separation chamber before maintaining cartridge filters.
2. Enter separation chamber.
3. Unscrew the two bolts holding the lid on each cartridge filter and remove lid.
4. Remove each of 4 to 8 media cages holding the media in place.
5. Spray down the cartridge filter to remove any accumulated pollutants.
6. Vacuum out old media and accumulated pollutants.
7. Reinstall media cages and fill with new media from manufacturer or outside supplier. Manufacturer will provide specification of media and sources to purchase.
8. Replace the lid and tighten down bolts. Replace screening device, grate or manhole cover when completed.

Drain Down Filter

1. Remove hatch or manhole cover over discharge chamber and enter chamber.
2. Unlock and lift drain down filter housing and remove old media block. Replace with new media block. Lower drain down filter housing and lock into place.
3. Exit chamber and replace hatch or manhole cover.

Maintenance Notes

1. Following maintenance and/or inspection, it is recommended the maintenance operator prepare a maintenance/inspection record. The record should include any maintenance activities performed, amount and description of debris collected, and condition of the system and its various filter mechanisms.

2. The owner should keep maintenance/inspection record(s) for a minimum of five years from the date of maintenance. These records should be made available to the governing municipality for inspection upon request at any time.

3. Transport all debris, trash, organics and sediments to approved facility for disposal in accordance with local and state requirements.

4. Entry into chambers may require confined space training based on state and local regulations.

5. No fertilizer shall be used in the Biofiltration Chamber.

6. Irrigation should be provided as recommended by manufacturer and/or landscape architect. Amount of irrigation required is dependent on plant species. Some plants may require irrigation.

Maintenance Procedure Illustration

Screening Device

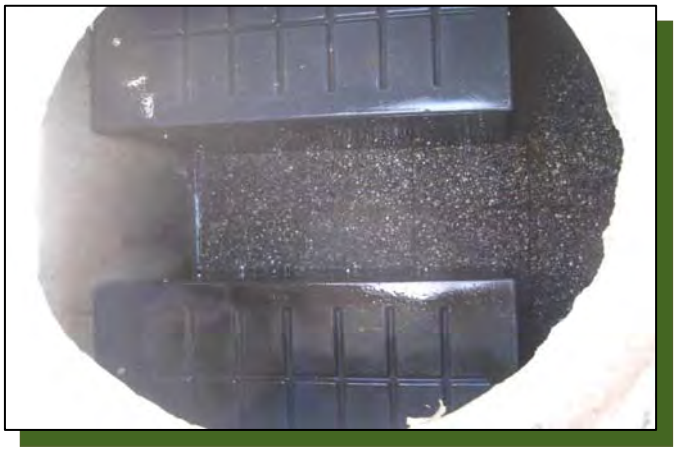
The screening device is located directly under the manhole or grate over the Pre-Treatment Chamber. It's mounted directly underneath for easy access and cleaning. Device can be cleaned by hand or with a vacuum truck.

Separation Chamber

The separation chamber is located directly beneath the screening device. It can be quickly cleaned using a vacuum truck or by hand. A pressure washer is useful to assist in the cleaning process.

Cartridge Filters

The cartridge filters are located in the Pre-Treatment chamber connected to the wall adjacent to the biofiltration chamber. The cartridges have removable tops to access the individual media filters. Once the cartridge is open media can be easily removed and replaced by hand or a vacuum truck.



Drain Down Filter

The drain down filter is located in the Discharge Chamber. The drain filter unlocks from the wall mount and hinges up. Remove filter block and replace with new block.

Trim Vegetation

Vegetation should be maintained in the same manner as surrounding vegetation and trimmed as needed. No fertilizer shall be used on the plants. Irrigation per the recommendation of the manufacturer and or landscape architect. Different types of vegetation requires different amounts of irrigation.

Inspection Form

Modular Wetland System, Inc.
P. 760.433-7640
F. 760-433-3176
E. Info@modularwetlands.com

www.modularwetlands.com

Inspection Report
Modular Wetlands System

Project Name _____

Project Address _____
(city) (Zip Code)

Owner / Management Company _____

Contact _____ Phone ( ) –

Inspector Name _____ Date ____/____/____ Time _____ AM / PM

Type of Inspection ☐ Routine ☐ Follow Up ☐ Complaint ☐ Storm Storm Event in Last 72-hours? ☐ No ☐ Yes

Weather Condition _____ Additional Notes _____

For Office Use Only
(Reviewed By)
(Date)
Office personnel to complete section to the left.

Inspection Checklist

Modular Wetland System Type (Curb, Grate or UG Vault): _____ Size (22', 14' or etc.): _____

Structural Integrity:	**Yes**	**No**	**Comments**
Damage to pre-treatment access cover (manhole cover/grate) or cannot be opened using normal lifting pressure?			
Damage to discharge chamber access cover (manhole cover/grate) or cannot be opened using normal lifting pressure?			
Does the MWS unit show signs of structural deterioration (cracks in the wall, damage to frame)?			
Is the inlet/outlet pipe or drain down pipe damaged or otherwise not functioning properly?			
Working Condition:			
Is there evidence of illicit discharge or excessive oil, grease, or other automobile fluids entering and clogging the unit?			
Is there standing water in inappropriate areas after a dry period?			
Is the filter insert (if applicable) at capacity and/or is there an accumulation of debris/trash on the shelf system?			
Does the depth of sediment/trash/debris suggest a blockage of the inflow pipe, bypass or cartridge filter? If yes, specify which one in the comments section. Note depth of accumulation in in pre-treatment chamber.			Depth:
Does the cartridge filter media need replacement in pre-treatment chamber and/or discharge chamber?			Chamber:
Any signs of improper functioning in the discharge chamber? Note issues in comments section.			
Other Inspection Items:			
Is there an accumulation of sediment/trash/debris in the wetland media (if applicable)?			
Is it evident that the plants are alive and healthy (if applicable)? Please note Plant Information below.			
Is there a septic or foul odor coming from inside the system?			

Waste:	**Yes**	**No**
Sediment / Silt / Clay		
Trash / Bags / Bottles		
Green Waste / Leaves / Foliage		

Recommended Maintenance	
No Cleaning Needed	
Schedule Maintenance as Planned	
Needs Immediate Maintenance	

Plant Information	
Damage to Plants	
Plant Replacement	
Plant Trimming	

Additional Notes: _____

2972 San Luis Rey Road, Oceanside, CA 92058 P (760) 433-7640 F (760) 433-3176

Maintenance Report

Modular Wetland System, Inc.
P. 760.433-7640
F. 760-433-3176
E. Info@modularwetlands.com

www.modularwetlands.com

Cleaning and Maintenance Report
Modular Wetlands System

Project Name _____

Project Address _____
(city) (Zip Code)

Owner / Management Company _____

Contact _____ Phone ( ) –

Inspector Name _____ Date ____/____/____ Time _____ AM / PM

Type of Inspection ☐ Routine ☐ Follow Up ☐ Complaint ☐ Storm Storm Event in Last 72-hours? ☐ No ☐ Yes

Weather Condition _____ Additional Notes _____

For Office Use Only
(Reviewed By)
(Date)
Office personnel to complete section to the left.

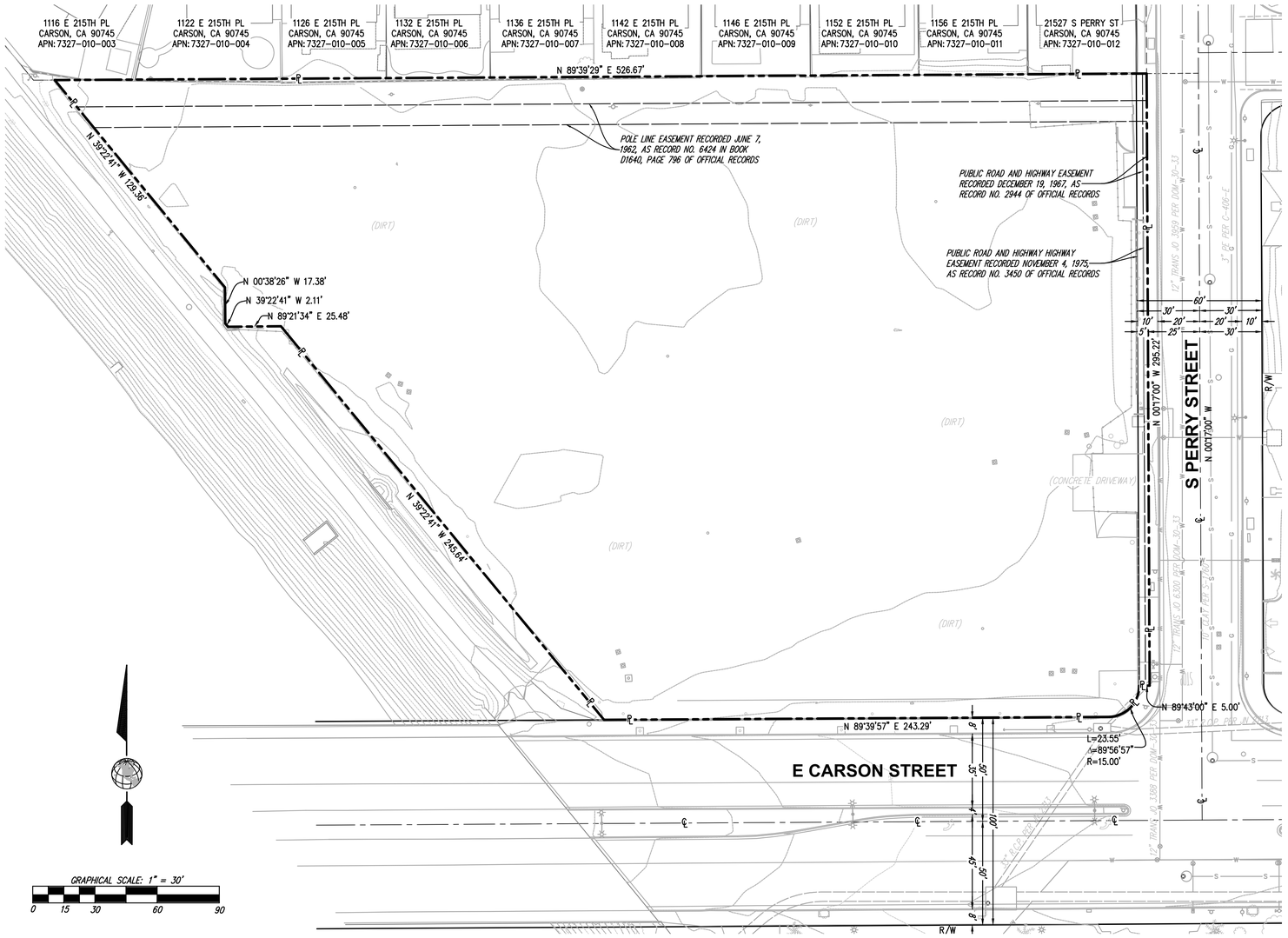
Site Map #	GPS Coordinates of Insert	Manufacturer / Description / Sizing	Trash Accumulation	Foliage Accumulation	Sediment Accumulation	Total Debris Accumulation	Condition of Media 25/50/75/100 (will be changed @ 75%)	Operational Per Manufactures' Specifications (If not, why?)
	Lat: Long:	MWS Catch Basins						
		MWS Sedimentation Basin						
		Media Filter Condition						
		Plant Condition						
		Drain Down Media Condition						
		Discharge Chamber Condition						
		Drain Down Pipe Condition						
		Inlet and Outlet Pipe Condition						

Comments:

2972 San Luis Rey Road, Oceanside, CA 92058 P. 760.433.7640 F. 760.433.3176

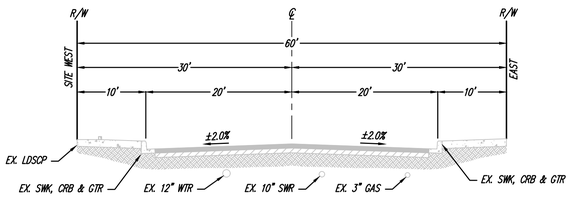
Attachment F

Plans



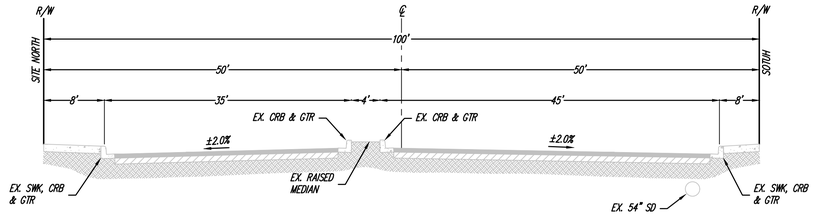
GRAPHICAL SCALE: 1" = 30'

0 15 30 60 90



TYPICAL SECTION - S. PERRY STREET

NOT TO SCALE



TYPICAL SECTION - E. CARSON STEET

NOT TO SCALE

EXISTING LEGEND:

ITEM	SYMBOL
PROPERTY LINE	
CENTERLINE	
RIGHT-OF-WAY	
EASEMENT	
EX. CONTOUR	552
EX. CURB & GUTTER	

OWNER:

RECREATION ROAD LLC

SITE ADDRESS:

21611 SOUTH PERRY STREET
CARSON, CA 90745

ASSESSOR'S PARCEL NUMBER:

7327-010-014 & 7327-010-015

TITLE INFORMATION:

TITLE INFORMATION FOR THIS SURVEY BASED ON A PRELIMINARY REPORT PREPARED BY COMMONWEALTH LAND TITLE INSURANCE COMPANY AS ORDER NO. 09174014-917-EQL, DATED: AUGUST 4, 2020.

LEGAL DESCRIPTION:

THAT PORTION OF LOT 15 OF TRACT NO. 4054, IN THE CITY OF CARSON, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 44, PAGES 39 THROUGH 41 INCLUSIVE OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE NORTHERLY LINE OF THE SOUTHERLY 20 FEET OF SAID LOT WITH A LINE PARALLEL WITH AND NORTHEASTERLY 27 FEET, MEASURED AT RIGHT ANGLES, FROM THE SOUTHWESTERLY LINE OF SAID LOT; THENCE ALONG SAID PARALLEL LINE NORTH 39°21'48" WEST 245.64 FEET; THENCE SOUTH 89°22'27" WEST 25.48 FEET; THENCE NORTH 39°21'48" WEST 2.11 FEET; THENCE NORTH 00°37'33" WEST 17.38 FEET TO A LINE PARALLEL WITH AND NORTHEASTERLY 18 FEET, MEASURED AT RIGHT ANGLES, FROM SAID SOUTHWESTERLY LINE; THENCE ALONG SAID LAST MENTIONED PARALLEL LINE NORTH 39°21'48" WEST TO THE SOUTHERLY LINE OF TRACT NO. 29360, AS PER MAP RECORDED IN BOOK 734, PAGES 45 AND 46 OF MAPS; THENCE EASTERLY ALONG SAID SOUTHERLY LINE TO THE EASTERLY LINE OF SAID LOT 15; THENCE SOUTHERLY ALONG SAID EASTERLY LINE TO SAID NORTHERLY LINE; THENCE WESTERLY ALONG SAID NORTHERLY LINE TO THE POINT OF BEGINNING.

EXCEPT THEREFROM THAT PORTION OF SAID LAND DESIGNATED AS PARCELS 2-36 INCLUSIVE IN THE FINAL DECREE OF CONDEMNATION ENTERED IN SUPERIOR COURT, LOS ANGELES COUNTY, CASE NO. 909,461, A CERTIFIED COPY OF WHICH WAS RECORDED AUGUST 26, 1969 AS INSTRUMENT NO. 2734, IN BOOK D-4478, PAGE 350 OF OFFICIAL RECORDS OF SAID COUNTY AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE EASTERLY LINE OF SAID LOT WITH THE NORTHERLY LINE OF THE SOUTHERLY 20 FEET OF SAID LOT; THENCE WESTERLY ALONG SAID NORTHERLY LINE 19.99 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE NORTHWEST, HAVING A RADIUS OF 15 FEET, TANGENT TO SAID NORTHERLY LINE AND TANGENT TO THE WESTERLY LINE OF THE EASTERLY 5 FEET OF SAID LOT; THENCE NORTHEASTERLY ALONG SAID CURVE 23.55 FEET TO SAID WESTERLY LINE; THENCE EASTERLY AT RIGHT ANGLES FROM SAID WESTERLY LINE 5 FEET TO SAID EASTERLY LINE; THENCE SOUTHERLY ALONG SAID EASTERLY LINE 14.99 FEET TO THE POINT OF BEGINNING.

VERTICAL BENCHMARK:

DESCRIPTION: LOS ANGELES COUNTY PUBLIC WORKS BENCHMARK NUMBER "Y 10545" IN TOP OF CURB ON SOUTH SIDE OF E 213TH STREET APPROXIMATELY 40 FEET WEST OF THE CENTERLINE OF PERRY STREET (APPROXIMATELY 1,010' NORTH OF SITE)

ELEVATION: 18.248' (NAVD88)

SOURCE OF TOPOGRAPHY:

TOPOGRAPHY SHOWN HEREON IS BASED ON AERIAL PHOTOGRAMMETRIC MAPPING CONDUCTED BY PRECISION UAV. HORIZONTAL AND VERTICAL GROUND CONTROL WERE ESTABLISHED BY OMEGA LAND SURVEYING, INC. ON FEBRUARY 01, 2021 WITH SUPPLEMENTAL DATA COLLECTED ON FEBRUARY 03, 2021.

BASIS OF BEARINGS:

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CENTERLINE OF PERRY STREET AS SHOWN ON SUBDIVISION MAP FOR TRACT NO. 29360 FILED IN BOOK 734, PAGE 46-47, OF MAP RECORDS, SAID BEARING BEING "N 00°17' W".

AREA SUMMARY:

TOTAL PARCEL AREA (NET)	110,643	SF
TOTAL PARCEL AREA (GROSS)	112,119	SF

GRADING INFORMATION:

CUT (TO FINISH SURFACE)	357	CY
FILL (TO FINISH SURFACE)	4,199	CY
UNDERCUTS	4,281	CY
REMEDIAL GRADING	15,037	CY
EXPORT (IMBALANCE)	725	CY

EASEMENTS:

(4) POLE LINE EASEMENT RECORDED JUNE 7, 1962, AS RECORD NO. 6424 IN BOOK D1640, PAGE 796 OF OFFICIAL RECORDS.

(5) PUBLIC ROAD AND HIGHWAY EASEMENT RECORDED DECEMBER 19, 1967, AS RECORD NO. 2944 OF OFFICIAL RECORDS.

(7) PUBLIC STREET OR HIGHWAY EASEMENT RECORDED NOVEMBER 4, 1975, AS RECORD NO. 3450 OF OFFICIAL RECORDS.

PLAN PREPARED BY:

OMEGA
ENGINEERING CONSULTANTS
4340 VIEWRIDGE AVE. SUITE B
SAN DIEGO, CA 92123
PH:(858) 634-8620 FAX:(858)-634-8627

FILENAME: P:\OMG OMEGA\0633 FARING SS CARSON\ACAD\DISCRETIONARY\0633-CDP-01-CONSTRAINTS.DWG DATE: 10/5/2021 11:20:02 AM

PERRY STREET
CARSON STREET SS
CARSON, CA

REGISTERED PROFESSIONAL ENGINEER SEAN M. SAVAGE No.75677 CIVIL STATE OF CALIFORNIA

FOR PLAN CHECK ONLY

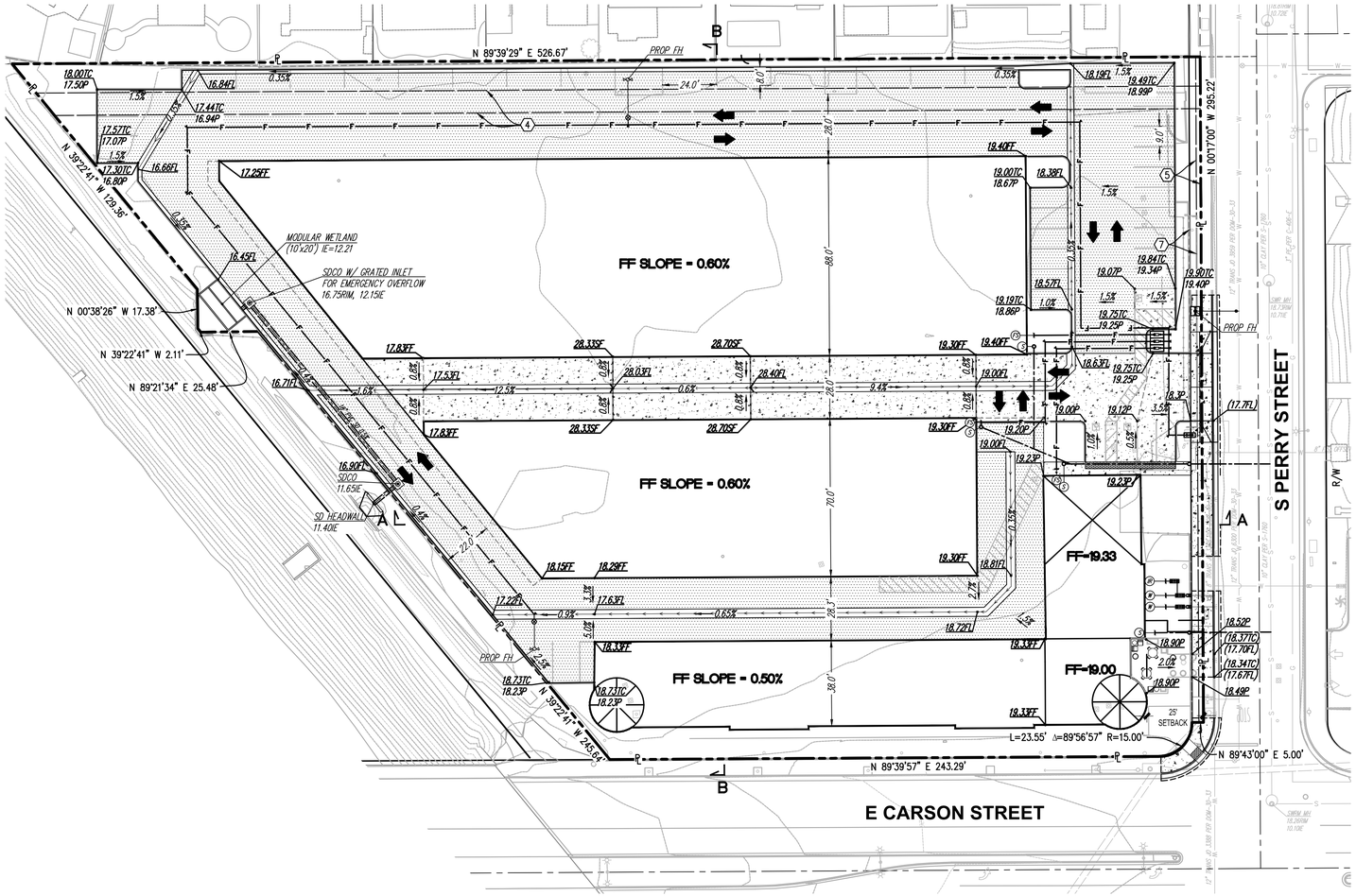
SEAN M. SAVAGE R.C.E. 75677 DATE

JOB NUMBER: 20-817

DATE: 10/05/2021

JORDAN ARCHITECTS
131 CALLE IGLESIA, SUITE 100
SAN CLEMENTE, CA 92672
949.388.8090

PRELIMINARY GRADING PLAN



GRAPHICAL SCALE: 1" = 30'

0 15 30 60 90

PLAN PREPARED BY:

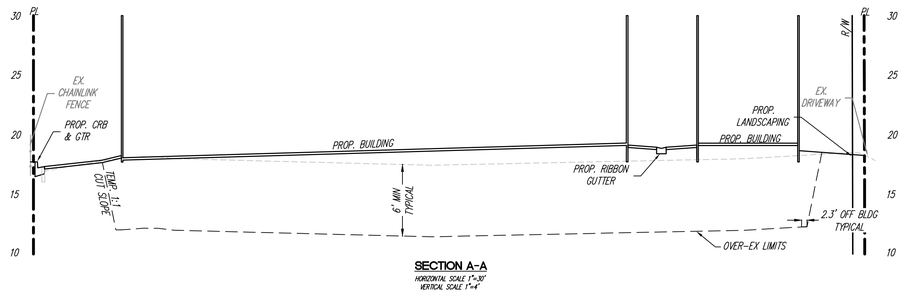
OMEGA
ENGINEERING CONSULTANTS
4340 VIEWRIDGE AVE, SUITE B
SAN DIEGO, CA 92123
PH:(858) 634-8620 FAX:(858)-634-8627

EXISTING LEGEND

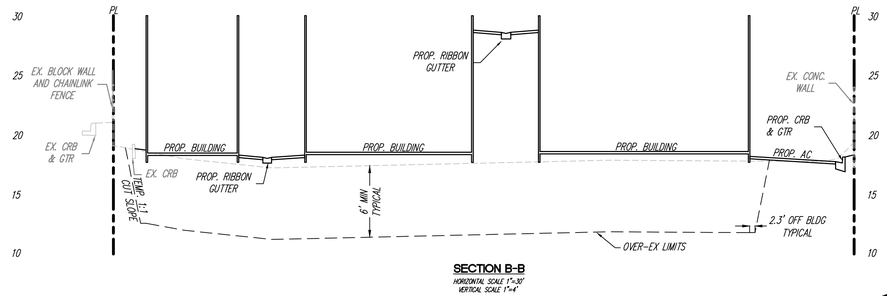
ITEM	SYMBOL
PROPERTY LINE	
CENTERLINE	
RIGHT-OF-WAY	
EX. CONTOUR	552
EX. CURB & GUTTER	

PROPOSED LEGEND

ITEM	SYMBOL
PROPOSED GRADE BREAK	
PROPOSED FINISH FLOOR SLOPE	FF SLOPE =0.5%
PROPOSED FINISH FLOOR ELEVATION	374.00FF
PROPOSED PAVEMENT ELEVATION	374.00P
PROPOSED FLOWLINE ELEVATION	374.00FL
PROPOSED GRADIANT	1.1%
PROPOSED 6" PCC CURB	
PROPOSED 6" PCC CURB & GUTTER	
PROPOSED FLOW LINE	
PROPOSED BUILDING	
PROPOSED PARKING STALL STRIPING	
PROPOSED HANDICAP STRIPING	
PROPOSED PVT. STORM DRAIN (SIZE PER PLAN)	
PROPOSED PVT. FIRE SERVICE LATERAL	
PROPOSED PVT. SEWER LATERAL	
PROPOSED SEWER POINT OF CONNECTION	S
PROPOSED FIRE POINT OF CONNECTION	FS
PROPOSED FIRE SERVICE BACKFLOW	DCDA
PROPOSED FDC/PIV	
PROPOSED FIRE HYDRANT	
PROPOSED PVT. STORM DRAIN CLEAN OUT/CONNECTION (SIZE AND TYPE PER PLAN)	
PROPOSED PVT. PCC PAVEMENT WALK	
PROPOSED PVT. ADA RAMP	
PROPOSED PVT. AC PAVEMENT HEAVY DRIVE AISLE	
PROPOSED PVT. MODULAR WETLAND	



SECTION A-A
HORIZONTAL SCALE 1"=30'
VERTICAL SCALE 1"=4'



SECTION B-B
HORIZONTAL SCALE 1"=30'
VERTICAL SCALE 1"=4'

PERRY STREET
CARSON STREET SS
CARSON, CA

REGISTERED PROFESSIONAL ENGINEER SEAN M. SAVAGE No.75677 CIVIL STATE OF CALIFORNIA

FOR PLAN CHECK ONLY

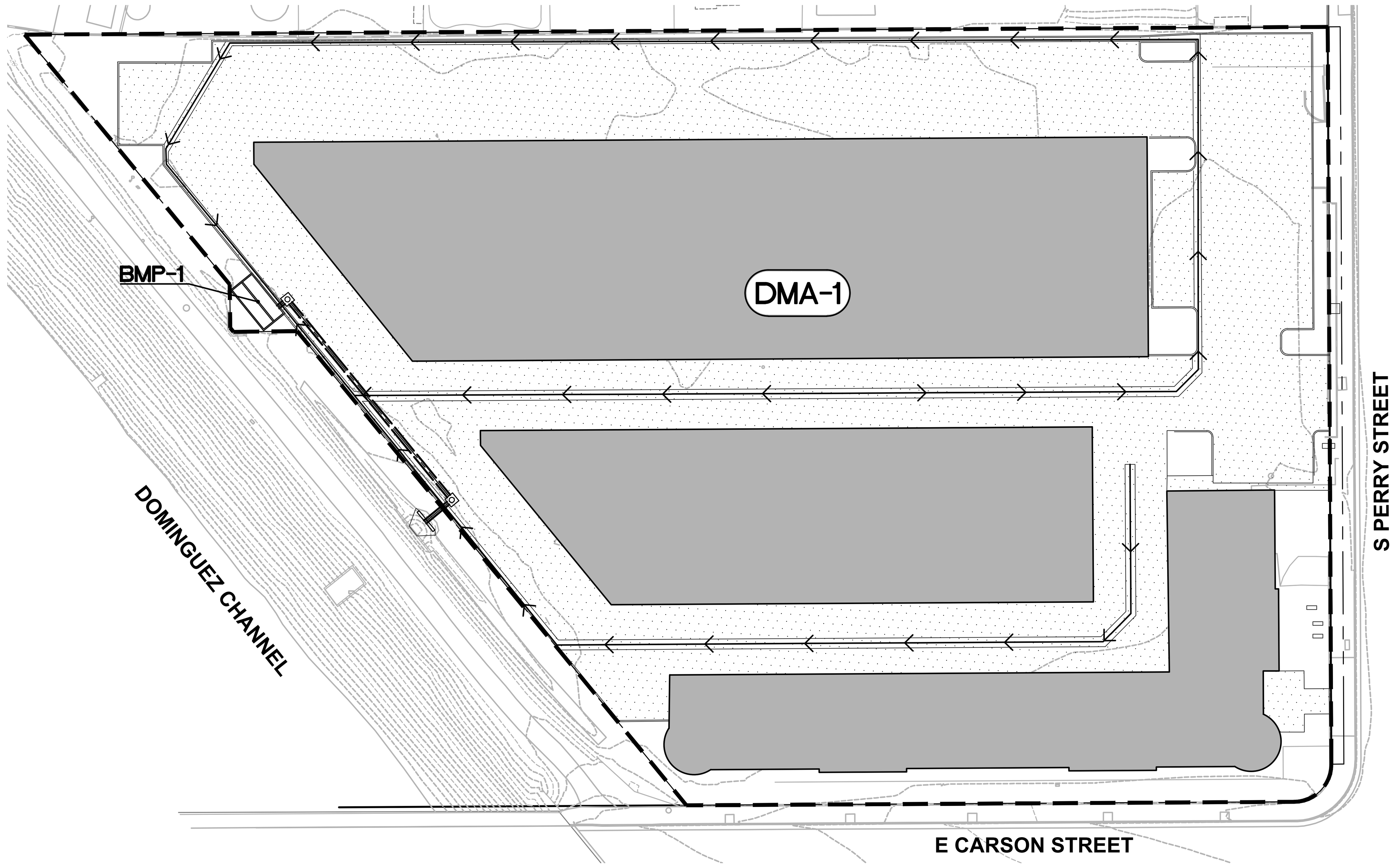
SEAN M. SAVAGE R.C.E. 75677 _____ DATE

JOB NUMBER: 20-817

DATE: 10/05/2021

JORDAN ARCHITECTS
131 CALLE IGLESIA, SUITE 100
SAN CLEMENTE, CA 92672
949.388.8090

FILENAME: P:\DWG OMEGA\0633 FARING SS CARSON\ACAD\DISCRETIONARY\0633-GDP-02-GDP.DWG DATE:10/5/2021 12:24:33 PM



LEGEND

AREA LIMITS	
FLOW ARROWS	
BUILDING AREA	
PAVEMENT AREA	
DRAINAGE MGMT AREA (DMA) NUMBER	DMA-1

PLAN PREPARED BY:

OMEGA ENGINEERING CONSULTANTS
4340 VIEWRIDGE AVE. SUITE B
SAN DIEGO, CA 92123
PH:(858) 634-8620 FAX:(858)-634-8627

DMA DATA TABLE

DMA-NO.	TOT. AREA (SF)	IMPERVIOUS (%)	REQ'D FLOWRATE (CFS)	BMP FLOWRATE (CFS)	TYPE/TREATED BY
DMA-1	120,644	89.8	0.702	0.710	BMP-1/MODULAR WETLAND

GENERAL STORM WATER NOTES

1. GROUNDWATER IS ANTICIPATED AT APPROXIMATELY 12.5 FEET BELOW EXISTING GRADE ON SITE.
2. NO EXISTING NATURAL HYDROLOGIC FEATURES
3. NO SIGNIFICANT ECOLOGICAL AREAS ON SITE
4. ALL APPLICABLE SOURCE CONTROL BMPS SHALL BE IMPLEMENTED
   5A. SOURCE CONTROL NOTES TO COME IN MINISTERIAL REVIEW

Peak Flow Hydrologic Analysis

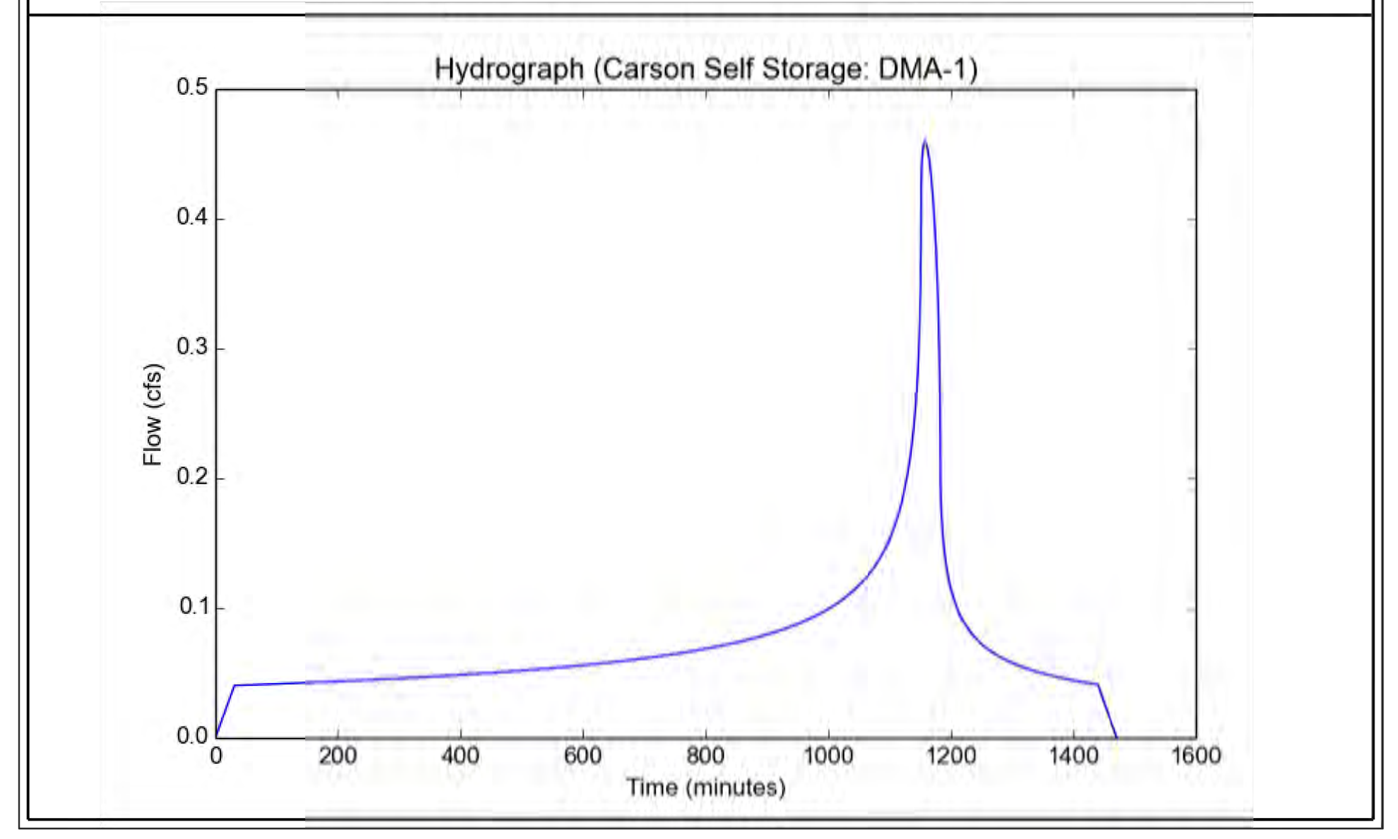
File location: P:/DWG OMEGA/0633 Faring SS Carson/STORMWATER REPORTS/Water Quality/ATTACHMENTS/85th Percentile Hydro
Version: HydroCalc 1.0.3

Input Parameters

Project Name	Carson Self Storage
Subarea ID	DMA-1
Area (ac)	2.77
Flow Path Length (ft)	475.0
Flow Path Slope (vft/hft)	0.006
85th Percentile Rainfall Depth (in)	0.8
Percent Impervious	0.898
Soil Type	3
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	0.8
Peak Intensity (in/hr)	0.2025
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.8184
Time of Concentration (min)	31.0
Clear Peak Flow Rate (cfs)	0.459
Burned Peak Flow Rate (cfs)	0.459
24-Hr Clear Runoff Volume (ac-ft)	0.1499
24-Hr Clear Runoff Volume (cu-ft)	6528.9479



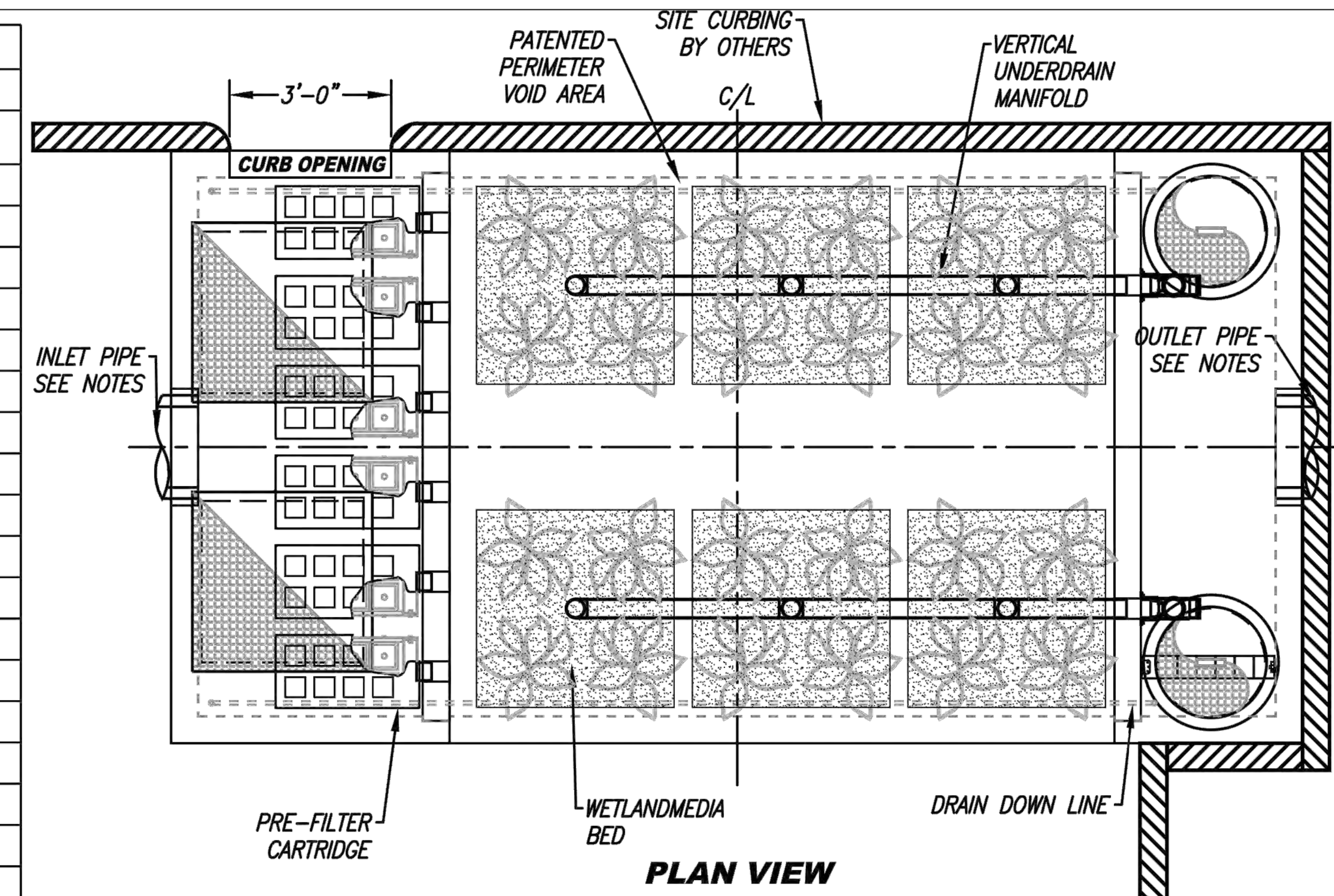
PROJECT HYDROGRAPH

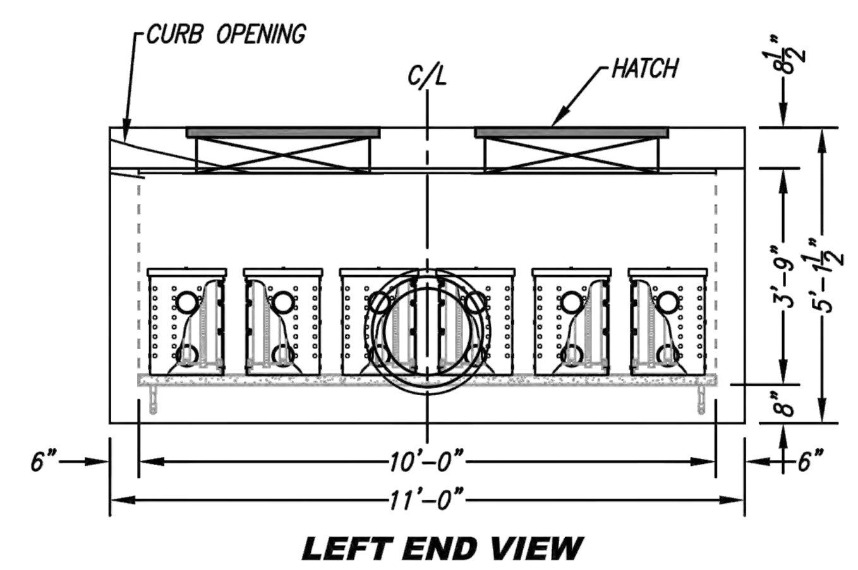
GRAPHICAL SCALE: 1" = 40'
0 20 40 80 120

SITE SPECIFIC DATA

PROJECT NUMBER			
PROJECT NAME			
PROJECT LOCATION			
STRUCTURE ID			
TREATMENT REQUIRED			
VOLUME BASED (CF)		FLOW BASED (CFS)	
N/A		0.710	
TREATMENT HGL AVAILABLE (FT)			N/K
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			FLOW BY
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2			
OUTLET PIPE			
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION			
SURFACE LOAD	PEDESIRIAN	OPEN PLANIER	PEDESTRIAN
FRAME & COVER	2 EA 36" X 36"	N/A	2 EA ø24"
WETLANDMEDIA VOLUME (CY)			
ORIFICE SIZE (DIA. INCHES)			2 EA ø2.67"

NOTES: PRELIMINARY. NOT FOR CONSTRUCTION.



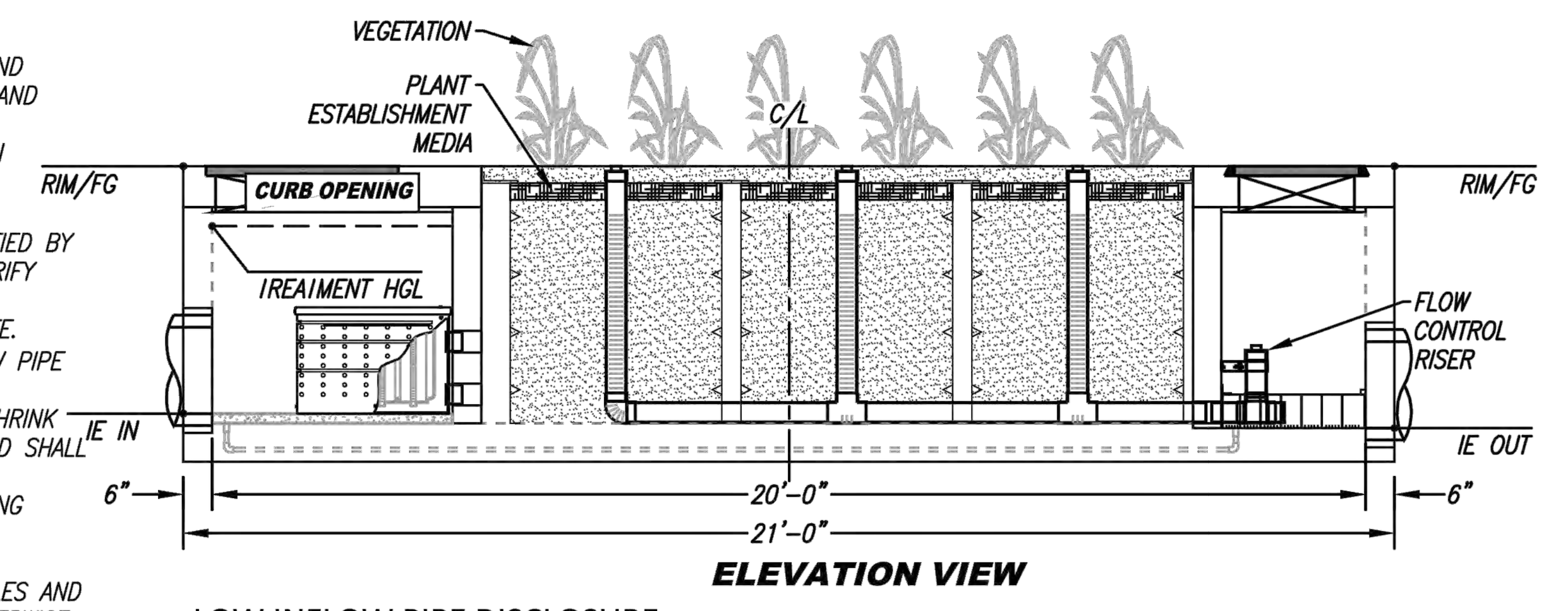


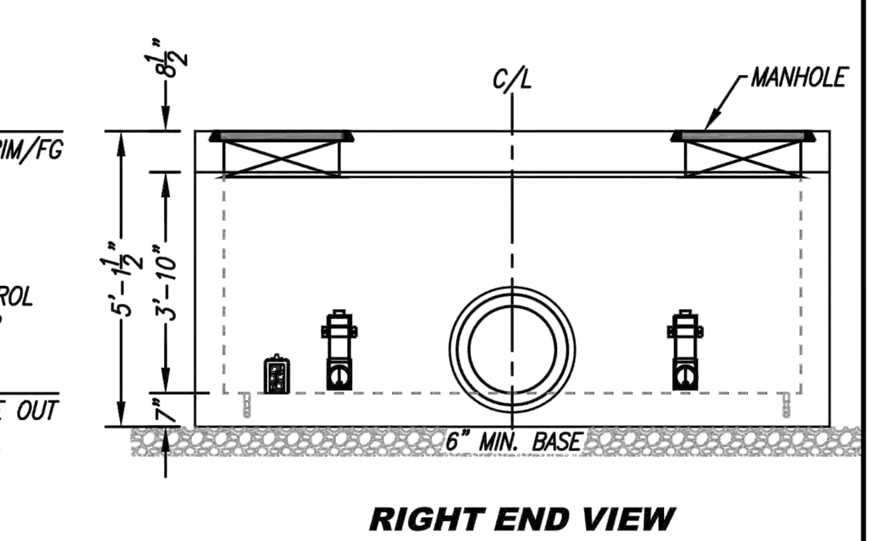
INSTALLATION NOTES

1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURERS SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURERS CONTRACT.
2. UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE TO VERIFY PROJECT ENGINEERS RECOMMENDED BASE SPECIFICATIONS.
3. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE. (PIPES CANNOT INTRUDE BEYOND FLUSH). INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR. ALL GAPS AROUND PIPES SHALL BE SEALED WATER TIGHT WITH A NON-SHRINK GROUT PER MANUFACTURERS STANDARD CONNECTION DETAIL AND SHALL MEET OR EXCEED REGIONAL PIPE CONNECTION STANDARDS.
4. CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES.
5. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL RISERS, MANHOLES, AND HATCHES. CONTRACTOR TO GROUT ALL MANHOLES AND HATCHES TO MATCH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.
6. DRIP OR SPRAY IRRIGATION REQUIRED ON ALL UNITS WITH VEGETATION.
7. CONTRACTOR RESPONSIBLE FOR CONTACTING MODULAR WETLANDS FOR ACTIVATION OF UNIT. MANUFACTURES WARRANTY IS VOID WITH OUT PROPER ACTIVATION BY A MODULAR WETLANDS REPRESENTATIVE.

GENERAL NOTES

1. MANUFACTURER TO PROVIDE ALL MATERIALS UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS, ELEVATIONS, SPECIFICATIONS AND CAPACITIES ARE SUBJECT TO CHANGE. FOR PROJECT SPECIFIC DRAWINGS DETAILING EXACT DIMENSIONS, WEIGHTS AND ACCESSORIES PLEASE CONTACT MANUFACTURER.





LOW INFLOW PIPE DISCLOSURE:

IT IS RECOMMENDED THAT A SUFFICIENT VARIATION IN ELEVATION BETWEEN THE INLET AND OUTLET BE PROVIDED TO ALLOW FOR ACCUMULATION OF SEDIMENT IN THE PRE-TREATMENT CHAMBER. FAILURE TO DO SO MAY RESULT IN BLOCKAGE AT INFLOW POINT(S) WHICH MAY CAUSE UPSTREAM FLOODING.

TREATMENT FLOW (CFS)	0.710
OPERATING HEAD (FT)	3.5
PRETREATMENT LOADING RATE (GPM/SF)	2.1
WETLAND MEDIA LOADING RATE (GPM/SF)	1.0

MWS-L-10-20-4'-5.5"-C-HC
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

MODULAR WETLAND DETAIL

NOT TO SCALE

PERRY STREET
CARSON STREET SS
CARSON, CA

REGISTERED PROFESSIONAL ENGINEER SEAN M. SAVAGE No.75677 CIVIL STATE OF CALIFORNIA

FOR PLAN CHECK ONLY
SEAN M. SAVAGE R.C.E. 75677 DATE

JOB NUMBER: 20-817
DATE: 10/05/2021

JORDAN ARCHITECTS
131 CALLE IGLESIA, SUITE 100
SAN CLEMENTE, CA 92672
949.388.8090

FILENAME: P:\DWG OMEGA\0633 FARING SS CARSON\ACAD\DISCRETIONARY\0633-CSP-03-DMA.DWG
DATE: 5/14/2021 11:41:32 AM

Appendix K
Noise Measurement Calculations

ESA

Project: 21611 Perry Street (Unmitigated)

Construction Noise Impact on Sensitive Receptors

Parameters

Construction Hours:	8	Daytime hours (7 am to 7 pm)
	0	Evening hours (7 pm to 10 pm)
	0	Nighttime hours (10 pm to 7 am)
Leq to L10 factor	3	

				R1					R2					R3					R4				
Construction Phase **Equipment Type**	**No. of Equip.**	**Reference Noise Level at 50ft, Lmax**	**Acoustical Usage Factor**	**Distance (ft)**	**Lmax**	**Leq**	**L10**	**Estimated Noise Shielding, dBA**	**Distance (ft)**	**Lmax**	**Leq**	**L11**	**Estimated Noise Shielding, dBA**	**Distance (ft)**	**Lmax**	**Leq**	**L12**	**Estimated Noise Shielding, dBA**	**Distance (ft)**	**Lmax**	**Leq**	**L11**	**Estimated Noise Shielding, dBA**
Demolition					***77***	***74***				***75***	***71***				***77***	***73***				***70***	***67***		
Compressor (air)	2	80	40%	400	60	56	59	5	600	61	57	60	0	500	63	59	62	0	700	60	56	59	0
Tractor/Loader/Backhoe	1	78	40%	400	55	51	54	5	600	56	52	55	0	500	58	54	57	0	700	55	51	54	0
Dump Truck	2	76	40%	200	62	58	61	5	250	65	61	64	0	200	67	63	66	0	500	59	55	58	0
Excavator	1	81	40%	400	58	54	57	5	600	59	55	58	0	500	61	57	60	0	700	58	54	57	0
Generator	1	81	50%	50	76	73	76	5	150	71	68	71	0	120	73	70	73	0	250	67	64	67	0
Tractor/Loader/Backhoe	2	78	40%	200	64	60	63	5	250	67	63	66	0	200	69	65	68	0	500	61	57	60	0
Tractor/Loader/Backhoe	1	78	40%	200	61	57	60	5	250	64	60	63	0	200	66	62	65	0	500	58	54	57	0
Vacuum Street Sweeper	1	80	10%	200	63	53	56	5	250	66	56	59	0	200	68	58	61	0	500	60	50	53	0
Grading/Excavation					***85***	***79***				***82***	***76***				***84***	***78***				***77***	***71***		
Tractor/Loader/Backhoe	1	78	40%	200	61	57	60	5	250	64	60	63	0	200	66	62	65	0	500	58	54	57	0
Concrete Saw	1	90	20%	50	85	78	81	5	150	80	73	76	0	120	82	75	78	0	250	76	69	72	0
Compactor (ground)	1	83	20%	200	66	59	62	5	250	69	62	65	0	200	71	64	67	0	500	63	56	59	0
Tractor/Loader/Backhoe	2	78	40%	200	64	60	63	5	250	67	63	66	0	200	69	65	68	0	500	61	57	60	0
Dump Truck	2	76	40%	200	62	58	61	5	250	65	61	64	0	200	67	63	66	0	500	59	55	58	0
Excavator	1	81	40%	200	64	60	63	5	250	67	63	66	0	200	69	65	68	0	500	61	57	60	0
Grader	1	85	40%	200	68	64	67	5	250	71	67	70	0	200	73	69	72	0	500	65	61	64	0
Tractor/Loader/Backhoe	2	78	40%	400	58	54	57	5	600	59	55	58	0	500	61	57	60	0	700	58	54	57	0
Scraper	3	84	40%	400	66	62	65	5	600	67	63	66	0	500	69	65	68	0	700	66	62	65	0
Roller	1	80	20%	400	57	50	53	5	600	58	51	54	0	500	60	53	56	0	700	57	50	53	0
Vacuum Street Sweeper	1	80	10%	400	57	47	50	5	600	58	48	51	0	500	60	50	53	0	700	57	47	50	0
Drainage/Utilities/Trenching					***80***	***76***				***77***	***74***				***79***	***76***				***72***	***69***		
Compressor (air)	1	78	40%	400	55	51	54	5	600	56	52	55	0	500	58	54	57	0	700	55	51	54	0
Tractor/Loader/Backhoe	2	78	40%	400	58	54	57	5	600	59	55	58	0	500	61	57	60	0	700	58	54	57	0
Compactor (ground)	1	83	20%	400	60	53	56	5	600	61	54	57	0	500	63	56	59	0	700	60	53	56	0
Dump Truck	2	76	40%	200	62	58	61	5	250	65	61	64	0	200	67	63	66	0	500	59	55	58	0
Excavator	1	81	40%	200	64	60	63	5	250	67	63	66	0	200	69	65	68	0	500	61	57	60	0
Generator	2	81	50%	50	79	76	79	5	150	74	71	74	0	120	76	73	76	0	250	70	67	70	0
Pumps	2	81	50%	200	67	64	67	5	250	70	67	70	0	200	72	69	72	0	500	64	61	64	0
Forklift	1	75	10%	200	58	48	51	5	250	61	51	54	0	200	63	53	56	0	500	55	45	48	0
Vacuum Street Sweeper	1	80	10%	400	57	47	50	5	600	58	48	51	0	500	60	50	53	0	700	57	47	50	0
Foundation/Concrete Pour					***85***	***78***				***81***	***75***				***83***	***77***				***77***	***70***		
Compressor (air)	1	78	40%	200	61	57	60	5	250	64	60	63	0	200	66	62	65	0	500	58	54	57	0
Tractor/Loader/Backhoe	1	78	40%	200	61	57	60	5	250	64	60	63	0	200	66	62	65	0	500	58	54	57	0
Concrete Saw	1	90	20%	50	85	78	81	5	150	80	73	76	0	120	82	75	78	0	250	76	69	72	0
Compactor (ground)	1	83	20%	200	66	59	62	5	250	69	62	65	0	200	71	64	67	0	500	63	56	59	0
Dump Truck	2	76	40%	200	62	58	61	5	250	65	61	64	0	200	67	63	66	0	500	59	55	58	0
Tractor/Loader/Backhoe	2	78	40%	200	64	60	63	5	250	67	63	66	0	200	69	65	68	0	500	61	57	60	0
Pumps	1	81	50%	400	58	55	58	5	600	59	56	59	0	500	61	58	61	0	700	58	55	58	0
Forklift	1	75	10%	400	52	42	45	5	600	53	43	46	0	500	55	45	48	0	700	52	42	45	0
Vacuum Street Sweeper	1	80	10%	400	57	47	50	5	600	58	48	51	0	500	60	50	53	0	700	57	47	50	0
Building Construction					***85***	***78***				***82***	***76***				***84***	***78***				***78***	***71***		
Compressor (air)	2	78	40%	200	64	60	63	5	250	67	63	66	0	200	69	65	68	0	500	61	57	60	0
Drum Mixer	2	80	50%	400	60	57	60	5	600	61	58	61	0	500	63	60	63	0	700	60	57	60	0
Concrete Saw	1	90	20%	200	73	66	69	5	250	76	69	72	0	200	78	71	74	0	500	70	63	66	0
Concrete Saw	1	90	20%	50	85	78	81	5	150	80	73	76	0	120	82	75	78	0	250	76	69	72	0
Crane	1	81	16%	400	58	50	53	5	400	63	55	58	0	400	63	55	58	0	400	63	55	58	0
Dump Truck	2	76	40%	400	56	52	55	5	600	57	53	56	0	500	59	55	58	0	700	56	52	55	0
Forklift	4	75	10%	400	58	48	51	5	600	59	49	52	0	500	61	51	54	0	700	58	48	51	0
Generator	1	81	50%	400	58	55	58	5	600	59	56	59	0	500	61	58	61	0	700	58	55	58	0
Pumps	1	81	50%	200	64	61	64	5	250	67	64	67	0	200	69	66	69	0	500	61	58	61	0
Forklift	2	75	10%	200	61	51	54	5	250	64	54	57	0	200	66	56	59	0	500	58	48	51	0
Paving					***81***	***78***				***78***	***75***				***80***	***77***				***74***	***70***		
Tractor/Loader/Backhoe	1	78	40%	400	55	51	54	5	600	56	52	55	0	500	58	54	57	0	700	55	51	54	0
Dump Truck	2	76	40%	400	56	52	55	5	600	57	53	56	0	500	59	55	58	0	700	56	52	55	0
Tractor/Loader/Backhoe	2	78	40%	200	64	60	63	5	250	67	63	66	0	200	69	65	68	0	500	61	57	60	0
Paver	1	77	50%	200	60	57	60	5	250	63	60	63	0	200	65	62	65	0	500	57	54	57	0
Other Equipment	2	85	50%	200	71	68	71	5	250	74	71	74	0	200	76	73	76	0	500	68	65	68	0
Other Equipment	1	85	50%	50	80	77	80	5	150	75	72	75	0	120	77	74	77	0	250	71	68	71	0
Roller	2	80	20%	400	60	53	56	5	600	61	54	57	0	500	63	56	59	0	700	60	53	56	0
Vacuum Street Sweeper	1	80	10%	400	57	47	50	5	600	58	48	51	0	500	60	50	53	0	700	57	47	50	0
Architectural Coatings					***75***	***72***				***71***	***68***				***73***	***70***				***67***	***64***		
Compressor (air)	1	78	40%	200	61	57	60	5	250	64	60	63	0	200	66	62	65	0	500	58	54	57	0
Drum Mixer	1	80	50%	50	75	72	75	5	150	70	67	70	0	120	72	69	72	0	250	66	63	66	0
Forklift	2	75	10%	400	55	45	48	5	600	56	46	49	0	500	58	48	51	0	700	55	45	48	0
Landscaping					***72***	***67***				***69***	***63***				***71***	***65***				***64***	***59***		
Dump Truck	1	76	40%	50	71	67	70	5	150	66	62	65	0	120	68	64	67	0	250	62	58	61	0
Forklift	2	75	10%	200	61	51	54	5	250	64	54	57	0	200	66	56	59	0	500	58	48	51	0
Tractor/Loader/Backhoe	1	78	40%	400	55	51	54	5	600	56	52	55	0	500	58	54	57	0	700	55	51	54	0
Overlapping Phases																							
Building Construction and Paving						81					78					80					74		
Building Construction, Paving, Architectural Coating, and Landscaping						82					79					81					74		
Building Construction, Architectural Coating, and Landscaping						80					77					79					72		
Maximum Combined Noise Levels						**81.8**					**79.0**					**80.9**					**74.2**		

Source for Ref. Noise Levels: LA CEQA Guides, 2006 & FHWA RCNM, 2005

Project: 21611 Perry Street (Mitigated)

Construction Noise Impact on Sensitive Receptors

Parameters

Construction Hours:	8	Daytime hours (7 am to 7 pm)
	0	Evening hours (7 pm to 10 pm)
	0	Nighttime hours (10 pm to 7 am)
Leq to L10 factor	3	

				R1					R2					R3					R4				
Construction Phase **Equipment Type**	**No. of Equip.**	**Reference Noise Level at 50ft, Lmax**	**Acoustical Usage Factor**	**Distance (ft)**	**Lmax**	**Leq**	**L10**	**Estimated Noise Shielding, dBA**	**Distance (ft)**	**Lmax**	**Leq**	**L11**	**Estimated Noise Shielding, dBA**	**Distance (ft)**	**Lmax**	**Leq**	**L12**	**Estimated Noise Shielding, dBA**	**Distance (ft)**	**Lmax**	**Leq**	**L11**	**Estimated Noise Shielding, dBA**
Demolition					***59***	***55***				***57***	***53***				***55***	***51***				***70***	***66***		
Compressor (air)	2	80	40%	400	47	43	46	18	600	44	40	43	17	500	44	40	43	19	700	60	56	59	0
Tractor/Loader/Backhoe	1	78	40%	400	42	38	41	18.2322	600	39	35	38	17.1973	500	39	35	38	19.3247	700	55	51	54	0
Dump Truck	2	76	40%	200	49	45	48	18.2322	250	48	44	47	17.1973	300	44	40	43	19.3247	500	59	55	58	0
Excavator	1	81	40%	400	45	41	44	18.2322	600	42	38	41	17.1973	500	42	38	41	19.3247	700	58	54	57	0
Generator	1	81	50%	120	55	52	55	18.2322	200	52	49	52	17.1973	170	51	48	51	19.3247	300	65	62	65	0
Tractor/Loader/Backhoe	2	78	40%	200	51	47	50	18.2322	250	50	46	49	17.1973	300	46	42	45	19.3247	500	61	57	60	0
Tractor/Loader/Backhoe	1	78	40%	200	48	44	47	18.2322	250	47	43	46	17.1973	300	43	39	42	19.3247	500	58	54	57	0
Vacuum Street Sweeper	1	80	10%	200	50	40	43	18.2322	250	49	39	42	17.1973	300	45	35	38	19.3247	500	60	50	53	0
Grading/Excavation					***66***	***60***				***63***	***57***				***62***	***55***				***76***	***70***		
Tractor/Loader/Backhoe	1	78	40%	200	48	44	47	18.2322	250	47	43	46	17.1973	300	43	39	42	19.3247	500	58	54	57	0
Concrete Saw	1	90	20%	120	64	57	60	18.2322	200	61	54	57	17.1973	170	60	53	56	19.3247	300	74	67	70	0
Compactor (ground)	1	83	20%	200	53	46	49	18.2322	250	52	45	48	17.1973	300	48	41	44	19.3247	500	63	56	59	0
Tractor/Loader/Backhoe	2	78	40%	200	51	47	50	18.2322	250	50	46	49	17.1973	300	46	42	45	19.3247	500	61	57	60	0
Dump Truck	2	76	40%	200	49	45	48	18.2322	250	48	44	47	17.1973	300	44	40	43	19.3247	500	59	55	58	0
Excavator	1	81	40%	200	51	47	50	18.2322	250	50	46	49	17.1973	300	46	42	45	19.3247	500	61	57	60	0
Grader	1	85	40%	200	55	51	54	18.2322	250	54	50	53	17.1973	300	50	46	49	19.3247	500	65	61	64	0
Tractor/Loader/Backhoe	2	78	40%	400	45	41	44	18.2322	600	42	38	41	17.1973	500	42	38	41	19.3247	700	58	54	57	0
Scraper	3	84	40%	400	52	48	51	18.2322	600	50	46	49	17.1973	500	49	45	48	19.3247	700	66	62	65	0
Roller	1	80	20%	400	44	37	40	18.2322	600	41	34	37	17.1973	500	41	34	37	19.3247	700	57	50	53	0
Vacuum Street Sweeper	1	80	10%	400	44	34	37	18.2322	600	41	31	34	17.1973	500	41	31	34	19.3247	700	57	47	50	0
Drainage/Utilities/Trenching					***61***	***57***				***59***	***55***				***57***	***53***				***72***	***68***		
Compressor (air)	1	78	40%	400	42	38	41	18.2322	600	39	35	38	17.1973	500	39	35	38	19.3247	700	55	51	54	0
Tractor/Loader/Backhoe	2	78	40%	400	45	41	44	18.2322	600	42	38	41	17.1973	500	42	38	41	19.3247	700	58	54	57	0
Compactor (ground)	1	83	20%	400	47	40	43	18.2322	600	44	37	40	17.1973	500	44	37	40	19.3247	700	60	53	56	0
Dump Truck	2	76	40%	200	49	45	48	18.2322	250	48	44	47	17.1973	300	44	40	43	19.3247	500	59	55	58	0
Excavator	1	81	40%	200	51	47	50	18.2322	250	50	46	49	17.1973	300	46	42	45	19.3247	500	61	57	60	0
Generator	2	81	50%	120	58	55	58	18.2322	200	55	52	55	17.1973	170	54	51	54	19.3247	300	68	65	68	0
Pumps	2	81	50%	200	54	51	54	18.2322	250	53	50	53	17.1973	300	49	46	49	19.3247	500	64	61	64	0
Forklift	1	75	10%	200	45	35	38	18.2322	250	44	34	37	17.1973	300	40	30	33	19.3247	500	55	45	48	0
Vacuum Street Sweeper	1	80	10%	400	44	34	37	18.2322	600	41	31	34	17.1973	500	41	31	34	19.3247	700	57	47	50	0
Foundation/Concrete Pour					***65***	***58***				***62***	***56***				***61***	***54***				***75***	***69***		
Compressor (air)	1	78	40%	200	48	44	47	18.2322	250	47	43	46	17.1973	300	43	39	42	19.3247	500	58	54	57	0
Tractor/Loader/Backhoe	1	78	40%	200	48	44	47	18.2322	250	47	43	46	17.1973	300	43	39	42	19.3247	500	58	54	57	0
Concrete Saw	1	90	20%	120	64	57	60	18.2322	200	61	54	57	17.1973	170	60	53	56	19.3247	300	74	67	70	0
Compactor (ground)	1	83	20%	200	53	46	49	18.2322	250	52	45	48	17.1973	300	48	41	44	19.3247	500	63	56	59	0
Dump Truck	2	76	40%	200	49	45	48	18.2322	250	48	44	47	17.1973	300	44	40	43	19.3247	500	59	55	58	0
Tractor/Loader/Backhoe	2	78	40%	200	51	47	50	18.2322	250	50	46	49	17.1973	300	46	42	45	19.3247	500	61	57	60	0
Pumps	1	81	50%	400	45	42	45	18.2322	600	42	39	42	17.1973	500	42	39	42	19.3247	700	58	55	58	0
Forklift	1	75	10%	400	39	29	32	18.2322	600	36	26	29	17.1973	500	36	26	29	19.3247	700	52	42	45	0
Vacuum Street Sweeper	1	80	10%	400	44	34	37	18.2322	600	41	31	34	17.1973	500	41	31	34	19.3247	700	57	47	50	0
Building Construction					***66***	***59***				***64***	***57***				***62***	***55***				***77***	***70***		
Compressor (air)	2	78	40%	200	51	47	50	18.2322	250	50	46	49	17.1973	300	46	42	45	19.3247	500	61	57	60	0
Drum Mixer	2	80	50%	400	47	44	47	18.2322	600	44	41	44	17.1973	500	44	41	44	19.3247	700	60	57	60	0
Concrete Saw	1	90	20%	200	60	53	56	18.2322	250	59	52	55	17.1973	300	55	48	51	19.3247	500	70	63	66	0
Concrete Saw	1	90	20%	120	64	57	60	18.2322	200	61	54	57	17.1973	170	60	53	56	19.3247	300	74	67	70	0
Crane	1	81	16%	400	45	37	40	18.2322	400	46	38	41	17.1973	400	44	36	39	19.3247	400	63	55	58	0
Dump Truck	2	76	40%	400	43	39	42	18.2322	600	40	36	39	17.1973	500	40	36	39	19.3247	700	56	52	55	0
Forklift	4	75	10%	400	45	35	38	18.2322	600	42	32	35	17.1973	500	42	32	35	19.3247	700	58	48	51	0
Generator	1	81	50%	400	45	42	45	18.2322	600	42	39	42	17.1973	500	42	39	42	19.3247	700	58	55	58	0
Pumps	1	81	50%	200	51	48	51	18.2322	250	50	47	50	17.1973	300	46	43	46	19.3247	500	61	58	61	0
Forklift	2	75	10%	200	48	38	41	18.2322	250	47	37	40	17.1973	300	43	33	36	19.3247	500	58	48	51	0
Paving					***62***	***59***				***60***	***57***				***58***	***55***				***73***	***69***		
Tractor/Loader/Backhoe	1	78	40%	400	42	38	41	18.2322	600	39	35	38	17.1973	500	39	35	38	19.3247	700	55	51	54	0
Dump Truck	2	76	40%	400	43	39	42	18.2322	600	40	36	39	17.1973	500	40	36	39	19.3247	700	56	52	55	0
Tractor/Loader/Backhoe	2	78	40%	200	51	47	50	18.2322	250	50	46	49	17.1973	300	46	42	45	19.3247	500	61	57	60	0
Paver	1	77	50%	200	47	44	47	18.2322	250	46	43	46	17.1973	300	42	39	42	19.3247	500	57	54	57	0
Other Equipment	2	85	50%	200	58	55	58	18.2322	250	57	54	57	17.1973	300	53	50	53	19.3247	500	68	65	68	0
Other Equipment	1	85	50%	120	59	56	59	18.2322	200	56	53	56	17.1973	170	55	52	55	19.3247	300	69	66	69	0
Roller	2	80	20%	400	47	40	43	18.2322	600	44	37	40	17.1973	500	44	37	40	19.3247	700	60	53	56	0
Vacuum Street Sweeper	1	80	10%	400	44	34	37	18.2322	600	41	31	34	17.1973	500	41	31	34	19.3247	700	57	47	50	0
Architectural Coatings					***55***	***52***				***52***	***49***				***51***	***48***				***66***	***62***		
Compressor (air)	1	78	40%	200	48	44	47	18.2322	250	47	43	46	17.1973	300	43	39	42	19.3247	500	58	54	57	0
Drum Mixer	1	80	50%	120	54	51	54	18.2322	200	51	48	51	17.1973	170	50	47	50	19.3247	300	64	61	64	0
Forklift	2	75	10%	400	42	32	35	18.2322	600	39	29	32	17.1973	500	39	29	32	19.3247	700	55	45	48	0
Landscaping					***53***	***47***				***50***	***44***				***48***	***43***				***63***	***58***		
Dump Truck	1	76	40%	120	50	46	49	18.2322	200	47	43	46	17.1973	170	46	42	45	19.3247	300	60	56	59	0
Forklift	2	75	10%	200	48	38	41	18.2322	250	47	37	40	17.1973	300	43	33	36	19.3247	500	58	48	51	0
Tractor/Loader/Backhoe	1	78	40%	400	42	38	41	18.2322	600	39	35	38	17.1973	500	39	35	38	19.3247	700	55	51	54	0
Overlapping Phases																							
Building Construction and Paving						62					60					58					73		
Building Construction, Paving, Architectural Coating, and Landscaping						63					61					59					73		
Building Construction, Architectural Coating, and Landscaping						60					58					56					71		
Maximum Combined Noise Levels						**62.8**					**60.5**					**58.5**					**73.3**		

Source for Ref. Noise Levels: LA CEQA Guides, 2006 & FHWA RCNM, 2005

21611 Perry Street Barrier Calculations

horizontal dist (feet)			source height (Hs) (feet)	Receiver Height (feet)	Barrier Height (feet)		source to receiver (C) (feet)	true distance source to barrier (A) (feet)	barrier to receiver (B) (feet)	path length difference: P A+B-C (feet)
DSB+DBR	DSB	DBR		HR	HB	°C				
70	50	20	4	5	18	15	70.01	51.92	23.85	5.77
150	50	100	4	5	18	15	150.00	51.92	100.84	2.76
80	50	30	4	5	18	15	80.01	51.92	32.70	4.61
250	50	200	4	5	18	15	250.00	51.92	200.42	2.34
70	50	20	4	5	15	15	70.01	51.20	22.36	3.55
150	50	100	4	5	15	15	150.00	51.20	100.50	1.69
80	50	30	4	5	15	15	80.01	51.20	31.62	2.81
250	50	200	4	5	15	15	250.00	51.20	200.25	1.44
50	50		4	5		15	50.01	50.16	5.00	5.15
50	50		4	5		15	50.01	50.16	5.00	5.15
50	50		4	5		15	50.01	50.16	5.00	5.15
50	50		4	5		15	50.01	50.16	5.00	5.15

	Barrier Attenuation Barrier Height			
	20 ft	15 ft	10 ft	5 ft
R1	20.3	18.2		
R2	17.2	15.2		
R3	19.3	17.3		
R2	16.5	14.6		

		path length difference: z A+B-C (meter)	Kmet	Speed of Sound (m/s)	wavelength in meter (λ)							
C2	C3				63	125	250	500	1000	2000	4000	8000
20	1	1.76	1.00	340.4	5.40	2.72	1.36	0.68	0.34	0.17	0.09	0.04
20	1	0.84	1.00	340.4	5.40	2.72	1.36	0.68	0.34	0.17	0.09	0.04
20	1	1.41	1.00	340.4	5.40	2.72	1.36	0.68	0.34	0.17	0.09	0.04
20	1	0.71	1.00	340.4	5.40	2.72	1.36	0.68	0.34	0.17	0.09	0.04
20	1	1.08	1.00	340.4	5.40	2.72	1.36	0.68	0.34	0.17	0.09	0.04
20	1	0.52	1.00	340.4	5.40	2.72	1.36	0.68	0.34	0.17	0.09	0.04
20	1	0.86	1.00	340.4	5.40	2.72	1.36	0.68	0.34	0.17	0.09	0.04
20	1	0.44	1.00	340.4	5.40	2.72	1.36	0.68	0.34	0.17	0.09	0.04
20	1	1.57	1.00	340.4	5.40	2.72	1.36	0.68	0.34	0.17	0.09	0.04
20	1	1.57	1.00	340.4	5.40	2.72	1.36	0.68	0.34	0.17	0.09	0.04
20	1	1.57	1.00	340.4	5.40	2.72	1.36	0.68	0.34	0.17	0.09	0.04
20	1	1.57	1.00	340.4	5.40	2.72	1.36	0.68	0.34	0.17	0.09	0.04

Dz Barrier Attenuation								Line of Sight		
63	125	250	500	1000	2000	4000	8000	Auto	MT	HT
10	12	15	17	20	23	26	29	YES	YES	YES
8	10	12	14	17	20	23	26	YES	YES	YES
9	11	14	16	19	22	25	28	YES	YES	YES
8	9	11	14	17	19	22	25	YES	YES	YES
8	10	13	15	18	21	24	27	YES	YES	YES
7	8	10	13	15	18	21	24	YES	YES	YES
8	10	12	14	17	20	23	26	YES	YES	YES
7	8	10	12	15	17	20	23	YES	YES	YES
0	0	0	0	0	0	0	0	NO	NO	NO
0	0	0	0	0	0	0	0	NO	NO	NO
0	0	0	0	0	0	0	0	NO	NO	NO
0	0	0	0	0	0	0	0	NO	NO	NO

Roadway Traffic Noise - Existing

Street	Existing Land Uses Located Along Roadway Segment	Traffic Noise Levels (dBA CNEL)			
		Existing	Existing with Project	Increase over Existing	Significant Impact?
Avalon Blvd n/o Carson St	Commercial/Mixed Use	70.9	70.9	0.0	No
Avalon Blvd s/o Carson St	Commercial/Mixed Use	71.1	71.1	0.0	No
Carson St between Avalon Blvd and I-405 SB Ramps	Commercial	73.0	73.0	0.0	No
Carson St between I-405 NB Ramps and Perry St	Manufacturing	71.9	71.9	0.1	No
Carson St between I-405 SB Ramps and I-405 NB Ramps	Commercial	72.7	72.7	0.0	No
Carson St between Perry St and Wilmington Ave	Commercial/Residential	71.6	71.7	0.0	No
Carson St e/o Wilmington Ave	Manufacturing	71.0	71.0	0.0	No
Carson St w/o Avalon Blvd	Commercial/Mixed Use	72.0	72.0	0.0	No
I-405 NB Ramps n/o Carson St	Commercial/OpenSpace	68.8	68.9	0.0	No
I-405 NB Ramps s/o Carson St	Commercial/OpenSpace	61.0	61.0	0.0	No
I-405 SB Ramps n/o Carson St	Commercial/OpenSpace	47.3	47.3	0.0	No
I-405 SB Ramps s/o Carson St	Commercial/OpenSpace	69.1	69.1	0.0	No
Perry St between Project Driveway and Carson St	Commercial/Mixed Use	58.4	59.0	0.6	No
Perry St n/o Project Driveway	Residential/Open Space	58.3	58.4	0.1	No
Wilmington Ave n/o Carson St	Manufacturing/Commercial/Residential	71.1	71.1	0.0	No
Wilmington Ave s/o Carson St	Manufacturing/Commercial/Residential	69.3	69.3	0.0	No

Roadway Traffic Noise - Future

Street	Existing Land Uses Located Along Roadway Segment	Traffic Noise Levels (dBA CNEL) Future Year (2029)	Future Year (2029) with Project	Increase over Existing	Significant Impact?
Avalon Blvd n/o Carson St	Commercial/Mixed Use	72.3	72.3	0.0	No
Avalon Blvd s/o Carson St	Commercial/Mixed Use	71.7	71.7	0.0	No
Carson St between Avalon Blvd and I-405 SB Ramps	Commercial	73.6	73.6	0.0	No
Carson St between I-405 NB Ramps and Perry St	Manufacturing	72.5	72.5	0.1	No
Carson St between I-405 SB Ramps and I-405 NB Ramps	Commercial	73.3	73.3	0.0	No
Carson St between Perry St and Wilmington Ave	Commercial/Residential	72.2	72.2	0.0	No
Carson St e/o Wilmington Ave	Manufacturing	71.7	71.7	0.0	No
Carson St w/o Avalon Blvd	Commercial/Mixed Use	72.9	72.9	0.0	No
I-405 NB Ramps n/o Carson St	Commercial/OpenSpace	69.1	69.2	0.0	No
I-405 NB Ramps s/o Carson St	Commercial/OpenSpace	61.1	61.1	0.0	No
I-405 SB Ramps n/o Carson St	Commercial/OpenSpace	47.4	47.4	0.0	No
I-405 SB Ramps s/o Carson St	Commercial/OpenSpace	69.3	69.4	0.0	No
Perry St between Project Driveway and Carson St	Commercial/Mixed Use	58.5	59.0	0.6	No
Perry St n/o Project Driveway	Residential/Open Space	58.4	58.5	0.1	No
Wilmington Ave n/o Carson St	Manufacturing/Commercial/Residential	71.2	71.2	0.0	No
Wilmington Ave s/o Carson St	Manufacturing/Commercial/Residential	69.4	69.4	0.0	No

TRAFFIC NOISE ANALYSIS TOOL

Project Name: 21611 Perry Street
Analysis Scenario: Existing
Source of Traffic Volumes: Fehr Peers

Segment	Ground Type	Distance from Roadway to Receiver (feet)	Speed (mph)			Peak Hour Volume			Peak Hour Noise Level (Leq(h) dBA)	Noise Level dBA CNEL
			Auto	MT	HT	Auto	MT	HT		
Avalon Blvd n/o Carson St	Hard	30	35	35	30	2202	45	23	70.6	70.9
Avalon Blvd s/o Carson St	Hard	30	35	35	30	2312	48	24	70.8	71.1
Carson St between Avalon Blvd and I-405 SB Ramps	Hard	30	40	40	35	2486	51	26	72.7	73.0
Carson St between I-405 NB Ramps and Perry St	Hard	30	40	40	35	1926	40	20	71.6	71.9
Carson St between I-405 SB Ramps and I-405 NB Ramps	Hard	30	40	40	35	2316	48	24	72.4	72.7
Carson St between Perry St and Wilmington Ave	Hard	30	40	40	35	1831	38	19	71.3	71.6
Carson St e/o Wilmington Ave	Hard	30	40	40	35	1593	33	16	70.7	71.0
Carson St w/o Avalon Blvd	Hard	30	40	40	35	2003	41	21	71.7	72.0
I-405 NB Ramps n/o Carson St	Hard	30	40	40	35	965	20	10	68.5	68.8
I-405 NB Ramps s/o Carson St	Hard	30	40	40	35	157	3	2	60.7	61.0
I-405 SB Ramps n/o Carson St	Hard	30	40	40	35	7	0	0	47.0	47.3
I-405 SB Ramps s/o Carson St	Hard	30	40	40	35	1022	21	11	68.8	69.1
Perry St between Project Driveway and Carson St	Hard	30	25	25	25	251	5	3	58.1	58.4
Perry St n/o Project Driveway	Hard	30	25	25	25	246	5	3	58.0	58.3
Wilmington Ave n/o Carson St	Hard	30	40	40	35	1632	34	17	70.8	71.1
Wilmington Ave s/o Carson St	Hard	30	40	40	35	1060	22	11	69.0	69.3

TRAFFIC NOISE ANALYSIS TOOL

Project Name: 21611 Perry Street
Analysis Scenario: Existing +Project
Source of Traffic Volumes: Fehr Peers

Segment	Ground Type	Distance from Roadway to Receiver (feet)	Speed (mph)			Peak Hour Volume			Peak Hour Noise Level (Leq(h) dBA)	Noise Level dBA CNEL
			Auto	MT	HT	Auto	MT	HT		
Avalon Blvd n/o Carson St	Hard	30	35	35	30	2204	45	23	70.6	70.9
Avalon Blvd s/o Carson St	Hard	30	35	35	30	2314	48	24	70.8	71.1
Carson St between Avalon Blvd and I-405 SB Ramps	Hard	30	40	40	35	2496	51	26	72.7	73.0
Carson St between I-405 NB Ramps and Perry St	Hard	30	40	40	35	1955	40	20	71.6	71.9
Carson St between I-405 SB Ramps and I-405 NB Ramps	Hard	30	40	40	35	2336	48	24	72.4	72.7
Carson St between Perry St and Wilmington Ave	Hard	30	40	40	35	1841	38	19	71.4	71.7
Carson St e/o Wilmington Ave	Hard	30	40	40	35	1596	33	16	70.7	71.0
Carson St w/o Avalon Blvd	Hard	30	40	40	35	2007	41	21	71.7	72.0
I-405 NB Ramps n/o Carson St	Hard	30	40	40	35	974	20	10	68.6	68.9
I-405 NB Ramps s/o Carson St	Hard	30	40	40	35	157	3	2	60.7	61.0
I-405 SB Ramps n/o Carson St	Hard	30	40	40	35	7	0	0	47.0	47.3
I-405 SB Ramps s/o Carson St	Hard	30	40	40	35	1031	21	11	68.8	69.1
Perry St between Project Driveway and Carson St	Hard	30	25	25	25	288	6	3	58.7	59.0
Perry St n/o Project Driveway	Hard	30	25	25	25	253	5	3	58.1	58.4
Wilmington Ave n/o Carson St	Hard	30	40	40	35	1636	34	17	70.8	71.1
Wilmington Ave s/o Carson St	Hard	30	40	40	35	1065	22	11	69.0	69.3

TRAFFIC NOISE ANALYSIS TOOL

Project Name: 21611 Perry Street
Analysis Scenario: Future
Source of Traffic Volumes: Fehr Peers

Segment	Ground Type	Distance from Roadway to Receiver (feet)	Speed (mph)			Peak Hour Volume			Peak Hour Noise Level (Leq(h) dBA)	Noise Level dBA CNEL
			Auto	MT	HT	Auto	MT	HT		
Avalon Blvd n/o Carson St	Hard	30	35	35	30	3046	63	31	72.0	72.3
Avalon Blvd s/o Carson St	Hard	30	35	35	30	2655	55	27	71.4	71.7
Carson St between Avalon Blvd and I-405 SB Ramps	Hard	30	40	40	35	2871	59	30	73.3	73.6
Carson St between I-405 NB Ramps and Perry St	Hard	30	40	40	35	2219	46	23	72.2	72.5
Carson St between I-405 SB Ramps and I-405 NB Ramps	Hard	30	40	40	35	2659	55	27	73.0	73.3
Carson St between Perry St and Wilmington Ave	Hard	30	40	40	35	2101	43	22	71.9	72.2
Carson St e/o Wilmington Ave	Hard	30	40	40	35	1854	38	19	71.4	71.7
Carson St w/o Avalon Blvd	Hard	30	40	40	35	2434	50	25	72.6	72.9
I-405 NB Ramps n/o Carson St	Hard	30	40	40	35	1027	21	11	68.8	69.1
I-405 NB Ramps s/o Carson St	Hard	30	40	40	35	160	3	2	60.8	61.1
I-405 SB Ramps n/o Carson St	Hard	30	40	40	35	7	0	0	47.1	47.4
I-405 SB Ramps s/o Carson St	Hard	30	40	40	35	1082	22	11	69.0	69.3
Perry St between Project Driveway and Carson St	Hard	30	25	25	25	256	5	3	58.2	58.5
Perry St n/o Project Driveway	Hard	30	25	25	25	251	5	3	58.1	58.4
Wilmington Ave n/o Carson St	Hard	30	40	40	35	1664	34	17	70.9	71.2
Wilmington Ave s/o Carson St	Hard	30	40	40	35	1085	22	11	69.1	69.4

TRAFFIC NOISE ANALYSIS TOOL

Project Name: 21611 Perry Street
Analysis Scenario: Future+Project
Source of Traffic Volumes: Fehr Peers

Segment	Ground Type	Distance from Roadway to Receiver (feet)	Speed (mph)			Peak Hour Volume			Peak Hour Noise Level (Leq(h) dBA)	Noise Level dBA CNEL
			Auto	MT	HT	Auto	MT	HT		
Avalon Blvd n/o Carson St	Hard	30	35	35	30	3048	63	31	72.0	72.3
Avalon Blvd s/o Carson St	Hard	30	35	35	30	2657	55	27	71.4	71.7
Carson St between Avalon Blvd and I-405 SB Ramps	Hard	30	40	40	35	2881	59	30	73.3	73.6
Carson St between I-405 NB Ramps and Perry St	Hard	30	40	40	35	2247	46	23	72.2	72.5
Carson St between I-405 SB Ramps and I-405 NB Ramps	Hard	30	40	40	35	2678	55	28	73.0	73.3
Carson St between Perry St and Wilmington Ave	Hard	30	40	40	35	2111	44	22	71.9	72.2
Carson St e/o Wilmington Ave	Hard	30	40	40	35	1858	38	19	71.4	71.7
Carson St w/o Avalon Blvd	Hard	30	40	40	35	2438	50	25	72.6	72.9
I-405 NB Ramps n/o Carson St	Hard	30	40	40	35	1035	21	11	68.9	69.2
I-405 NB Ramps s/o Carson St	Hard	30	40	40	35	160	3	2	60.8	61.1
I-405 SB Ramps n/o Carson St	Hard	30	40	40	35	7	0	0	47.1	47.4
I-405 SB Ramps s/o Carson St	Hard	30	40	40	35	1091	22	11	69.1	69.4
Perry St between Project Driveway and Carson St	Hard	30	25	25	25	293	6	3	58.7	59.0
Perry St n/o Project Driveway	Hard	30	25	25	25	258	5	3	58.2	58.5
Wilmington Ave n/o Carson St	Hard	30	40	40	35	1669	34	17	70.9	71.2
Wilmington Ave s/o Carson St	Hard	30	40	40	35	1089	22	11	69.1	69.4

Appendix L
Local Transportation Assessment

ESA

21611 South Perry Street

Local Transportation Assessment

Prepared for:
21611 Perry Street, LLC

January 18, 2022

LB21-0049.00

FEHR PEERS

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1. Introduction

This report documents the assumptions, methodologies, and findings of a traffic and parking study conducted by Fehr & Peers to address non-CEQA related transportation needs and potential improvements for the 21611 South Perry Street self-storage/mixed-use project (the "Project") in the City of Carson, California, on a 2.8-acre site located east of the I-405 Freeway interchange with Carson Street.

1.1 Project Description

The Project is proposed to be developed in the City of Carson in the South Bay area of Los Angeles County on a currently vacant lot. It is located approximately 17.5 miles south of downtown Los Angeles and approximately 8.5 miles east of the Pacific Ocean. The Project site is comprised of approximately 2.8 acres located to the east of the I-405 Freeway interchange with Carson Street. The Project site is bounded by a single-family residential neighborhood to the north, a mix of residential and commercial uses to the east, a truck dealership to the south, and the Dominguez Channel to the west. **Figure 1** illustrates the Project site and study area. **Figure 2** includes the site plan.

The Project as analyzed in this study involves the construction of:

- 109,039 square feet (725 storage units) of self-storage warehouse space
- 2,425 square feet of self-storage office space
- 700 square feet of retail space
- 1,550 square feet of restaurant space

The Project, as illustrated in the site plan in **Figure 2**, will have side-street stop control access and egress at one driveway location. This Project driveway will provide access to and from Perry Street.

1.2 Study Scope

The scope of work for this study was determined in conjunction with the City of Carson's Transportation staff. The base assumptions and technical methodologies were discussed with the City of Carson as part of the study approach and agreed to in a memorandum of understanding, dated December 13, 2021. This memorandum is included in **Appendix E** of this document.

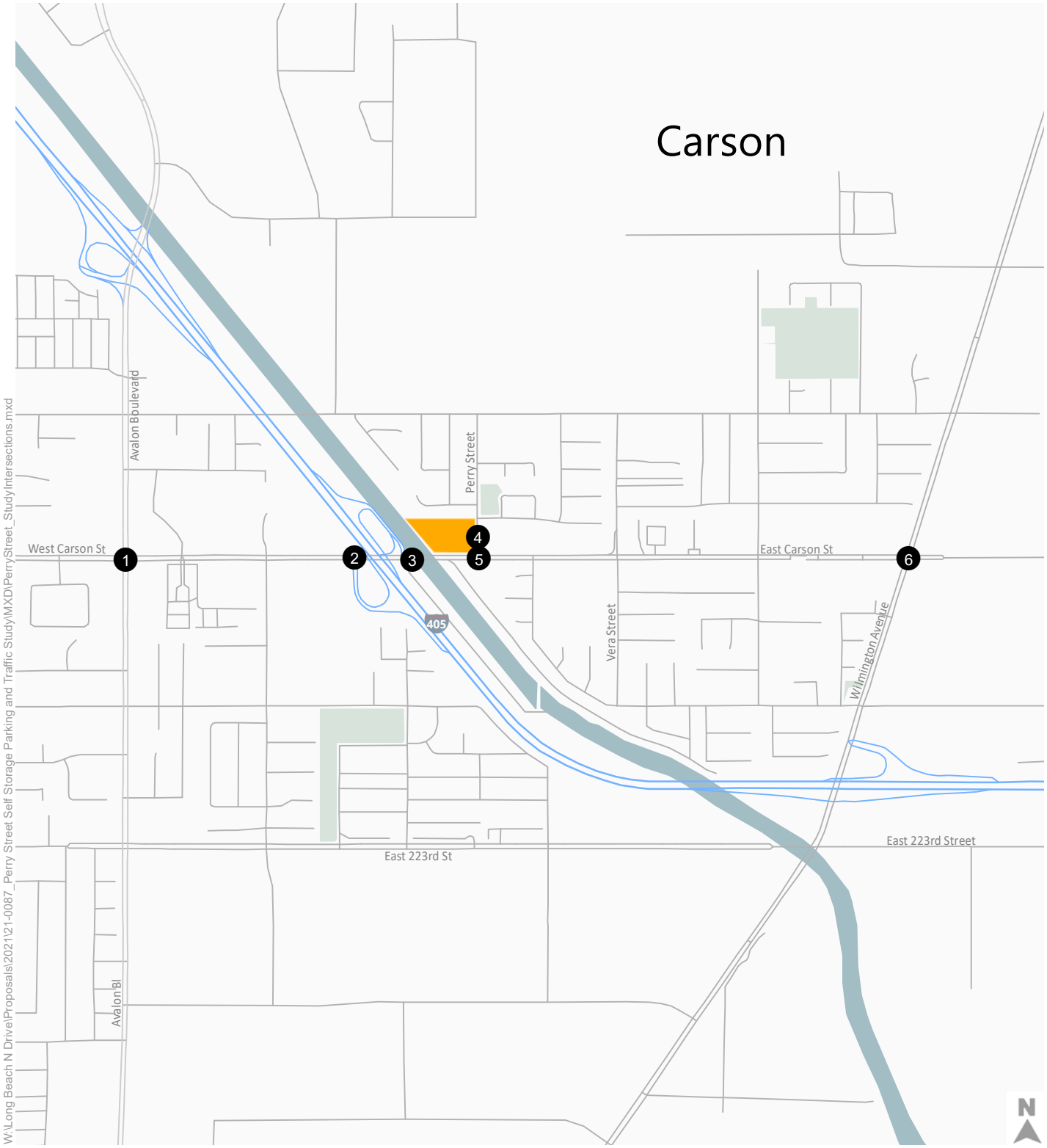


Figure 1

Project Location and Study Intersections

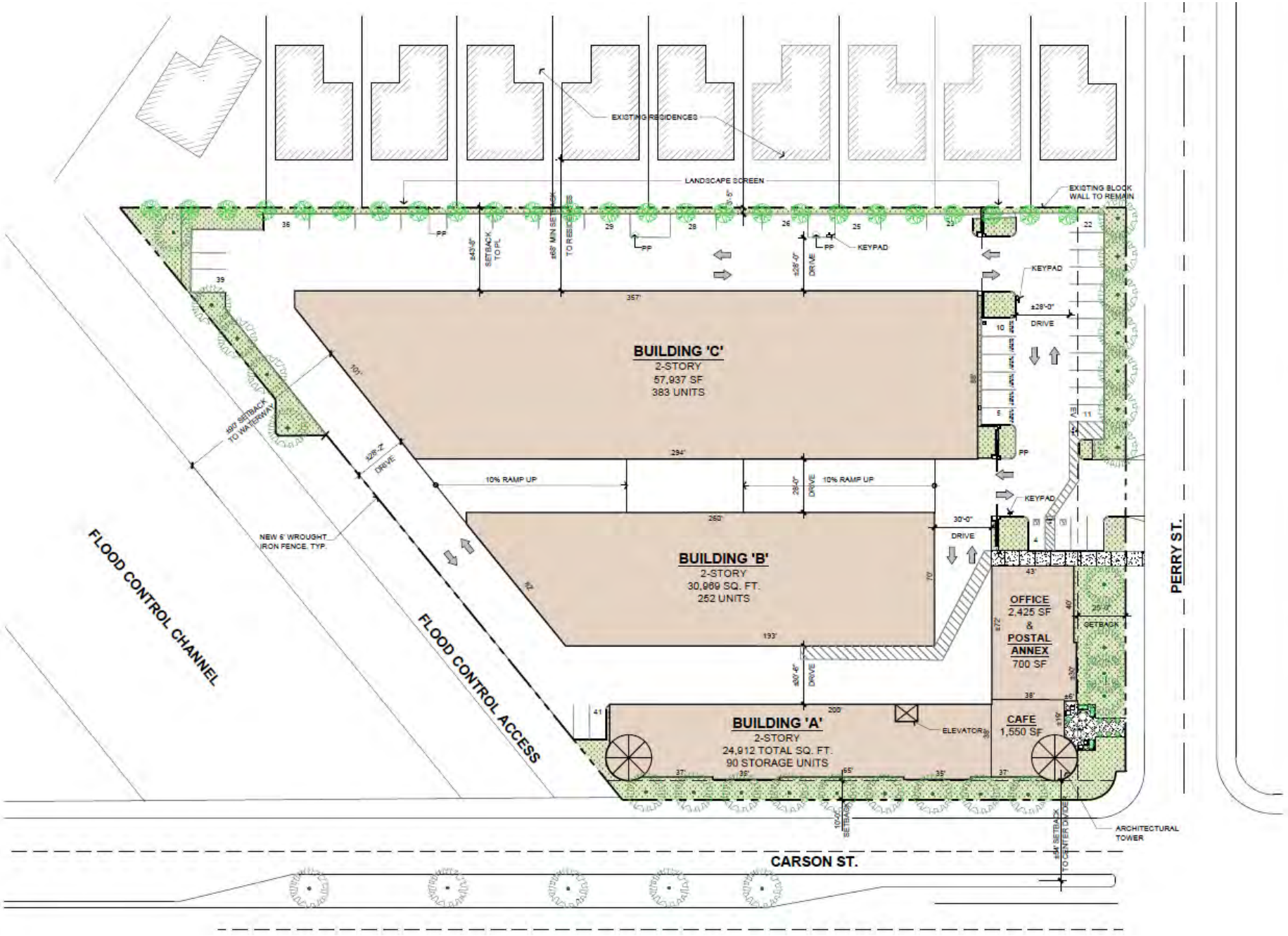


Image Source: Jordan Architects

Figure 2

Site Plan

1.3 Traffic Scenarios

The study assumes that the Project will be completed by year 2023. This study analyzes the potential project-generated traffic effects to the local street system under both existing and future year traffic conditions. The following traffic scenarios have been developed and analyzed as part of this study:

- Existing Conditions – The existing conditions analysis includes a description of the transportation system serving the Project site, existing traffic volumes, and an assessment of the operating conditions at the study analysis locations described below. This scenario is described in detail in **Chapter 2**.
- Existing plus Ambient Growth plus Project Conditions – This traffic scenario provides projected traffic volumes and an assessment of operations under existing conditions with the addition of project-generated traffic and ambient regional growth by the year 2023. The effects of the proposed Project on existing traffic operating conditions were then identified. This scenario is described in detail in **Chapter 3**.
- Future Base (Year 2023) Conditions – Future traffic projections without the proposed Project were developed for the year 2023. The objective of this analysis was to project future traffic growth and operating conditions that could be expected to result from ambient regional growth and related projects in the vicinity of the Project site by the year 2023. This scenario is described in detail in **Chapter 3**.
- Future (Year 2023) plus Project Conditions – This traffic scenario provides projected traffic volumes and an assessment of operating conditions under future conditions with the addition of Project-generated traffic. The effects of the proposed Project on future traffic operating conditions were then identified. This scenario is described in **Chapter 3**.

1.4 Study Intersections

A total of 6 intersections were selected for the analysis of the Project in consultation with the City of Carson. Of the 6 intersections, 4 are signalized intersections and 2 are unsignalized intersections.

1.4.1 Signalized Intersections

The following signalized intersections, illustrated in **Figure 1**, were identified in conjunction with the City of Carson to be analyzed as part of the scope of work for this Project:

1. Avalon Boulevard & Carson Street
2. I-405 Southbound Ramps & Carson Street
3. I-405 Northbound Ramps/Recreation Road & Carson Street
6. Wilmington Avenue & Carson Street

1.4.2 Unsignalized Intersections

The following two unsignalized intersections, illustrated in **Figure 1**, were identified in conjunction with the City of Carson:

4. Perry Street & Project Driveway
5. Perry Street & Carson Street

1.5 Organization of Report

This report is divided into 6 chapters, including this introduction. **Chapter 2** describes the existing conditions including an inventory of the streets, highways, and transit service in the study area, a summary of existing traffic volumes, and an assessment of existing operating conditions. The methodologies used to develop traffic forecasts for the Existing, Existing plus Ambient Growth plus Project, Future Base, and Future plus Project scenarios and the forecasts themselves are included in **Chapter 3**. **Chapter 4** presents an assessment of intersection traffic conditions with the addition of Project trips. **Chapter 5** provides an assessment of the proposed Project's parking and access scheme. **Chapter 6** provides a summary and conclusions.

2. Existing Conditions

A comprehensive data collection effort was conducted to develop a detailed description of existing conditions in the study area. The assessment of conditions includes a description of the study area, an inventory of the local street system, a review of traffic volume on these facilities, an assessment of the resulting operating conditions, and the current transit service in the study area. This chapter presents a detailed description of these elements.

2.1 Study Area

The Project site is located within the City of Carson. The study area selected for analysis is bounded by the State Route 91 freeway to the north, the Harbor Freeway (I-110) to the west, State Route 47 to the east, and 223rd Street to the south. The streets in the study area are under the jurisdiction of the City of Carson, except for all freeway ramp terminal intersections which are controlled by Caltrans.

2.2 Existing Street System

As illustrated in **Figure 1**, the Project site is located just east of the I-405 Freeway interchange with Carson Street. The site is currently a vacant lot. I-405 provides the primary regional access to the Project site.

Major arterials serving the study area include Carson Street in the east/west direction and Avalon Boulevard and Wilmington Avenue in the north/south direction.

The characteristics of the freeways and major roadways serving the study area are described below.

2.2.1 Freeways

- **Interstate 405** runs in a northwest/southeast direction in the study area, extending from I-5 in the City of Irvine to the San Fernando Valley in the City of Los Angeles. In the study area, the freeway provides four lanes and one carpool lane in each direction plus auxiliary lanes. Ramps are provided at Carson Street.

2.2.2 East/West Streets

- **Carson Street** is classified as a Major Highway in the City of Carson's General Plan, Transportation and Infrastructure Element and runs in the east/west direction south of the Project site with two lanes in each direction through most of the study area. Parking is generally permitted on both sides of the street and left-turn pockets are present at major intersections. Carson Street from Figueroa Street to the I-405 interchange was recently improved as part of the Carson Street Mixed-Use District Master Plan, adding pedestrian enhancements including curb bulbouts and high-visibility crosswalks.

2.2.3 North/South Streets

- **Avalon Boulevard** is classified as a Major Highway and runs in the north/south direction west of the Project site with three travel lanes in each direction north of Carson Street and two travel lanes in each direction south of Carson Street. Parking is permitted on the blocks south of Carson Street but not on the blocks north of Carson Street. Left-turn pockets are present at major intersections.
- **Wilmington Avenue** is classified as a Major Highway and runs in the north/south direction east of the Project site with generally two travel lanes in each direction. Parking is generally permitted on both sides of the street and left-turn pockets are present at major intersections.

Lane configurations of the study intersections are provided in **Appendix A**.

2.3 Existing Public Transit Service

The Project site is served by one public transit route, Long Beach Transit Route 4, which provides service to the LA Metro J Line bus rapid transit at Carson Station and the LA Metro A Line light rail at Del Amo Station. Route 4 provides service every 40 minutes on weekdays and Saturdays.

2.4 Existing Bicycle and Pedestrian Facilities

Figure 3 shows existing bicycle facilities in the study area. As shown in the figure, the study area has a limited existing bikeway network. Carson Street is now designated as a Class III bike route west of I-405 as part of the recent street improvements. The study area generally has a network of 4- to 8-foot-wide sidewalks but does not have crosswalks on all intersection legs and countdown pedestrian signals at all marked crossings.

There are several bike lanes and bike routes planned throughout the study area as well as a planned extension of the bike path along the Dominguez Channel, east of I-405. Proposed bicycle facilities are also shown in **Figure 4**. Data on the proposed facilities come from two sources: the City of Carson Master Plan of Bikeways and Metro's Active Transportation Strategic Plan.

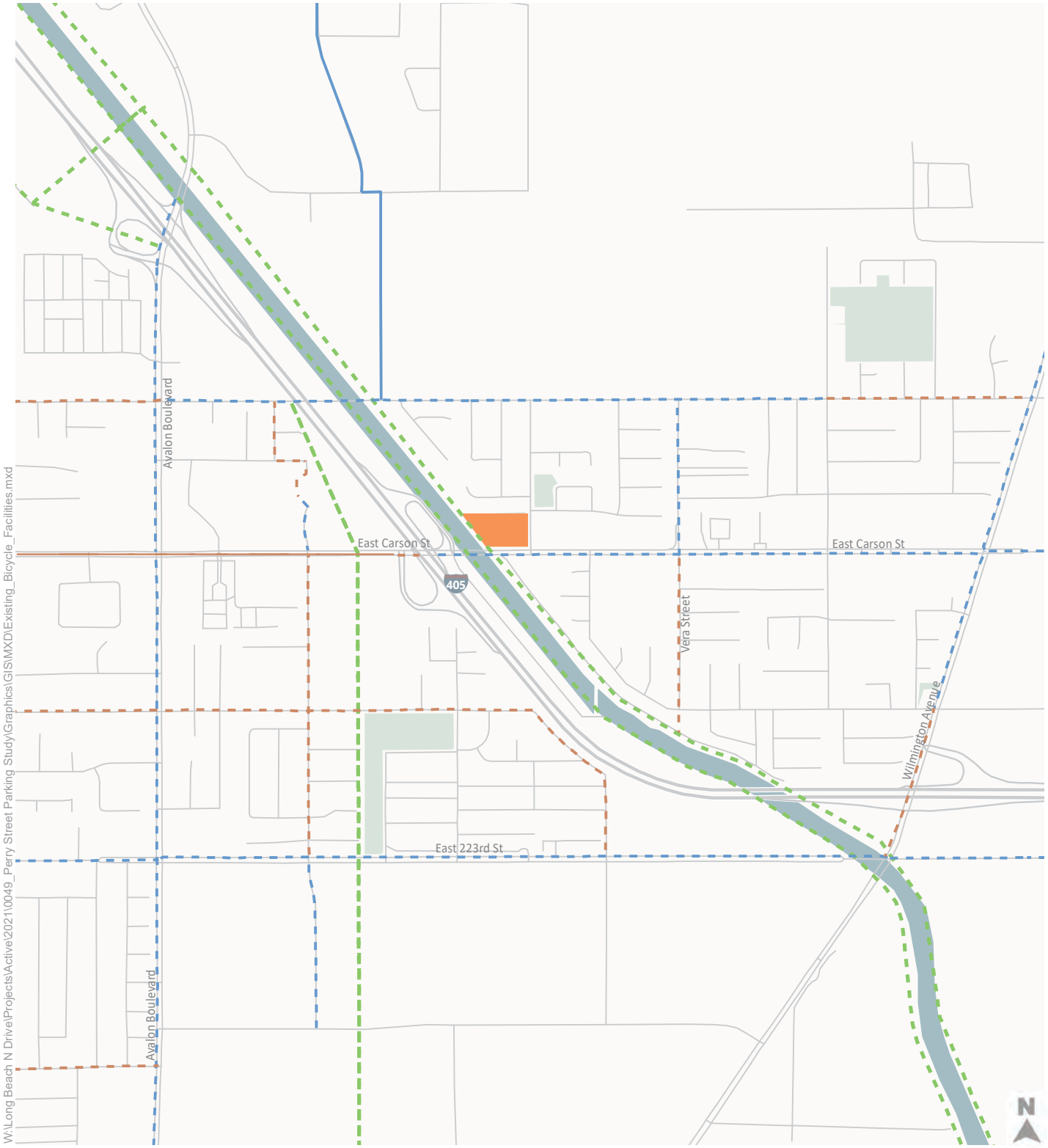


Figure 3

Existing and Proposed Bicycle Facilities

2.5 Existing Traffic Volumes and Level of Service

This section presents existing peak hour traffic volumes, describes the methodology used to assess traffic conditions at each intersection, and analyzes the resulting operating conditions at each location, indicating average vehicle delay and levels of service (LOS).

2.5.1 Existing Traffic Volumes

Due to significant changes in travel behavior caused by the COVID-19 pandemic, this study utilized AM and PM peak hour traffic counts collected in the year prior to the start of the pandemic (March 2019-March 2020). Since pre-pandemic traffic counts were not available for Intersection 5 – Perry Street & Carson Street, new traffic counts were collected at this location on Thursday, December 9, 2021. Adjustment factors were then applied to the new traffic counts to estimate pre-pandemic traffic levels. These adjustment factors were derived by comparing the pre-pandemic counts at nearby intersections with the new counts. Specifically, traffic heading towards the I-405 Freeway in the AM peak hour was increased by approximately 30% and traffic heading away from the I-405 Freeway in the PM peak hour was increased by approximately 20%. The existing weekday morning and evening peak hour volumes at the study intersections, and the adjustment factor volumes, are provided in **Appendix A**. Signal timing plans for the signalized study intersections are provided in **Appendix B**. Traffic count worksheets for the study intersections are contained in **Appendix C**.

2.5.2 Level of Service Methodology

Per the City of Carson guidelines, study intersections are analyzed using the Highway Capacity Manual (HCM), 6th Edition method. The HCM method estimates the average vehicle delay at each intersection based on key parameters including traffic volume, signal timing, and roadway geometry. The overall intersection delay per vehicle is subsequently assigned a LOS value to describe intersection operations, as shown in **Table 1**. LOS ranges from LOS A (free flow) to LOS F (gridlock condition).

The two unsignalized study intersections (Intersections 4 and 5) are both side-street stop-controlled, and the LOS for these intersections is based on the worst operating stop-controlled approach.[1] **Table 1** also shows the LOS values assigned based on stop-controlled approach delay per vehicle for unsignalized intersections using the HCM method.

2.5.3 Existing 2019 Levels of Service

Existing year traffic volumes, presented in **Appendix A**, were analyzed using the methodologies described above to determine the existing operating conditions at the study intersections. **Table 2** summarizes the resulting seconds of delay per vehicle and the corresponding LOS at each of the analyzed intersections.

[1] The analysis for Intersection 5 includes southern approach volumes for reference. The southern approach is the private driveway for a truck dealer facility. Since the southern approach is a private driveway with low traffic volumes in all scenarios, the LOS reported for this intersection is based on the delay for the northern approach.

All existing study intersections operate at LOS D or better during both peak periods. Detailed LOS analysis sheets for the Project are provided in **Appendix D**.

Table 1: HCM Level of Service Definitions

LOS	Description for Signalized Intersections	Signalized Delay (Seconds)	Unsignalized Delay (Seconds)
A	Operations with very low delay occurring with favorable progression and/or short cycle length.	≤ 10.0	≤ 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	> 10.0 to 20.0	> 10.0 to 15.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	> 20.0 to 35.0	> 15.0 to 25.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	> 35.0 to 55.0	> 25.0 to 35.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 55.0 to 80.0	> 35.0 to 50.0
F	Operations with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	> 80.0	> 50.0

Source: *Highway Capacity Manual, 6th Edition* (Transportation Research Board, 2016).

Table 2: Existing Levels of Service

Study Intersection	Control Type	Period	Delay (s)	LOS
1. Avalon Boulevard & Carson Street	Signalized	AM	39.9	D
		PM	51.2	D
2. I-405 SB Ramps & Carson Street	Signalized	AM	9.4	A
		PM	10.2	B
3. I-405 NB Ramps & Carson Street	Signalized	AM	7.5	A
		PM	8.1	A
4. Perry Street & Project Driveway	TWSC [1]	AM	Project Only Scenarios	
		PM		
5. Perry Street & Carson Street	TWSC	AM	18.3	C
		PM	19.0	C
6. Wilmington Avenue & Carson Street	Signalized	AM	28.2	C
		PM	26.0	C

[1] TWSC = Two-Way Stop-Controlled
Source: Fehr & Peers.

3. Traffic Projections

3.1 Project Traffic

The development of trip generation estimates for the proposed Project involves the use of a 3-step process: trip generation, trip distribution, and traffic assignment.

3.1.1 Project Trip Generation

As indicated in Chapter 1, the proposed Project uses include 109,039 square feet (or 725 storage units) of self-storage warehouse space, 2,425 square feet of self-storage office space, 700 square feet of retail space, and 1,550 square feet of restaurant space.

Trip generation rates from *Trip Generation, 11th Edition* (Institute of Transportation Engineers [ITE], 2021) were used to estimate the number of trips associated with the Project and are presented in **Table 3**. As described below, reductions were applied to the standard ITE rates to account for pass-by trips. The standard ITE rates reflect land uses within a suburban, auto-oriented environment. To be conservative, this analysis does not include trip reductions for walking, biking and transit use beyond the levels found in a typical suburban environment.

Pass-by credits account for patrons making an intermediate stop on the way from an origin to a primary trip destination without a route diversion. A typical pass-by trip is a retail destination that people may visit on the way home from work. These trips would be attracted from traffic passing the site on nearby streets. The City of Carson does not have standard pass-by credit guidelines. Instead, pass-by credits were informed by the ITE *Trip Generation Handbook*.

As shown in **Table 3**, the Project will generate an estimate net increase of 580 daily trips, including 93 trips (49 inbound/44 outbound) during the AM peak hour and 45 trips (22 inbound/23 outbound) during the PM peak hour.

3.1.2 Project Traffic Distribution

The geographic distribution of traffic generated by the proposed Project depends on several factors. These include the type and density of the proposed land uses, the geographic distribution of population and employment centers from the patrons and employees of the Project may be drawn, and the location of the Project's driveway access in relation to the surrounding street system. Considering these factors, trip distribution patterns were developed according to the nature of the land uses and the corresponding percentage of traffic likely to use the freeway versus the local street system to access the Project site. **Figure 4** illustrates the distribution pattern for the Project.

TABLE 3
PERRY STREET SELF-STORAGE PROJECT
ESTIMATED PROJECT TRIP GENERATION

Land Use	ITE Land Use Code	Size	Trip Generation Rates [a]							Estimated Trip Generation						
				AM Peak Hour			PM Peak Hour				AM Peak Hour Trips			PM Peak Hour Trips		
			Daily	Rate	In%	Out%	Rate	In%	Out%	Daily	In	Out	Total	In	Out	Total
PROPOSED PROJECT																
Mini-Warehouse	151	7.25 Units (100s) [b]	17.96	1.21	51%	49%	1.68	50%	50%	130	5	4	9	6	6	12
Less: Internal capture			*0%*		*0%*	*0%*		*0%*	*0%*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Less: Walk/Bike/Transit Credit [c]			*0%*	*0%*			*0%*			*0*	*0*	*0*	*0*	*0*	*0*	*0*
Net External Vehicle Trips										130	5	4	9	6	6	12
Coffee/Donut Shop without Drive-Through Window [d]	936	1.55 KSF	450.49	93.08	51%	49%	32.29	50%	50%	698	73	71	144	25	25	50
Less: Internal capture			*0%*		*0%*	*0%*		*0%*	*0%*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Less: Walk/Bike/Transit Credit [c]			*0%*	*0%*			*0%*			*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total Driveway Trips										698	73	71	144	25	25	50
Less: Pass-by			*43%*	*43%*			*43%*			*(300)*	*(31)*	*(31)*	*(62)*	*(11)*	*(11)*	*(22)*
Net External Vehicle Trips										398	42	40	82	14	14	28
Copy, Print, and Express Ship Store [e]	920	0.7 KSF	74.2	2.78	75%	25%	7.42	44%	56%	52	2	0	2	2	3	5
Less: Internal capture			*0%*		*0%*	*0%*		*0%*	*0%*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Less: Walk/Bike/Transit Credit [c]			*0%*	*0%*			*0%*			*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total Driveway Trips										52	2	0	2	2	3	5
Less: Pass-by			*0%*	*0%*			*0%*			*0*	*0*	*0*	*0*	*0*	*0*	*0*
Net External Vehicle Trips										52	2	0	2	2	3	5
TOTAL DRIVEWAY TRIPS										880	80	75	155	33	34	67
TOTAL PROJECT EXTERNAL VEHICLE TRIPS										580	49	44	93	22	23	45
EXISTING USE CREDIT																
Vacant Lot	-		-	-	-	-	-	-	-	0	0	0	0	0	0	0
TOTAL EXISTING DRIVEWAY TRIPS										0	0	0	0	0	0	0
NET INCREMENTAL EXTERNAL TRIPS										580	49	44	93	22	23	45

Notes:

[a] Source: Institute of Transportation Engineers (ITE), *Trip Generation, 11th Edition* , 2021

[b] The independent variable used to estimate trip generation for the self-storage use is total number of storage units. Trip generation for the self-storage office space is considered to be inclusive, per the ITE approach.

[c] A 0% Walk/Bike/Transit Credit was used based on the site's general suburban context.

[d] ITE use 933 - Fast-Food Restaurant without Drive-Through Window used for daily rate due to lack of daily rate data for ITE use 936 - Coffee/Donut Shop without Drive-Through Window.

[e] ITE use 920 does not have a daily rate. The daily rate is estimated to be 10 times greater than the PM peak hour traffic volume for the use.

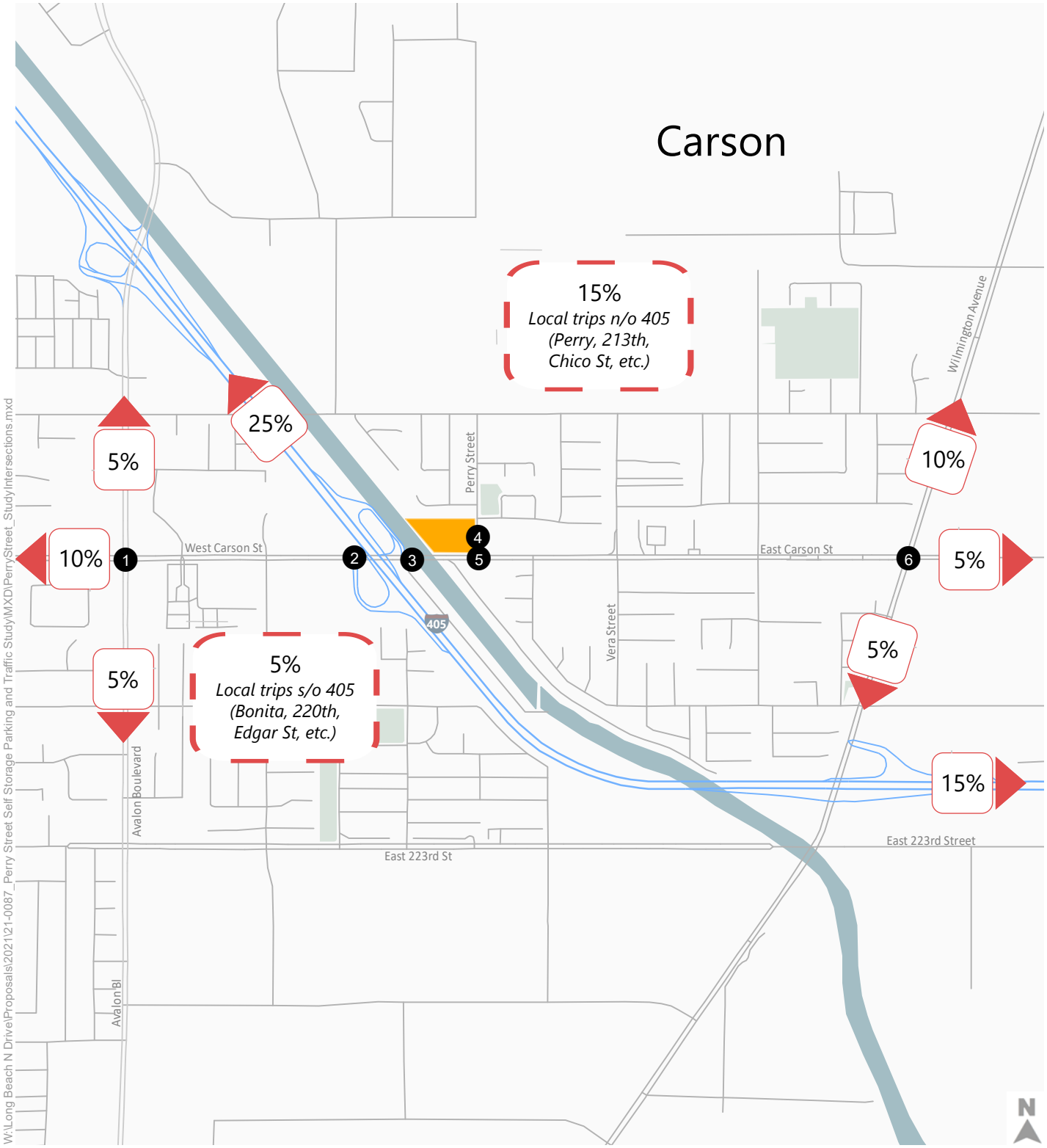


Figure 4

Project Trip Distribution

3.1.3 Project Traffic Assignment

The traffic expected to be generated by the proposed Project was assigned to the street network using the distribution patterns illustrated in **Figure 4**. **Appendix A** shows the assignment of Project-only traffic volumes for the morning and evening peak hours at the 6 analyzed intersection locations.

3.2 Existing Plus Ambient Growth Plus Project Traffic Conditions

Based on historic trends and at the direction of the City of Carson, it was established that an ambient growth factor of 0.5% per year should be applied to adjust the existing base year traffic volumes to reflect the effects of regional growth and development by year 2023. This growth factor was applied to the 2019 traffic volume data to reflect the effect of ambient growth by the year 2023.

The Project traffic estimated and assigned to the study intersections was added to the existing traffic volumes along with the regional ambient traffic growth to estimate Existing plus Ambient Growth plus Project traffic volumes. Turning movement traffic volumes for the Existing plus Ambient Growth plus Project scenario are provided in **Appendix A**. Analysis sheets are provided in **Appendix D**.

3.3 Future Year 2023 Traffic Conditions

To evaluate the potential effects of the proposed Project on future (Year 2023) conditions, it was necessary to develop estimates of future traffic conditions in the area both with and without Project traffic. First, estimates of traffic growth were developed for the study area to forecast future conditions without the Project. These forecasts included traffic increases due to both regional ambient traffic growth and traffic generated by specific developments in the vicinity of the Project (related projects). Including both ambient growth and trips from specific projects proposed within the vicinity of the Project provides a conservative estimate of future traffic projections.

These projected traffic volumes, identified herein as the Future Base conditions, represent the future conditions without the proposed Project.

3.3.1 Related Project Traffic Generation and Assignment

Future Base traffic forecasts include the effects of known specific projects, called related projects, expected to be implemented in the vicinity of the proposed Project. A list of related projects was prepared based on data from the City of Carson. A total of 25 related projects were identified in the study area; these projects are listed in **Table 4** and illustrated in **Figure 5**.

3.3.1.1 Trip Generation

Trip generation estimates for the related projects were calculated using a combination of previous study findings, publicly available environmental documentation, and trip generation rates contained in *Trip*

Generation, 10th Edition.[2] **Table 4** presents the resulting trip generation estimates for these related projects. These trip generation projections are conservative in that they do not in every case account for either the existing uses to be removed or the possible use of walking, biking and transit. Traffic mitigation measures associated with the related projects are not considered in order to conduct a more conservative analysis.

3.3.1.2 Trip Distribution

The geographic distribution of the traffic generated by the related projects is dependent on several factors. These factors include the type and density of the proposed land uses, the geographic distribution of population from which employees and potential patrons of proposed commercial developments may be drawn, the locations of employment and commercial centers to which residents of residential projects may be drawn, and the location of the projects in relation to the surrounding street system. Additionally, if the traffic study or environmental document for a related project was available, the trip distribution from that study was considered.

Using the estimated trip generation and trip distribution patterns described above, traffic generated by the related projects was assigned to the street network.

3.3.2 Future Year 2023 Base Traffic Volumes

Future (Year 2023) Base weekday AM and PM peak hour traffic volumes and lane geometries for the analyzed intersections are provided in **Appendix A**. The Future Base traffic conditions represent an estimate of future conditions without the proposed Project inclusive of the regional ambient growth and related projects traffic.

3.4 Future Plus Project Traffic Projections

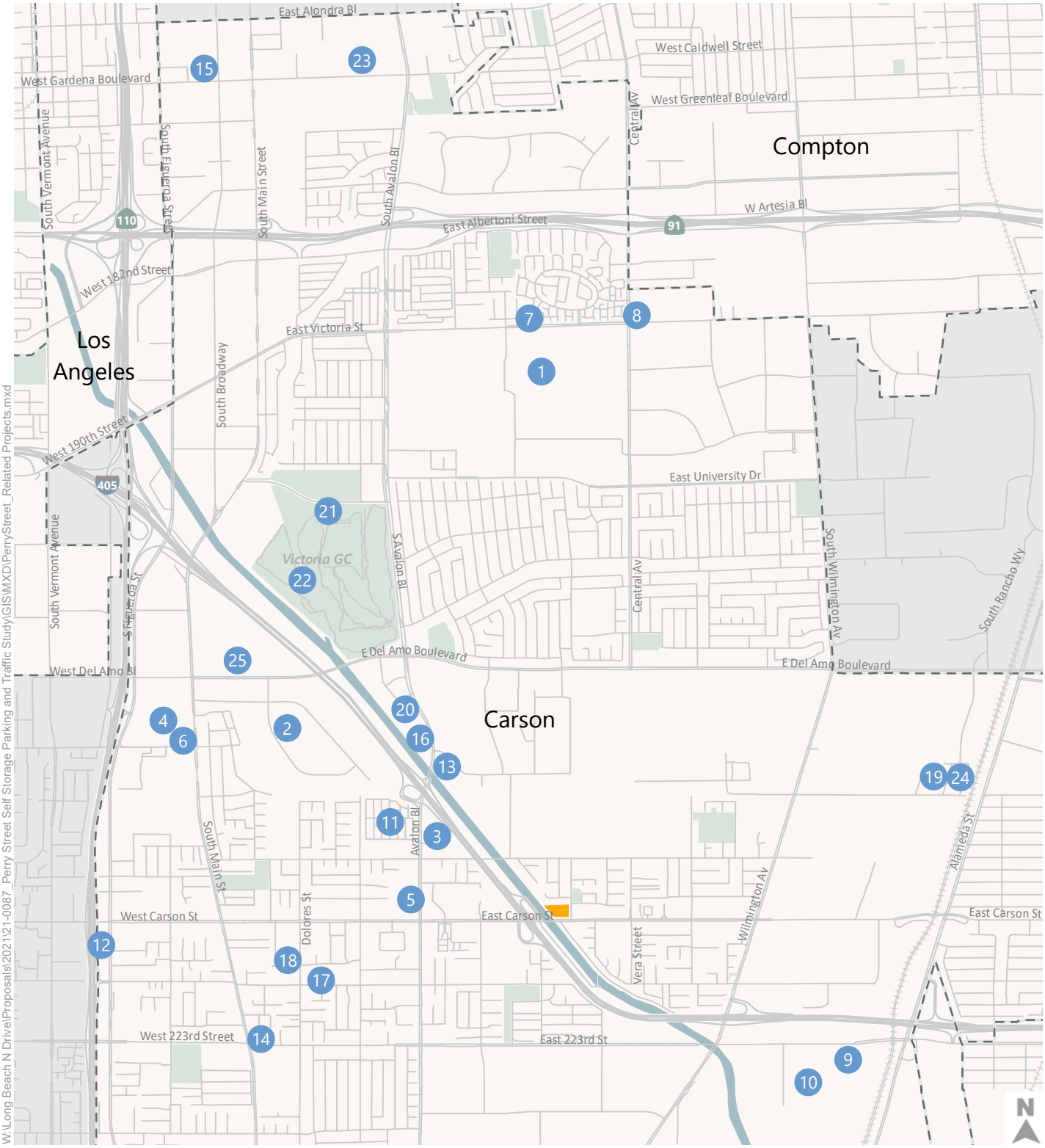
The proposed Project traffic volumes were added to the Future (Year 2023) Base traffic projections, resulting in Future (Year 2023) plus Project AM and PM peak hour traffic volumes. The Future (Year 2023) plus Project scenario represents future traffic conditions with the completion of the proposed Project. **Appendix A** shows the lane configurations and volumes analyzed as part of the Future plus Project scenario.

[2] Trip generation estimates for related projects, along with previous study findings and publicly available environmental documentation, were conducted prior to the issuance of *Trip Generation, 11th Edition*.

TABLE 4
PERRY STREET SELF STORAGE PROJECT
RELATED PROJECTS

No.	Project Location	Land Use	Size		Trip Generation						
						AM			PM		
					Daily	IN	OUT	TOTAL	IN	OUT	TOTAL
1	CSUDH Master Plan	Mixed Use	[1]	[1]	N/A	2,299	1,415	3,714	1,940	2,286	4,226
2	The District at South Bay	Mixed Use	[1]	[1]	42,791	1,490	1,349	2,838	1,809	1,997	3,805
3	21212 Avalon Blvd	Mixed Use	[1]	[1]	9,779	171	347	518	391	268	659
4	20601 S Main St	Industrial Park	267	ksf	900	87	20	107	22	85	107
5	Union South Bay (21521 S Avalon Blvd)	Multifamily	357	du	3,685	54	156	210	199	137	335
		Shopping	31	ksf							
6	225 W Torrance Blvd	Multifamily	356	du	1,937	33	95	128	96	61	157
7	1007 E Victoria St	Multifamily	35	du	278	4	13	17	13	8	21
8	NEC Victoria and Central	Multifamily	175	du	1,281	19	62	81	62	36	98
9	2254 E 223rd St	Warehousing	121	ksf	429	29	8	36	10	29	39
10	2112 E 223rd St	Warehousing	292	ksf	507	38	12	50	14	41	55
11	21207 Avalon Blvd	Mixed Use	[1]	[1]	5,586	125	277	402	283	174	457
12	21809-21811 S Figueroa St	Multifamily	32	du	234	3	11	14	11	7	18
13	888 E Dominguez St	Hotel	118	keys	905	32	22	54	36	35	71
14	123 E 223rd st	Multifamily	10	du	36	2	1	3	1	2	3
15	333 W Gardena Blvd	Warehousing	146	ksf	276	19	6	25	7	21	28
16	20707 Avalon Blvd	Retail	3	ksf	608	26	26	52	22	20	42
17	345/349 E 220th St	Multifamily	35	du	256	4	12	16	12	7	19
18	21915 S Dolores St	Multifamily	5	du	37	1	2	3	2	2	4
19	2315 E Dominguez St	Warehousing	14	ksf	68	1	1	2	1	2	3
20	20501 Avalon Blvd	Retail	5	ksf	1,013	44	43	86	37	34	70
21	Carol Kimmelman Campus	Mixed Use	[1]	[1]	3,808	105	83	188	244	192	436
22	Creek Dominguez Hills	Mixed Use	[1]	[1]	16,132	580	384	964	727	669	1,396
23	439 E Gardena Blvd	Warehousing	4	ksf	52	1	0	1	0	1	1
24	20950 Brant Ave	Retail	4	ksf	151	2	2	4	7	8	15
25	20330 S Main St	Multifamily	300	du	1,580	27	109	136	84	45	129
				Total	92,329	5,196	4,456	9,649	6,030	6,167	12,194

Notes:
du = dwelling unit
ksf = one thousand square feet
[1] Mixed Use developments contain more than one independent variable to calculate trip generation.
Related projects list is based on information provided by the City of Carson, the County of Los Angeles, publicly available environmental documentation, and trip generation rates contained in ITE Trip Generation, 10th Edition.



Proposed Project Site

Cities

Related Projects

Figure 5

Related Projects

4. Intersection Traffic Analysis

The intersection traffic analysis evaluates the projected LOS at each study intersection under the Existing plus Ambient Growth plus Project and Future (Year 2023) plus Project conditions to estimate the incremental increase in seconds of delay per vehicle expected to be caused by the proposed Project.

4.1 Existing Plus Ambient Growth Plus Project Analysis

4.1.1 Existing Plus Ambient Growth Plus Project Traffic Level of Service

The Existing plus Ambient Growth plus Project traffic volumes presented in **Appendix A** were analyzed to determine the projected delay per vehicle and LOS for each of the study intersections. **Table 5** summarizes the Existing plus Ambient Growth plus Project LOS. Analysis sheets are provided in **Appendix D**. As shown in **Table 5**, all study intersections are projected to operate at LOS D or better during both morning and evening peak hours under Existing plus Ambient Growth plus Project conditions.

4.2 Future Plus Project Analysis

4.2.1 Future Base Traffic Level of Service

The Future (Year 2023) Base peak hour traffic volumes were analyzed to determine the projected seconds of delay per vehicle and LOS for each of the study intersections. **Table 6** summarizes the future LOS at each intersection. Five of the 6 study intersections are projected to operate at LOS D or better during the morning and evening peak hours under Future Base conditions.

The following study intersection is projected to operate at LOS E under Future Base conditions:

1. Avalon Boulevard & Carson Street (AM & PM Peak Hours)

Detailed LOS analysis sheets for the Future Base scenario are provided in **Appendix D**.

4.2.2 Future Plus Project Traffic Level of Service

The Future (Year 2023) plus Project peak hour traffic volumes, provided in **Appendix A**, were analyzed to determine the projected future operating conditions with the addition of the proposed Project traffic. The results of the Future (Year 2023) plus Project analysis are also presented in **Table 6**, with analysis sheets provided in **Appendix D**. Five of the 6 study intersections are projected to operate at LOS D or better during the morning and evening peak hours under Future plus Project conditions.

The following study intersection is projected to operate at LOS E under Future plus Project conditions:

1. Avalon Boulevard & Carson Street (AM & PM Peak Hours)

Table 5: Existing Plus Ambient Growth Plus Project Levels of Service

Study Intersection	Period	Existing		Existing + Ambient + Project	
		Delay (s)	LOS	Delay (s)	LOS
1. Avalon Boulevard & Carson Street	AM	39.9	D	42.3	D
	PM	51.2	D	53.6	D
2. I-405 SB Ramps & Carson Street	AM	9.4	A	9.9	A
	PM	10.2	B	10.7	B
3. I-405 NB Ramps & Carson Street	AM	7.5	A	7.7	A
	PM	8.1	A	8.2	A
4. Perry Street & Project Driveway	AM	Project Only Scenario		9.5	A
	PM			9.4	A
5. Perry Street & Carson Street	AM	18.3	C	24.5	C
	PM	19.0	C	19.6	C
6. Wilmington Avenue & Carson Street	AM	28.2	C	29.5	C
	PM	26.0	C	26.8	C

Source: Fehr & Peers.

Table 6: Future Base and Future Plus Project Levels of Service

Study Intersection	Period	Future Base		Future + Project	
		Delay (s)	LOS	Delay (s)	LOS
1. Avalon Boulevard & Carson Street	AM	**59.1**	**E**	**59.8**	**E**
	PM	**79.0**	**E**	**79.4**	**E**
2. I-405 SB Ramps & Carson Street	AM	9.5	A	9.9	A
	PM	11.3	B	11.4	B
3. I-405 NB Ramps & Carson Street	AM	7.7	A	7.9	A
	PM	8.1	A	8.2	A
4. Perry Street & Project Driveway	AM	Project Only Scenario		9.5	A
	PM			9.4	A
5. Perry Street & Carson Street	AM	21.8	C	31.6	D
	PM	27.2	D	31.3	D
6. Wilmington Avenue & Carson Street	AM	29.8	C	30.2	C
	PM	29.4	C	29.5	C

Source: Fehr & Peers.

5. Site Access Analysis

5.1 Project Driveway

The Project will provide direct access to and from Perry Street from a new driveway between 216th Street and Carson Street. The project driveway approach will be stop-controlled. This driveway is included in the LOS analysis portion of this study as Intersection 4. **Figure 2** shows the site plan and Project driveway access.

5.2 Queuing Analysis

A queueing analysis was performed for all study intersections and all traffic volume scenarios to determine if the addition of Project traffic causes potential safety issues related to spill over queues. Study intersections are considered adversely affected if the Project's traffic contributes to unacceptable queuing, defined as:

- Spill over from turn pockets into through lanes
- Spill over into intersections

This analysis utilized the *HCM, 6th Edition* methodology to calculate the 95th percentile queue lengths for each left-turn pocket of each study intersection. Additionally, the 95th percentile queue length for the northbound left-turn movement into the Project site from Perry Street was measured. **Table 7** presents a summary of the left-turn pocket queuing analysis for Existing, Existing plus Ambient Growth plus Project, Future (Year 2023) Base, and Future (Year 2023) plus Project scenarios. As shown in **Table 7**, although several queues exceed the turn pocket storage length, these issues occur even without the addition of Project trips. Also, Project traffic is never estimated to add more than one vehicle to any queue length. These findings suggest that the addition of Project traffic will not cause any new potential safety issues related to spill over queuing. Detailed analysis sheets for each study intersection are provided in **Appendix D**.

Table 7: Study Intersection Left-Turn Pocket Queuing

Study Intersection	Direction	Storage Length (ft)	Period	Existing	Existing Ambient Project	Future Base	Future Project	Unacceptable?
1. Avalon Boulevard & Carson Street	SBL	145	AM	200	200	500	500	NO
			PM	375	400	725	725	NO
	WBL	210	AM	250	275	275	275	NO
			PM	250	275	250	275	NO
	NBL	140	AM	150	150	150	150	NO
			PM	150	150	200	200	NO
	EBL	225	AM	125	125	150	150	NO
			PM	125	125	200	200	NO
2. I-405 SB Ramps & Carson Street	WBL	55	AM	100	100	75	100	NO
			PM	75	100	75	100	NO
	EBL	45	AM	25	25	25	25	NO
			PM	25	25	25	25	NO
	Off-Ramp	1,130	AM	75	75	75	75	NO
			PM	25	50	50	50	NO
3. I-405 NB Ramps & Carson Street	WBL	100	AM	25	25	25	25	NO
			PM	50	50	50	50	NO
	EBL	70	AM	125	150	150	150	NO
			PM	175	175	150	150	NO
	Off-Ramp	1,220	AM	50	50	50	50	NO
			PM	75	75	75	75	NO
4. Perry Street & Project Driveway	NBL	150	AM	Project Only Scenario	25	Project Only Scenario	25	NO
			PM		0		0	NO
5. Perry Street & Carson Street	WBL	75	AM	0	0	0	0	NO
			PM	0	0	0	0	NO
	EBL	100	AM	25	25	25	25	NO
			PM	25	25	25	25	NO
6. Wilmington Avenue & Carson Street	SBL	210	AM	200	200	225	225	NO
			PM	400	425	425	425	NO
	WBL	195	AM	125	125	125	125	NO
			PM	100	100	100	100	NO
	NBL	295	AM	100	125	125	125	NO
			PM	150	150	150	150	NO
	EBL	195	AM	250	275	275	300	NO
			PM	175	175	175	175	NO

Source: Fehr & Peers.

5.3 Parking Demand Analysis

The Project site plans to provide 41 total parking spaces to serve the on-site uses. Of the 41 total parking spaces, 19 are designated for the self-storage use and are located within a controlled-access gated area. Only customers and employees of the self-storage facility will have access to these spaces. The remaining 22 spaces are available to serve all on-site users, including customers and employees of the retail and restaurant uses and prospective customers for the self-storage use.

5.3.1 Municipal Code Required Parking

The Carson Municipal Code includes minimum off-street parking ratios as a general requirement for new developments within the City[3]. **Table 8** shows the code parking requirements for the proposed Project land uses. As shown in the table, if the code were applied, the parking requirement would be 65 – or 24 more spaces than proposed. Therefore, the proposed parking supply would not meet the minimum code requirement for off-street parking.

Table 8: Carson Municipal Code Parking Requirements

Land Use	Parking Ratio	Size	Parking Spaces
Self-Storage	1 space per 20 units of storage area	725 units	36
	1 space per 300 SF of office area	2,425 SF	8
Restaurant	1 space per 100 SF	1,550 SF	16
Retail	1 space per 300 SF (Minimum of 5 spaces)	700 SF	5
		Total	**65**

Source: City of Carson, Fehr & Peers.

5.3.2 ITE Parking Generation Rates

The Institute of Transportation Engineers (ITE) maintains an informational report, *Parking Generation*, based on parking demand studies submitted to ITE by public agencies; consulting firms (including Fehr & Peers); universities and colleges; developers; associations; and local sections, districts, and student chapters of ITE. The data in the report is periodically updated, and is currently in its fifth edition, published in 2019[4]. Included in this report is empirically collected hourly parking demand count data from a variety of uses in the U.S. and Canada.

Based on the compiled parking data, peak period parking demand can be estimated at similar facilities using independent variables specified in the ITE report and either fitted curve or average demand rates. To evaluate the number of spaces needed at the proposed Project, this analysis uses the gross floor area

[3] *Carson Municipal Code, Section 9162.21,* City of Carson, 2022
[4] *Parking Generation, Fifth Edition,* Institute of Transportation Engineers, Washington D.C., 2019

from the proposed Project site and the demand rates from the ITE report to estimate peak period parking demand.

Table 9 provides a summary of estimated peak parking demand using the data from the ITE report. As shown in **Table 9**, the estimated peak parking demand for the proposed project using the ITE method is 29 spaces. This finding suggests that the 41 parking spaces proposed for the project will be more than adequate to accommodate peak parking demand for the Project.

Table 9: Peak Parking Demand Estimate – ITE Method

ITE Land Use Code	Equation [2]	Project Size	Project Demand
151 – Mini-Warehouse [1]	P = 0.1x	111,464 SF	11
936 – Coffee/Donut Shop without Drive-Through Window	P = 10.49x	1,550 SF	16
920 – Copy, Print, and Express Ship Store	P = 3.01x	700 SF	2
		Total	**29**

[1] The ITE report specifies Mini-Warehouse to be "typically referred to as 'self-storage' facilities."
[2] P = Parked Vehicles, x = 1,000 square feet increments of gross floor area.
Source: Fehr & Peers.

6. Summary and Conclusions

The following summarizes the results of the Project's traffic and parking study analysis:

- The Project consists of the proposed construction of 109,039 square feet (or 725 storage units) of self-storage warehouse space, 2,425 square feet of self-storage office space, 700 square feet of retail space, and 1,550 square feet of restaurant space.

- The site on which the Project will be developed is comprised of approximately 2.8 acres located to the east of the I-405 Freeway interchange with Carson Street. The Project proposes to provide side-street stop-controlled vehicular ingress and egress at one location: along Perry Street midblock between Carson Street and 216th Street.

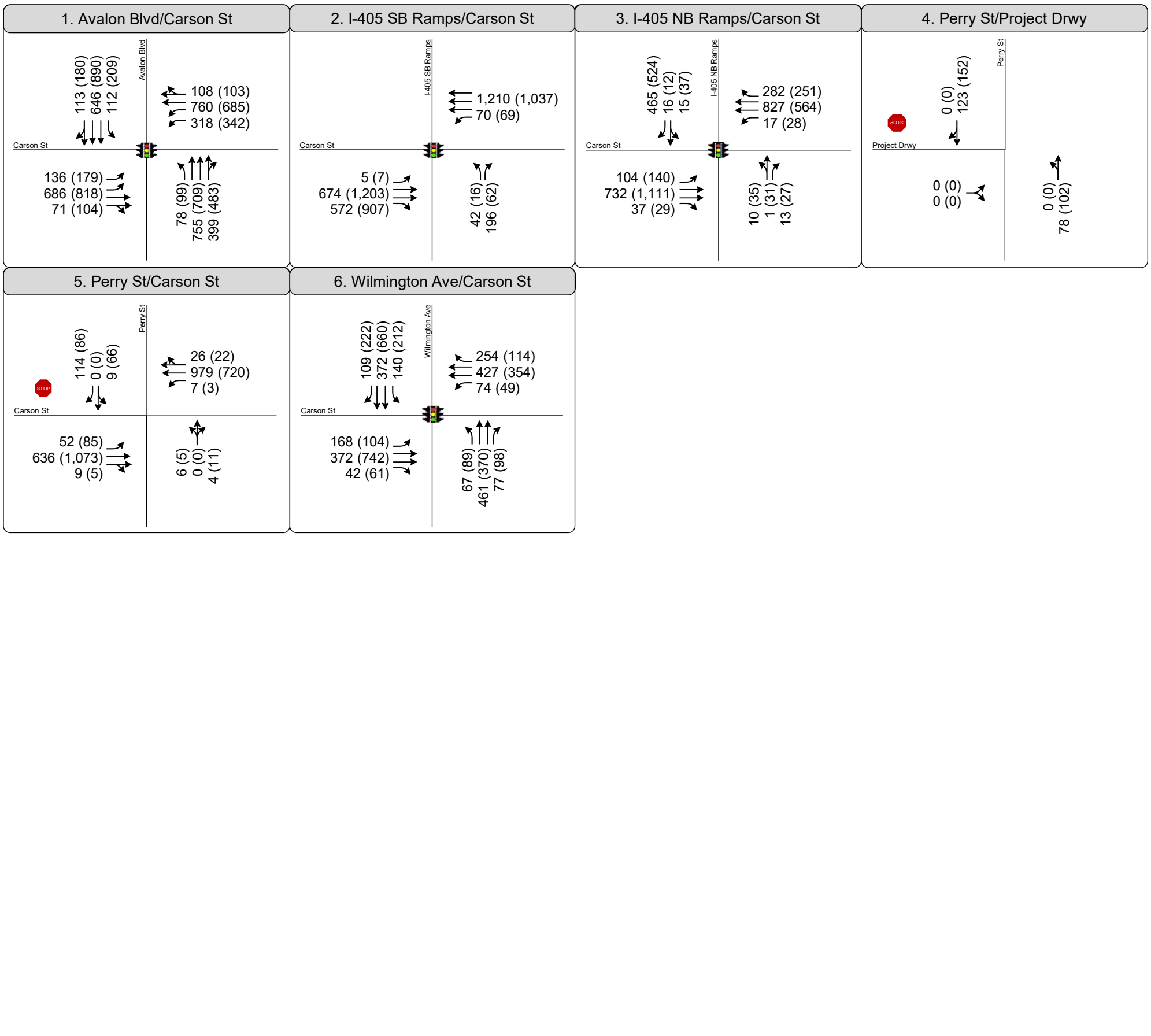
- The Project is expected to generate approximately 580 net new daily trips, 93 net new trips during the AM peak hour, and 45 net new trips during the PM peak hour.

- The addition of Project trips does not cause average vehicle delay at any study intersection to worsen from LOS D or better to LOS E or F.

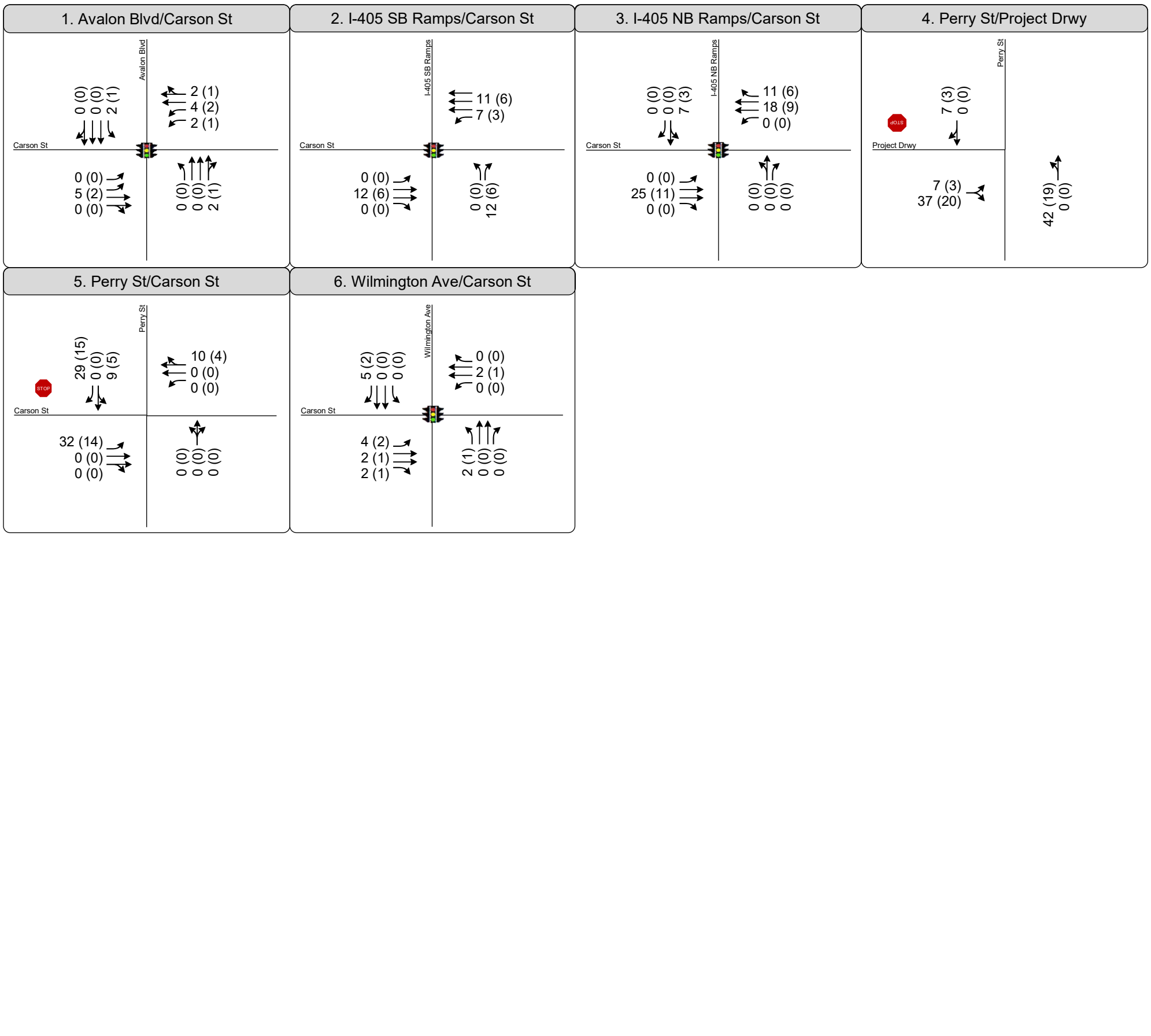
- The addition of Project trips does not cause spill over queuing at any study intersection. At intersections already experiencing spill over queueing without Project trips, the addition of Project trips increases the queue by no more than one vehicle at any study intersection approach.

- Using the ITE method for estimating parking demand, the proposed on-site parking supply of 41 spaces is more than adequate to accommodate the estimated peak parking demand of 29 spaces.

APPENDIX A:
LANE CONFIGURATIONS AND TRAFFIC VOLUMES



Traffic Volumes and Lane Configurations
Existing Conditions - AM (PM) Peak Hour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0 (0)
2 (1)
2 (1)
4 (2)
2 (1)
0 (0)
5 (2)
0 (0)
0 (0)
0 (0)
2 (1)
2. I-405 SB Ramps/Carson St
I-405 SB Ramps
Carson St
11 (6)
7 (3)
0 (0)
12 (6)
0 (0)
12 (6)
3. I-405 NB Ramps/Carson St
I-405 NB Ramps
Carson St
0 (0)
0 (0)
7 (3)
11 (6)
18 (9)
0 (0)
0 (0)
25 (11)
0 (0)
0 (0)
0 (0)
0 (0)
4. Perry St/Project Drwy
Perry St
STOP
Project Drwy
7 (3)
0 (0)
7 (3)
37 (20)
42 (19)
0 (0)
5. Perry St/Carson St
Perry St
STOP
Carson St
29 (15)
0 (0)
9 (5)
10 (4)
0 (0)
0 (0)
32 (14)
0 (0)
0 (0)
0 (0)
0 (0)
0 (0)
6. Wilmington Ave/Carson St
Wilmington Ave
Carson St
5 (2)
0 (0)
0 (0)
0 (0)
2 (1)
0 (0)
4 (2)
2 (1)
2 (1)
2 (1)
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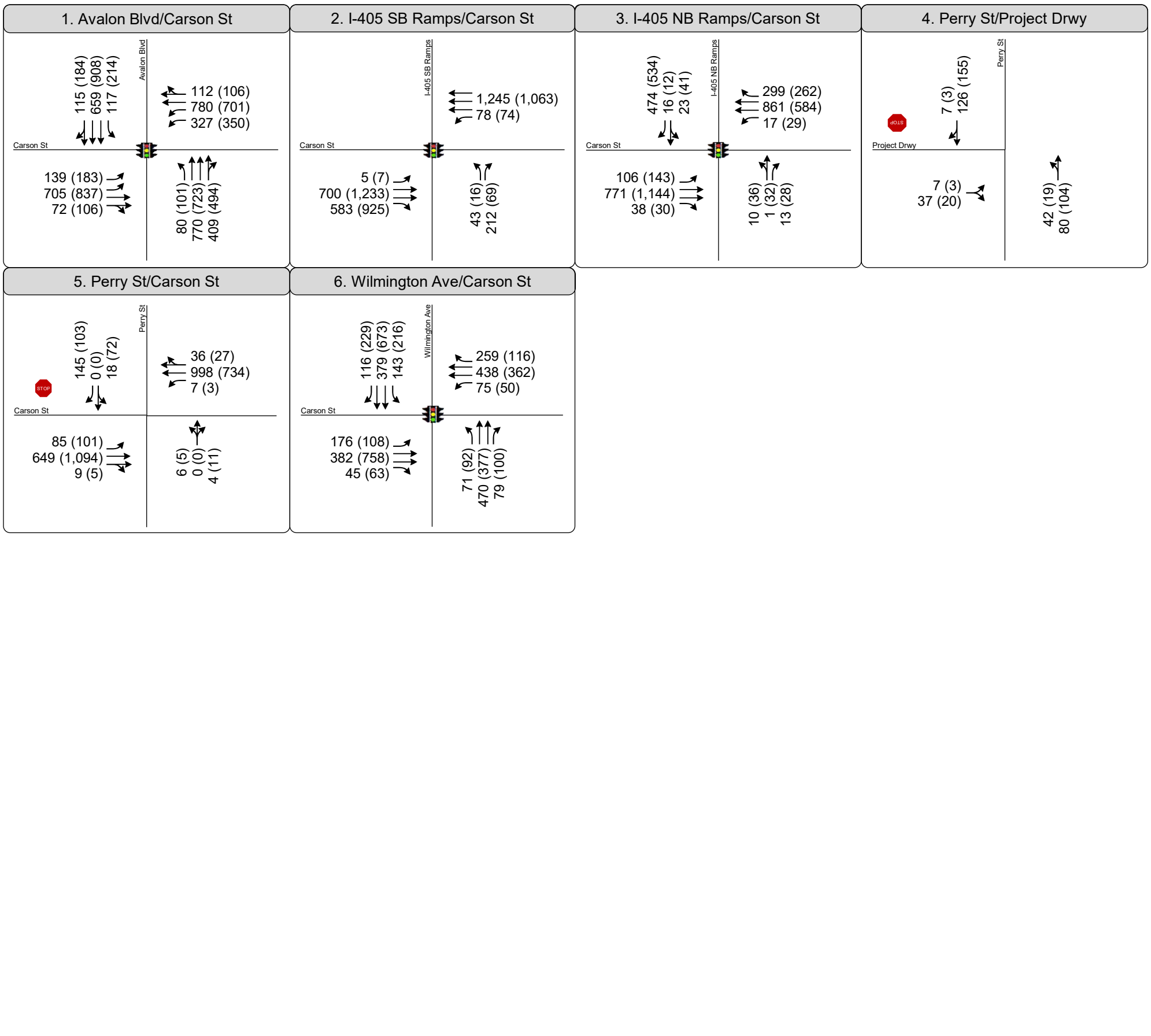
0 (0)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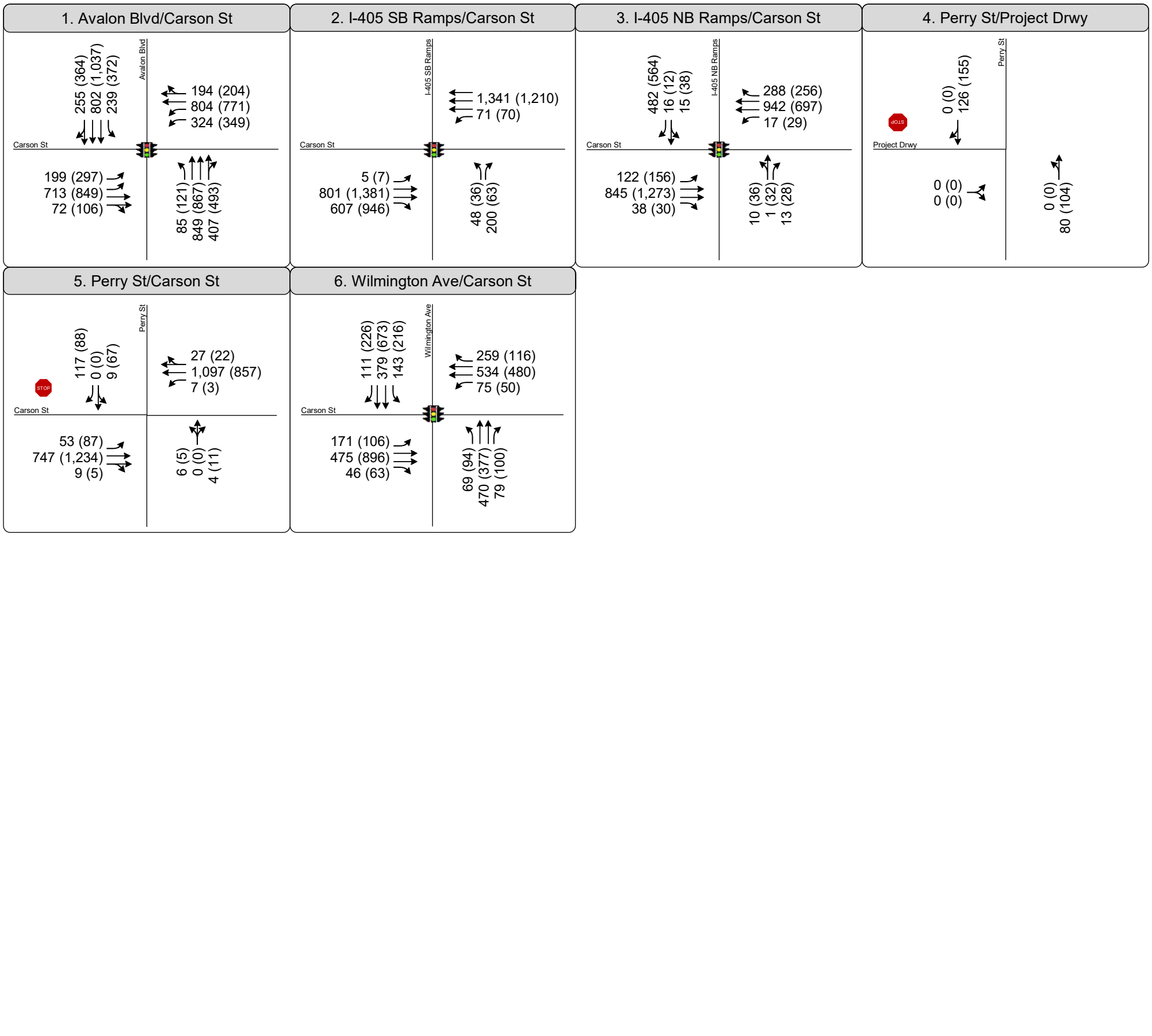
Carson St
115 (184)
659 (908)
117 (214)
112 (106)
780 (701)
327 (350)
139 (183)
705 (837)
72 (106)
80 (101)
770 (723)
409 (494)
2. I-405 SB Ramps/Carson St
I-405 SB Ramps
Carson St
1,245 (1,063)
78 (74)
5 (7)
700 (1,233)
583 (925)
43 (16)
212 (69)
3. I-405 NB Ramps/Carson St
I-405 NB Ramps
Carson St
474 (534)
16 (12)
23 (41)
299 (262)
861 (584)
17 (29)
106 (143)
771 (1,144)
38 (30)
10 (36)
1 (32)
13 (28)
4. Perry St/Project Drwy
Perry St
STOP
Project Drwy
7 (3)
126 (155)
7 (3)
37 (20)
42 (19)
80 (104)
5. Perry St/Carson St
Perry St
STOP
Carson St
145 (103)
0 (0)
18 (72)
36 (27)
998 (734)
7 (3)
85 (101)
649 (1,094)
9 (5)
6 (5)
0 (0)
4 (11)
6. Wilmington Ave/Carson St
Wilmington Ave
Carson St
116 (229)
379 (673)
143 (216)
259 (116)
438 (362)
75 (50)
176 (108)
382 (758)
45 (63)
71 (92)
470 (377)
79 (100)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Avalon Blvd
Carson St
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239 (372)
194 (204)
804 (771)
324 (349)
199 (297)
713 (849)
72 (106)
85 (121)
849 (867)
407 (493)
2. I-405 SB Ramps/Carson St
I-405 SB Ramps
Carson St
1,341 (1,210)
71 (70)
5 (7)
801 (1,381)
607 (946)
48 (36)
200 (63)
3. I-405 NB Ramps/Carson St
I-405 NB Ramps
Carson St
482 (564)
16 (12)
15 (38)
288 (256)
942 (697)
17 (29)
122 (156)
845 (1,273)
38 (30)
10 (36)
1 (32)
13 (28)
4. Perry St/Project Drwy
Perry St
STOP
Project Drwy
0 (0)
126 (155)
0 (0)
0 (0)
0 (0)
80 (104)
5. Perry St/Carson St
Perry St
STOP
Carson St
117 (88)
0 (0)
9 (67)
27 (22)
1,097 (857)
7 (3)
53 (87)
747 (1,234)
9 (5)
6 (5)
0 (0)
4 (11)
6. Wilmington Ave/Carson St
Wilmington Ave
Carson St
111 (226)
379 (673)
143 (216)
259 (116)
534 (480)
75 (50)
171 (106)
475 (896)
46 (63)
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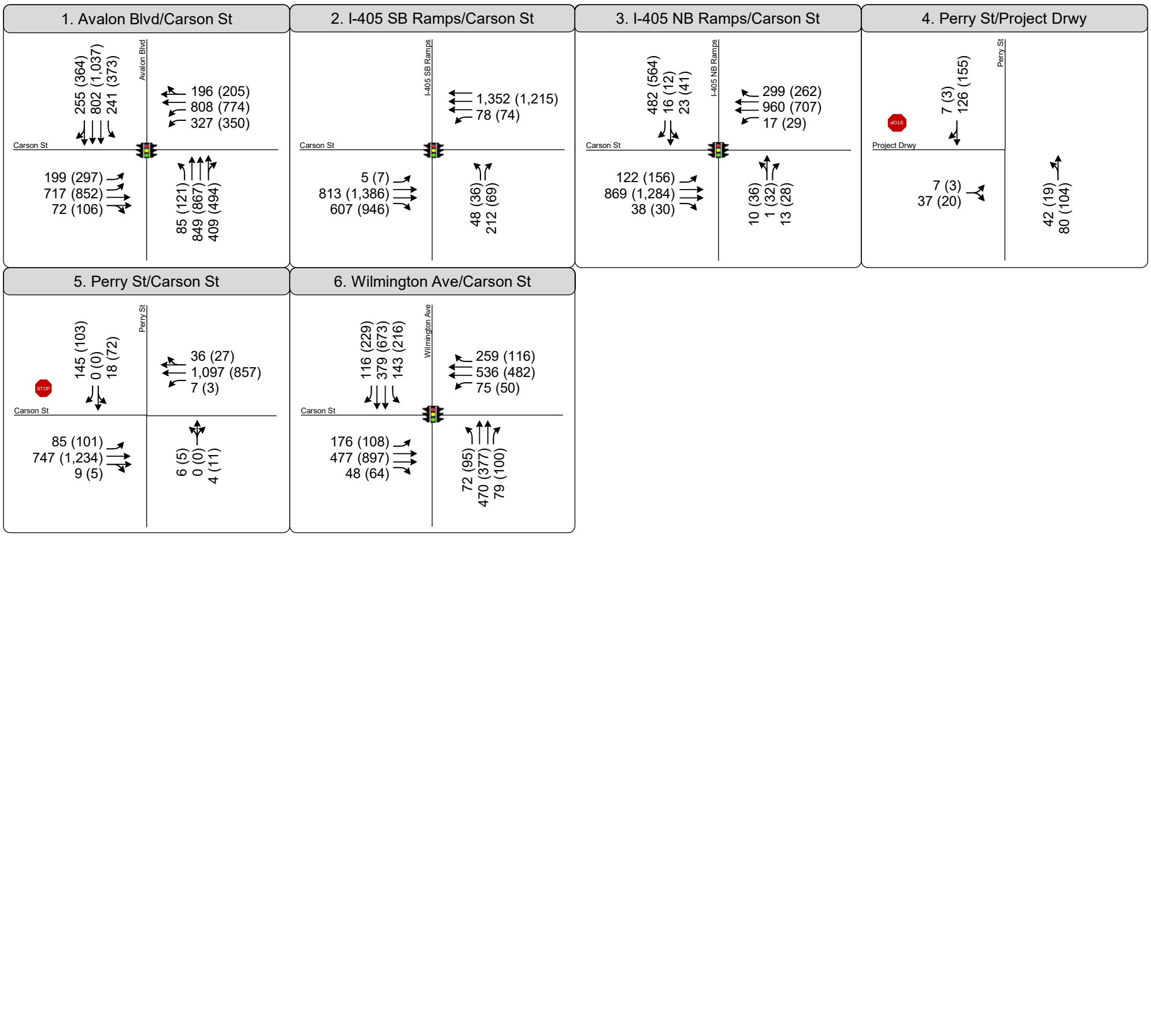
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Avalon Blvd
Carson St
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808 (774)
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199 (297)
717 (852)
72 (106)
85 (121)
849 (867)
409 (494)
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I-405 SB Ramps
Carson St
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78 (74)
5 (7)
813 (1,386)
607 (946)
48 (36)
212 (69)
3. I-405 NB Ramps/Carson St
I-405 NB Ramps
Carson St
482 (564)
16 (12)
23 (41)
299 (262)
960 (707)
17 (29)
122 (156)
869 (1,284)
38 (30)
10 (36)
1 (32)
13 (28)
4. Perry St/Project Drwy
Perry St
Project Drwy
STOP
7 (3)
126 (155)
7 (3)
37 (20)
42 (19)
80 (104)
5. Perry St/Carson St
Perry St
Carson St
STOP
145 (103)
0 (0)
18 (72)
36 (27)
1,097 (857)
7 (3)
85 (101)
747 (1,234)
9 (5)
6 (5)
0 (0)
4 (11)
6. Wilmington Ave/Carson St
Wilmington Ave
Carson St
116 (229)
379 (673)
143 (216)
259 (116)
536 (482)
75 (50)
176 (108)
477 (897)
48 (64)
72 (95)
470 (377)
79 (100)

APPENDIX B:
SIGNAL TIMING SHEETS

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
TRAFFIC AND LIGHTING DIVISION
TRAFFIC SIGNAL TIMING

ASC/2S

PROGRAM REFERENCE CARD

INTERSECTION: CARSON ST @ AVALON BLVD Date Prepared: 9-30-09/KH By: DMP

T.S. No.: 3991 Date Implemented: 10-19-09 By:

1. CONFIGURATION SUBMENU

1. CONTROLLER SEQUENCE

PRIORITY	1	2	3	4	5	6	7	8	9	10	11	12
RING 1	1	2	3	4								
RING 2	5	6	7	8								
CG (CONCURRENT GROUPS)		X		X								

2. PHASES IN USE

	PHASE NUMBER											
	1	2	3	4	5	6	7	8	9	10	11	12
PHASES IN USE	X	X	X	X	X	X	X	X				
EXCLUSIVE PED												

3. PHASE TO LOAD SWITCH (MMU) ASSIGNMENT

LOAD SWITCH (MMU)	SIGNAL DRIVER GROUP		LOAD SWITCH (MMU)	SIGNAL DRIVER GROUP	
CHANNEL	PHASE/OVLP	PED	CHANNEL	PHASE/OVLP	PED
1	1		9	2	X
2	2		10	4	X
3	3		11	6	X
4	4		12	8	X
5	5		13		
6	6		14		
7	7		15		
8	8		16		

4. SDLC OPTIONS/ENABLES

	BIU NUMBER							
	1	2	3	4	5	6	7	8
TERM & FACIL								
DETECTOR RACK								
TYPE 2 RUNS AS TYPE 1								
MMU DISABLE								X
DIAGNOSTIC ENABLE (TEST FIXTURE)								
PEER TO PEER ENABLE								
PEER TO PEER ADDRESS:								

1)		2)		3)		4)		5)	
6)		7)		8)		9)		10)	

5. PORT 2 CONFIGURATION

PORT 2 PROTOCOL	
PORT 2 ENABLE	
DATA RATE (BPS)	
DATA, PARITY, STOP	
AB3418 ADDRESS	
AB3418 GROUP ADDRESS	
AB3418 RESPONSE DELAY	
AB3418 SINGLE FLAG ENABLE	
AB3418 DROP-OUT TIME	
AB3418 TOD SF SELECT	
AB3418 RTS TIMING	
AB3418 RTS TO CTS DELAY	
AB3418 RTS TURN-OFF DELAY	
AB3418 EARLY RTS	

6. PORT 3 CONFIGURATION

PORT 3 PROTOCOL	
PORT 3 ENABLE	
PORT 3 MILLISEC TIMING	
PORT 3 RTS TO CTS DELAY	
PORT 3 RTS TURN-OFF DELAY	
DUPLEX -- HALF OR FULL	
MODEM DATA RATE (BPS)	
DATA, PARITY, STOP	
TELEMETRY ADDRESS	
SYSTEM DETECTOR 9-16 ADDRESS	
TELEMETRY RESPONSE DELAY	
AB3418 ADDRESS	
AB3418 GROUP ADDRESS	
AB3418 RESPONSE DELAY	
AB3418 SINGLE FLAG ENABLE	
AB3418 DROP-OUT TIME	
AB3418 TOD SF SELECT	
AB3418 EARLY RTS	
RICOCHET OPTION	
RICOCHET ADDRESS	
Auto Status Destination ADDR	
Auto Status Report Delay	
Icons Live Time	

8. UTILITIES SUBMENU

5. SIGN ON

SOFTWARE ASSY		VERSION
BOOT		
MAIN PROGRAM		
HELP		
CONFIGURATION		

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
TRAFFIC AND LIGHTING DIVISION
TRAFFIC SIGNAL TIMING

ASC/2S

PROGRAM REFERENCE CARD

INTERSECTION: CARSON ST @ AVALON BLVD Date Prepared: 9-30-09 HCH By: PMP

T.S. No.: 3991 Date Implemented: 10-19-09 By:

1. CONFIGURATION SUBMENU (Continued)

7. ENABLE EVENT LOGS

CRITICAL RFE'S (MMU/TF)	X
NON-CRITICAL RFE'S(DET/TEST)	X
DETECTOR ERRORS	X
COORDINATION ERRORS	X
MMU FLASH FAULTS	X
LOCAL FLASH FAULTS	X
PREEMPT	X
POWER ON/OFF	X
LOW BATTERY	X
SPARE	
ALARM 1	X
ALARM 2	
ALARM 3	
ALARM 4	
ALARM 5	
ALARM 6	
ALARM 7	
ALARM 8	
ALARM 9	
ALARM 10	
ALARM 11	
ALARM 12	
ALARM 13	
ALARM 14	
ALARM 15	
ALARM 16	

8. OPTIONS #

SUPERVISOR ACCESS CODE	
DATA CHANGE ACCESS CODE	
KEY CLICK ENABLE	
BACKLIGHT ENABLE	

9. MMU PROGRAM CAN SERVE WITH

PHASE	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2
1															
2															■
3														■	■
4													■	■	■
5												■	■	■	■
6											■	■	■	■	■
7										■	■	■	■	■	■
8									■	■	■	■	■	■	■
9								■	■	■	■	■	■	■	■
10							■	■	■	■	■	■	■	■	■
11						■	■	■	■	■	■	■	■	■	■
12					■	■	■	■	■	■	■	■	■	■	■
13				■	■	■	■	■	■	■	■	■	■	■	■
14			■	■	■	■	■	■	■	■	■	■	■	■	■
15		■	■	■	■	■	■	■	■	■	■	■	■	■	■

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
TRAFFIC AND LIGHTING DIVISION
TRAFFIC SIGNAL TIMING

ASC/2S
PROGRAM REFERENCE CARD

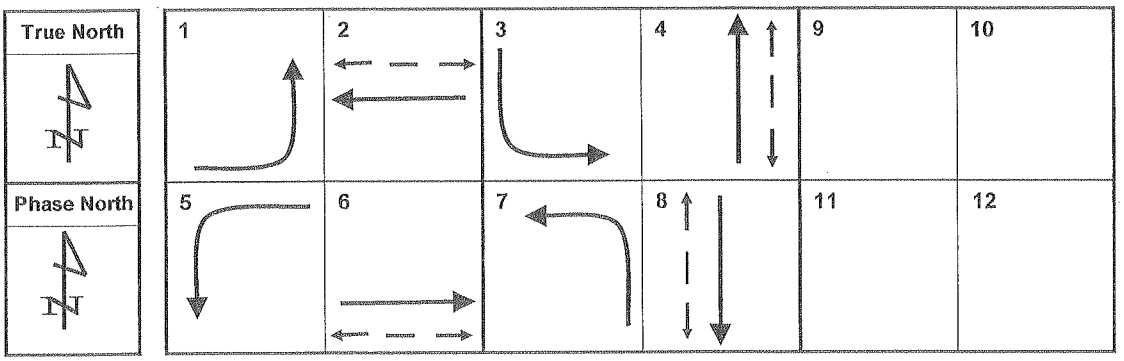
INTERSECTION: CARSON ST @ AVALON BLVD Date Prepared: 9-30-09 HCH By: PMP

T.S. No.: 3991 Date Implemented: 10-19-09 By: [illegible]

2. CONTROLLER SUBMENU

1. CONTROLLER TIMING DATA

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MIN GREEN	4	6	4	6	4	6	4	6				
BIKE GREEN	0	0	0	0	0	0	0	0				
CS MIN GREEN	0	0	0	0	0	0	0	0				
WALK	0	7	0	7	0	7	0	7				
PED CLEAR	0	17	0	17	0	17	0	17				
VEH EXT	1.5	4.0	1.5	4.0	1.5	4.0	1.5	4.0				
VEH EXT 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
MAX EXT	0	0	0	0	0	0	0	0				
MAX 1	20	50	20	50	20	50	20	50				
MAX 2	20	130	20	50	20	130	20	50				
MAX 3	0	0	0	0	0	0	0	0				
DET MAX	0	0	0	0	0	0	0	0				
YELLOW	3.0	4.5	3.0	4.5	3.0	4.5	3.0	4.5				
RED CLEAR	0.5	1.0	0.5	1.0	0.5	1.0	0.5	1.0				
RED REVERT	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0				
					0							
ACT B4	0	0	0	0	0	0	0	0				
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
MAX INITIAL	0	0	0	0	0	0	0	0				
TIME B4 REDUCTION	0	15	0	15	0	15	0	15				
CARS WT	0	255	0	255	0	255	0	255				
TIME TO REDUCE	0	15	0	15	0	15	0	15				
MIN GAP	1.5	3.0	1.5	3.0	1.5	3.0	1.5	3.0				



COMMENTS:

ASC/2S

PROGRAM REFERENCE CARD

INTERSECTION: CARSON ST @ AVALON BLVD Date Prepared: 9-30-09 HcH By: PMP

T.S. No.: 3991 Date Implemented: 10-19-09 By: HH

2. CONTROLLER SUBMENU (Continued)

2. PHASE OVERLAP ASSIGNMENTS

	OVERLAP CONSISTS OF PHASES:											
OVLP PHASE	1	2	3	4	5	6	7	8	9	10	11	12
1	X											
2		X										
3			X									
4				X								
5					X							
6						X						
7							X					
8								X				
9									X			
10										X		
11											X	
12												X

3. PED TIMING CARRYOVER

PHASE	CARRYOVER PHASE	PHASE	CARRYOVER PHASE
1		7	
2		8	
3		9	
4		10	
5		11	
6		12	

4. CONTROLLER RECALL DATA

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
LOCKING MEMORY		X		X		X		X				
VEH RECALL												
PED RECALL												
RECALL TO MAX												
SOFT RECALL		X				X						
DON'T REST HERE												
PED DARK N/CALL												

ASC/2S

PROGRAM REFERENCE CARD

INTERSECTION: CARSON ST @ AVALON BLVD Date Prepared: 9-30-09/HCH By: PMP

T.S. No.: 3991 Date Implemented: By:

2. CONTROLLER SUBMENU (Continued)

5. CONTROLLER OVERLAP DATA

OVERLAP A	1	2	3	4	5	6	7	8	9	10	11	12
STANDARD												
PROTECTED												
PERMITTED												
ENABLE LAG												
ENABLE LEAD												
SPARE												
ADVANCE GREEN TIMER												
LAG/LEAD GREEN TIMER												
LAG/LEAD YELLOW TIMER												
LAG/LEAD RED TIMER												

OVERLAP B	1	2	3	4	5	6	7	8	9	10	11	12
STANDARD												
PROTECTED												
PERMITTED												
ENABLE LAG												
ENABLE LEAD												
SPARE												
ADVANCE GREEN TIMER												
LAG/LEAD GREEN TIMER												
LAG/LEAD YELLOW TIMER												
LAG/LEAD RED TIMER												

OVERLAP C	1	2	3	4	5	6	7	8	9	10	11	12
STANDARD												
PROTECTED												
PERMITTED												
ENABLE LAG												
ENABLE LEAD												
SPARE												
ADVANCE GREEN TIMER												
LAG/LEAD GREEN TIMER												
LAG/LEAD YELLOW TIMER												
LAG/LEAD RED TIMER												

OVERLAP D	1	2	3	4	5	6	7	8	9	10	11	12
STANDARD												
PROTECTED												
PERMITTED												
ENABLE LAG												
ENABLE LEAD												
SPARE												
ADVANCE GREEN TIMER												
LAG/LEAD GREEN TIMER												
LAG/LEAD YELLOW TIMER												
LAG/LEAD RED TIMER												

PED OVERLAP ASSIGNMENTS OVERLAP CONSISTS OF PHASES:												
OVLP PHASE	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
TRAFFIC AND LIGHTING DIVISION
TRAFFIC SIGNAL TIMING

ASC/2S

PROGRAM REFERENCE CARD

INTERSECTION: CARSON ST @ AVALON BLVD Date Prepared: 9-30-09 HCH By: PMP

T.S. No.: 3991 Date Implemented: 10-19-09 By:

2. CONTROLLER SUBMENU (Continued)

6. CONTROLLER START/FLASH DATA

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
POWER START		X				X						
EXTERNAL START		X				X						
ENTRY REM FLASH												
EXIT REM FLASH												
REM FLASH YELLOW												
FL TOGETHER PHS												
FL TOGETHER OVLPS	A			B			C			D		

POWER START	YELLOW
EXTERNAL START	YELLOW
POWER START ALL RED TIME	0
POWER START FLASH TIME	0
REMOTE FLASH OPTIONS:	
OUT OF FLASH YELLOW	
OUT OF FLASH ALL RED	
MINIMUM RECALL	
SPARE	
FLASH THRU LOAD SWITCHES	
CYCLE THROUGH PHASES	

7. NO SERVE PHASE

PHASE	12	11	10	9	8	7	6	5	4	3	2
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											

8. DIMMING

LOAD SWITCH	1	2	3	4	5	6	7	8
DIM GRN/WALK								
DIM YEL/PC								
DIM RED/DW								
LOAD SWITCH	9	10	11	12	13	14	15	16
DIM GRN/WALK								
DIM YEL/PC								
DIM RED/DW								

9. CONTROLLER OPTION DATA

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
GUAR PASSAGE												
NON ACTUATED I												
NON ACTUATED II												
DUAL ENTRY												
COND SERVICE												
COND RESERVICE												
REST IN WALK												
FLASHING WALK												

FIVE SECTION LEFT TURN HEADS
(SPECIAL PROGRAM OPTION FOR STATE OF ILLINOIS)

5 - 2		7 - 4		1 - 6	
3 - 8		11 - 10		9 - 12	

DUAL ENTRY		RESERVED	
COND SERVICE ENABLE		BACKUP PROTECTION GROUP 1	
COND SERVICE DET X SWITCHING		BACKUP PROTECTION GROUP 2	
PED CLEAR PROTECT		BACKUP PROTECTION GROUP 3	
SPEC PREEMPT OVLP FLASH		SIMULTANEOUS GAP GROUP 1	ON
LOCK DETECTORS IN RED ONLY		SIMULTANEOUS GAP GROUP 2	ON
RESERVED		SIMULTANEOUS GAP GROUP 3	

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
TRAFFIC AND LIGHTING DIVISION
TRAFFIC SIGNAL TIMING

ASC/2S
PROGRAM REFERENCE CARD

INTERSECTION: CARSON ST @ AVALON BLVD Date Prepared: 9-30-09 Hc11 By: PMP

T.S. No.: 3991 Date Implemented: 10-19-09 By: [illegible]

3. COORDINATOR SUBMENU

TIME OF DAY OPERATION SUMMARY					
PLAN 1	0900 - 1500 M-F 1800 - 2100 M-F	PLAN 4		PLAN 7	
PLAN 2	0600 - 0900 M-F	PLAN 5		PLAN 8	
PLAN 3	1500 - 1800 M-F	PLAN 6		PLAN 9	
FREE	ALL OTHER TIMES				

1. COORDINATOR OPTIONS

SPLIT UNITS	SEC	ACTUATED COORD PHASE(S)	X
OFFSET UNITS	SEC	ACTUATED WALK/REST	
INTERCONNECT FORMAT	STD	INHIBIT MAX	
INTERCONNECT SOURCE	NIC	MAX 2 SELECT	X
RESYNC COUNT	255	MULTISYNC	
TRANSITION	SMOOTH	FLOAT FORCE OFF	
DWELL PERIOD	255		

FREE ALTERNATE SEQUENCE	A		B		C		D		E		F	

2. COORD MANUAL AND SPLIT DEMAND

MANUAL ENABLE		MANUAL PATTERN	

SPLIT DEMAND:	DEMAND 1	DEMAND 2
DEMAND CALL TIME	0	0
DEMAND CYCLE COUNT	0	0

DEMAND PHASE	1	2	3	4	5	6	7	8	9	10	11	12
DEMAND 1 PHASES												
DEMAND 2 PHASES												

3. COORD AUTO PERM MIN GREEN

PHASE	AUTO PERM MIN GREEN	PHASE	AUTO PERM MIN GRN
1	7	7	7
2	7	8	7
3	7	9	
4	7	10	
5	7	11	
6	7	12	

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
TRAFFIC AND LIGHTING DIVISION
TRAFFIC SIGNAL TIMING

ASC/2S

PROGRAM REFERENCE CARD

INTERSECTION: CARSON ST @ AVALON BLVD

Date Prepared: 9-30-09 HC/1 By: RMP

Date Implemented: 10-19-09 By: [illegible]

T.S. No.: 3991

3. COORDINATOR SUBMENU (Continued)

4. PATTERN DATA

COORD PATTERN	1		
CYCLE LENGTH	120	C/O/S	1/1/1
OFFSET	38		

SPLITS							
PHASE 1	19	PHASE 2	16	PHASE 3	16	PHASE 4	38
PHASE 5	19	PHASE 6	16	PHASE 7	16	PHASE 8	38
PHASE 9		PHASE 10		PHASE 11		PHASE 12	
VEH PERMISSIVE	[1] 0			[2] 0			
VEH PERM 2 DISP							
PHASE RESERVICE							
SPLIT EXTENSION/RING	[1] 30			[2] 30			
SPL DMD PATTERN	[1]			[2]			
XARTERY PATTERN							

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
COORD PHASES		X				X						
VEHICLE RECALL		X				X						
VEH MAX RECALL												
PED RECALL												
PHASE OMIT												
SPARE												

	A	B	C	D	E	F
ALTERNATE SEQUENCE						

COORD PATTERN	2		
CYCLE LENGTH	120	C/O/S	2/1/1
OFFSET	39		

SPLITS							
PHASE 1	19	PHASE 2	28	PHASE 3	16	PHASE 4	40
PHASE 5	19	PHASE 6	28	PHASE 7	16	PHASE 8	40
PHASE 9		PHASE 10		PHASE 11		PHASE 12	
VEH PERMISSIVE	[1] 0			[2] 0			
VEH PERM 2 DISP							
PHASE RESERVICE							
SPLIT EXTENSION/RING	[1] 16			[2] 16			
SPL DMD PATTERN	[1]			[2]			
XARTERY PATTERN							

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
COORD PHASES		X				X						
VEHICLE RECALL		X				X						
VEH MAX RECALL												
PED RECALL												
PHASE OMIT												
SPARE												

	A	B	C	D	E	F
ALTERNATE SEQUENCE						

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
TRAFFIC AND LIGHTING DIVISION
TRAFFIC SIGNAL TIMING

ASC/2S

PROGRAM REFERENCE CARD

INTERSECTION: CARSON ST @ AVALON BLVD

Date Prepared: 9-30-09/Hdl By: Pmp

T.S. No.: 3991

Date Implemented: 10-19-09 By: [illegible]

3. COORDINATOR SUBMENU (Continued)

4. PATTERN DATA (Continued)

COORD PATTERN	3		
CYCLE LENGTH	120	C/O/S	3/1/1
OFFSET	48		

SPLITS								
PHASE 1	20	PHASE 2	26	PHASE 3	19	PHASE 4	38	
PHASE 5	20	PHASE 6	26	PHASE 7	19	PHASE 8	38	
PHASE 9		PHASE 10		PHASE 11		PHASE 12		
VEH PERMISSIVE	[1]	0		[2]	0			
VEH PERM 2 DISP								
PHASE RESERVICE								
SPLIT EXTENSION/RING	[1]	16		[2]	16			
SPL DMD PATTERN	[1]			[2]				
XARTERY PATTERN								

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
COORD PHASES		X				X						
VEHICLE RECALL		X				X						
VEH MAX RECALL												
PED RECALL												
PHASE OMIT												
SPARE												

	A	B	C	D	E	F
ALTERNATE SEQUENCE						

Up to 64 Coordination Patterns Available.

COORD PATTERN	4		
CYCLE LENGTH		C/O/S	
OFFSET			

SPLITS								
PHASE 1		PHASE 2		PHASE 3		PHASE 4		
PHASE 5		PHASE 6		PHASE 7		PHASE 8		
PHASE 9		PHASE 10		PHASE 11		PHASE 12		
VEH PERMISSIVE	[1]			[2]				
VEH PERM 2 DISP								
PHASE RESERVICE								
SPLIT EXTENSION/RING	[1]			[2]				
SPL DMD PATTERN	[1]			[2]				
XARTERY PATTERN								

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
COORD PHASES												
VEHICLE RECALL												
VEH MAX RECALL												
PED RECALL												
PHASE OMIT												
SPARE												

	A	B	C	D	E	F
ALTERNATE SEQUENCE						

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
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INTERSECTION: CARSON ST @ AVALON BLVD Date Prepared: 9-30-09 HCH By: PMP

T.S. No.: 3991 (NOT USED) Date Implemented: _____ By: _____

4. PREEMPTOR SUBMENU

1. PRIORITY PREEMPTOR 1

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
TERM PHASE OVLP												
TRK CLR PHASE												
HOLD PHASES												
EXIT PHASES												
EXIT CALLS												
SPARE												
TERM OVERLAP	A			B			C			D		

ACTIVE		PED DARK	
PRIORITY		PED ACTIVE	
DET LOCK		ZERO PC TIME	
HOLD FLASH		PC THRU YELLOW	
TERM OVLP ASAP		TERM PHASES	
DON'T OVERRIDE FLASH		ACTIVE ONLY DURING HOLD	
FLASH ALL OUTPUTS		NO CVM IN FLASH	
YELLOW-RED GOES GREEN		FAST FLASH GRN ON HOLD	
ENABLE MAX PREEMPT TIME		OUT OF FLASH	

MAX TIME		DURATION TIME	
MIN HOLD TIME		DELAY TIME	
MIN PED CLEAR		INHIBIT TIME	
EXIT MAX		HOLD DELAY TIME	

	GREEN	YELLOW	RED
MINIMUM			
TRACK CLEAR			
HOLD			

3. PRIORITY PREEMPTOR 3

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
TERM PHASE OVLP												
TRK CLR PHASE												
HOLD PHASES												
EXIT PHASES												
EXIT CALLS												
SPARE												
TERM OVERLAP	A			B			C			D		

ACTIVE		PED DARK	
PRIORITY		PED ACTIVE	
DET LOCK		ZERO PC TIME	
HOLD FLASH		PC THRU YELLOW	
TERM OVLP ASAP		TERM PHASES	
DON'T OVERRIDE FLASH		ACTIVE ONLY DURING HOLD	
FLASH ALL OUTPUTS		NO CVM IN FLASH	
YELLOW-RED GOES GREEN		FAST FLASH GRN ON HOLD	
ENABLE MAX PREEMPT TIME		OUT OF FLASH	

MAX TIME		DURATION TIME	
MIN HOLD TIME		DELAY TIME	
MIN PED CLEAR		INHIBIT TIME	
EXIT MAX		HOLD DELAY TIME	

	GREEN	YELLOW	RED
MINIMUM			
TRACK CLEAR			
HOLD			
LINKED PREEMPTOR			

2. PRIORITY PREEMPTOR 2

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
TERM PHASE OVLP												
TRK CLR PHASE												
HOLD PHASES												
EXIT PHASES												
EXIT CALLS												
SPARE												
TERM OVERLAP	A			B			C			D		

ACTIVE		PED DARK	
PRIORITY		PED ACTIVE	
DET LOCK		ZERO PC TIME	
HOLD FLASH		PC THRU YELLOW	
TERM OVLP ASAP		TERM PHASES	
DON'T OVERRIDE FLASH		ACTIVE ONLY DURING HOLD	
FLASH ALL OUTPUTS		NO CVM IN FLASH	
YELLOW-RED GOES GREEN		FAST FLASH GRN ON HOLD	
ENABLE MAX PREEMPT TIME		OUT OF FLASH	

MAX TIME		DURATION TIME	
MIN HOLD TIME		DELAY TIME	
MIN PED CLEAR		INHIBIT TIME	
EXIT MAX		HOLD DELAY TIME	

	GREEN	YELLOW	RED
MINIMUM			
TRACK CLEAR			
HOLD			
LINKED PREEMPTOR			

4. PRIORITY PREEMPTOR 4

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
TERM PHASE OVLP												
TRK CLR PHASE												
HOLD PHASES												
EXIT PHASES												
EXIT CALLS												
SPARE												
TERM OVERLAP	A			B			C			D		

ACTIVE		PED DARK	
PRIORITY		PED ACTIVE	
DET LOCK		ZERO PC TIME	
HOLD FLASH		PC THRU YELLOW	
TERM OVLP ASAP		TERM PHASES	
DON'T OVERRIDE FLASH		ACTIVE ONLY DURING HOLD	
FLASH ALL OUTPUTS		NO CVM IN FLASH	
YELLOW-RED GOES GREEN		FAST FLASH GRN ON HOLD	
ENABLE MAX PREEMPT TIME		OUT OF FLASH	

MAX TIME		DURATION TIME	
MIN HOLD TIME		DELAY TIME	
MIN PED CLEAR		INHIBIT TIME	
EXIT MAX		HOLD DELAY TIME	

	GREEN	YELLOW	RED
MINIMUM			
TRACK CLEAR			
HOLD			
LINKED PREEMPTOR			

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
TRAFFIC AND LIGHTING DIVISION
TRAFFIC SIGNAL TIMING

ASC/2S

PROGRAM REFERENCE CARD

INTERSECTION: CARSON ST @ AVALON BLVD Date Prepared: 9-30-09 HcH By: DMP

T.S. No.: 3991 (NOT USED) Date Implemented: By:

4. PREEMPTOR SUBMENU (Continued)

5. PRIORITY PREEMPTOR 5

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
TERM PHASE OVLP												
TRK CLR PHASE												
HOLD PHASES												
EXIT PHASES												
EXIT CALLS												
SPARE												

TERM OVERLAP	A		B		C		D	

ACTIVE		PED DARK	
PRIORITY		PED ACTIVE	
DET LOCK		ZERO PC TIME	
HOLD FLASH		PC THRU YELLOW	
TERM OVLP ASAP		TERM PHASES	
DON'T OVERRIDE FLASH		ACTIVE ONLY DURING HOLD	
FLASH ALL OUTPUTS		NO CVM IN FLASH	
YELLOW-RED GOES GREEN		FAST FLASH GRN ON HOLD	
ENABLE MAX PREEMPT TIME		OUT OF FLASH	

MAX TIME		DURATION TIME	
MIN HOLD TIME		DELAY TIME	
MIN PED CLEAR		INHIBIT TIME	
EXIT MAX		HOLD DELAY TIME	

	GREEN	YELLOW	RED
MINIMUM			
TRACK CLEAR			
HOLD			
LINKED PREEMPTOR			

6. PRIORITY PREEMPTOR 6

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
TERM PHASE OVLP												
TRK CLR PHASE												
HOLD PHASES												
EXIT PHASES												
EXIT CALLS												
SPARE												

TERM OVERLAP	A		B		C		D	

ACTIVE		PED DARK	
PRIORITY		PED ACTIVE	
DET LOCK		ZERO PC TIME	
HOLD FLASH		PC THRU YELLOW	
TERM OVLP ASAP		TERM PHASES	
DON'T OVERRIDE FLASH		ACTIVE ONLY DURING HOLD	
FLASH ALL OUTPUTS		NO CVM IN FLASH	
YELLOW-RED GOES GREEN		FAST FLASH GRN ON HOLD	
ENABLE MAX PREEMPT TIME		OUT OF FLASH	

MAX TIME		DURATION TIME	
MIN HOLD TIME		DELAY TIME	
MIN PED CLEAR		INHIBIT TIME	
EXIT MAX		HOLD DELAY TIME	

	GREEN	YELLOW	RED
MINIMUM			
TRACK CLEAR			
HOLD			
LINKED PREEMPTOR			

7. BUS PREEMPTORS

	BUS PREEMPTOR 1	2	3	4
PREEMPTOR ACTIVE				
DETECTOR LOCK				
MAXIMUM TIME				
RESERVICE TIME				
DELAY TIME				
INHIBIT TIME				
ENTRANCE GREEN				
ENTRANCE PED CLEAR				
ENTRANCE YELLOW				
ENTRANCE RED				
MIN HOLD TIME				

	HOLD PHASE 1	2	3	4	5	6	7	8	9	10	11	12
PREEMPTOR 1												
PREEMPTOR 2												
PREEMPTOR 3												
PREEMPTOR 4												

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
TRAFFIC AND LIGHTING DIVISION
TRAFFIC SIGNAL TIMING

ASC/2S

PROGRAM REFERENCE CARD

INTERSECTION: CARSON ST @ AVALON BLVD Date Prepared: 9-30-09 HCH By: JMP

T.S. No.: 3991 Date Implemented: 10-19-09 By: [illegible]

5. NIC/TOD SUBMENU

1. NIC/TOD CLOCK/CALENDAR DATA

DATE SET	
TIME SET	
MANUAL NIC PROGRAM STEP	0
MANUAL TOD PROGRAM STEP	0
SYNC REFERENCE TIME	★ ★ 0000
SYNC REFERENCE	REFERENCE TIME
WEEK 1 BEGINS ON 1ST SUNDAY	
DISABLE DAYLIGHT SAVINGS	
DST BEGINS LAST SUNDAY	

2. NIC/TOD WEEKLY PROGRAMS

WEEK	SUN	MON	TUE	WED	THU	FRI	SAT
1	2	1	1	1	1	1	2
2							
3							
4							
5							
6							
7							
8							
9							
10							

3. NIC/TOD YEARLY PROGRAMS

WEEK OF YEAR	1	2	3	4	5	6	7	8
WEEKLY PROGRAM	1	1	1	1	1	1	1	1
WEEK OF YEAR	9	10	11	12	13	14	15	16
WEEKLY PROGRAM	1	1	1	1	1	1	1	1
WEEK OF YEAR	17	18	19	20	21	22	23	24
WEEKLY PROGRAM	1	1	1	1	1	1	1	1
WEEK OF YEAR	25	26	27	28	29	30	31	32
WEEKLY PROGRAM	1	1	1	1	1	1	1	1
WEEK OF YEAR	33	34	35	36	37	38	39	40
WEEKLY PROGRAM	1	1	1	1	1	1	1	1
WEEK OF YEAR	41	42	43	44	45	46	47	48
WEEKLY PROGRAM	1	1	1	1	1	1	1	1
WEEK OF YEAR				49	50	51	52	53
WEEKLY PROGRAM				1	1	1	1	1

4. NIC/TOD HOLIDAY PROGRAM

HOLIDAY	FLOAT/FIXED	MON/MON	DOW/DOM	WOM/YEAR	PROG
1	FIXED	1	1	0	2
2	FIXED	7	4	0	2
3	FIXED	11	11	0	2
4	FIXED	12	24	0	2
5	FIXED	12	25	0	2
6					
7					
8					
9					
10					
11					
12					
13					
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31					
32					
33					
34					
35					
36					

★ ★ NOTE: WHEN USING RCTB UNIT, IN ORDER FOR THE CONTROLLER CLOCK TO BE PROPERLY UPDATED, THE RCTB UNIT MUST BE DESIGNED FOR A 3:30 AM SYNC PULSE.

ASC/2S

PROGRAM REFERENCE CARD

INTERSECTION: CARSON ST @ AVALON BLVD Date Prepared: 9-30-09 HCH By: PMP

T.S. No.: 3991 Date Implemented: 10-19-09 By:

5. NIC/TOD SUBMENU (Continued)

5. NIC PROGRAM STEP

STEP	PGM	TIME	PATTERN	OVERRIDE
1	1	0000	0	
2	2	0000	0	
3	1	0600	2	
4	1	0900	1	
5	1	1500	3	
6	1	1800	1	
7	1	2100	0	

Up to 200 NIC Program Steps Available.

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
TRAFFIC AND LIGHTING DIVISION
TRAFFIC SIGNAL TIMING

ASC/2S

PROGRAM REFERENCE CARD

INTERSECTION: CARSON ST @ AVALON BLVD

Date Prepared: 9-30-09 HCH By: PMP

Date Implemented: ______ By: ______

T.S. No.: 3991

(NOT USED)

5. NIC/TOD SUBMENU (Continued)

6. TOD PROGRAM STEPS

TOD PROGRAM STEP												
DAY PGM NUMBER												
STEP BEGINS												
FLASH					DIM ENABLE							
RED REST					ALT VEH EXTSN							
SPARE 5					DET LOG ENABLE							
SPARE 3					SPARE 4							
TYPE 0 DELAY ENABLE					SPARE 2							
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	
PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX 2 ENABLE												
MAX 3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INHIBIT												
PHASE OMIT												
SPECIAL FUNCTIONS									(1 - 8)			

TOD PROGRAM STEP												
DAY PGM NUMBER												
STEP BEGINS												
FLASH					DIM ENABLE							
RED REST					ALT VEH EXTSN							
SPARE 5					DET LOG ENABLE							
SPARE 3					SPARE 4							
TYPE 0 DELAY ENABLE					SPARE 2							
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	
PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX 2 ENABLE												
MAX 3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INHIBIT												
PHASE OMIT												
SPECIAL FUNCTIONS									(1 - 8)			

TOD PROGRAM STEP												
DAY PGM NUMBER												
STEP BEGINS												
FLASH					DIM ENABLE							
RED REST					ALT VEH EXTSN							
SPARE 5					DET LOG ENABLE							
SPARE 3					SPARE 4							
TYPE 0 DELAY ENABLE					SPARE 2							
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	
PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX 2 ENABLE												
MAX 3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INHIBIT												
PHASE OMIT												
SPECIAL FUNCTIONS									(1 - 8)			

TOD PROGRAM STEP												
DAY PGM NUMBER												
STEP BEGINS												
FLASH					DIM ENABLE							
RED REST					ALT VEH EXTSN							
SPARE 5					DET LOG ENABLE							
SPARE 3					SPARE 4							
TYPE 0 DELAY ENABLE					SPARE 2							
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	
PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX 2 ENABLE												
MAX 3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INHIBIT												
PHASE OMIT												
SPECIAL FUNCTIONS									(1 - 8)			

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
TRAFFIC AND LIGHTING DIVISION
TRAFFIC SIGNAL TIMING

ASC/2S

PROGRAM REFERENCE CARD

INTERSECTION: CARSON ST @ AVALON BLVD

Date Prepared: 9-30-09 HcH By: PMP

T.S. No.: 3991

(NOT USED)

Date Implemented: ______ By: ______

5. NIC/TOD SUBMENU (Continued)

6. TOD PROGRAM STEPS (CONTINUED)

TOD PROGRAM STEP												
DAY PGM NUMBER												
STEP BEGINS												
FLASH					DIM ENABLE							
RED REST					ALT VEH EXTSN							
SPARE 5					DET LOG ENABLE							
SPARE 3					SPARE 4							
TYPE 0 DELAY ENABLE					SPARE 2							
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	
PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX 2 ENABLE												
MAX 3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INHIBIT												
PHASE OMIT												
SPECIAL FUNCTIONS									(1 - 8)			

TOD PROGRAM STEP												
DAY PGM NUMBER												
STEP BEGINS												
FLASH					DIM ENABLE							
RED REST					ALT VEH EXTSN							
SPARE 5					DET LOG ENABLE							
SPARE 3					SPARE 4							
TYPE 0 DELAY ENABLE					SPARE 2							
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	
PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX 2 ENABLE												
MAX 3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INHIBIT												
PHASE OMIT												
SPECIAL FUNCTIONS									(1 - 8)			

TOD PROGRAM STEP												
DAY PGM NUMBER												
STEP BEGINS												
FLASH					DIM ENABLE							
RED REST					ALT VEH EXTSN							
SPARE 5					DET LOG ENABLE							
SPARE 3					SPARE 4							
TYPE 0 DELAY ENABLE					SPARE 2							
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	
PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX 2 ENABLE												
MAX 3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INHIBIT												
PHASE OMIT												
SPECIAL FUNCTIONS									(1 - 8)			

TOD PROGRAM STEP												
DAY PGM NUMBER												
STEP BEGINS												
FLASH					DIM ENABLE							
RED REST					ALT VEH EXTSN							
SPARE 5					DET LOG ENABLE							
SPARE 3					SPARE 4							
TYPE 0 DELAY ENABLE					SPARE 2							
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	
PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX 2 ENABLE												
MAX 3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INHIBIT												
PHASE OMIT												
SPECIAL FUNCTIONS									(1 - 8)			

Up to 100 TOD Program Steps Available.

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
TRAFFIC AND LIGHTING DIVISION
TRAFFIC SIGNAL TIMING

ASC/2S

PROGRAM REFERENCE CARD

INTERSECTION: CARSON ST @ AVALON BLVD Date Prepared: 9-30-09 HCH By: PMP

T.S. No.: 3991 Date Implemented: 10-19-09 By: [illegible]

6. DETECTORS SUBMENU

1. DETECTOR TYPE/TIMERS

DETECTOR	TYPE	LOCK	EXTEND	DELAY	NO RESET	LOG ENABLE
1	0					
2	5		2.0			
3	0					
4	5		2.0			
5	0					
6	5		2.0			
7	0					
8	5		2.0			
9	0					
10	0					
11	0					
12	0					
13	0					
14	0					
15						
16						
17						
18						
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62						
63						
64						

2. DETECTOR PHASE ASSIGNMENT

	PHASE ASSIGNMENT											
DETECTOR	1	2	3	4	5	6	7	8	9	10	11	12
1	X											
2		X										
3			X									
4				X								
5					X							
6						X						
7							X					
8								X				
9						X						
10				X								
11		X										
12								X				
13	X											
14					X							
15												
16												
17												
18												
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61												
62												
63												
64												

INTERSECTION: CARSON ST @ AVALON BLVD Date Prepared: 9-30-09 HCH By: PMP

T.S. No.: 3991 Date Implemented: 10-19-09 By: [illegible]

6. DETECTORS SUBMENU (Continued)

3. PED AND SYSTEM DETECTOR LOCAL ASSIGNMENT

DETECTOR LOG INTERVAL					MINUTES			
LOCAL PED DET NUMBER	PHASE PED DETECTOR							
	1	2	3	4	5	6		
		2		4		6		
	7	8	9	10	11	12		
NUMBER		8						
LOCAL DET NUMBER	LOCAL SYSTEM DETECTOR NUMBER							
	1	2	3	4	5	6	7	8
	9	10	11	12	13	14	15	16
NUMBER								

Section 6-4: (See Next Page)

5. SPEED DETECTORS

SPEED DETECTOR NUMBERS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ONE DETECTOR SPEED:																
LOCAL DET NUMBER																
VEHICLE LENGTH																
LOOP LENGTH																
TWO DETECTOR SPEED:																
LOCAL DET NUMBER																
SPEED TRAP LENGTH																
ENABLE LOG																
UNITS:																

Section 6-6: (See Next Page)

7. PED DETECTOR DIAGNOSTIC PLAN

PLAN	DET NO.	1	2	3	4	5	6	7	8	9	10	11	12
1	DIAG NO.												
	SCALING												
2	DIAG NO.												
	SCALING												
3	DIAG NO.												
	SCALING												
4	DIAG NO.												
	SCALING												
5	DIAG NO.												
	SCALING												
6	DIAG NO.												
	SCALING												
7	DIAG NO.												
	SCALING												
8	DIAG NO.												
	SCALING												

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
TRAFFIC AND LIGHTING DIVISION
TRAFFIC SIGNAL TIMING

ASC/2S

PROGRAM REFERENCE CARD

INTERSECTION: CARSON ST @ AVALON BLVD Date Prepared: 9-30-09 HCH By: PMP

T.S. No.: 3991 (NOT USED) Date Implemented: By:

6. DETECTORS SUBMENU (Continued)

4. CROSS SWITCHING

	PHASES											
DETECTOR	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
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63												
64												

6. VEHICLE DETECTOR DIAGNOSTIC PLAN

PLAN	DET NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	DIAG NO																
	SCALING																
2	DIAG NO																
	SCALING																
3	DIAG NO																
	SCALING																
4	DIAG NO																
	SCALING																
5	DIAG NO																
	SCALING																
6	DIAG NO																
	SCALING																
7	DIAG NO																
	SCALING																
8	DIAG NO																
	SCALING																
FAIL ACTION																	

PLAN	DET NO.	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
1	DIAG NO																
	SCALING																
2	DIAG NO																
	SCALING																
3	DIAG NO																
	SCALING																
4	DIAG NO																
	SCALING																
5	DIAG NO																
	SCALING																
6	DIAG NO																
	SCALING																
7	DIAG NO																
	SCALING																
8	DIAG NO																
	SCALING																
FAIL ACTION																	

PLAN	DET NO.	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
1	DIAG NO																
	SCALING																
2	DIAG NO																
	SCALING																
3	DIAG NO																
	SCALING																
4	DIAG NO																
	SCALING																
5	DIAG NO																
	SCALING																
6	DIAG NO																
	SCALING																
7	DIAG NO																
	SCALING																
8	DIAG NO																
	SCALING																
FAIL ACTION																	

Vehicle Detector Diagnostic Plans for Detectors 49-64 Also Available.

INTERSECTION: CARSON ST @ AVALON BLVD Date Prepared: 9-30-09 HCH By: PMP

T.S. No.: 3991 (NOT USED) Date Implemented: By:

6. DETECTORS SUBMENU (Continued)

8. DETECTOR DIAGNOSTIC INTERVAL

DETECTOR DIAGNOSTIC INTERVAL			
DIAGNOSTIC NUMBER	NO ACTIVITY	MAX PRESENCE	ERRATIC COUNTS
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
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31			
32			

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
TRAFFIC AND LIGHTING DIVISION
TRAFFIC SIGNAL TIMING

ASC/2S

PROGRAM REFERENCE CARD

INTERSECTION: CARSON ST @ AVALON BLVD Date Prepared: 9-30-09 HCH By: PMP

T.S. No.: 3991 Date Implemented: 10-19-09 By: [illegible]

NOTE: NOT IN SEQUENTIAL ORDER

DETECTOR ASSIGNMENT WORK SHEET

LOOP LOCATION	LANE	DET ASSIGN	DET TYP #	PHASE 1	2	3	4	5	6	7	8	9	10	11	12	DET DELAY	DET EXTEND	QUEUE MAX	REMARKS
1-N-Ø3	LT	3	0			X													F
2-S-Ø4	1,2,3	4	5				X										2.0		Q
1-W-Ø1	LT-1	1	0	X															F
2-E-Ø2	1,2	2	5		X												2.0		Q
1-S-Ø7	LT	7	0							X									F
2-N-Ø8	1,2,3	8	5								X						2.0		Q
1-E-Ø5	LT-1	5	0					X											F
2-W-Ø6	1,2	6	5						X								2.0		Q
1-E-Ø2	1,2	11	0		X														A
1-N-Ø8	1,2	12	0								X								A
1-W-Ø6	1,2	9	0						X										A
1-S-Ø4	1,2	10	0				X												A
2-W-Ø1	LT-2	13	0	X															F
2-E-Ø5	LT-2	14	0					X											F

DETECTOR ASSIGNMENT DEFINITIONS

CONTROLLER	CONNECTOR'S A,B C								CONNECTOR D								CONNECTOR TELEMETRY								CONNECTOR TYPE 1							
ASC-2	DETECTOR								DETECTOR								DETECTOR								INPUT TYPE 1 ONLY							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32

* = DELAY Time or EXTEND Time set on External Sensor

** = When the Detector Input is set to be a TYPE 4 Detector, the EXTEND value set in the Controller becomes the QUEUE MAX value and any Extension Time needed must be set externally on the Sensor. If the Detector Input is set to be a TYPE 5, the EXTEND value becomes a Reset (Gap) Timer value and the Extension Time is set Externally on the Sensor Unit.

Q = QUEUE CLEARING LOOP F = FIRST VEHICLE LOOP

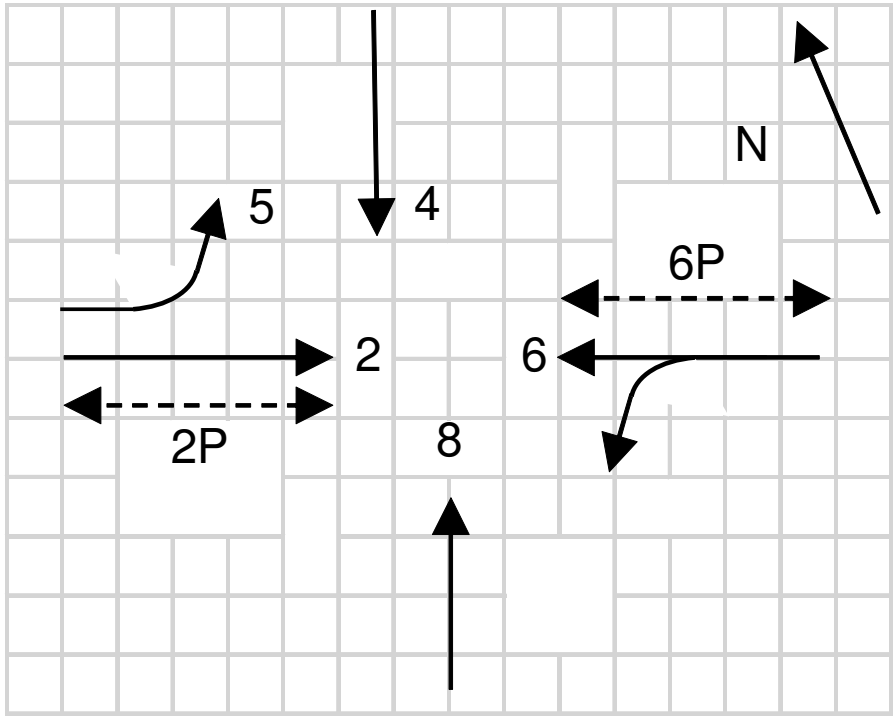
H = HOLDING LOOP A = ADVANCE LOOP

Location: R405 NB @ Carson St
System:
Master At: Here
District: 07
I/C: NB-SB Ramp
Designed By: HD
Installed By: HD
Service Info:

Timing Change:	Date Start:	Date End:	Designed:	Installed:
	10/29/2020		10/15/2020	10/29/2020

			FLASH
PHASE	1)		[ ]
	2)	EB Carson St (2ped)	[ ]
	3)		[ ]
	4)	NB off Ramp	[ ]
	5)	EBLT Carson St	[ ]
	6)	WB Carson St (6 ped)	[ ]
	7)		[ ]
	8)	NB Recreation Rd	[ ]
OVERLAP	A)		[ ]
	B)		[ ]
	C)		[ ]
	D)		[ ]
	E)		[ ]
	F)		[ ]

Intersection Layout



Comments and Notes:
* To prevent yellow trap WBLT (phase 5 place a call to phase 4 by 2-1-2-1)

RAM Checksum

Page 2: 5B9D	Page 8: 5996
Page 3: 034A	Page 9: D2FD
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Page 5: 191A	Page 11: C838
Page 6: 191A	Page 12: 1FB3
Page 7: 12D9	Page 13: 86F7

Post Mile: 10.58

Printed: 12/15/2021

CONFIGURATION PHASE FLAGS

Cabinet (9-3)
332
Configuration
CALTRANS

Phases (2-1-1-1)	
Permitted	. 2 . 4 5 6 . 8
Restricted	. . . . .

Phase Recalls (2-1-1-2)	
Vehicle Min	. 2 . . . 6 . .
Vehicle Max	. . . . .
Pedestrian	. . . . .
Bicycle	. . . . .

Phase Locks (2-1-1-3)	
Red	. . . . 5 . . .
Yellow	. 2 . . . 6 . .
Force/Max	. . . . .

Phase Features (2-1-1-4)	
Double Entry	. . . . .
Rest In Walk	. . . . .
Rest In Red	. . . . .
Walk 2	. . . . .
Max Green 2	. . . . .
Max Green 3	. . . . .

Startup (2-1-1-5)	
First Green Phases	. 2 . . . 6 . .
Yellow Start Phases	. . . 4 . . . .
Vehicle Calls	. 2 . 4 5 6 . 8
Pedestrian Calls	. 2 . . . 6 . .
Yellow Start Overlaps	. . . . .
Startup All-Red	6.0

Call To Phase (2-1-2-1)		Omit On Green	
1	. . . . .	1	. . . . .
2	. . . . .	2	. . . . .
3	. . . . .	3	. . . . .
4	. . . . .	4	. . . . .
5	. . . 4	5	. . . . .
6	. . . . .	6	. . . . .
7	. . . . .	7	. . . . .
8	. . . . .	8	. . . . .

Flashing Colors (2-1-2-2)	
Yellow Flash Phases	. . . . .
Yellow Flash Overlaps	. . . . .
Flash In Red Phases	. . . . .
Flash In Red Overlaps	. . . . .

Special Operation (2-1-2-3)	
Single Exit Phase	. . . . .
Driveway Signal Phases	. . . . .
Driveway Signal Overlaps	. . . . .
Leading Ped Phases	. . . . .

Protected Permissive (2-1-2-4)	
Protected Permissive	. . . . .

Pedestrian (2-1-3)	
P1	. . . . .
P2	. 2 . . . . .
P3	. . . . .
P4	. . . 4 . . . .
P5	. . . . .
P6	. . . . . 6 . .
P7	. . . . .
P8	 8

Overlap (2-1-4)				
Overlap	Parent	Omit	No Start	Not
A	. . . . .	. . . . .	. . . . .	. . . . .
B	. . . . .	. . . . .	. . . . .	. . . . .
C	. . . . .	. . . . .	. . . . .	. . . . .
D	. . . . .	. . . . .	. . . . .	. . . . .
E	. . . . .	. . . . .	. . . . .	. . . . .
F	. . . . .	. . . . .	. . . . .	. . . . .

PHASE TIMING

Phase (2-2)	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
--- Walk 1 ---	0	7	0	0	0	7	0	0
Flash Don't Walk	0	25	0	0	0	18	0	0
Minimum Green	10	10	10	10	10	10	10	10
Det Limit	10	0	10	0	0	0	10	0
Max Initial	10	20	10	0	0	20	10	0
Max Green 1	50	40	50	20	20	40	50	20
Max Green 2	50	40	50	20	20	40	50	20
Max Green 3	50	40	50	20	20	40	50	20
Extension	5.0	4.0	5.0	3.0	2.5	4.0	5.0	3.0
Maximum Gap	5.0	5.0	5.0	3.0	2.5	5.0	5.0	3.0
Minimum Gap	5.0	3.0	5.0	3.0	2.5	3.0	5.0	3.0
Add Per Vehicle	1.0	2.0	1.0	0.0	0.0	2.0	1.0	0.0
Reduce Gap By	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0
Reduce Every	1.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Yellow	5.0	4.4	5.0	4.1	3.7	4.4	5.0	4.1
All-Red	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Ped/Bike (2-3)	**-1-**	**-2-**	**-3-**	**-4-**	**-5-**	**-6-**	**-7-**	**-8-**
--- Walk 2 ---	0	0	0	0	0	0	0	0
Delay/Early Walk	0	0	0	0	0	0	0	0
Solid Don't Walk	0	0	0	0	0	0	0	0
Bike Green	0	0	0	0	0	0	0	0
Bike All-Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

OVERLAP TIMING

Overlap (2-4)	A	B	C	D	E	F
Green	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	5.0	5.0	5.0	5.0	5.0
Red	0.0	0.0	0.0	0.0	0.0	0.0

Red Revert

Red Revert (2-5)	
Time	5.0
All-Red Sec/Min (2-6)	
All-Red Sec/Min:	OFF

Max 2 Extension

Max/Gap Out (2-7)	
Max Cnt	0
Gap Cnt	0

Local Plan 1...9 (7-1) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 1	Green Factor	90		. . . . .	10				58		20	25	28		20
Plan 2	Green Factor	90		. . . . .	10				58		20	25	28		20
Plan 3	Green Factor	90		. . . . .	10				58		20	25	28		20
Plan 4	Green Factor			. . . . .											
Plan 5	Green Factor			. . . . .											
Plan 6	Green Factor			. . . . .											
Plan 7	Green Factor			. . . . .											
Plan 8	Green Factor			. . . . .											
Plan 9	Green Factor			. . . . .											

Master Timer Sync (7-A)	
Enable in Plans	
1-9	. . . . .
11-19	. . . . .
21-29	. . . . .

Master Sub Master	
Input	
Output	

FREE PLAN PHASE FLAGS

(7-E) Free	
Lag	Omit
. 2 . 4 . 6 . 8	. . . . .
Veh Min	Veh Max
. 2 . . . 6 . .	. . . . .
Ped	Bike
. . . . .	. . . . .
Cond	Cond Grn
. . . . .	10

Local Plan 1...9 (7-1) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 1	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. 2 . . . 6 . .	. . . . .
Plan 2	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. 2 . . . 6 . .	. . . . .
Plan 3	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. 2 . . . 6 . .	. . . . .
Plan 4	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 5	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 6	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 7	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 8	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 9	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .

MANUAL COMMANDS

Manual Plan (4-1)		*Plan: 1-29*
Plan	OffSet	*254 = Flash*
	A	*255 = Free*
		Offset A, B, or C

Special Function Override (4-2)			
#	Control	#	Control
1	NORMAL	3	NORMAL
2	NORMAL	4	NORMAL

Detector Reset	(4-3)
Local Manual (4-4)	OFF

Local Plan 11...19 (7-2) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 11	Green Factor			.....											
Plan 12	Green Factor			.....											
Plan 13	Green Factor			.....											
Plan 14	Green Factor			.....											
Plan 15	Green Factor			.....											
Plan 16	Green Factor			.....											
Plan 17	Green Factor			.....											
Plan 18	Green Factor			.....											
Plan 19	Green Factor			.....											

Local Plan 11...19 (7-2) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 11	.....	.....	.....	.....	.....	.....	.....	.....
Plan 12	.....	.....	.....	.....	.....	.....	.....	.....
Plan 13	.....	.....	.....	.....	.....	.....	.....	.....
Plan 14	.....	.....	.....	.....	.....	.....	.....	.....
Plan 15	.....	.....	.....	.....	.....	.....	.....	.....
Plan 16	.....	.....	.....	.....	.....	.....	.....	.....
Plan 17	.....	.....	.....	.....	.....	.....	.....	.....
Plan 18	.....	.....	.....	.....	.....	.....	.....	.....
Plan 19	.....	.....	.....	.....	.....	.....	.....	.....

Local Plan 21...29 (7-3) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 21	Green Factor			.....											
Plan 22	Green Factor			.....											
Plan 23	Green Factor			.....											
Plan 24	Green Factor			.....											
Plan 25	Green Factor			.....											
Plan 26	Green Factor			.....											
Plan 27	Green Factor			.....											
Plan 28	Green Factor			.....											
Plan 29	Green Factor			.....											

Local Plan 21...29 (7-3) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 21	.....	.....	.....	.....	.....	.....	.....	.....
Plan 22	.....	.....	.....	.....	.....	.....	.....	.....
Plan 23	.....	.....	.....	.....	.....	.....	.....	.....
Plan 24	.....	.....	.....	.....	.....	.....	.....	.....
Plan 25	.....	.....	.....	.....	.....	.....	.....	.....
Plan 26	.....	.....	.....	.....	.....	.....	.....	.....
Plan 27	.....	.....	.....	.....	.....	.....	.....	.....
Plan 28	.....	.....	.....	.....	.....	.....	.....	.....
Plan 29	.....	.....	.....	.....	.....	.....	.....	.....

DETECTORS

Detector Attributes (5-1)				Slot
Det	Type	Phases	Lock	
1	COUNT+CALL+EXTEND	1	NO	I1U
2	COUNT+CALL+EXTEND	1	NO	I1L
3	COUNT+CALL+EXTEND	. 2	NO	I2U
4	COUNT+CALL+EXTEND	. 2	NO	I2L
5	COUNT+CALL+EXTEND	. 2	NO	I3U
6	CALL+EXTEND	. 2	NO	I3L
7	LIMITED	. 2	NO	I4U
8	COUNT+CALL+EXTEND	. 2	NO	I4L
9	COUNT+CALL+EXTEND	. . 3	NO	I5U
10	COUNT+CALL+EXTEND	. . 3	NO	I5L
11	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I6U
12	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I6L
13	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I7U
14	CALL+EXTEND	. . . 4 . . .	NO	I7L
15	LIMITED	. . . 4 . . .	NO	I8U
16	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I8L
17	COUNT+CALL+EXTEND	1	NO	I9U
18	COUNT+CALL+EXTEND	. . 3	NO	I9L
19	COUNT+CALL+EXTEND	. 2	NO	I10U
20	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I10L
21	COUNT+CALL+EXTEND	. . . . 5 . . .	NO	J1U
22	COUNT+CALL+EXTEND	. . . . 5 . . .	NO	J1L
23	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J2U
24	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J2L
25	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J3U
26	CALL+EXTEND	. . . . . 6 . .	NO	J3L
27	LIMITED	. . . . . 6 . .	NO	J4U
28	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J4L
29	COUNT+CALL+EXTEND	. . . . . 7 .	NO	J5U
30	COUNT+CALL+EXTEND	. . . . . 7 .	NO	J5L
31	COUNT+CALL+EXTEND	 8	NO	J6U
32	COUNT+CALL+EXTEND	 8	NO	J6L
33	COUNT+CALL+EXTEND	 8	NO	J7U
34	CALL+EXTEND	 8	NO	J7L
35	LIMITED	 8	NO	J8U
36	COUNT+CALL+EXTEND	 8	NO	J8L
37	COUNT+CALL+EXTEND	. . . . 5 . . .	NO	J9U
38	COUNT+CALL+EXTEND	. . . . . 7 .	NO	J9L
39	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J10U
40	COUNT+CALL+EXTEND	 8	NO	J10L
41	PEDESTRIAN	. 2	NO	I12U
42	PEDESTRIAN	. . . 4 . . .	NO	I12L
43	PEDESTRIAN	. . . . . 6 . .	NO	I13U
44	PEDESTRIAN	 8	NO	I13L

Detector Configuration (5-2)				
Det	Delay	Extend	Recall	Port
1			10	3.2
2			10	7.2
3			10	1.1
4			10	1.5
5			10	4.5
6			10	6.2
7			10	2.1
8			10	7.4
9			10	3.4
10			10	7.6
11			10	1.3
12			10	1.7
13			10	4.7
14			10	6.4
15			10	2.3
16			10	7.8
17			10	3.6
18			10	3.8
19			10	4.1
20			10	4.2
21			10	3.1
22			10	7.1
23			10	1.2
24			10	1.6
25			10	4.6
26			10	6.3
27			10	2.2
28			10	7.3
29			10	3.3
30			10	7.5
31			10	1.4
32			10	1.8
33			10	4.8
34			10	6.5
35			10	2.4
36			10	7.7
37			10	3.5
38			10	3.7
39			10	4.3
40			10	4.4
41			10	5.1
42			10	5.3
43			10	5.2
44			10	5.4

Failure Times(5-3)	Minutes
Maximum On Time	
Fail Reset Time	

Failure Override (5-4)	
Detectors 1-8	. . . . .
Detectors 9-16	. . . . .
Detectors17-24	. . . . .
Detectors 25-32	. . . . .
Detectors 33-40	. . . . .
Detectors 41-44	. . . . .

System Detector Assignment (5-5)								
Sys Det	1	2	3	4	5	6	7	8
Det Nu								
Sys Det	9	10	11	12	13	14	15	16
Det Nu								

CIC Operation (5-6-1)	
Enable in Plans	. . . . .

CIC Values (5-6-2)	Volume	Occupancy	Demand
Smoothing	0.66	0.66	0.66
Multiplier	4.0	0.33	
Exponent	0.50	1.00	

Detector-to-Phase Assignment (5-6-3)								
Sys Det	1	2	3	4	5	6	7	8
Phase								
Sys Det	9	10	11	12	13	14	15	16
Phase								

Input File Port-Bit Assignments

332 Cabinet - For Reference Only

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
I-	3.2	1.1	4.5	2.1	3.4	1.3	4.7	2.3	3.6	4.1	6.6	5.1	5.2	6.7
	7.2	1.5	6.2	7.4	7.6	1.7	6.4	7.8	3.8	4.2	2.7	5.3	5.4	6.8
J-	3.1	1.2	4.6	2.2	3.3	1.4	4.8	2.4	3.5	4.3	2.8	5.5	5.6	2.5
	7.1	1.6	6.3	7.3	7.5	1.8	6.5	7.7	3.7	4.4	6.1	5.7	5.8	2.6

TOD SCHEDULE

Table 1 (8-2-1)		
Time	Plan	OS
0600	2	A
0900	255	A
1500	3	A
1800	1	A
2000	255	A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 2 (8-2-2)		
Time	Plan	OS
0630	1	A
0900	255	A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 3 (8-2-3)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 4 (8-2-4)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 5 (8-2-5)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 6 (8-2-6)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

WEEKDAY ASSIGNMENT

Weekday Table Assignments (8-2-7)						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	1	1	1	1	2	2

HOLIDAY TABLES

Floating Holiday Table (8-2-8)

#	Mnth	Week	DOW	Table
1			. . . . .	
2			. . . . .	
3			. . . . .	
4			. . . . .	
5			. . . . .	
6			. . . . .	
7			. . . . .	
8			. . . . .	
9			. . . . .	
10			. . . . .	
11			. . . . .	
12			. . . . .	
13			. . . . .	
14			. . . . .	
15			. . . . .	
16			. . . . .	

Fixed Holiday Table (8-2-9)

#	Mnth	Day	DOW	Table
1			. . . . .	
2			. . . . .	
3			. . . . .	
4			. . . . .	
5			. . . . .	
6			. . . . .	
7			. . . . .	
8			. . . . .	
9			. . . . .	
10			. . . . .	
11			. . . . .	
12			. . . . .	
13			. . . . .	
14			. . . . .	
15			. . . . .	
16			. . . . .	

Daylight Saving (8-1)

Enabled	YES	Month	Sunday
	Start	MAR	2nd
	End	NOV	1st

Solar Clock Data (8-4)

North Latitude	34
West Longitude	118
Local Time Zone	8

Sabbatical Clock (8-5)

Hebrew	Ped Recall
Sabbath	. . . . .
Holiday	. . . . .

TOD FUNCTIONS

TOD Functions (8-3)

#	Start	End	DOW	Action	Phases
1			. . . . .		. . . . .
2			. . . . .		. . . . .
3			. . . . .		. . . . .
4			. . . . .		. . . . .
5			. . . . .		. . . . .
6			. . . . .		. . . . .
7			. . . . .		. . . . .
8			. . . . .		. . . . .
9			. . . . .		. . . . .
10			. . . . .		. . . . .
11			. . . . .		. . . . .
12			. . . . .		. . . . .
13			. . . . .		. . . . .
14			. . . . .		. . . . .
15			. . . . .		. . . . .
16			. . . . .		. . . . .

Action Codes:

0. None
1. Permitted
2. Restricted
4. Veh Min Recall
5. Veh Max Recall
6. Ped Recall
7. Bike Recall
8. Red Lock
9. Yellow Lock
10. Force/Max Lock
11. Double Entry
12. Y-Coord C
13. Y-Coord D
14. Free
15. Flashing
16. Walk 2
17. Max Green 2
18. Max Green 3
19. Rest in Walk
20. Rest in Red
21. Free Lag Phases
22. Special Functions
23. Truck Preempt
24. Conditional Service
25. Conditional Service
26. Leading Ped
27. Traffic Actuated Max 2
41. Protected Permissive
42. Protected Permissive

Action Code = Phases added to normal setting

100+Action Code = Phases removed

200+Action Code = Phases replaced

COMMUNICATIONS

	C2 (6-1-1)	C20 (6-1-2)	C21 (6-1-3)
Address			
Baud	1200	1200	1200
Protocol	MASTER	AB3418	AB3418
Data Bits	8	8	8
Parity	NONE	NONE	NONE
Stop Bits	1	1	1
RTS On Time	20	20	20
RTS Off Time	20	20	20
Handshaking	NORMAL	NORMAL	NORMAL
Access Level	0	0	0

SOFT LOGIC

Soft Logic (6-2)

#	Data	OP	Data	OP	Data	OP	Data
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							

*Refer to User's Manual for Data and OP Codes

CALLBACK NUMBERS

Callback Numbers (6-3...3)

Line Out			
Long Distance			
Local Toll			
Delay	10	10	10
Area Code			
Phone Number			

NETWORK

Network Parameters (6-4)

Address	
Protocol	AB3418
Port	27000
Type	STATIC
Central Access	
Field Access	
ATSPM	OFF

IP Address	0	.	0	.	0	.	0
Netmask	255	.	255	.	255	.	0
Broadcast	0	.	0	.	0	.	255
Gateway	0	.	0	.	0	.	254

Access Levels:

0-Full Access
1-Status Only
2-Status, Set Pattern, Time
3-Status, Set Pattern, Time, Manual Plan
4-Reserved
5-Full Access with No Set Pattern
6-Full Access with No Set Time
7-Full Access with No Set Pattern, Manual Plan
8-Full Access with No Set Time, Pattern, Manual Plan

SPAT Network (6-5)

SPAT	1	2
Protocol	NONE	NONE
UDP Port	0	0

IP Address	0	.	0	.	0	.	0

RAILROAD PREEMPTION

RR 1

Timing (3-1-1)	
Clear 1	15
Clear 2	5
Clear 3	
Hold	
Min Gr	
Delay	
Exit	
Ped Clr	

Phase Flags (3-1-2)			Pedestrian Flags (3-1-3)			Overlap Flags (3-1-4)		
Grn Hold	Yel Flash	Red Flash	Walk	Flash DW	Solid DW	Grn Hold	Yel Flash	Red Flash
. 2 . . 5 . . .	. . . .	. . . .	. . . .	. . . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .	. . . . .
. 2 . . 5 . . .	. . . .	. . . .	. . . .	. . . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .	. . . . .
. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . . .	. . . . .	. . . . .
1 . . 4 . . 7 8	. . . .	. . . .	. . . .	. . . 4 . . . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .

Exit Parameters (3-1-5)

Phase Green	Ovrlap Green	Veh Permit/Call	Ped Permit/Call
. 2 . . . 6 . .	. . . . .	1 2 3 4 5 6 7 8	. 2 . 4 . 6 . 8

Configuration (3-1-6)

	PR	XR	Gate	Isld	APP	Sign	Sign	Max On	Latching
1								5	NO
2									

Valid Inputs: 1.x, 2.x, 3.x, 4.x, 5.x, 6.x, 7.x, 8.x x=1 to 8
Valid Outputs: 11.x, 12.x, 13.x, 14.x, 15.x, 16.x, 17.x, 18.x x=1 to 8

RR 2

Timing (3-2-1)	
Clear 1	15
Clear 2	5
Clear 3	
Hold	
Min Gr	
Delay	
Exit	
Ped Clr	

Phase Flags (3-2-2)			Pedestrian Flags (3-2-3)			Overlap Flags (3-2-4)		
Grn Hold	Yel Flash	Red Flash	Walk	Flash DW	Solid DW	Grn Hold	Yel Flash	Red Flash
. . . 4 . . 7 .	. . . .	. . . .	. . . .	. . . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .	. . . . .
. . . 4 . . 7 .	. . . .	. . . .	. . . .	. . . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .	. . . . .
. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . . .	. . . . .	. . . . .
1 2 3 . . 6 . .	. . . .	. . . .	. . . .	. 2 . . . 6 . .	. . . 4 . . . 8	. . . . .	. . . . .	. . . . .

Exit Parameters (3-2-5)

Phase Green	Ovrlap Green	Veh Permit	Ped Permit
. 2 . . . 6 . .	. . . . .	1 2 3 4 5 6 7 8	. 2 . 4 . 6 . 8

Configuration (3-2-6)

	PR	XR	Gate	Isld	APP	Sign	Sign	Max On	Latching
1								5	NO
2									

Valid Inputs: 1.x, 2.x, 3.x, 4.x, 5.x, 6.x, 7.x, 8.x x=1 to 8
Valid Outputs: 11.x, 12.x, 13.x, 14.x, 15.x, 16.x, 17.x, 18.x x=1 to 8

EMERGENCY VEHICLE PREEMPTION

EVA (3-A)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	30	30	. 2 . . 5 . . .	. . . . .

Port	Latching	Phase Termination
	NO	ADVANCE

EVB (3-B)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	30	30	. . . 4 . . 7 .	. . . . .

Port	Latching	Phase Termination
	NO	ADVANCE

EVC (3-C)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	30	30	1 . . . . 6 . .	. . . . .

Port	Latching	Phase Termination
	NO	ADVANCE

EVD (3-D)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	30	30	. . 3 8	. . . . .

Port	Latching	Phase Termination
	NO	ADVANCE

INPUTS

		7 Wire I/C (2-1-5-1)			
		Input	Port	Input	Port
Enable	NO	RR1		Free	
Max ON		RR2		D2	
Max OFF		RR3		D3	

Manual Control (2-1-5-2)	
Input	Port
Manual Advance	
Advance Enable	

Cabinet Status (2-1-5-3)	
Input	Port
Flash Bus	
Door Ajar	
Flash Sense	6.7
Stop Time	6.8

Special Function (2-1-5-4)	
Input	Port
1	
2	
3	
4	

Battery Backup (2-1-5-5)	
Port	Operation
	NORMAL

Y-Coordination (2-1-5-6	
Port C	Port D

OUTPUTS

Loadswitch Assignments (2-1-6)							+
A	1	2	22	3	4	24	9
B	5	6	26	7	8	28	10
X	13	14	0	11	12	0	0

Loadswitch Codes:
- 0 Unused (no output)
- 1-8 Vehicle 1-8
- 9-14 Overlap A-F
- 21-28 Ped 1-8
- 41-47 Special Functions
- 41 Protected Permissive Flashing Phase 1
- 43 Protected Permissive Flashing Phase 3
- 45 Protected Permissive Flashing Phase 5
- 47 Protected Permissive Flashing Phase 7
- 51-57 Special Functions
- 71-72 Seven Wire I/C

+ middle output of loadswitches 3 and 6 Channel 9 and 10

INTERVAL CONTROL

Interval Control (3-3-1)	
	Time
Step 1	
Step 2	
Step 3	
Step 4	
Step 5	
Step 6	
Step 7	
Step 8	

Phase Control (3-3-2)		
Hold	Force	Advance
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....

Phase Recall (3-3-3)		
Veh Call	Ped Call	Int Call
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....

Phase Permitted (3-3-4)		
Phs Permit	Ped Permit	Ovrlap Permit
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....

Configuration (3-3-5)			
Input	Port	Delay	HRI Cross
1			
2			

HRI

HRI Configuration (3-4)	
RailRoad	51
Line	
Group	

	WAYSIDE	ATC
Subnode		
Device		

TRANSIT PRIORITY

Local Plans (3-E) 1...9 11...19		Early Green	Green Extend	Inhibit Cycles	Phase 1 Minimum	Phase 2 Minimum	Phase 3 Minimum	Phase 4 Minimum	Phase 5 Minimum	Phase 6 Minimum	Phase 7 Minimum	Phase 8 Minimum
Plan 1	Green Factor											
Plan 2	Green Factor											
Plan 3	Green Factor											
Plan 4	Green Factor											
Plan 5	Green Factor											
Plan 6	Green Factor											
Plan 7	Green Factor											
Plan 8	Green Factor											
Plan 9	Green Factor											
Plan 11	Green Factor											
Plan 12	Green Factor											
Plan 13	Green Factor											
Plan 14	Green Factor											
Plan 15	Green Factor											
Plan 16	Green Factor											
Plan 17	Green Factor											
Plan 18	Green Factor											
Plan 19	Green Factor											

Transit Priority Configuration (3-E-A)				Indicator Output	
Enable in Plans		Input	Type	Stop	Go
Plan 1-9	. . . . .	0.0	NONE	0	0
Plan 11-19	. . . . .	0.0	NONE	0	0

Queue Jump (3-E-B)	
Grn Hold	Hold Phase
	. . . . .
	. . . . .

Free Plans (3-E-E)	
Max Grn Hold	Hold Phase
	. . . . .

Access Utilities (9-5)	
Password	***
Timeout	30

YELLOW YIELD COORDINATION

					Force-Offs											
Y-Coord Plans (7-C,D)	Long Grn	No Grn	Offset	Perm	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-	Coord	Lag	Min Recall	Restricted
Plan C													. 2 . . . 6 . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .
Plan D													. 2 . . . 6 . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .

TRUCK PRIORITY

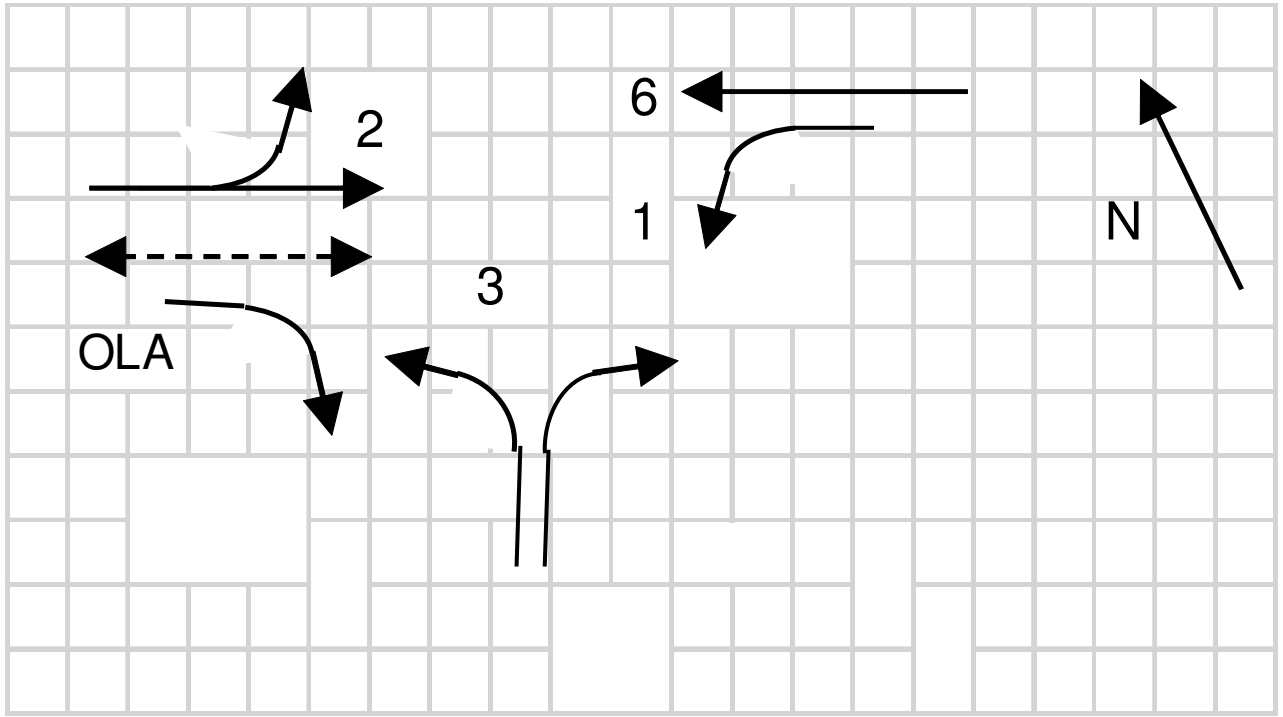
Truck Priority (3-F)	Passage	CarryOver	Clearance	Next Priority	Phase Green	Det 2 Port	Det 3 Port	Det 4 Port	Sign Output	Slave Input	Slave Output
					. . . . .	0.0	0.0	0.0	0	0.0	0

Location: R405 SB @ Carson St
System:
Master At: NB Ramp
District: 07
I/C: SB-NB Ramp
Designed By: HD
Installed By: HD
Service Info:

Timing Change:	Date Start:	Date End:	Designed:	Installed:
	10/29/2020		10/15/2020	10/29/2020

			FLASH
PHASE	1)	WBLT Carson St	[ ]
	2)	EB Carson St (2 ped)	[ ]
	3)	SB off Ramp	[ ]
	4)		[ ]
	5)		[ ]
	6)	WB Carson St	[ ]
	7)		[ ]
	8)		[ ]
OVERLAP	A)		[ ]
	B)		[ ]
	C)		[ ]
	D)		[ ]
	E)		[ ]
	F)		[ ]

Intersection Layout



Comments and Notes:
* To prevent yellow trap EBLT (phase 1 Place a call to phase 3 by 2-1-2-1)
* OLA (2 color) EBRT on Ramp is on with phase 3

RAM Checksum

Page 2: AA7B	Page 8: 5996
Page 3: 0F2D	Page 9: D2FD
Page 4: 6A0D	Page 10: 22C1
Page 5: 191A	Page 11: C838
Page 6: 191A	Page 12: 1FB3
Page 7: 12D9	Page 13: 86F7

Post Mile: 10.54

Printed: 12/15/2021

CONFIGURATION PHASE FLAGS

Cabinet (9-3)
332
Configuration
CALTRANS

Phases (2-1-1-1)	
Permitted	1 2 3 . . 6 . .
Restricted	. . . . .

Phase Recalls (2-1-1-2)	
Vehicle Min	. 2 . . . 6 . .
Vehicle Max	. . . . .
Pedestrian	. . . . .
Bicycle	. . . . .

Phase Locks (2-1-1-3)	
Red	1 . . . . .
Yellow	. 2 . . . 6 . .
Force/Max	. . . . .

Phase Features (2-1-1-4)	
Double Entry	. . . . .
Rest In Walk	. . . . .
Rest In Red	. . . . .
Walk 2	. . . . .
Max Green 2	. . . . .
Max Green 3	. . . . .

Startup (2-1-1-5)	
First Green Phases	. 2 . . . 6 . .
Yellow Start Phases	. . 3 . . . . .
Vehicle Calls	1 2 3 . . 6 . .
Pedestrian Calls	. 2 . . . . .
Yellow Start Overlaps	. . . . .
Startup All-Red	6.0

Call To Phase (2-1-2-1)		Omit On Green	
1	. . 3	1	. . . . .
2	. . . . .	2	. . . . .
3	. . . . .	3	. . . . .
4	. . . . .	4	. . . . .
5	. . . . .	5	. . . . .
6	. . . . .	6	. . . . .
7	. . . . .	7	. . . . .
8	. . . . .	8	. . . . .

Flashing Colors (2-1-2-2)	
Yellow Flash Phases	. . . . .
Yellow Flash Overlaps	. . . . .
Flash In Red Phases	. . . . .
Flash In Red Overlaps	. . . . .

Special Operation (2-1-2-3)	
Single Exit Phase	. . . . .
Driveway Signal Phases	. . . . .
Driveway Signal Overlaps	. . . . .
Leading Ped Phases	. . . . .

Protected Permissive (2-1-2-4)	
Protected Permissive	. . . . .

Pedestrian (2-1-3)	
P1	. . . . .
P2	. 2 . . . . .
P3	. . . . .
P4	. . . 4 . . . .
P5	. . . . .
P6	. . . . . 6 . .
P7	. . . . .
P8	 8

Overlap (2-1-4)				
Overlap	Parent	Omit	No Start	Not
A	. . 3	. . . . .	. . . . .	. . . . .
B	. . . . .	. . . . .	. . . . .	. . . . .
C	. . . . .	. . . . .	. . . . .	. . . . .
D	. . . . .	. . . . .	. . . . .	. . . . .
E	. . . . .	. . . . .	. . . . .	. . . . .
F	. . . . .	. . . . .	. . . . .	. . . . .

PHASE TIMING

Phase (2-2)	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
--- Walk 1 ---	0	7	0	10	0	0	0	10
Flash Don't Walk	0	30	0	10	0	0	0	10
Minimum Green	10	10	10	10	10	10	10	10
Det Limit	0	0	0	10	10	0	10	10
Max Initial	0	20	0	10	10	20	10	10
Max Green 1	20	40	25	50	50	40	50	50
Max Green 2	20	40	25	50	50	40	50	50
Max Green 3	20	40	25	50	50	40	50	50
Extension	2.5	4.0	3.0	5.0	5.0	4.0	5.0	5.0
Maximum Gap	2.5	5.0	3.0	5.0	5.0	5.0	5.0	5.0
Minimum Gap	2.5	3.0	3.0	5.0	5.0	3.0	5.0	5.0
Add Per Vehicle	0.0	2.0	0.0	1.0	1.0	2.0	1.0	1.0
Reduce Gap By	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0
Reduce Every	0.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0
Yellow	3.7	4.4	4.1	5.0	5.0	4.4	5.0	5.0
All-Red	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Ped/Bike (2-3)	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
--- Walk 2 ---	0	0	0	0	0	0	0	0
Delay/Early Walk	0	0	0	0	0	0	0	0
Solid Don't Walk	0	0	0	0	0	0	0	0
Bike Green	0	0	0	0	0	0	0	0
Bike All-Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

OVERLAP TIMING

Overlap (2-4)	A	B	C	D	E	F
Green	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	5.0	5.0	5.0	5.0	5.0
Red	0.0	0.0	0.0	0.0	0.0	0.0

Red Revert

Red Revert (2-5)	
Time	5.0
All-Red Sec/Min (2-6)	
All-Red Sec/Min:	OFF

Max 2 Extension

Max/Gap Out (2-7)	
Max Cnt	0
Gap Cnt	0

Local Plan 1...9 (7-1) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 1	Green Factor	90		.....	9			16	37	20			58		
Plan 2	Green Factor	90		.....	9			16	37	20			58		
Plan 3	Green Factor	90		.....	9			16	37	20			58		
Plan 4	Green Factor			.....											
Plan 5	Green Factor			.....											
Plan 6	Green Factor			.....											
Plan 7	Green Factor			.....											
Plan 8	Green Factor			.....											
Plan 9	Green Factor			.....											

Master Timer Sync (7-A)	
Enable in Plans	
1-9	.....
11-19	.....
21-29	.....

Master Sub Master	
Input	
Output	

FREE PLAN PHASE FLAGS

(7-E) Free	
Lag	Omit
.2.4.6.8	.....
Veh Min	Veh Max
.2...6..	.....
Ped	Bike
.....	.....
Cond	Cond Grn
.....	10

Local Plan 1...9 (7-1) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 1	.2.4.6.8	.2...6..	.....	.....	.....	.....	.2.....	.....
Plan 2	.2.4.6.8	.2...6..	.....	.....	.....	.....	.2.....	.....
Plan 3	.2.4.6.8	.2...6..	.....	.....	.....	.....	.2.....	.....
Plan 4	.....	.....	.....	.....	.....	.....	.....	.....
Plan 5	.....	.....	.....	.....	.....	.....	.....	.....
Plan 6	.....	.....	.....	.....	.....	.....	.....	.....
Plan 7	.....	.....	.....	.....	.....	.....	.....	.....
Plan 8	.....	.....	.....	.....	.....	.....	.....	.....
Plan 9	.....	.....	.....	.....	.....	.....	.....	.....

MANUAL COMMANDS

Manual Plan (4-1)	
Plan	OffSet
	A

Plan: 1-29
254 = Flash
255 = Free
Offset A, B, or C

Special Function Override (4-2)			
#	Control	#	Control
1	NORMAL	3	NORMAL
2	NORMAL	4	NORMAL

Detector Reset	(4-3)
Local Manual (4-4)	OFF

Local Plan 11...19 (7-2) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 11	Green Factor			.....											
Plan 12	Green Factor			.....											
Plan 13	Green Factor			.....											
Plan 14	Green Factor			.....											
Plan 15	Green Factor			.....											
Plan 16	Green Factor			.....											
Plan 17	Green Factor			.....											
Plan 18	Green Factor			.....											
Plan 19	Green Factor			.....											

Local Plan 11...19 (7-2) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 11	.....	.....	.....	.....	.....	.....	.....	.....
Plan 12	.....	.....	.....	.....	.....	.....	.....	.....
Plan 13	.....	.....	.....	.....	.....	.....	.....	.....
Plan 14	.....	.....	.....	.....	.....	.....	.....	.....
Plan 15	.....	.....	.....	.....	.....	.....	.....	.....
Plan 16	.....	.....	.....	.....	.....	.....	.....	.....
Plan 17	.....	.....	.....	.....	.....	.....	.....	.....
Plan 18	.....	.....	.....	.....	.....	.....	.....	.....
Plan 19	.....	.....	.....	.....	.....	.....	.....	.....

Local Plan 21...29 (7-3) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 21	Green Factor			.....											
Plan 22	Green Factor			.....											
Plan 23	Green Factor			.....											
Plan 24	Green Factor			.....											
Plan 25	Green Factor			.....											
Plan 26	Green Factor			.....											
Plan 27	Green Factor			.....											
Plan 28	Green Factor			.....											
Plan 29	Green Factor			.....											

Local Plan 21...29 (7-3) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 21	.....	.....	.....	.....	.....	.....	.....	.....
Plan 22	.....	.....	.....	.....	.....	.....	.....	.....
Plan 23	.....	.....	.....	.....	.....	.....	.....	.....
Plan 24	.....	.....	.....	.....	.....	.....	.....	.....
Plan 25	.....	.....	.....	.....	.....	.....	.....	.....
Plan 26	.....	.....	.....	.....	.....	.....	.....	.....
Plan 27	.....	.....	.....	.....	.....	.....	.....	.....
Plan 28	.....	.....	.....	.....	.....	.....	.....	.....
Plan 29	.....	.....	.....	.....	.....	.....	.....	.....

DETECTORS

Detector Attributes (5-1)				Slot
Det	Type	Phases	Lock	
1	COUNT+CALL+EXTEND	1	NO	I1U
2	COUNT+CALL+EXTEND	1	NO	I1L
3	COUNT+CALL+EXTEND	. 2	NO	I2U
4	COUNT+CALL+EXTEND	. 2	NO	I2L
5	COUNT+CALL+EXTEND	. 2	NO	I3U
6	CALL+EXTEND	. 2	NO	I3L
7	LIMITED	. 2	NO	I4U
8	COUNT+CALL+EXTEND	. 2	NO	I4L
9	COUNT+CALL+EXTEND	. . 3	NO	I5U
10	COUNT+CALL+EXTEND	. . 3	NO	I5L
11	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I6U
12	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I6L
13	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I7U
14	CALL+EXTEND	. . . 4 . . .	NO	I7L
15	LIMITED	. . . 4 . . .	NO	I8U
16	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I8L
17	COUNT+CALL+EXTEND	1	NO	I9U
18	COUNT+CALL+EXTEND	. . 3	NO	I9L
19	COUNT+CALL+EXTEND	. 2	NO	I10U
20	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I10L
21	COUNT+CALL+EXTEND	. . . . 5 . . .	NO	J1U
22	COUNT+CALL+EXTEND	. . . . 5 . . .	NO	J1L
23	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J2U
24	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J2L
25	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J3U
26	CALL+EXTEND	. . . . . 6 . .	NO	J3L
27	LIMITED	. . . . . 6 . .	NO	J4U
28	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J4L
29	COUNT+CALL+EXTEND	. . . . . 7 .	NO	J5U
30	COUNT+CALL+EXTEND	. . . . . 7 .	NO	J5L
31	COUNT+CALL+EXTEND	 8	NO	J6U
32	COUNT+CALL+EXTEND	 8	NO	J6L
33	COUNT+CALL+EXTEND	 8	NO	J7U
34	CALL+EXTEND	 8	NO	J7L
35	LIMITED	 8	NO	J8U
36	COUNT+CALL+EXTEND	 8	NO	J8L
37	COUNT+CALL+EXTEND	. . . . 5 . . .	NO	J9U
38	COUNT+CALL+EXTEND	. . . . . 7 .	NO	J9L
39	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J10U
40	COUNT+CALL+EXTEND	 8	NO	J10L
41	PEDESTRIAN	. 2	NO	I12U
42	PEDESTRIAN	. . . 4 . . .	NO	I12L
43	PEDESTRIAN	. . . . . 6 . .	NO	I13U
44	PEDESTRIAN	 8	NO	I13L

Detector Configuration (5-2)				
Det	Delay	Extend	Recall	Port
1			10	3.2
2			10	7.2
3			10	1.1
4			10	1.5
5			10	4.5
6			10	6.2
7			10	2.1
8			10	7.4
9			10	3.4
10			10	7.6
11			10	1.3
12			10	1.7
13			10	4.7
14			10	6.4
15			10	2.3
16			10	7.8
17			10	3.6
18			10	3.8
19			10	4.1
20			10	4.2
21			10	3.1
22			10	7.1
23			10	1.2
24			10	1.6
25			10	4.6
26			10	6.3
27			10	2.2
28			10	7.3
29			10	3.3
30			10	7.5
31			10	1.4
32			10	1.8
33			10	4.8
34			10	6.5
35			10	2.4
36			10	7.7
37			10	3.5
38			10	3.7
39			10	4.3
40			10	4.4
41			10	5.1
42			10	5.3
43			10	5.2
44			10	5.4

Failure Times(5-3)	Minutes
Maximum On Time	
Fail Reset Time	

Failure Override (5-4)	
Detectors 1-8	. . . . .
Detectors 9-16	. . . . .
Detectors17-24	. . . . .
Detectors 25-32	. . . . .
Detectors 33-40	. . . . .
Detectors 41-44	. . . . .

System Detector Assignment (5-5)								
Sys Det	1	2	3	4	5	6	7	8
Det Nu								
Sys Det	9	10	11	12	13	14	15	16
Det Nu								

CIC Operation (5-6-1)	
Enable in Plans	. . . . .

CIC Values (5-6-2)	Volume	Occupancy	Demand
Smoothing	0.66	0.66	0.66
Multiplier	4.0	0.33	
Exponent	0.50	1.00	

Detector-to-Phase Assignment (5-6-3)								
Sys Det	1	2	3	4	5	6	7	8
Phase								
Sys Det	9	10	11	12	13	14	15	16
Phase								

Input File Port-Bit Assignments

332 Cabinet - For Reference Only

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
I-	3.2	1.1	4.5	2.1	3.4	1.3	4.7	2.3	3.6	4.1	6.6	5.1	5.2	6.7
	7.2	1.5	6.2	7.4	7.6	1.7	6.4	7.8	3.8	4.2	2.7	5.3	5.4	6.8
J-	3.1	1.2	4.6	2.2	3.3	1.4	4.8	2.4	3.5	4.3	2.8	5.5	5.6	2.5
	7.1	1.6	6.3	7.3	7.5	1.8	6.5	7.7	3.7	4.4	6.1	5.7	5.8	2.6

TOD SCHEDULE

Table 1 (8-2-1)		
Time	Plan	OS
0600	2	A
0900	255	A
1500	3	A
1800	1	A
2000	255	A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 2 (8-2-2)		
Time	Plan	OS
0630	1	A
0900	255	A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 3 (8-2-3)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 4 (8-2-4)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 5 (8-2-5)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 6 (8-2-6)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

WEEKDAY ASSIGNMENT

Weekday Table Assignments (8-2-7)						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	1	1	1	1	2	2

HOLIDAY TABLES

Floating Holiday Table (8-2-8)

#	Mnth	Week	DOW	Table
1			. . . . .	
2			. . . . .	
3			. . . . .	
4			. . . . .	
5			. . . . .	
6			. . . . .	
7			. . . . .	
8			. . . . .	
9			. . . . .	
10			. . . . .	
11			. . . . .	
12			. . . . .	
13			. . . . .	
14			. . . . .	
15			. . . . .	
16			. . . . .	

Fixed Holiday Table (8-2-9)

#	Mnth	Day	DOW	Table
1			. . . . .	
2			. . . . .	
3			. . . . .	
4			. . . . .	
5			. . . . .	
6			. . . . .	
7			. . . . .	
8			. . . . .	
9			. . . . .	
10			. . . . .	
11			. . . . .	
12			. . . . .	
13			. . . . .	
14			. . . . .	
15			. . . . .	
16			. . . . .	

Daylight Saving (8-1)

Enabled	YES	Month	Sunday
	Start	MAR	2nd
	End	NOV	1st

Solar Clock Data (8-4)

North Latitude	34
West Longitude	118
Local Time Zone	8

Sabbatical Clock (8-5)

Hebrew	Ped Recall
Sabbath	. . . . .
Holiday	. . . . .

TOD FUNCTIONS

TOD Functions (8-3)

#	Start	End	DOW	Action	Phases
1			. . . . .		. . . . .
2			. . . . .		. . . . .
3			. . . . .		. . . . .
4			. . . . .		. . . . .
5			. . . . .		. . . . .
6			. . . . .		. . . . .
7			. . . . .		. . . . .
8			. . . . .		. . . . .
9			. . . . .		. . . . .
10			. . . . .		. . . . .
11			. . . . .		. . . . .
12			. . . . .		. . . . .
13			. . . . .		. . . . .
14			. . . . .		. . . . .
15			. . . . .		. . . . .
16			. . . . .		. . . . .

Action Codes:

0. None
1. Permitted
2. Restricted
4. Veh Min Recall
5. Veh Max Recall
6. Ped Recall
7. Bike Recall
8. Red Lock
9. Yellow Lock
10. Force/Max Lock
11. Double Entry
12. Y-Coord C
13. Y-Coord D
14. Free
15. Flashing
16. Walk 2
17. Max Green 2
18. Max Green 3
19. Rest in Walk
20. Rest in Red
21. Free Lag Phases
22. Special Functions
23. Truck Preempt
24. Conditional Service
25. Conditional Service
26. Leading Ped
27. Traffic Actuated Max 2
41. Protected Permissive
42. Protected Permissive

Action Code = Phases added to normal setting

100+Action Code = Phases removed

200+Action Code = Phases replaced

COMMUNICATIONS

	C2 (6-1-1)	C20 (6-1-2)	C21 (6-1-3)
Address	1		
Baud	1200	1200	1200
Protocol	AB3418	AB3418	AB3418
Data Bits	8	8	8
Parity	NONE	NONE	NONE
Stop Bits	1	1	1
RTS On Time	20	20	20
RTS Off Time	20	20	20
Handshaking	NORMAL	NORMAL	NORMAL
Access Level	0	0	0

CALLBACK NUMBERS

Callback Numbers (6-3...3)

Line Out			
Long Distance			
Local Toll			
Delay	10	10	10
Area Code			
Phone Number			

SOFT LOGIC

Soft Logic (6-2)

#	Data	OP	Data	OP	Data	OP	Data
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							

*Refer to User's Manual for Data and OP Codes

NETWORK

Network Parameters (6-4)

Address	
Protocol	AB3418
Port	27000
Type	STATIC
Central Access	
Field Access	
ATSPM	OFF

IP Address	0	.	0	.	0	.	0
Netmask	255	.	255	.	255	.	0
Broadcast	0	.	0	.	0	.	255
Gateway	0	.	0	.	0	.	254

Access Levels:

0-Full Access
1-Status Only
2-Status, Set Pattern, Time
3-Status, Set Pattern, Time, Manual Plan
4-Reserved
5-Full Access with No Set Pattern
6-Full Access with No Set Time
7-Full Access with No Set Pattern, Manual Plan
8-Full Access with No Set Time, Pattern, Manual Plan

SPAT Network (6-5)

SPAT	1	2
Protocol	NONE	NONE
UDP Port	0	0

IP Address	0	.	0	.	0	.	0

RAILROAD PREEMPTION

RR 1

Timing (3-1-1)	
Clear 1	15
Clear 2	5
Clear 3	
Hold	
Min Gr	
Delay	
Exit	
Ped Clr	

Phase Flags (3-1-2)			Pedestrian Flags (3-1-3)			Overlap Flags (3-1-4)		
Grn Hold	Yel Flash	Red Flash	Walk	Flash DW	Solid DW	Grn Hold	Yel Flash	Red Flash
. 2 . . 5 . . .	. . . .	. . . .	. . . .	. . . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .	. . . . .
. 2 . . 5 . . .	. . . .	. . . .	. . . .	. . . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .	. . . . .
. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . . .	. . . . .	. . . . .
1 . . 4 . . 7 8	. . . .	. . . .	. . . .	. . . 4 . . . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .

Exit Parameters (3-1-5)

Phase Green	Ovrlap Green	Veh Permit/Call	Ped Permit/Call
. 2 . . . 6 . .	. . . . .	1 2 3 4 5 6 7 8	. 2 . 4 . 6 . 8

Configuration (3-1-6)

	PR	XR	Gate	Isld	APP	Sign	Sign	Max On	Latching
1								5	NO
2									

Valid Inputs: 1.x, 2.x, 3.x, 4.x, 5.x, 6.x, 7.x, 8.x x=1 to 8
Valid Outputs: 11.x, 12.x, 13.x, 14.x, 15.x, 16.x, 17.x, 18.x x=1 to 8

RR 2

Timing (3-2-1)	
Clear 1	15
Clear 2	5
Clear 3	
Hold	
Min Gr	
Delay	
Exit	
Ped Clr	

Phase Flags (3-2-2)			Pedestrian Flags (3-2-3)			Overlap Flags (3-2-4)		
Grn Hold	Yel Flash	Red Flash	Walk	Flash DW	Solid DW	Grn Hold	Yel Flash	Red Flash
. . . 4 . . 7 .	. . . .	. . . .	. . . .	. . . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .	. . . . .
. . . 4 . . 7 .	. . . .	. . . .	. . . .	. . . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .	. . . . .
. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . . .	. . . . .	. . . . .
1 2 3 . . 6 . .	. . . .	. . . .	. . . .	. 2 . . . 6 . .	. . . 4 . . . 8	. . . . .	. . . . .	. . . . .

Exit Parameters (3-2-5)

Phase Green	Ovrlap Green	Veh Permit	Ped Permit
. 2 . . . 6 . .	. . . . .	1 2 3 4 5 6 7 8	. 2 . 4 . 6 . 8

Configuration (3-2-6)

	PR	XR	Gate	Isld	APP	Sign	Sign	Max On	Latching
1								5	NO
2									

Valid Inputs: 1.x, 2.x, 3.x, 4.x, 5.x, 6.x, 7.x, 8.x x=1 to 8
Valid Outputs: 11.x, 12.x, 13.x, 14.x, 15.x, 16.x, 17.x, 18.x x=1 to 8

EMERGENCY VEHICLE PREEMPTION

EVA (3-A)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	30	30	. 2 . . 5 . . .	. . . . .

Port	Latching	Phase Termination
	NO	ADVANCE

EVB (3-B)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	30	30	. . . 4 . . 7 .	. . . . .

Port	Latching	Phase Termination
	NO	ADVANCE

EVC (3-C)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	30	30	1 . . . . 6 . .	. . . . .

Port	Latching	Phase Termination
	NO	ADVANCE

EVD (3-D)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	30	30	. . 3 8	. . . . .

Port	Latching	Phase Termination
	NO	ADVANCE

INPUTS

		7 Wire I/C (2-1-5-1)			
		Input	Port	Input	Port
Enable	NO	RR1		Free	
Max ON		RR2		D2	
Max OFF		RR3		D3	

Manual Control (2-1-5-2)	
Input	Port
Manual Advance	
Advance Enable	

Cabinet Status (2-1-5-3)	
Input	Port
Flash Bus	
Door Ajar	
Flash Sense	6.7
Stop Time	6.8

Special Function (2-1-5-4)	
Input	Port
1	
2	
3	
4	

Battery Backup (2-1-5-5)	
Port	Operation
	NORMAL

Y-Coordination (2-1-5-6	
Port C	Port D

OUTPUTS

Loadswitch Assignments (2-1-6)							+
A	1	2	22	3	4	24	9
B	5	6	26	7	8	28	10
X	13	14	0	11	12	0	0

Loadswitch Codes:
- 0 Unused (no output)
- 1-8 Vehicle 1-8
- 9-14 Overlap A-F
- 21-28 Ped 1-8
- 41-47 Special Functions
- 41 Protected Permissive Flashing Phase 1
- 43 Protected Permissive Flashing Phase 3
- 45 Protected Permissive Flashing Phase 5
- 47 Protected Permissive Flashing Phase 7
- 51-57 Special Functions
- 71-72 Seven Wire I/C

+ middle output of loadswitches 3 and 6 Channel 9 and 10

INTERVAL CONTROL

Interval Control (3-3-1)	
	Time
Step 1	
Step 2	
Step 3	
Step 4	
Step 5	
Step 6	
Step 7	
Step 8	

Phase Control (3-3-2)		
Hold	Force	Advance
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....

Phase Recall (3-3-3)		
Veh Call	Ped Call	Int Call
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....

Phase Permitted (3-3-4)		
Phs Permit	Ped Permit	Ovrlap Permit
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....

Configuration (3-3-5)			
Input	Port	Delay	HRI Cross
1			
2			

HRI

HRI Configuration (3-4)	
RailRoad	51
Line	
Group	

	WAYSIDE	ATC
Subnode		
Device		

TRANSIT PRIORITY

Local Plans (3-E) 1...9 11...19		Early Green	Green Extend	Inhibit Cycles	Phase 1 Minimum	Phase 2 Minimum	Phase 3 Minimum	Phase 4 Minimum	Phase 5 Minimum	Phase 6 Minimum	Phase 7 Minimum	Phase 8 Minimum
Plan 1	Green Factor											
Plan 2	Green Factor											
Plan 3	Green Factor											
Plan 4	Green Factor											
Plan 5	Green Factor											
Plan 6	Green Factor											
Plan 7	Green Factor											
Plan 8	Green Factor											
Plan 9	Green Factor											
Plan 11	Green Factor											
Plan 12	Green Factor											
Plan 13	Green Factor											
Plan 14	Green Factor											
Plan 15	Green Factor											
Plan 16	Green Factor											
Plan 17	Green Factor											
Plan 18	Green Factor											
Plan 19	Green Factor											

Transit Priority Configuration (3-E-A)				Indicator Output	
Enable in Plans		Input	Type	Stop	Go
Plan 1-9	. . . . .	0.0	NONE	0	0
Plan 11-19	. . . . .	0.0	NONE	0	0

Queue Jump (3-E-B)	
Grn Hold	Hold Phase
	. . . . .
	. . . . .

Free Plans (3-E-E)	
Max Grn Hold	Hold Phase
	. . . . .

Access Utilities (9-5)	
Password	***
Timeout	30

YELLOW YIELD COORDINATION

					Force-Offs											
Y-Coord Plans (7-C,D)	Long Grn	No Grn	Offset	Perm	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-	Coord	Lag	Min Recall	Restricted
Plan C													. 2 . . . 6 . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .
Plan D													. 2 . . . 6 . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .

TRUCK PRIORITY

Truck Priority (3-F)	Passage	CarryOver	Clearance	Next Priority	Phase Green	Det 2 Port	Det 3 Port	Det 4 Port	Sign Output	Slave Input	Slave Output
					. . . . .	0.0	0.0	0.0	0	0.0	0

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
TRAFFIC AND LIGHTING DIVISION
TRAFFIC SIGNAL TIMING

ASC/2

PROGRAM REFERENCE CARD

INTERSECTION: Carson St. @ Wilmington Ave. Date Prepared: 8-11-10 HCH By: PMP

T.S. No.: 4028 Date Implemented: _____ By: _____

1. CONFIGURATION SUBMENU

1. CONTROLLER SEQUENCE

PRIORITY	1	2	3	4	5	6	7	8	9	10	11	12
RING 1	1	2	3	4								
RING 2	5	6	7	8								
CG (CONCURRENT GROUPS)		X		X								

2. PHASES IN USE

	PHASE NUMBER											
	1	2	3	4	5	6	7	8	9	10	11	12
PHASES IN USE	X	X	X	X	X	X	X	X				
EXCLUSIVE PED												

3. PHASE TO LOAD SWITCH (MMU) ASSIGNMENT

LOAD SWITCH (MMU)	SIGNAL DRIVER GROUP		LOAD SWITCH (MMU)	SIGNAL DRIVER GROUP	
CHANNEL	PHASE/OVLP	PED	CHANNEL	PHASE/OVLP	PED
1	1		9	2	X
2	2		10	4	X
3	3		11	6	X
4	4		12	8	X
5	5		13		
6	6		14		
7	7		15		
8	8		16		

4. SDLC OPTIONS/ENABLES

	BIU NUMBER							
	1	2	3	4	5	6	7	8
TERM & FACIL								
DETECTOR RACK								
TYPE 2 RUNS AS TYPE 1								
MMU DISABLE								X
DIAGNOSTIC ENABLE (TEST FIXTURE)								
PEER TO PEER ENABLE								

PEER TO PEER ADDRESS:									
1)		2)		3)		4)		5)	
6)		7)		8)		9)		10)	

5. PORT 2 CONFIGURATION

PORT 2 PROTOCOL	
PORT 2 ENABLE	
AB3418 ADDRESS	
AB3418 GROUP ADDRESS	
AB3418 RESPONSE DELAY	
AB3418 SINGLE FLAG ENABLE	
AB3418 DROP-OUT TIME	
AB3418 TOD SF SELECT	
DATA RATE (BPS)	
DATA, PARITY, STOP	

6. PORT 3 CONFIGURATION

PORT 3 PROTOCOL	
PORT 3 ENABLE	
TELEMETRY ADDRESS	
SYSTEM DETECTOR 9-16 ADDRESS	
TELEMETRY RESPONSE DELAY	
AB3418 ADDRESS	
AB3418 GROUP ADDRESS	
AB3418 RESPONSE DELAY	
AB3418 SINGLE FLAG ENABLE	
AB3418 DROP-OUT TIME	
AB3418 TOD SF SELECT	
ADDITIONAL SCREEN(S)	
DUPLEX -- HALF OR FULL	
MODEM DATA RATE (BPS)	
DATA, PARITY, STOP	

LOS ANGELES COUNTY
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T.S. No.: 4028 Date Implemented: _____ By: _____

1. CONFIGURATION SUBMENU (Continued)

7. ENABLE EVENT LOGS

CRITICAL RFE'S (MMU/TF)	
NON-CRITICAL RFE'S(DET/TEST)	
DETECTOR ERRORS	
COORDINATION ERRORS	
MMU FLASH FAULTS	
LOCAL FLASH FAULTS	
PREEMPT	
POWER ON/OFF	
LOW BATTERY	
SPARE	
ALARM 1	
ALARM 2	
ALARM 3	
ALARM 4	
ALARM 5	
ALARM 6	
ALARM 7	
ALARM 8	
ALARM 9	
ALARM 10	
ALARM 11	
ALARM 12	
ALARM 13	
ALARM 14	
ALARM 15	
ALARM 16	

8. OPTIONS

SUPERVISOR ACCESS CODE	
DATA CHANGE ACCESS CODE	
KEY CLICK ENABLE	
BACKLIGHT ENABLE	

9. MMU PROGRAM CAN SERVE WITH

PHASE	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
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TRAFFIC SIGNAL TIMING

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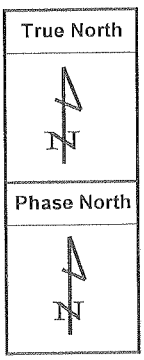
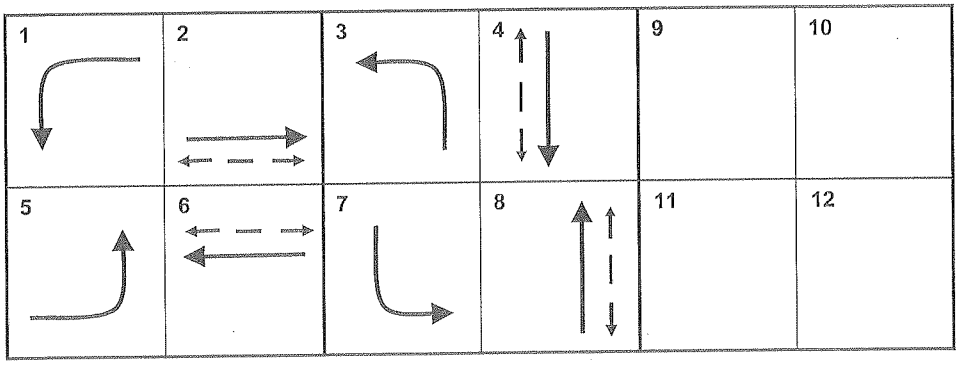
2. CONTROLLER SUBMENU

1. CONTROLLER TIMING DATA

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MIN GREEN	4	6	4	6	4	6	4	6				
BIKE GREEN	0	0	0	0	0	0	0	0				
CS MIN GREEN	0	0	0	0	0	0	0	0				
WALK	0	7	0	7	0	7	0	7				
PED CLEAR	0	19	0	19	0	18	0	18				
VEH EXT	1.5	4.0	1.5	4.0	1.5	4.0	1.5	4.0				
VEH EXT 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
MAX EXT	0	0	0	0	0	0	0	0				
MAX 1	20	50	20	50	20	50	20	50				
MAX 2	20	130	20	50	20	130	20	50				
MAX 3	0	0	0	0	0	0	0	0				
DET MAX	0	0	0	0	0	0	0	0				
YELLOW	3.0	4.5	3.0	4.5	3.0	4.5	3.0	4.5				
RED CLEAR	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0				
RED REVERT	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0				
ACT B4	0	0	0	0	0	0	0	0				
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
MAX INITIAL	0	0	0	0	0	0	0	0				
TIME B4 REDUCTION	0	15	0	15	0	15	0	15				
CARS WT	0	255	0	255	0	255	0	255				
TIME TO REDUCE	0	15	0	15	0	15	0	15				
MIN GAP	1.5	3.0	1.5	3.0	1.5	3.0	1.5	3.0				





COMMENTS:

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
TRAFFIC AND LIGHTING DIVISION
TRAFFIC SIGNAL TIMING

ASC/2

PROGRAM REFERENCE CARD

INTERSECTION: Carson St. @ Wilmington Ave. Date Prepared: 8-11-10 HcH By: PMP

T.S. No.: 4028 Date Implemented: _____ By: _____

2. CONTROLLER SUBMENU (Continued)

2. PHASE OVERLAP ASSIGNMENTS

	OVERLAP CONSISTS OF PHASES:											
OVLP PHASE	1	2	3	4	5	6	7	8	9	10	11	12
1	X											
2		X										
3			X									
4				X								
5					X							
6						X						
7							X					
8								X				
9									X			
10										X		
11											X	
12												X

3. PED TIMING CARRYOVER

PHASE	CARRYOVER PHASE	PHASE	CARRYOVER PHASE
1		7	
2		8	
3		9	
4		10	
5		11	
6		12	

4. CONTROLLER RECALL DATA

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
LOCKING MEMORY		X		X		X		X				
VEH RECALL		X				X						
PED RECALL												
RECALL TO MAX												
SOFT RECALL												
DON'T REST HERE												
PED DARK N/CALL												

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
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TRAFFIC SIGNAL TIMING

ASC/2

PROGRAM REFERENCE CARD

INTERSECTION: Carson St. @ Wilmington Ave. Date Prepared: 8-11-10 HC/H By: PMP

T.S. No.: 4028 Date Implemented: _____ By: _____

(NOT USED)

2. CONTROLLER SUBMENU (Continued)

5. CONTROLLER OVERLAP DATA

OVERLAP A	1	2	3	4	5	6	7	8	9	10	11	12
STANDARD												
PROTECTED												
PERMITTED												
ENABLE LAG												
ENABLE LEAD												
SPARE												
ADVANCE GREEN												
LAG/LEAD GREEN												
LAG/LEAD YELLOW												
LAG/LEAD RED TIMER												

OVERLAP B	1	2	3	4	5	6	7	8	9	10	11	12
STANDARD												
PROTECTED												
PERMITTED												
ENABLE LAG												
ENABLE LEAD												
SPARE												
ADVANCE GREEN												
LAG/LEAD GREEN												
LAG/LEAD YELLOW												
LAG/LEAD RED TIMER												

OVERLAP C	1	2	3	4	5	6	7	8	9	10	11	12
STANDARD												
PROTECTED												
PERMITTED												
ENABLE LAG												
ENABLE LEAD												
SPARE												
ADVANCE GREEN												
LAG/LEAD GREEN												
LAG/LEAD YELLOW												
LAG/LEAD RED TIMER												

OVERLAP D	1	2	3	4	5	6	7	8	9	10	11	12
STANDARD												
PROTECTED												
PERMITTED												
ENABLE LAG												
ENABLE LEAD												
SPARE												
ADVANCE GREEN												
LAG/LEAD GREEN												
LAG/LEAD YELLOW												
LAG/LEAD RED TIMER												

PED OVERLAP ASSIGNMENTS OVERLAP CONSISTS OF PHASES:												
OVLP PHASE	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
TRAFFIC AND LIGHTING DIVISION
TRAFFIC SIGNAL TIMING

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PROGRAM REFERENCE CARD

INTERSECTION: Carson St. @ Wilmington Ave. Date Prepared: 8-11-10 HCH By: PMP

T.S. No.: 4028 Date Implemented: _____ By: _____

2. CONTROLLER SUBMENU (Continued)

6. CONTROLLER START/FLASH DATA

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
POWER START		X				X						
EXTERNAL START		X				X						
ENTRY REM FLASH												
EXIT REM FLASH												
REM FLASH YELLOW												
FL TOGETHER PHS												
FL TOGETHER OVLPS	A			B			C			D		

POWER START	YELLOW
EXTERNAL START	YELLOW
POWER START ALL RED TIME	0
POWER START FLASH TIME	0
REMOTE FLASH OPTIONS:	
OUT OF FLASH YELLOW	
OUT OF FLASH RED	
MINIMUM RECALL	
USE ALTERNATE FLASH	
FLASH THRU LOAD SWITCHES	
CYCLE THROUGH PHASES	
YELLOW FLASH MAIN STREET	

7. NO SERVE PHASE

PHASE	12	11	10	9	8	7	6	5	4	3	2
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											

8. DIMMING

LOAD SWITCH	1	2	3	4	5	6	7	8
DIM GRN/WALK								
DIM YEL/PC								
DIM RED/DW								
LOAD SWITCH	9	10	11	12	13	14	15	16
DIM GRN/WALK								
DIM YEL/PC								
DIM RED/DW								

9. CONTROLLER OPTION DATA

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
GUAR PASSAGE												
NON ACTUATED I												
NON ACTUATED II												
DUAL ENTRY												
COND SERVICE												
COND RESERVICE												
REST IN WALK												
FLASHING WALK												

FIVE SECTION LEFT TURN HEADS
(SPECIAL PROGRAM OPTION FOR STATE OF ILLINOIS)

5 - 2		7 - 4		1 - 6	
3 - 8		11 - 10		9 - 12	

DUAL ENTRY		RESERVED	
COND SERVICE ENABLE		BACKUP PROTECTION GROUP 1	
COND SERVICE DET X SWITCHING		BACKUP PROTECTION GROUP 2	
PED CLEAR PROTECT		BACKUP PROTECTION GROUP 3	
SPEC PREEMPT OVLP FLASH		SIMULTANEOUS GAP GROUP 1	ON
LOCK DETECTORS IN RED ONLY		SIMULTANEOUS GAP GROUP 2	ON
RESERVED		SIMULTANEOUS GAP GROUP 3	

LOS ANGELES COUNTY
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T.S. No.: 4028 Date Implemented: By:

3. COORDINATION SUBMENU

TIME OF DAY OPERATION SUMMARY					
PLAN 1	0900 - 1500 M-F 1800 - 2100 M-F	PLAN 4		PLAN 7	
PLAN 2	0600 - 0900 M-F	PLAN 5		PLAN 8	
PLAN 3	1500 - 1800 M-F	PLAN 6		PLAN 9	
FREE	ALL OTHER TIMES				

1. COORDINATOR OPTIONS

SPLIT UNITS	SEC	ACTUATED COORD PHASE(S)	X
OFFSET UNITS	SEC	ACTUATED WALK/REST	
INTERCONNECT FORMAT	STD	INHIBIT MAX	
INTERCONNECT SOURCE	NIC	MAX 2 SELECT	X
RESYNC COUNT	255	MULTISYNC	
TRANSITION	SMOOTH	FLOAT FORCE OFF	
DWELL PERIOD	255		

FREE ALTERNATE SEQUENCE	A	B	C	D	E	F

2. COORD MANUAL AND SPLIT DEMAND

MANUAL ENABLE		MANUAL PATTERN	

SPLIT DEMAND:	DEMAND 1	DEMAND 2
DEMAND CALL TIME	0	0
DEMAND CYCLE COUNT	0	0

DEMAND PHASE	1	2	3	4	5	6	7	8	9	10	11	12
DEMAND 1 PHASE												
DEMAND 2 PHASE												

3. COORD AUTO PERM MIN GREEN

PHASE	AUTO PERM MIN GREEN	PHASE	AUTO PERM MIN GRN
1	7	7	7
2	7	8	7
3	7	9	
4	7	10	
5	7	11	
6	7	12	

LOS ANGELES COUNTY
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Date Prepared: 8-11-10 Hdt By: PMP

T.S. No.: 4028

Date Implemented: _____ By: _____

3. COORDINATION SUBMENU (Continued)

4. PATTERN DATA

STD FORMAT

COORD PATTERN	1	OFFSET	5
CYCLE LENGTH	120	C/O/S	1/1/1

PLAN FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		PLAN	

TS2 FORMAT

COORD PATTERN		TIMING PLAN	
CYCLE LENGTH		OFFSETS	1 2 3

SPLITS												
PHASE 1	19	PHASE 2	15	PHASE 3	16	PHASE 4	38					
PHASE 5	19	PHASE 6	15	PHASE 7	16	PHASE 8	38					
PHASE 9		PHASE 10		PHASE 11		PHASE 12						
VEH PERMISSIVE	[1]	0		[2]	0							
VEH PERM 2 DISP												
PHASE RESERVICE												
SPLIT EXTENSION/RING	[1]	31		[2]	31							
SPL DMD PATTERN	[1]			[2]								
XARTERY PATTERN												

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
COORD PHASES		X				X						
VEHICLE RECALL		X				X						
VEH MAX RECALL												
PED RECALL												
PHASE OMIT												
SPARE												

	A	B	C	D	E	F
ALTERNATE SEQUENCE						

STD FORMAT

COORD PATTERN	2	OFFSET	5
CYCLE LENGTH	120	C/O/S	2/1/1

PLAN FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		PLAN	

TS2 FORMAT

COORD PATTERN		TIMING PLAN	
CYCLE LENGTH		OFFSETS	1 2 3

SPLITS												
PHASE 1	16	PHASE 2	15	PHASE 3	16	PHASE 4	38					
PHASE 5	16	PHASE 6	15	PHASE 7	16	PHASE 8	38					
PHASE 9		PHASE 10		PHASE 11		PHASE 12						
VEH PERMISSIVE	[1]	0		[2]	0							
VEH PERM 2 DISP												
PHASE RESERVICE												
SPLIT EXTENSION/RING	[1]	31		[2]	31							
SPL DMD PATTERN	[1]			[2]								
XARTERY PATTERN												

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
COORD PHASES		X				X						
VEHICLE RECALL		X				X						
VEH MAX RECALL												
PED RECALL												
PHASE OMIT												
SPARE												

	A	B	C	D	E	F
ALTERNATE SEQUENCE						

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PROGRAM REFERENCE CARD

INTERSECTION: Carson St. @ Wilmington Ave.

Date Prepared: 8-11-10HCH By: PMP

T.S. No.: 4028

Date Implemented: _____ By: _____

3. COORDINATION SUBMENU (Continued)

4. PATTERN DATA (Continued)

STD FORMAT

COORD PATTERN	3	OFFSET	5
CYCLE LENGTH	120	C/O/S	3/1/1

PLAN FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		PLAN	

TS2 FORMAT

COORD PATTERN		TIMING PLAN						
CYCLE LENGTH		OFFSETS	1		2		3	

SPLITS								
PHASE 1	19	PHASE 2	15	PHASE 3	19	PHASE 4	33	
PHASE 5	19	PHASE 6	15	PHASE 7	19	PHASE 8	33	
PHASE 9		PHASE 10		PHASE 11		PHASE 12		
VEH PERMISSIVE	[1]	0		[2]	0			
VEH PERM 2 DISP								
PHASE RESERVICE								
SPLIT EXTENSION/RING	[1]	33		[2]	33			
SPL DMD PATTERN	[1]			[2]				
XARTERY PATTERN								

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
COORD PHASES		X				X						
VEHICLE RECALL		X				X						
VEH MAX RECALL												
PED RECALL												
PHASE OMIT												
SPARE												

	A	B	C	D	E	F
ALTERNATE SEQUENCE						

STD FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		C/O/S	

PLAN FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		PLAN	

TS2 FORMAT

COORD PATTERN		TIMING PLAN						
CYCLE LENGTH		OFFSETS	1		2		3	

SPLITS								
PHASE 1		PHASE 2		PHASE 3		PHASE 4		
PHASE 5		PHASE 6		PHASE 7		PHASE 8		
PHASE 9		PHASE 10		PHASE 11		PHASE 12		
VEH PERMISSIVE	[1]			[2]				
VEH PERM 2 DISP								
PHASE RESERVICE								
SPLIT EXTENSION/RING	[1]			[2]				
SPL DMD PATTERN	[1]			[2]				
XARTERY PATTERN								

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
COORD PHASES												
VEHICLE RECALL												
VEH MAX RECALL												
PED RECALL												
PHASE OMIT												
SPARE												

	A	B	C	D	E	F
ALTERNATE SEQUENCE						

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(NOT USED)

4. PREEMPTOR SUBMENU

1. PRIORITY PREEMPTOR 1

	1	2	3	4	5	6	7	8	9	10	11	12
TERM PHASE OVLP												
TRK CLR PHASE												
HOLD PHASES												
EXIT PHASES												
EXIT CALLS												
SPARE												
TERM OVERLAP	A			B			C			D		

ACTIVE		PED DARK	
PRIORITY		PED ACTIVE	
DET LOCK		ZERO PC TIME	
HOLD FLASH		PC THRU YELLOW	
TERM OVLP ASAP		TERM PHASES	
DON'T OVERRIDE FLASH		ACTIVE ONLY DURING HOLD	
FLASH ALL OUTPUTS		NO CVM IN FLASH	
YELLOW-RED GOES GREEN		FAST FLASH GRN ON HOLD	
ENABLE MAX PREEMPT TIME		OUT OF FLASH	
MAX TIME		DURATION TIME	
MIN HOLD TIME		DELAY TIME	
MIN PED CLEAR		INHIBIT TIME	
EXIT MAX		HOLD DELAY TIME	

	GREEN	YELLOW	RED
MINIMUM			
TRACK CLEAR			
HOLD			

2. PRIORITY PREEMPTOR 2

	1	2	3	4	5	6	7	8	9	10	11	12
TERM PHASE OVLP												
TRK CLR PHASE												
HOLD PHASES												
EXIT PHASES												
EXIT CALLS												
SPARE												
TERM OVERLAP	A			B			C			D		

ACTIVE		PED DARK	
PRIORITY		PED ACTIVE	
DET LOCK		ZERO PC TIME	
HOLD FLASH		PC THRU YELLOW	
TERM OVLP ASAP		TERM PHASES	
DON'T OVERRIDE FLASH		ACTIVE ONLY DURING HOLD	
FLASH ALL OUTPUTS		NO CVM IN FLASH	
YELLOW-RED GOES GREEN		FAST FLASH GRN ON HOLD	
ENABLE MAX PREEMPT TIME		OUT OF FLASH	
MAX TIME		DURATION TIME	
MIN HOLD TIME		DELAY TIME	
MIN PED CLEAR		INHIBIT TIME	
EXIT MAX		HOLD DELAY TIME	

	GREEN	YELLOW	RED
MINIMUM			
TRACK CLEAR			
HOLD			
LINKED PREEMPTOR			

3. PRIORITY PREEMPTOR 3

	1	2	3	4	5	6	7	8	9	10	11	12
TERM PHASE OVLP												
TRK CLR PHASE												
HOLD PHASES												
EXIT PHASES												
EXIT CALLS												
SPARE												
TERM OVERLAP	A			B			C			D		

ACTIVE		PED DARK	
PRIORITY		PED ACTIVE	
DET LOCK		ZERO PC TIME	
HOLD FLASH		PC THRU YELLOW	
TERM OVLP ASAP		TERM PHASES	
DON'T OVERRIDE FLASH		ACTIVE ONLY DURING HOLD	
FLASH ALL OUTPUTS		NO CVM IN FLASH	
YELLOW-RED GOES GREEN		FAST FLASH GRN ON HOLD	
ENABLE MAX PREEMPT TIME		OUT OF FLASH	
MAX TIME		DURATION TIME	
MIN HOLD TIME		DELAY TIME	
MIN PED CLEAR		INHIBIT TIME	
EXIT MAX		HOLD DELAY TIME	

	GREEN	YELLOW	RED
MINIMUM			
TRACK CLEAR			
HOLD			
LINKED PREEMPTOR			

4. PRIORITY PREEMPTOR 4

	1	2	3	4	5	6	7	8	9	10	11	12
TERM PHASE OVLP												
TRK CLR PHASE												
HOLD PHASES												
EXIT PHASES												
EXIT CALLS												
SPARE												
TERM OVERLAP	A			B			C			D		

ACTIVE		PED DARK	
PRIORITY		PED ACTIVE	
DET LOCK		ZERO PC TIME	
HOLD FLASH		PC THRU YELLOW	
TERM OVLP ASAP		TERM PHASES	
DON'T OVERRIDE FLASH		ACTIVE ONLY DURING HOLD	
FLASH ALL OUTPUTS		NO CVM IN FLASH	
YELLOW-RED GOES GREEN		FAST FLASH GRN ON HOLD	
ENABLE MAX PREEMPT TIME		OUT OF FLASH	
MAX TIME		DURATION TIME	
MIN HOLD TIME		DELAY TIME	
MIN PED CLEAR		INHIBIT TIME	
EXIT MAX		HOLD DELAY TIME	

	GREEN	YELLOW	RED
MINIMUM			
TRACK CLEAR			
HOLD			
LINKED PREEMPTOR			

LOS ANGELES COUNTY
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T.S. No.: 4028 Date Implemented: By:

(NOT USED)

4. PREEMPTOR SUBMENU (Continued)

5. PRIORITY PREEMPTOR 5

	1	2	3	4	5	6	7	8	9	10	11	12
TERM PHASE OVLP												
TRK CLR PHASE												
HOLD PHASES												
EXIT PHASES												
EXIT CALLS												
SPARE												
TERM OVERLAP	A			B			C			D		

ACTIVE		PED DARK	
PRIORITY		PED ACTIVE	
DET LOCK		ZERO PC TIME	
HOLD FLASH		PC THRU YELLOW	
TERM OVLP ASAP		TERM PHASES	
DON'T OVERRIDE FLASH		ACTIVE ONLY DURING HOLD	
FLASH ALL OUTPUTS		NO CVM IN FLASH	
YELLOW-RED GOES GREEN		FAST FLASH GRN ON HOLD	
ENABLE MAX PREEMPT TIME		OUT OF FLASH	

MAX TIME		DURATION TIME	
MIN HOLD TIME		DELAY TIME	
MIN PED CLEAR		INHIBIT TIME	
EXIT MAX		HOLD DELAY TIME	

	GREEN	YELLOW	RED
MINIMUM			
TRACK CLEAR			
HOLD			
LINKED PREEMPTOR			

6. PRIORITY PREEMPTOR 6

	1	2	3	4	5	6	7	8	9	10	11	12
TERM PHASE OVLP												
TRK CLR PHASE												
HOLD PHASES												
EXIT PHASES												
EXIT CALLS												
SPARE												
TERM OVERLAP	A			B			C			D		

ACTIVE		PED DARK	
PRIORITY		PED ACTIVE	
DET LOCK		ZERO PC TIME	
HOLD FLASH		PC THRU YELLOW	
TERM OVLP ASAP		TERM PHASES	
DON'T OVERRIDE FLASH		ACTIVE ONLY DURING HOLD	
FLASH ALL OUTPUTS		NO CVM IN FLASH	
YELLOW-RED GOES GREEN		FAST FLASH GRN ON HOLD	
ENABLE MAX PREEMPT TIME		OUT OF FLASH	

MAX TIME		DURATION TIME	
MIN HOLD TIME		DELAY TIME	
MIN PED CLEAR		INHIBIT TIME	
EXIT MAX		HOLD DELAY TIME	

	GREEN	YELLOW	RED
MINIMUM			
TRACK CLEAR			
HOLD			
LINKED PREEMPTOR			

7. BUS PREEMPTORS

	BUS PREEMPTOR 1	2	3	4
PREEMPTOR ACTIVE				
DETECTOR LOCK				
MAXIMUM TIME				
RESERVICE TIME				
DELAY TIME				
INHIBIT TIME				
ENTRANCE GREEN				
ENTRANCE PED CLEAR				
ENTRANCE YELLOW				
ENTRANCE RED				
MIN HOLD TIME				

	HOLD PHASE 1	2	3	4	5	6	7	8	9	10	11	12
PREEMPTOR 1												
PREEMPTOR 2												
PREEMPTOR 3												
PREEMPTOR 4												

LOS ANGELES COUNTY
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T.S. No.: 4028 Date Implemented: _____ By: _____

5. NIC/TOD SUBMENU

1. NIC/TOD CLOCK/CALENDAR DATA

DATE SET	
TIME SET	
MANUAL NIC PROGRAM STEP	0
MANUAL TOD PROGRAM STEP	0
SYNC REFERENCE TIME	★ ★ 0000
SYNC REFERENCE	REFERENCE TIME
WEEK 1 BEGINS ON 1ST SUNDAY	
DISABLE DAYLIGHT SAVINGS	
DST BEGINS LAST SUNDAY	

2. NIC/TOD WEEKLY PROGRAMS

WEEK	SUN	MON	TUE	WED	THU	FRI	SAT
1	2	1	1	1	1	1	2
2							
3							
4							
5							
6							
7							
8							
9							
10							

3. NIC/TOD YEARLY PROGRAMS

WEEK OF YEAR	1	2	3	4	5	6	7	8
WEEKLY PROGRAM	1	1	1	1	1	1	1	1
WEEK OF YEAR	9	10	11	12	13	14	15	16
WEEKLY PROGRAM	1	1	1	1	1	1	1	1
WEEK OF YEAR	17	18	19	20	21	22	23	24
WEEKLY PROGRAM	1	1	1	1	1	1	1	1
WEEK OF YEAR	25	26	27	28	29	30	31	32
WEEKLY PROGRAM	1	1	1	1	1	1	1	1
WEEK OF YEAR	33	34	35	36	37	38	39	40
WEEKLY PROGRAM	1	1	1	1	1	1	1	1
WEEK OF YEAR	41	42	43	44	45	46	47	48
WEEKLY PROGRAM	1	1	1	1	1	1	1	1
WEEK OF YEAR				49	50	51	52	53
WEEKLY PROGRAM				1	1	1	1	1

4. NIC/TOD HOLIDAY PROGRAM

HOLIDAY	FLOAT/FIXED	MON/MON	DOW/DOM	WOM/YEAR	PROG
1	FIXED	1	1	0	2
2	FIXED	7	4	0	2
3	FIXED	11	11	0	2
4	FIXED	12	24	0	2
5	FIXED	12	25	0	2
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					

★ ★ NOTE: When using RCTB Unit, in order for the controller clock to be properly updated, the RCTB Unit must be designed for a 03:30 AM Sync Pulse.

LOS ANGELES COUNTY
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5. NIC/TOD SUBMENU (Continued)

5. NIC PROGRAM STEP

STEP	PGM	TIME	PATTERN	OVERRIDE
1	1	0000	0	
2	2	0000	0	
3	1	0600	2	
4	1	0900	1	
5	1	1500	3	
6	1	1800	1	
7	1	2100	0	

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Date Prepared: 8-11-10 Hclt By: pmp

T.S. No.: 4028

Date Implemented: ______ By: ______

(NOT USED)

5. NIC/TOD SUBMENU (Continued)

6. TOD PROGRAM STEPS

TOD PROGRAM STEP												
DAY PGM NUMBER												
STEP BEGINS												
FLASH					DIM ENABLE							
RED REST					ALT VEH EXTSN							
SPARE 5					DET LOG ENABLE							
SPARE 3					SPARE 4							
TYPE 0 DELAY ENABLE					SPARE 2							
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	
PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX 2 ENABLE												
MAX 3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INHIBIT												
PHASE OMIT												
SPECIAL FUNCTIONS									(1 - 8)			

TOD PROGRAM STEP												
DAY PGM NUMBER												
STEP BEGINS												
FLASH					DIM ENABLE							
RED REST					ALT VEH EXTSN							
SPARE 5					DET LOG ENABLE							
SPARE 3					SPARE 4							
TYPE 0 DELAY ENABLE					SPARE 2							
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	
PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX 2 ENABLE												
MAX 3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INHIBIT												
PHASE OMIT												
SPECIAL FUNCTIONS									(1 - 8)			

TOD PROGRAM STEP												
DAY PGM NUMBER												
STEP BEGINS												
FLASH					DIM ENABLE							
RED REST					ALT VEH EXTSN							
SPARE 5					DET LOG ENABLE							
SPARE 3					SPARE 4							
TYPE 0 DELAY ENABLE					SPARE 2							
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	
PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX 2 ENABLE												
MAX 3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INHIBIT												
PHASE OMIT												
SPECIAL FUNCTIONS									(1 - 8)			

TOD PROGRAM STEP												
DAY PGM NUMBER												
STEP BEGINS												
FLASH					DIM ENABLE							
RED REST					ALT VEH EXTSN							
SPARE 5					DET LOG ENABLE							
SPARE 3					SPARE 4							
TYPE 0 DELAY ENABLE					SPARE 2							
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	
PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX 2 ENABLE												
MAX 3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INHIBIT												
PHASE OMIT												
SPECIAL FUNCTIONS									(1 - 8)			

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Date Prepared: 8-11-10 Hch By: PMP

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Date Implemented: ______ By: ______

(NOT USED)

5. NIC/TOD SUBMENU (Continued)

6. TOD PROGRAM STEPS (CONTINUED)

TOD PROGRAM STEP												
DAY PGM NUMBER												
STEP BEGINS												
FLASH					DIM ENABLE							
RED REST					ALT VEH EXTSN							
SPARE 5					DET LOG ENABLE							
SPARE 3					SPARE 4							
TYPE 0 DELAY ENABLE					SPARE 2							
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	
PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX 2 ENABLE												
MAX 3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INHIBIT												
PHASE OMIT												
SPECIAL FUNCTIONS									(1 - 8)			

TOD PROGRAM STEP												
DAY PGM NUMBER												
STEP BEGINS												
FLASH					DIM ENABLE							
RED REST					ALT VEH EXTSN							
SPARE 5					DET LOG ENABLE							
SPARE 3					SPARE 4							
TYPE 0 DELAY ENABLE					SPARE 2							
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	
PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX 2 ENABLE												
MAX 3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INHIBIT												
PHASE OMIT												
SPECIAL FUNCTIONS									(1 - 8)			

TOD PROGRAM STEP												
DAY PGM NUMBER												
STEP BEGINS												
FLASH					DIM ENABLE							
RED REST					ALT VEH EXTSN							
SPARE 5					DET LOG ENABLE							
SPARE 3					SPARE 4							
TYPE 0 DELAY ENABLE					SPARE 2							
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	
PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX 2 ENABLE												
MAX 3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INHIBIT												
PHASE OMIT												
SPECIAL FUNCTIONS									(1 - 8)			

TOD PROGRAM STEP												
DAY PGM NUMBER												
STEP BEGINS												
FLASH					DIM ENABLE							
RED REST					ALT VEH EXTSN							
SPARE 5					DET LOG ENABLE							
SPARE 3					SPARE 4							
TYPE 0 DELAY ENABLE					SPARE 2							
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	
PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX 2 ENABLE												
MAX 3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INHIBIT												
PHASE OMIT												
SPECIAL FUNCTIONS									(1 - 8)			

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
TRAFFIC AND LIGHTING DIVISION
TRAFFIC SIGNAL TIMING

ASC/2

PROGRAM REFERENCE CARD

INTERSECTION: Carson St. @ Wilmington Ave. Date Prepared: 8-11-10 HcH By: RMP

T.S. No.: 4028 Date Implemented: _____ By: _____

6. DETECTORS SUBMENU

1. DETECTOR TYPE/TIMERS

DETECTOR	TYPE	LOCK	EXTEND	DELAY	NO RESET	LOG ENABLE
1	0					
2	0					
3	0					
4	0					
5	5		2.0			
6	5		2.0			
7	5		2.0			
8	5		2.0			
9	0					
10	0					
11	0					
12	0					
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						

2. DETECTOR PHASE ASSIGNMENT

	PHASE ASSIGNMENT											
DETECTOR	1	2	3	4	5	6	7	8	9	10	11	12
1			X									
2							X					
3	X											
4					X							
5				X								
6								X				
7		X										
8						X						
9						X						
10								X				
11		X										
12				X								
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
32												

3. PED AND SYSTEM DETECTOR LOCAL ASSIGNMENT

DETECTOR LOG INTERVAL				MINUTES		
LOCAL PED DET NUMBER	PHASE PED DETECTOR					
	1	2	3	4	5	6
		2		4		6
	7	8	9	10	11	12
NUMBER		8				
LOCAL PED DET NUMBER	LOCAL SYSTEM DETECTOR NUMBER					
	1	2	3	4	5	6
	7	8	9	10	11	12
NUMBER						

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
TRAFFIC AND LIGHTING DIVISION
TRAFFIC SIGNAL TIMING

ASC/2

PROGRAM REFERENCE CARD

INTERSECTION: Carson St. @ Wilmington Ave. Date Prepared: 8-11-10 HCH By: PMP

T.S. No.: 4028 Date Implemented: _____ By: _____

(NOT USED)

6. DETECTORS SUBMENU (Continued)

4. CROSS SWITCHING

	PHASES											
DETECTOR	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
32												

6. VEHICLE DETECTOR DIAGNOSTIC PLAN

PLAN	DET NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	DIAG NO																
	SCALING																
2	DIAG NO																
	SCALING																
3	DIAG NO																
	SCALING																
4	DIAG NO																
	SCALING																
5	DIAG NO																
	SCALING																
6	DIAG NO																
	SCALING																
7	DIAG NO																
	SCALING																
8	DIAG NO																
	SCALING																
FINAL ACTION																	

PLAN	DET NO.	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
1	DIAG NO																
	SCALING																
2	DIAG NO																
	SCALING																
3	DIAG NO																
	SCALING																
4	DIAG NO																
	SCALING																
5	DIAG NO																
	SCALING																
6	DIAG NO																
	SCALING																
7	DIAG NO																
	SCALING																
8	DIAG NO																
	SCALING																
FINAL ACTION																	

5. SPEED DETECTORS

SPEED DETECTOR NUMBERS	1	2	3	4	5	6	7	8
ONE DETECTOR SPEED:								
LOCAL DET NUMBER								
VEHICLE LENGTH								
LOOP LENGTH								
TWO DETECTOR SPEED:								
LOCAL DET NUMBER								
SPEED TRAP								
ENABLE LOG								
UNITS:								

7. PED DETECTOR DIAGNOSTIC PLAN

PLAN	DET NO.	1	2	3	4	5	6	7	8	9	10	11	12
1	DIAG NO.												
	SCALING												
2	DIAG NO.												
	SCALING												
3	DIAG NO.												
	SCALING												
4	DIAG NO.												
	SCALING												
5	DIAG NO.												
	SCALING												
6	DIAG NO.												
	SCALING												
7	DIAG NO.												
	SCALING												
8	DIAG NO.												
	SCALING												

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
TRAFFIC AND LIGHTING DIVISION
TRAFFIC SIGNAL TIMING

ASC/2

PROGRAM REFERENCE CARD

INTERSECTION: Carson St. @ Wilmington Ave. Date Prepared: 8-11-10 HcH By: pmp

T.S. No.: 4028 Date Implemented: By:

(NOT USED)

6. DETECTORS SUBMENU (Continued)

8. DETECTOR DIAGNOSTIC INTERVAL

DETECTOR DIAGNOSTIC INTERVAL			
DIAGNOSTIC NUMBER	NO ACTIVITY	MAX PRESENCE	ERRATIC COUNTS
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
TRAFFIC AND LIGHTING DIVISION
TRAFFIC SIGNAL TIMING

ASC/2

PROGRAM REFERENCE CARD

INTERSECTION: Carson St. @ Wilmington Ave. Date Prepared: 8-11-10 HcH By: PMP

T.S. No.: 4028 Date Implemented: By:

DETECTOR ASSIGNMENT WORK SHEET

LOOP LOCATION	LANE	DET ASSIGN	DET TYP #	PHASE 1	2	3	4	5	6	7	8	9	10	11	12	DET DELAY	DET EXTEND	QUEUE MAX	REMARKS
1-E-Ø1	LT	3	0	X															F
1-W-Ø5	LT	4	0					X											F
1-S-Ø3	LT	1	0			X													F
1-N-Ø7	LT	2	0							X									F
1-W-Ø2	1,2	7	5		X												2.0		Q
1-E-Ø6	1,2	8	5						X								2.0		Q
1-N-Ø4	1,2	5	5				X										2.0		Q
1-S-Ø8	1,2	6	5								X						2.0		Q
2-W-Ø2	1,2	11	0		X														A
2-N-Ø4	1,2	12	0				X												A
2-E-Ø6	1,2	9	0						X										A
2-S-Ø8	1,2	10	0								X								A

DETECTOR ASSIGNMENT DEFINITIONS

CONTROLLER	CONNECTOR'S A,B C								CONNECTOR D								CONNECTOR TELEMETRY								CONNECTOR TYPE 1							
ASC-2	DETECTOR								DETECTOR								DETECTOR								INPUT TYPE 1 ONLY							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32

* = DELAY Time or EXTEND Time set on External Sensor

** = When the Detector Input is set to be a TYPE 4 Detector, the EXTEND value set in the Controller becomes the QUEUE MAX value and any Extension Time needed must be set externally on the Sensor. If the Detector Input is set to be a TYPE 5, the EXTEND value becomes a Reset (Gap) Timer value and the Extension Time is set Externally on the Sensor Unit.

Q = QUEUE CLEARING LOOP F = FIRST VEHICLE LOOP

H = HOLDING LOOP A = ADVANCE LOOP

APPENDIX C:
EXISTING TRAFFIC COUNTS

Prepared by National Data & Surveying Services

Avalon Blvd & Carson St

Peak Hour Turning Movement Count

ID: 19-05496-009
City: Carson

Day: Wednesday
Date: 08/28/2019

PEAK HOURS

AM: 07:15 AM - 08:15 AM
NOON: NONE
PM: 04:45 PM - 05:45 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

SOUTHBOUND — Avalon Blvd

AM	113	646	112	1	1000	AM
NOON	0	0	0	0	0	NOON
PM	180	890	205	4	995	PM
	0	3	1	0		

EASTBOUND — Carson St

AM	NOON	PM	
952	0	965	
1	0	1	0
136	0	179	2
686	0	818	2
71	0	104	0

WESTBOUND — Carson St

	PM	NOON	AM
0	103	0	108
2	685	0	760
2	331	0	313
0	11	0	5
	1517	0	1202

CONTROL

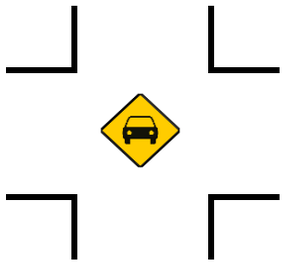
Signalized

TEV	4184 AM	0 NOON	4803 PM
PHF	0.90		0.99

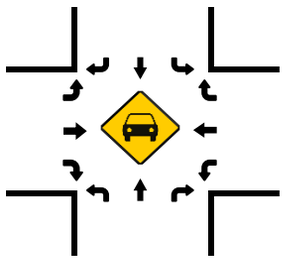
NORTHBOUND — Avalon Blvd

	0	1	3	0		
PM	1326	1	99	709	483	PM
NOON	0	0	0	0	0	NOON
AM	1030	0	78	755	399	AM

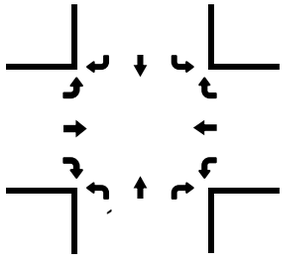
Total Vehicles (AM)



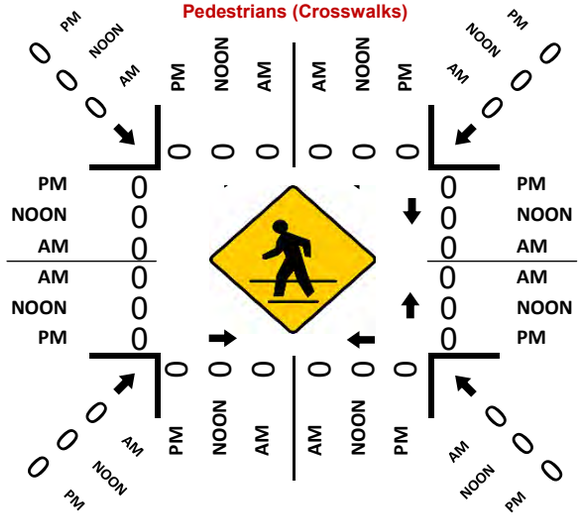
Total Vehicles (NOON)



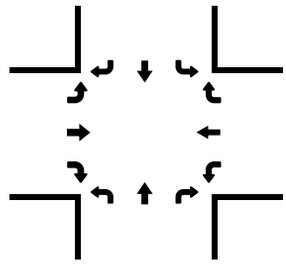
Total Vehicles (PM)



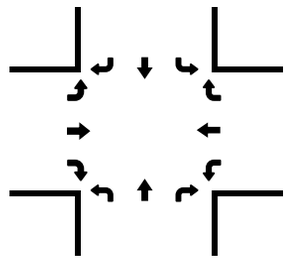
Pedestrians (Crosswalks)



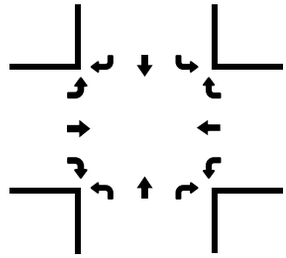
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)



Prepared by National Data & Surveying Services

I-405 SB Ramps & Carson St

Peak Hour Turning Movement Count

ID: 19-05496-011
City: Carson

Day: Tuesday
Date: 08/27/2019

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
04:45 PM - 05:45 PM	04:00 PM - 06:00 PM

I-405 SB Ramps — SOUTHBOUND

AM	3	0	0	0	25	AM
NOON	0	0	0	0	0	NOON
PM	4	0	0	0	32	PM

EASTBOUND (Carson St)

AM	NOON	PM		
1255	0	1060	⇦	
0	0	3	↶	0
5	0	4	↱	1
674	0	1203	→	2
572	0	907	↴	1
AM	NOON	PM		

WESTBOUND (Carson St)

PM	NOON	AM		
18	0	13	↰	0
1037	0	1210	←	3
69	0	70	↰	1
0	0	0	↶	0
1265	0	870	⇨	
PM	NOON	AM		

NORTHBOUND — I-405 SB Ramps

PM	976	0	16	10	62	PM
NOON	0	0	0	0	0	NOON
AM	642	0	42	7	196	AM

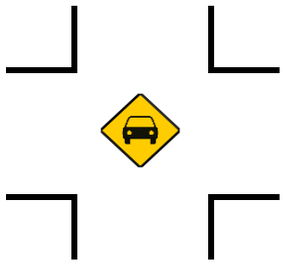
⇩	↶	↰	↑	↱
	0	1	0	1

CONTROL

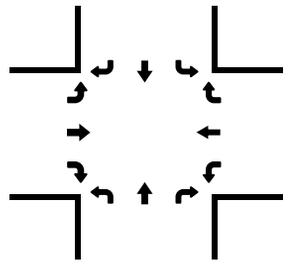
Signalized

TEV	2792 AM	0 NOON	3333 PM
PHF	0.92		0.95

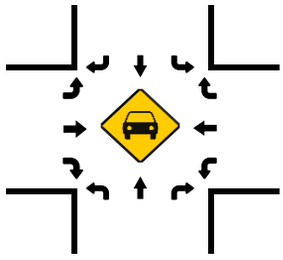
Total Vehicles (AM)



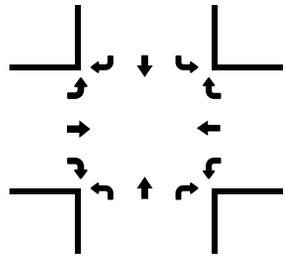
Total Vehicles (AM)



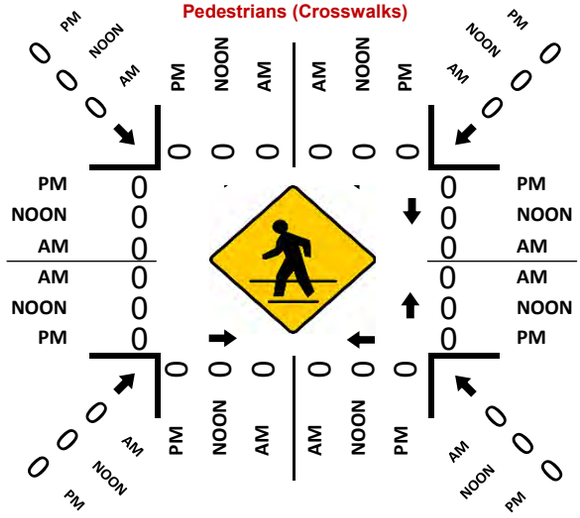
Total Vehicles (NOON)



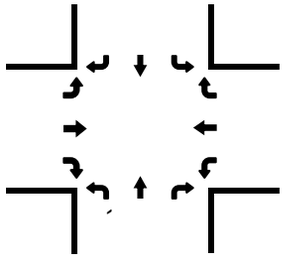
Total Vehicles (NOON)



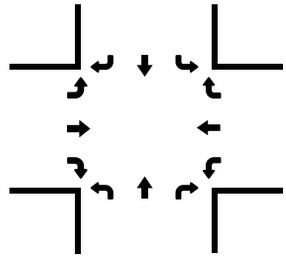
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



Prepared by National Data & Surveying Services

I-405 NB Ramps & Carson St

Peak Hour Turning Movement Count

ID: 19-05496-012
City: Carson

Day: Tuesday
Date: 08/27/2019

PEAK HOURS

AM: 07:15 AM - 08:15 AM
NOON: NONE
PM: 04:45 PM - 05:45 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

I-405 NB Ramps — SOUTHBOUND

AM	465	16	15	1	388	AM
NOON	0	0	0	0	0	NOON
PM	524	12	34	3	425	PM
	1	0.5	0.5	0		

Carson St — EASTBOUND

AM	NOON	PM		
1302	0	1123	⇦	
0	0	0	↩	0
104	0	140	↱	1
732	0	1111	→	2
37	0	29	↳	0
AM	NOON	PM		

CONTROL

Signalized

TEV	2520 AM	0 NOON	2790 PM
PHF	0.91		0.94

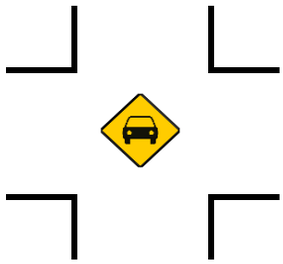
Carson St — WESTBOUND

PM	NOON	AM		
251	0	282	↰	1
564	0	827	←	2
28	0	17	↰	1
1	0	0	↩	0
1173	0	760	⇨	
PM	NOON	AM		

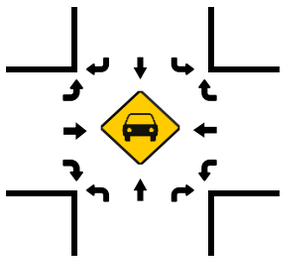
I-405 NB Ramps — NORTHBOUND

PM	69	0	35	31	27	PM
NOON	0	0	0	0	0	NOON
AM	70	0	10	1	13	AM
		0	0	0.5	0.5	

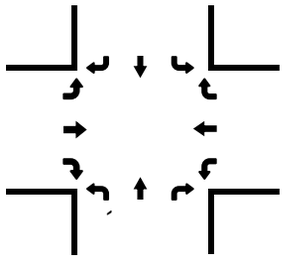
Total Vehicles (AM)



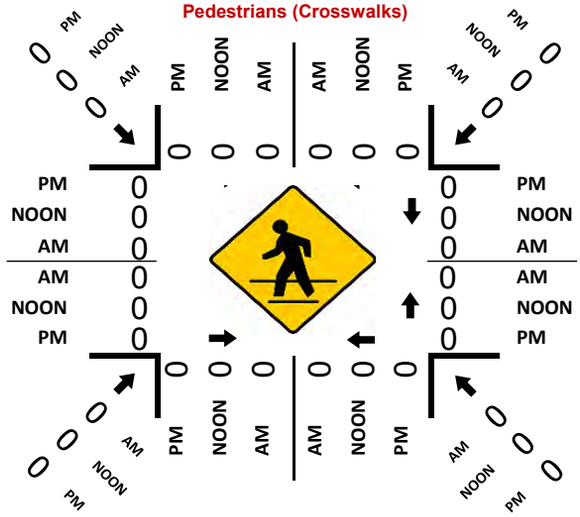
Total Vehicles (NOON)



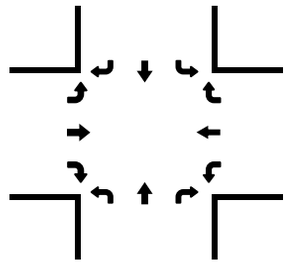
Total Vehicles (PM)



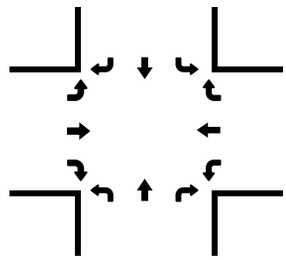
Pedestrians (Crosswalks)



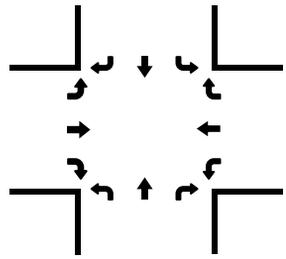
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)



Prepared by National Data & Surveying Services

S Perry St & E Carson St

Peak Hour Turning Movement Count

ID: 21-020357-001
City: Carson

Day: Thursday
Date: 12/9/2021

PEAK HOURS

AM: 07:30 AM - 08:30 AM
NOON: NONE
PM: 04:45 PM - 05:45 PM

COUNT PERIODS

AM: 7:00 AM - 09:00 AM
NOON: NONE
PM: 4:00 PM - 06:00 PM

SOUTHBOUND (S Perry St)

AM	80	0	9	0	78	AM
NOON	0	0	0	0	0	NOON
PM	86	0	66	1	85	PM
	0	1	0	0		

EASTBOUND (E Carson St)

AM	NOON	PM	
771	0	817	
2	0	6	0
52	0	62	1
636	0	858	2
9	0	4	0
AM	NOON	PM	

WESTBOUND (E Carson St)

PM	NOON	AM	
22	0	26	0
720	0	685	2
3	0	7	1
1	0	0	0
936	0	649	
PM	NOON	AM	

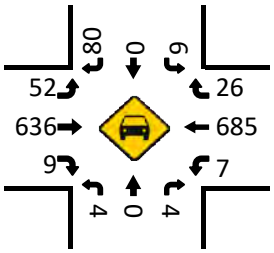
CONTROL: 1-Way Stop(SB)

TEV	1514 AM	0 NOON	1845 PM
PHF	0.87		0.96

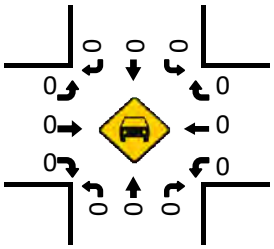
NORTHBOUND (S Perry St)

PM	7	0	5	0	11	PM
NOON	0	0	0	0	0	NOON
AM	16	0	4	0	4	AM
		0	0	1	0	

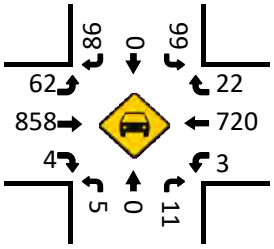
Totals (AM)



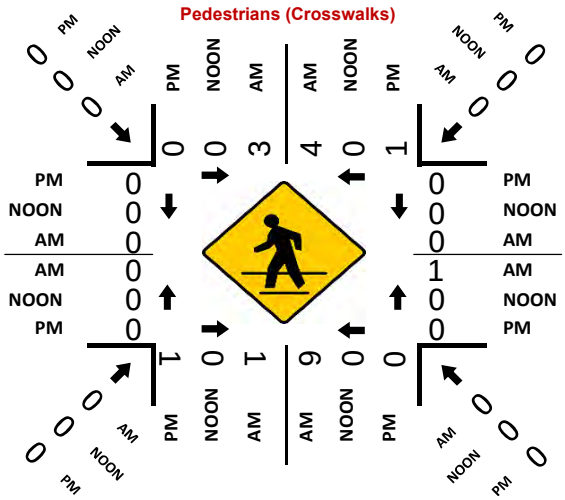
Totals (NOON)



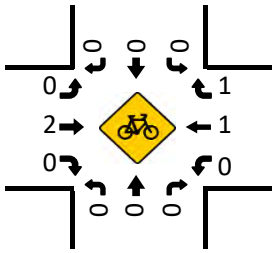
Totals (PM)



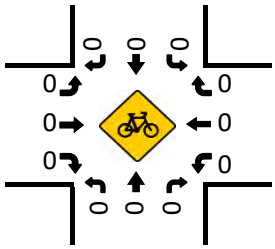
Pedestrians (Crosswalks)



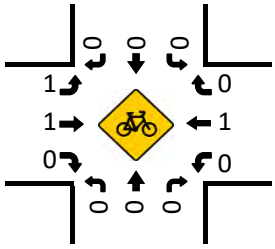
Total Bikes (AM)



Total Bikes (NOON)



Total Bikes (PM)



Prepared by National Data & Surveying Services

Wilmington Ave & Carson St

Peak Hour Turning Movement Count

ID: Historical
City: Carson

Day: Tuesday
Date: 06/04/2019

PEAK HOURS

07:30 AM - 08:30 AM
NONE
04:30 PM - 05:30 PM

COUNT PERIODS

07:00 AM - 09:00 AM
NONE
04:00 PM - 06:00 PM

Wilmington Ave — SOUTHBOUND

AM	109	372	138	2	885	AM
NOON	0	0	0	0	0	NOON
PM	222	660	209	3	588	PM
	0	2	1	0		

Carson St — EASTBOUND

AM	NOON	PM	
595	0	662	
1	0	3	0
168	0	101	1
372	0	742	2
42	0	61	0
AM	NOON	PM	

CONTROL

Signalized

TEV	2565 AM	0 NOON	3075 PM
PHF	0.84		0.94

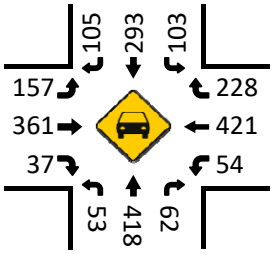
WESTBOUND — Carson St

PM	NOON	AM	
114	0	254	0
354	0	427	2
49	0	74	1
0	0	1	0
1049	0	588	
PM	NOON	AM	

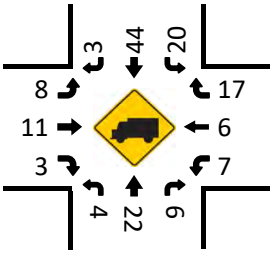
	0	1	2	0		
PM	776	6	83	370	98	PM
NOON	0	0	0	0	0	NOON
AM	497	9	58	461	77	AM

Wilmington Ave — NORTHBOUND

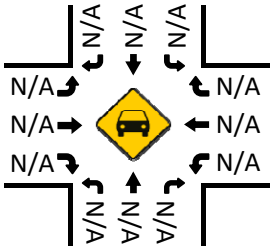
Cars (AM)



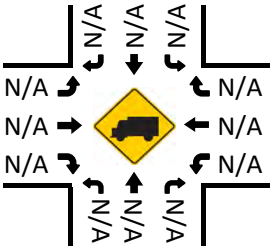
MT (AM)



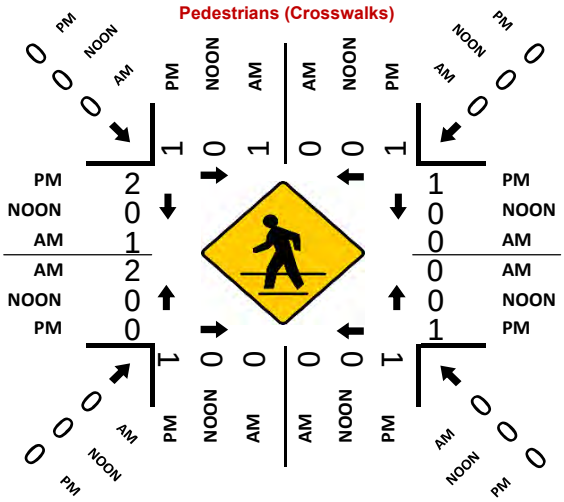
Cars (NOON)



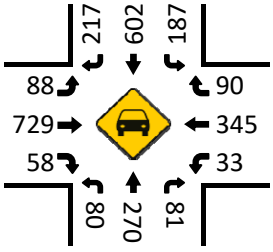
MT (NOON)



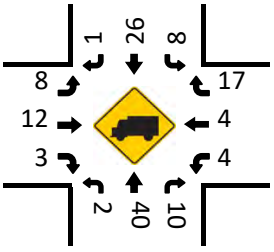
Pedestrians (Crosswalks)



Cars (PM)



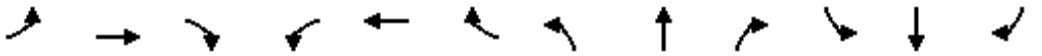
MT (PM)



APPENDIX D:
LOS ANALYSIS SHEETS

HCM 6th Signalized Intersection Summary
1: Carson Street & Avalon Boulevard

01/13/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	136	686	71	318	760	108	78	755	399	112	646	113
Future Volume (veh/h)	136	686	71	318	760	108	78	755	399	112	646	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	151	762	79	353	844	120	87	839	443	124	718	126
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	210	948	98	412	1093	155	110	1182	551	151	1621	282
Arrive On Green	0.06	0.29	0.29	0.12	0.35	0.35	0.06	0.35	0.35	0.08	0.37	0.37
Sat Flow, veh/h	3456	3250	337	3456	3123	444	1781	3404	1585	1781	4377	760
Grp Volume(v), veh/h	151	417	424	353	480	484	87	839	443	124	557	287
Grp Sat Flow(s),veh/h/ln	1728	1777	1810	1728	1777	1790	1781	1702	1585	1781	1702	1733
Q Serve(g_s), s	4.9	24.8	24.9	11.5	27.6	27.6	5.5	24.4	29.0	7.8	14.1	14.3
Cycle Q Clear(g_c), s	4.9	24.8	24.9	11.5	27.6	27.6	5.5	24.4	29.0	7.8	14.1	14.3
Prop In Lane	1.00		0.19	1.00		0.25	1.00		1.00	1.00		0.44
Lane Grp Cap(c), veh/h	210	518	528	412	622	627	110	1182	551	151	1260	642
V/C Ratio(X)	0.72	0.80	0.80	0.86	0.77	0.77	0.79	0.71	0.80	0.82	0.44	0.45
Avail Cap(c_a), veh/h	498	690	703	498	690	696	257	1323	616	257	1323	674
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.8	37.5	37.5	49.5	33.2	33.2	53.0	32.4	33.9	51.6	27.2	27.2
Incr Delay (d2), s/veh	1.7	6.0	5.9	10.5	5.4	5.4	4.7	1.8	7.6	4.2	0.3	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	11.3	11.5	5.5	12.3	12.4	2.6	10.1	12.0	3.6	5.7	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.5	43.5	43.5	60.0	38.5	38.5	57.7	34.2	41.4	55.8	27.5	27.9
LnGrp LOS	D	D	D	E	D	D	E	C	D	E	C	C
Approach Vol, veh/h		992			1317			1369			968	
Approach Delay, s/veh		45.2			44.3			38.0			31.2	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.5	45.6	13.2	45.3	17.1	38.9	10.6	47.9
Change Period (Y+Rc), s	3.5	5.5	3.5	5.5	3.5	5.5	3.5	5.5
Max Green Setting (Gmax), s	16.5	44.5	16.5	44.5	16.5	44.5	16.5	44.5
Max Q Clear Time (g_c+I1), s	6.9	29.6	9.8	31.0	13.5	26.9	7.5	16.3
Green Ext Time (p_c), s	0.1	6.9	0.0	8.8	0.2	6.5	0.0	8.5

Intersection Summary	
HCM 6th Ctrl Delay	39.9
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	674	572	70	1210	0	42	0	196	0	0	0
Future Volume (veh/h)	5	674	572	70	1210	0	42	0	196	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	0	1870	0	1870			
Adj Flow Rate, veh/h	5	733	622	76	1315	0	46	0	213			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	2	2	2	0	2	0	2			
Cap, veh/h	315	1999	1141	198	3706	0	281	0	250			
Arrive On Green	0.56	0.56	0.56	0.22	1.00	0.00	0.16	0.00	0.16			
Sat Flow, veh/h	418	3554	1585	1781	5274	0	1781	0	1585			
Grp Volume(v), veh/h	5	733	622	76	1315	0	46	0	213			
Grp Sat Flow(s),veh/h/ln	418	1777	1585	1781	1702	0	1781	0	1585			
Q Serve(g_s), s	0.5	10.2	16.3	3.3	0.0	0.0	2.0	0.0	11.8			
Cycle Q Clear(g_c), s	0.5	10.2	16.3	3.3	0.0	0.0	2.0	0.0	11.8			
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00			
Lane Grp Cap(c), veh/h	315	1999	1141	198	3706	0	281	0	250			
V/C Ratio(X)	0.02	0.37	0.55	0.38	0.35	0.00	0.16	0.00	0.85			
Avail Cap(c_a), veh/h	315	1999	1141	303	3706	0	394	0	350			
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	1.00	0.80	0.80	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	8.7	10.9	5.8	32.4	0.0	0.0	32.8	0.0	36.9			
Incr Delay (d2), s/veh	0.1	0.5	1.9	0.7	0.2	0.0	0.3	0.0	13.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	3.6	4.8	1.3	0.1	0.0	0.9	0.0	5.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.8	11.4	7.7	33.1	0.2	0.0	33.1	0.0	50.3			
LnGrp LOS	A	B	A	C	A	A	C	A	D			
Approach Vol, veh/h		1360			1391			259				
Approach Delay, s/veh		9.7			2.0			47.2				
Approach LOS		A			A			D				

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	14.7	56.0				70.7		19.3				
Change Period (Y+Rc), s	* 4.7	5.4				5.4		5.1				
Max Green Setting (Gmax), s	* 15	39.6				59.6		19.9				
Max Q Clear Time (g_c+I1), s	15.3	18.3				2.0		13.8				
Green Ext Time (p_c), s	0.1	10.8				19.2		0.4				

Intersection Summary	
HCM 6th Ctrl Delay	9.4
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	732	37	17	827	282	10	1	13	15	16	465
Future Volume (veh/h)	104	732	37	17	827	282	10	1	13	15	16	465
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	114	804	41	19	909	310	11	1	14	16	18	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	186	2832	1263	497	2275	1015	192	14	137	107	97	
Arrive On Green	0.21	1.00	1.00	0.64	0.64	0.64	0.09	0.09	0.09	0.09	0.09	0.00
Sat Flow, veh/h	1781	3554	1585	652	3554	1585	1333	165	1585	558	1124	1585
Grp Volume(v), veh/h	114	804	41	19	909	310	12	0	14	34	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	652	1777	1585	1498	0	1585	1682	0	1585
Q Serve(g_s), s	5.2	0.0	0.0	1.0	11.1	7.9	0.0	0.0	0.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.2	0.0	0.0	1.0	11.1	7.9	0.5	0.0	0.7	1.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.92		1.00	0.47		1.00
Lane Grp Cap(c), veh/h	186	2832	1263	497	2275	1015	206	0	137	204	0	
V/C Ratio(X)	0.61	0.28	0.03	0.04	0.40	0.31	0.06	0.00	0.10	0.17	0.00	
Avail Cap(c_a), veh/h	501	2832	1263	497	2275	1015	398	0	350	422	0	
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	33.9	0.0	0.0	6.0	7.8	7.2	37.8	0.0	37.9	38.3	0.0	0.0
Incr Delay (d2), s/veh	2.2	0.2	0.0	0.1	0.5	0.8	0.1	0.0	0.3	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.1	0.0	0.1	3.6	2.4	0.2	0.0	0.3	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.2	0.2	0.0	6.1	8.4	8.0	37.9	0.0	38.2	38.6	0.0	0.0
LnGrp LOS	D	A	A	A	A	A	D	A	D	D	A	
Approach Vol, veh/h		959			1238			26			34	A
Approach Delay, s/veh		4.5			8.2			38.1			38.6	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	2	4	5	6	8
Phs Duration (G+Y+Rc), s	77.1	12.9	14.1	63.0	12.9
Change Period (Y+Rc), s	5.4	5.1	* 4.7	5.4	5.1
Max Green Setting (Gmax), s	59.6	19.9	* 25	29.6	19.9
Max Q Clear Time (g_c+I1), s	2.0	3.5	7.2	13.1	2.7
Green Ext Time (p_c), s	9.8	0.1	0.2	9.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	7.5
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	78	123	0
Future Vol, veh/h	0	0	0	78	123	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	85	134	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	219	134	134	0	-	0
Stage 1	134	-	-	-	-	-
Stage 2	85	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	769	915	1451	-	-	-
Stage 1	892	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	769	915	1451	-	-	-
Mov Cap-2 Maneuver	769	-	-	-	-	-
Stage 1	892	-	-	-	-	-
Stage 2	938	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1451	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	1.8

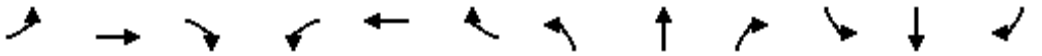
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	52	636	9	7	979	26	6	0	4	9	0	114
Future Vol, veh/h	52	636	9	7	979	26	6	0	4	9	0	114
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	75	-	-	-	-	-	-	-	30
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	60	731	10	8	1125	30	7	0	5	10	0	131

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1155	0	0	741	0	0	1435	2027	371	1642	2017	578
Stage 1	-	-	-	-	-	-	856	856	-	1156	1156	-
Stage 2	-	-	-	-	-	-	579	1171	-	486	861	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	601	-	-	1173	-	-	159	67	*838	*101	67	459
Stage 1	-	-	-	-	-	-	583	552	-	*209	269	-
Stage 2	-	-	-	-	-	-	468	265	-	*790	549	-
Platoon blocked, %		-	-	1	-	-	1	1	1	1	1	
Mov Cap-1 Maneuver	601	-	-	1173	-	-	104	59	*838	*93	60	459
Mov Cap-2 Maneuver	-	-	-	-	-	-	104	59	-	*93	60	-
Stage 1	-	-	-	-	-	-	525	497	-	*188	267	-
Stage 2	-	-	-	-	-	-	332	263	-	*707	494	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.1	29.2	18.3
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	160	601	-	-	1173	-	-	93	459
HCM Lane V/C Ratio	0.072	0.099	-	-	0.007	-	-	0.111	0.285
HCM Control Delay (s)	29.2	11.7	-	-	8.1	-	-	48.5	15.9
HCM Lane LOS	D	B	-	-	A	-	-	E	C
HCM 95th %tile Q(veh)	0.2	0.3	-	-	0	-	-	0.4	1.2

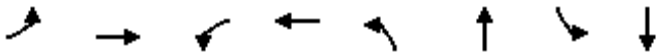
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	168	372	42	74	427	254	67	461	77	140	372	109
Future Volume (veh/h)	168	372	42	74	427	254	67	461	77	140	372	109
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	200	443	50	88	508	302	80	549	92	167	443	130
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	237	1226	547	113	978	436	103	833	371	203	1033	461
Arrive On Green	0.14	0.35	0.35	0.06	0.28	0.28	0.06	0.24	0.24	0.12	0.30	0.30
Sat Flow, veh/h	1753	3497	1560	1753	3497	1560	1753	3497	1560	1753	3497	1560
Grp Volume(v), veh/h	200	443	50	88	508	302	80	549	92	167	443	130
Grp Sat Flow(s),veh/h/ln	1753	1749	1560	1753	1749	1560	1753	1749	1560	1753	1749	1560
Q Serve(g_s), s	9.1	7.7	1.8	4.1	10.1	14.2	3.7	11.6	3.9	7.6	8.4	5.3
Cycle Q Clear(g_c), s	9.1	7.7	1.8	4.1	10.1	14.2	3.7	11.6	3.9	7.6	8.4	5.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	237	1226	547	113	978	436	103	833	371	203	1033	461
V/C Ratio(X)	0.84	0.36	0.09	0.78	0.52	0.69	0.78	0.66	0.25	0.82	0.43	0.28
Avail Cap(c_a), veh/h	342	1895	845	342	1895	845	342	1895	845	342	1895	845
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.7	19.8	17.9	37.8	24.9	26.4	38.1	28.3	25.3	35.5	23.3	22.2
Incr Delay (d2), s/veh	8.7	0.3	0.1	4.4	0.6	2.8	4.7	1.3	0.5	3.2	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	3.0	0.6	1.8	4.0	5.2	1.7	4.7	1.4	3.3	3.3	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.3	20.1	18.0	42.2	25.5	29.2	42.9	29.5	25.8	38.7	23.7	22.7
LnGrp LOS	D	C	B	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		693			898			721			740	
Approach Delay, s/veh		26.6			28.4			30.5			26.9	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	34.3	8.8	29.7	15.1	28.5	13.5	25.0
Change Period (Y+Rc), s	4.0	5.5	4.0	5.5	4.0	5.5	4.0	5.5
Max Green Setting (Gmax), s	16.0	44.5	16.0	44.5	16.0	44.5	16.0	44.5
Max Q Clear Time (g_c+I1), s	6.1	9.7	5.7	10.4	11.1	16.2	9.6	13.6
Green Ext Time (p_c), s	0.0	4.6	0.0	5.0	0.1	6.8	0.1	5.9

Intersection Summary	
HCM 6th Ctrl Delay	28.2
HCM 6th LOS	C



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	151	841	353	964	87	1282	124	844
v/c Ratio	0.57	0.82	0.83	0.81	0.60	0.81	0.70	0.51
Control Delay	67.0	48.1	71.9	43.9	75.8	41.1	78.6	33.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.0	48.1	71.9	43.9	75.8	41.1	78.6	33.7
Queue Length 50th (ft)	65	349	154	387	73	335	104	197
Queue Length 95th (ft)	106	444	#250	511	134	431	179	268
Internal Link Dist (ft)		543		632		486		619
Turn Bay Length (ft)	225		210		140		145	
Base Capacity (vph)	466	1240	466	1287	240	1770	240	1827
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.68	0.76	0.75	0.36	0.72	0.52	0.46

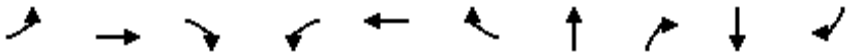
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	5	733	622	76	1315	46	213
v/c Ratio	0.02	0.34	0.44	0.37	0.35	0.21	0.55
Control Delay	9.6	9.9	1.3	39.6	3.6	36.8	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.6	9.9	1.3	39.6	3.6	36.8	11.0
Queue Length 50th (ft)	1	99	1	43	66	24	0
Queue Length 95th (ft)	7	169	22	m79	76	53	59
Internal Link Dist (ft)		349			384		
Turn Bay Length (ft)	45			55			
Base Capacity (vph)	228	2126	1478	300	3725	391	515
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.34	0.42	0.25	0.35	0.12	0.41

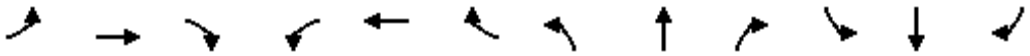
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	114	804	41	19	909	310	12	14	34	511
v/c Ratio	0.50	0.32	0.03	0.05	0.45	0.29	0.06	0.05	0.15	0.77
Control Delay	50.5	2.0	0.4	12.2	13.0	3.1	31.4	0.3	33.5	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.5	2.0	0.4	12.2	13.0	3.1	31.4	0.3	33.5	11.9
Queue Length 50th (ft)	53	10	0	4	134	5	6	0	18	0
Queue Length 95th (ft)	125	54	1	20	262	54	20	0	40	87
Internal Link Dist (ft)		384			608		543		472	
Turn Bay Length (ft)	70			100		160		20		225
Base Capacity (vph)	497	2540	1186	384	2032	1056	328	417	361	748
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.32	0.03	0.05	0.45	0.29	0.04	0.03	0.09	0.68

Intersection Summary



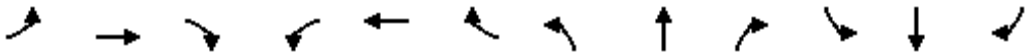
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	200	443	50	88	508	302	80	549	92	167	443	130
v/c Ratio	0.67	0.38	0.09	0.53	0.62	0.50	0.51	0.66	0.21	0.66	0.40	0.22
Control Delay	51.9	27.4	2.5	55.5	36.2	6.9	55.4	37.4	8.0	54.0	28.3	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.9	27.4	2.5	55.5	36.2	6.9	55.4	37.4	8.0	54.0	28.3	6.2
Queue Length 50th (ft)	114	110	0	51	144	0	47	157	0	94	110	0
Queue Length 95th (ft)	#233	169	8	103	201	49	96	218	33	176	168	36
Internal Link Dist (ft)		337			604			581			494	
Turn Bay Length (ft)	195		180	195		445	295		220	210		135
Base Capacity (vph)	300	1670	789	300	1670	904	300	1670	794	300	1670	814
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.27	0.06	0.29	0.30	0.33	0.27	0.33	0.12	0.56	0.27	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
1: Carson Street & Avalon Boulevard

01/13/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	818	104	342	685	103	99	709	483	209	890	180
Future Volume (veh/h)	179	818	104	342	685	103	99	709	483	209	890	180
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	181	826	105	345	692	104	100	716	488	211	899	182
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	233	948	121	393	1070	161	123	1119	521	220	1634	329
Arrive On Green	0.07	0.30	0.30	0.11	0.35	0.35	0.07	0.33	0.33	0.12	0.38	0.38
Sat Flow, veh/h	3456	3171	403	3456	3098	465	1781	3404	1585	1781	4261	859
Grp Volume(v), veh/h	181	463	468	345	397	399	100	716	488	211	717	364
Grp Sat Flow(s),veh/h/ln	1728	1777	1798	1728	1777	1787	1781	1702	1585	1781	1702	1716
Q Serve(g_s), s	6.9	33.0	33.0	13.1	25.1	25.2	7.4	23.9	39.9	15.7	22.0	22.1
Cycle Q Clear(g_c), s	6.9	33.0	33.0	13.1	25.1	25.2	7.4	23.9	39.9	15.7	22.0	22.1
Prop In Lane	1.00		0.22	1.00		0.26	1.00		1.00	1.00		0.50
Lane Grp Cap(c), veh/h	233	531	537	393	614	617	123	1119	521	220	1305	658
V/C Ratio(X)	0.78	0.87	0.87	0.88	0.65	0.65	0.81	0.64	0.94	0.96	0.55	0.55
Avail Cap(c_a), veh/h	427	592	599	427	614	617	220	1134	528	220	1305	658
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.3	44.4	44.4	58.2	36.8	36.8	61.3	38.1	43.5	58.2	32.2	32.2
Incr Delay (d2), s/veh	2.1	13.0	12.9	16.3	2.7	2.7	4.9	1.4	24.5	48.5	0.6	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	16.1	16.3	6.5	11.1	11.2	3.5	10.1	18.9	10.0	9.1	9.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.4	57.4	57.3	74.5	39.5	39.5	66.2	39.5	68.0	106.7	32.8	33.5
LnGrp LOS	E	E	E	E	D	D	E	D	E	F	C	C
Approach Vol, veh/h		1112			1141			1304			1292	
Approach Delay, s/veh		58.3			50.1			52.2			45.1	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	51.6	20.0	49.4	18.7	45.4	12.7	56.7
Change Period (Y+Rc), s	3.5	5.5	3.5	5.5	3.5	5.5	3.5	5.5
Max Green Setting (Gmax), s	16.5	44.5	16.5	44.5	16.5	44.5	16.5	44.5
Max Q Clear Time (g_c+I1), s	8.9	27.2	17.7	41.9	15.1	35.0	9.4	24.1
Green Ext Time (p_c), s	0.1	6.1	0.0	2.0	0.1	5.0	0.0	9.7

Intersection Summary	
HCM 6th Ctrl Delay	51.2
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	1203	907	69	1037	0	16	0	62	0	0	0
Future Volume (veh/h)	7	1203	907	69	1037	0	16	0	62	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	0	1870	0	1870			
Adj Flow Rate, veh/h	7	1266	955	73	1092	0	17	0	65			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	2	2	2	0	2	0	2			
Cap, veh/h	402	2215	1141	198	4016	0	172	0	153			
Arrive On Green	0.62	0.62	0.62	0.22	1.00	0.00	0.10	0.00	0.10			
Sat Flow, veh/h	516	3554	1585	1781	5274	0	1781	0	1585			
Grp Volume(v), veh/h	7	1266	955	73	1092	0	17	0	65			
Grp Sat Flow(s),veh/h/ln	516	1777	1585	1781	1702	0	1781	0	1585			
Q Serve(g_s), s	0.5	18.8	38.2	3.1	0.0	0.0	0.8	0.0	3.5			
Cycle Q Clear(g_c), s	0.5	18.8	38.2	3.1	0.0	0.0	0.8	0.0	3.5			
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00			
Lane Grp Cap(c), veh/h	402	2215	1141	198	4016	0	172	0	153			
V/C Ratio(X)	0.02	0.57	0.84	0.37	0.27	0.00	0.10	0.00	0.42			
Avail Cap(c_a), veh/h	402	2215	1141	303	4016	0	394	0	350			
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	1.00	0.82	0.82	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	6.5	9.9	8.9	32.3	0.0	0.0	37.1	0.0	38.3			
Incr Delay (d2), s/veh	0.1	1.1	7.4	0.7	0.1	0.0	0.2	0.0	1.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.1	6.3	12.2	1.3	0.1	0.0	0.3	0.0	1.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.6	11.0	16.2	33.0	0.1	0.0	37.3	0.0	40.1			
LnGrp LOS	A	B	B	C	A	A	D	A	D			
Approach Vol, veh/h		2228			1165			82				
Approach Delay, s/veh		13.2			2.2			39.5				
Approach LOS		B			A			D				

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	14.7	61.5				76.2		13.8				
Change Period (Y+Rc), s	* 4.7	5.4				5.4		5.1				
Max Green Setting (Gmax), s	* 15	39.6				59.6		19.9				
Max Q Clear Time (g_c+I1), s	5.1	40.2				2.0		5.5				
Green Ext Time (p_c), s	0.1	0.0				14.4		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	10.2
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	1111	29	28	564	251	35	31	27	37	12	524
Future Volume (veh/h)	140	1111	29	28	564	251	35	31	27	37	12	524
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	149	1182	31	30	600	267	37	33	29	39	13	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	193	2753	1228	363	2182	973	141	107	172	149	40	
Arrive On Green	0.22	1.00	1.00	0.61	0.61	0.61	0.11	0.11	0.11	0.11	0.11	0.00
Sat Flow, veh/h	1781	3554	1585	460	3554	1585	736	990	1585	732	372	1585
Grp Volume(v), veh/h	149	1182	31	30	600	267	70	0	29	52	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	460	1777	1585	1726	0	1585	1104	0	1585
Q Serve(g_s), s	7.1	0.0	0.0	2.4	7.1	7.0	0.0	0.0	1.5	2.2	0.0	0.0
Cycle Q Clear(g_c), s	7.1	0.0	0.0	2.4	7.1	7.0	3.2	0.0	1.5	5.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.53		1.00	0.75		1.00
Lane Grp Cap(c), veh/h	193	2753	1228	363	2182	973	249	0	172	190	0	
V/C Ratio(X)	0.77	0.43	0.03	0.08	0.27	0.27	0.28	0.00	0.17	0.27	0.00	
Avail Cap(c_a), veh/h	501	2753	1228	363	2182	973	427	0	350	352	0	
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.78	0.78	0.78	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	34.2	0.0	0.0	7.2	8.1	8.1	37.2	0.0	36.4	38.6	0.0	0.0
Incr Delay (d2), s/veh	3.8	0.4	0.0	0.4	0.3	0.7	0.6	0.0	0.5	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.1	0.0	0.2	2.4	2.2	1.5	0.0	0.6	1.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.0	0.4	0.0	7.6	8.4	8.8	37.8	0.0	36.9	39.4	0.0	0.0
LnGrp LOS	D	A	A	A	A	A	D	A	D	D	A	
Approach Vol, veh/h		1362			897			99			52	A
Approach Delay, s/veh		4.5			8.5			37.5			39.4	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		75.1		14.9	14.5	60.7		14.9				
Change Period (Y+Rc), s		5.4		5.1	* 4.7	5.4		5.1				
Max Green Setting (Gmax), s		59.6		19.9	* 25	29.6		19.9				
Max Q Clear Time (g_c+I1), s		2.0		7.4	9.1	9.1		5.2				
Green Ext Time (p_c), s		17.4		0.1	0.2	7.2		0.3				

Intersection Summary		
HCM 6th Ctrl Delay		8.1
HCM 6th LOS		A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	102	152	0
Future Vol, veh/h	0	0	0	102	152	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	111	165	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	276	165	165	0	-	0
Stage 1	165	-	-	-	-	-
Stage 2	111	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	714	879	1413	-	-	-
Stage 1	864	-	-	-	-	-
Stage 2	914	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	714	879	1413	-	-	-
Mov Cap-2 Maneuver	714	-	-	-	-	-
Stage 1	864	-	-	-	-	-
Stage 2	914	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1413	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	1.9

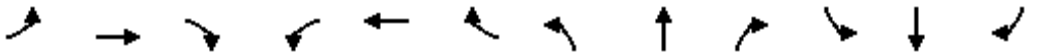
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	85	1073	5	3	720	22	5	0	11	66	0	86
Future Vol, veh/h	85	1073	5	3	720	22	5	0	11	66	0	86
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	75	-	-	-	-	-	-	-	30
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	89	1118	5	3	750	23	5	0	11	69	0	90

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	773	0	0	1123	0	0	1680	2078	562	1505	2069	387
Stage 1	-	-	-	-	-	-	1299	1299	-	768	768	-
Stage 2	-	-	-	-	-	-	381	779	-	737	1301	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	838	-	-	*999	-	-	154	74	*668	*247	76	611
Stage 1	-	-	-	-	-	-	457	435	-	*360	409	-
Stage 2	-	-	-	-	-	-	613	404	-	*629	433	-
Platoon blocked, %		-	-	1	-	-	1	1	1	1	1	
Mov Cap-1 Maneuver	838	-	-	*999	-	-	121	66	*668	*223	68	611
Mov Cap-2 Maneuver	-	-	-	-	-	-	121	66	-	*223	68	-
Stage 1	-	-	-	-	-	-	409	388	-	*322	408	-
Stage 2	-	-	-	-	-	-	522	403	-	*553	387	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0	18.8	19
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	277	838	-	-	* 999	-	-	223	611
HCM Lane V/C Ratio	0.06	0.106	-	-	0.003	-	-	0.308	0.147
HCM Control Delay (s)	18.8	9.8	-	-	8.6	-	-	28.2	11.9
HCM Lane LOS	C	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	0.2	0.4	-	-	0	-	-	1.3	0.5

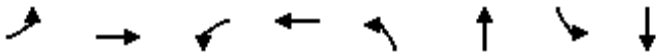
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	742	61	49	354	114	89	370	98	212	660	222
Future Volume (veh/h)	104	742	61	49	354	114	89	370	98	212	660	222
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	111	789	65	52	377	121	95	394	104	226	702	236
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	141	1151	513	65	1000	446	121	799	357	265	1087	485
Arrive On Green	0.08	0.33	0.33	0.04	0.29	0.29	0.07	0.23	0.23	0.15	0.31	0.31
Sat Flow, veh/h	1739	3469	1547	1739	3469	1547	1739	3469	1547	1739	3469	1547
Grp Volume(v), veh/h	111	789	65	52	377	121	95	394	104	226	702	236
Grp Sat Flow(s),veh/h/ln	1739	1735	1547	1739	1735	1547	1739	1735	1547	1739	1735	1547
Q Serve(g_s), s	4.8	15.1	2.2	2.3	6.7	4.6	4.1	7.6	4.3	9.7	13.4	9.5
Cycle Q Clear(g_c), s	4.8	15.1	2.2	2.3	6.7	4.6	4.1	7.6	4.3	9.7	13.4	9.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	141	1151	513	65	1000	446	121	799	357	265	1087	485
V/C Ratio(X)	0.79	0.69	0.13	0.80	0.38	0.27	0.78	0.49	0.29	0.85	0.65	0.49
Avail Cap(c_a), veh/h	363	2013	898	363	2013	898	363	2013	898	363	2013	898
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.6	22.2	17.9	36.6	21.8	21.1	35.1	25.6	24.3	31.7	22.7	21.3
Incr Delay (d2), s/veh	3.7	1.0	0.2	8.0	0.3	0.5	4.1	0.7	0.6	10.4	0.9	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	5.7	0.8	1.1	2.5	1.6	1.8	3.0	1.5	4.6	5.1	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.3	23.2	18.0	44.6	22.1	21.5	39.2	26.3	25.0	42.0	23.6	22.4
LnGrp LOS	D	C	B	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		965			550			593			1164	
Approach Delay, s/veh		24.6			24.1			28.1			26.9	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	30.9	9.3	29.5	10.2	27.6	15.7	23.2
Change Period (Y+Rc), s	4.0	5.5	4.0	5.5	4.0	5.5	4.0	5.5
Max Green Setting (Gmax), s	16.0	44.5	16.0	44.5	16.0	44.5	16.0	44.5
Max Q Clear Time (g_c+I1), s	4.3	17.1	6.1	15.4	6.8	8.7	11.7	9.6
Green Ext Time (p_c), s	0.0	8.4	0.0	8.7	0.0	4.3	0.1	4.4

Intersection Summary	
HCM 6th Ctrl Delay	26.0
HCM 6th LOS	C



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	181	931	345	796	100	1204	211	1081
v/c Ratio	0.64	0.88	0.86	0.68	0.66	0.88dr	0.94	0.64
Control Delay	70.0	53.6	78.2	40.3	79.9	42.4	105.1	38.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.0	53.6	78.2	40.3	79.9	42.4	105.1	38.2
Queue Length 50th (ft)	82	411	159	311	89	328	~194	291
Queue Length 95th (ft)	122	506	#241	406	148	387	#368	362
Internal Link Dist (ft)		543		632		486		619
Turn Bay Length (ft)	225		210		140		145	
Base Capacity (vph)	435	1155	435	1215	224	1662	224	1707
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.81	0.79	0.66	0.45	0.72	0.94	0.63

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

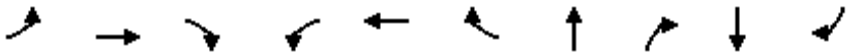
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	7	1266	955	73	1092	17	65
v/c Ratio	0.02	0.61	0.68	0.36	0.30	0.07	0.22
Control Delay	10.7	14.2	4.1	47.6	3.3	32.2	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.7	14.2	4.1	47.6	3.3	32.2	6.2
Queue Length 50th (ft)	1	215	40	43	32	9	0
Queue Length 95th (ft)	10	388	114	m75	93	25	22
Internal Link Dist (ft)		349			384		
Turn Bay Length (ft)	45			55			
Base Capacity (vph)	283	2091	1470	300	3669	391	417
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.61	0.65	0.24	0.30	0.04	0.16

Intersection Summary

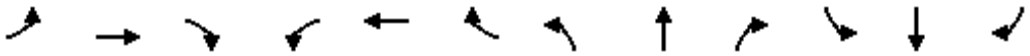
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	149	1182	31	30	600	267	70	29	52	557
v/c Ratio	0.59	0.47	0.03	0.12	0.32	0.27	0.32	0.10	0.26	0.79
Control Delay	54.5	3.5	1.1	15.1	13.3	2.9	37.0	0.6	35.8	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.5	3.5	1.1	15.1	13.3	2.9	37.0	0.6	35.8	12.2
Queue Length 50th (ft)	92	63	0	7	84	0	38	0	28	1
Queue Length 95th (ft)	m154	74	m1	31	171	45	68	0	55	94
Internal Link Dist (ft)		384			608		543		472	
Turn Bay Length (ft)	70			100		160		20		225
Base Capacity (vph)	497	2535	1181	241	1859	982	339	420	308	784
Starvation Cap Reductn	0	147	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.49	0.03	0.12	0.32	0.27	0.21	0.07	0.17	0.71

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



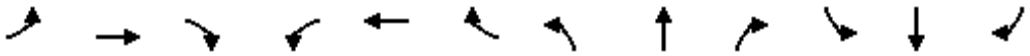
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	111	789	65	52	377	121	95	394	104	226	702	236
v/c Ratio	0.59	0.71	0.12	0.40	0.41	0.24	0.55	0.47	0.23	0.76	0.59	0.37
Control Delay	60.7	34.8	4.6	60.0	32.3	7.4	60.1	33.9	7.6	61.2	32.4	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.7	34.8	4.6	60.0	32.3	7.4	60.1	33.9	7.6	61.2	32.4	13.2
Queue Length 50th (ft)	66	223	0	31	97	0	56	108	0	135	196	37
Queue Length 95th (ft)	158	388	23	88	183	47	138	185	42	#393	343	124
Internal Link Dist (ft)		337			604			581			494	
Turn Bay Length (ft)	195		180	195		445	295		220	210		135
Base Capacity (vph)	299	1662	786	299	1662	806	299	1662	797	299	1662	823
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.47	0.08	0.17	0.23	0.15	0.32	0.24	0.13	0.76	0.42	0.29

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
1: Carson Street & Avalon Boulevard

01/13/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	705	72	327	780	112	80	770	409	117	659	115
Future Volume (veh/h)	139	705	72	327	780	112	80	770	409	117	659	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	154	783	80	363	867	124	89	856	454	130	732	128
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	211	958	98	419	1105	158	112	1175	547	156	1621	281
Arrive On Green	0.06	0.29	0.29	0.12	0.35	0.35	0.06	0.35	0.35	0.09	0.37	0.37
Sat Flow, veh/h	3456	3255	332	3456	3121	446	1781	3404	1585	1781	4379	758
Grp Volume(v), veh/h	154	427	436	363	494	497	89	856	454	130	567	293
Grp Sat Flow(s),veh/h/ln	1728	1777	1811	1728	1777	1790	1781	1702	1585	1781	1702	1734
Q Serve(g_s), s	5.2	26.5	26.6	12.2	29.5	29.5	5.9	26.1	31.2	8.5	15.0	15.2
Cycle Q Clear(g_c), s	5.2	26.5	26.6	12.2	29.5	29.5	5.9	26.1	31.2	8.5	15.0	15.2
Prop In Lane	1.00		0.18	1.00		0.25	1.00		1.00	1.00		0.44
Lane Grp Cap(c), veh/h	211	523	533	419	629	634	112	1175	547	156	1260	642
V/C Ratio(X)	0.73	0.82	0.82	0.87	0.78	0.78	0.79	0.73	0.83	0.83	0.45	0.46
Avail Cap(c_a), veh/h	480	666	679	480	666	671	248	1276	594	248	1276	650
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.8	38.9	38.9	51.2	34.3	34.3	54.9	34.0	35.7	53.3	28.3	28.3
Incr Delay (d2), s/veh	1.8	7.1	7.0	12.8	6.3	6.2	4.7	2.2	9.6	6.6	0.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	12.2	12.5	5.9	13.4	13.4	2.8	10.9	13.2	4.1	6.1	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.6	46.1	46.0	64.0	40.6	40.5	59.6	36.2	45.3	59.9	28.6	29.1
LnGrp LOS	E	D	D	E	D	D	E	D	D	E	C	C
Approach Vol, veh/h		1017			1354			1399			990	
Approach Delay, s/veh		47.6			46.8			40.6			32.9	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	47.6	13.9	46.5	17.9	40.4	11.0	49.4
Change Period (Y+Rc), s	3.5	5.5	3.5	5.5	3.5	5.5	3.5	5.5
Max Green Setting (Gmax), s	16.5	44.5	16.5	44.5	16.5	44.5	16.5	44.5
Max Q Clear Time (g_c+I1), s	7.2	31.5	10.5	33.2	14.2	28.6	7.9	17.2
Green Ext Time (p_c), s	0.1	6.5	0.0	7.8	0.1	6.4	0.0	8.6

Intersection Summary	
HCM 6th Ctrl Delay	42.3
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	700	583	78	1245	0	43	0	212	0	0	0
Future Volume (veh/h)	5	700	583	78	1245	0	43	0	212	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	0	1870	0	1870			
Adj Flow Rate, veh/h	5	761	634	85	1353	0	47	0	230			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	2	2	2	0	2	0	2			
Cap, veh/h	302	1962	1141	198	3653	0	299	0	266			
Arrive On Green	0.55	0.55	0.55	0.22	1.00	0.00	0.17	0.00	0.17			
Sat Flow, veh/h	403	3554	1585	1781	5274	0	1781	0	1585			
Grp Volume(v), veh/h	5	761	634	85	1353	0	47	0	230			
Grp Sat Flow(s),veh/h/ln	403	1777	1585	1781	1702	0	1781	0	1585			
Q Serve(g_s), s	0.5	11.0	16.8	3.7	0.0	0.0	2.0	0.0	12.7			
Cycle Q Clear(g_c), s	0.5	11.0	16.8	3.7	0.0	0.0	2.0	0.0	12.7			
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00			
Lane Grp Cap(c), veh/h	302	1962	1141	198	3653	0	299	0	266			
V/C Ratio(X)	0.02	0.39	0.56	0.43	0.37	0.00	0.16	0.00	0.86			
Avail Cap(c_a), veh/h	302	1962	1141	303	3653	0	394	0	350			
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	1.00	0.79	0.79	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	9.1	11.5	5.9	32.5	0.0	0.0	32.0	0.0	36.4			
Incr Delay (d2), s/veh	0.1	0.6	2.0	0.9	0.2	0.0	0.2	0.0	15.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	4.0	5.0	1.5	0.1	0.0	0.9	0.0	6.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.2	12.1	7.8	33.4	0.2	0.0	32.2	0.0	52.2			
LnGrp LOS	A	B	A	C	A	A	C	A	D			
Approach Vol, veh/h		1400			1438			277				
Approach Delay, s/veh		10.1			2.2			48.8				
Approach LOS		B			A			D				

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	14.7	55.1				69.8		20.2				
Change Period (Y+Rc), s	* 4.7	5.4				5.4		5.1				
Max Green Setting (Gmax), s	* 15	39.6				59.6		19.9				
Max Q Clear Time (g_c+I1), s	15.7	18.8				2.0		14.7				
Green Ext Time (p_c), s	0.1	11.0				20.1		0.4				

Intersection Summary	
HCM 6th Ctrl Delay	9.9
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	771	38	17	861	299	10	1	13	23	16	474
Future Volume (veh/h)	106	771	38	17	861	299	10	1	13	23	16	474
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	116	847	42	19	946	329	11	1	14	25	18	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	187	2815	1255	477	2256	1006	200	15	145	132	79	
Arrive On Green	0.21	1.00	1.00	0.63	0.63	0.63	0.09	0.09	0.09	0.09	0.09	0.00
Sat Flow, veh/h	1781	3554	1585	625	3554	1585	1352	164	1585	754	862	1585
Grp Volume(v), veh/h	116	847	42	19	946	329	12	0	14	43	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	625	1777	1585	1516	0	1585	1616	0	1585
Q Serve(g_s), s	5.3	0.0	0.0	1.0	11.9	8.6	0.0	0.0	0.7	0.6	0.0	0.0
Cycle Q Clear(g_c), s	5.3	0.0	0.0	1.0	11.9	8.6	0.5	0.0	0.7	2.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.92		1.00	0.58		1.00
Lane Grp Cap(c), veh/h	187	2815	1255	477	2256	1006	215	0	145	211	0	
V/C Ratio(X)	0.62	0.30	0.03	0.04	0.42	0.33	0.06	0.00	0.10	0.20	0.00	
Avail Cap(c_a), veh/h	501	2815	1255	477	2256	1006	400	0	350	414	0	
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.92	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	33.9	0.0	0.0	6.2	8.2	7.6	37.4	0.0	37.5	38.0	0.0	0.0
Incr Delay (d2), s/veh	2.3	0.3	0.0	0.2	0.6	0.9	0.1	0.0	0.3	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.1	0.0	0.1	3.9	2.6	0.2	0.0	0.3	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.2	0.3	0.0	6.3	8.8	8.4	37.5	0.0	37.8	38.5	0.0	0.0
LnGrp LOS	D	A	A	A	A	A	D	A	D	D	A	
Approach Vol, veh/h		1005			1294			26			43	A
Approach Delay, s/veh		4.4			8.6			37.7			38.5	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	2	4	5	6	8
Phs Duration (G+Y+Rc), s	76.7	13.3	14.1	62.5	13.3
Change Period (Y+Rc), s	5.4	5.1	* 4.7	5.4	5.1
Max Green Setting (Gmax), s	59.6	19.9	* 25	29.6	19.9
Max Q Clear Time (g_c+I1), s	2.0	4.0	7.3	13.9	2.7
Green Ext Time (p_c), s	10.6	0.1	0.2	9.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	7.7
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	37	42	80	126	7
Future Vol, veh/h	7	37	42	80	126	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	40	46	87	137	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	320	141	145	0	-	0
Stage 1	141	-	-	-	-	-
Stage 2	179	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	673	907	1437	-	-	-
Stage 1	886	-	-	-	-	-
Stage 2	852	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	650	907	1437	-	-	-
Mov Cap-2 Maneuver	650	-	-	-	-	-
Stage 1	856	-	-	-	-	-
Stage 2	852	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	2.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1437	-	853	-	-
HCM Lane V/C Ratio	0.032	-	0.056	-	-
HCM Control Delay (s)	7.6	0	9.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	2.8

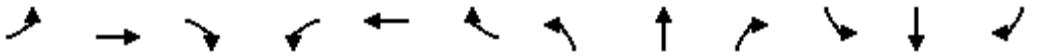
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	85	649	9	7	998	36	6	0	4	18	0	145
Future Vol, veh/h	85	649	9	7	998	36	6	0	4	18	0	145
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	75	-	-	-	-	-	-	-	30
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	98	746	10	8	1147	41	7	0	5	21	0	167

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1188	0	0	756	0	0	1537	2151	378	1753	2136	594
Stage 1	-	-	-	-	-	-	947	947	-	1184	1184	-
Stage 2	-	-	-	-	-	-	590	1204	-	569	952	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	583	-	-	1155	-	-	127	53	*838	*79	54	448
Stage 1	-	-	-	-	-	-	498	490	-	*201	261	-
Stage 2	-	-	-	-	-	-	461	255	-	*790	487	-
Platoon blocked, %		-	-	1	-	-	1	1	1	1	1	
Mov Cap-1 Maneuver	583	-	-	1155	-	-	69	43	*838	*68	45	448
Mov Cap-2 Maneuver	-	-	-	-	-	-	69	43	-	*68	45	-
Stage 1	-	-	-	-	-	-	414	408	-	*167	259	-
Stage 2	-	-	-	-	-	-	287	253	-	*653	405	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0.1	41.9	24.5
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	109	583	-	-	1155	-	-	68	448
HCM Lane V/C Ratio	0.105	0.168	-	-	0.007	-	-	0.304	0.372
HCM Control Delay (s)	41.9	12.4	-	-	8.1	-	-	79.6	17.7
HCM Lane LOS	E	B	-	-	A	-	-	F	C
HCM 95th %tile Q(veh)	0.3	0.6	-	-	0	-	-	1.1	1.7

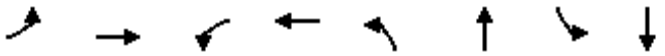
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	382	45	75	438	259	71	470	79	143	379	116
Future Volume (veh/h)	176	382	45	75	438	259	71	470	79	143	379	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	210	455	54	89	521	308	85	560	94	170	451	138
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	246	1247	556	114	983	438	109	836	373	205	1028	458
Arrive On Green	0.14	0.36	0.36	0.06	0.28	0.28	0.06	0.24	0.24	0.12	0.29	0.29
Sat Flow, veh/h	1753	3497	1560	1753	3497	1560	1753	3497	1560	1753	3497	1560
Grp Volume(v), veh/h	210	455	54	89	521	308	85	560	94	170	451	138
Grp Sat Flow(s),veh/h/ln	1753	1749	1560	1753	1749	1560	1753	1749	1560	1753	1749	1560
Q Serve(g_s), s	10.0	8.2	2.0	4.3	10.7	15.1	4.1	12.4	4.2	8.1	8.9	5.8
Cycle Q Clear(g_c), s	10.0	8.2	2.0	4.3	10.7	15.1	4.1	12.4	4.2	8.1	8.9	5.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	246	1247	556	114	983	438	109	836	373	205	1028	458
V/C Ratio(X)	0.85	0.36	0.10	0.78	0.53	0.70	0.78	0.67	0.25	0.83	0.44	0.30
Avail Cap(c_a), veh/h	329	1824	814	329	1824	814	329	1824	814	329	1824	814
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.8	20.3	18.3	39.3	25.9	27.5	39.4	29.4	26.3	36.8	24.4	23.3
Incr Delay (d2), s/veh	12.1	0.3	0.1	4.3	0.6	2.9	4.5	1.3	0.5	4.5	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	3.2	0.7	1.9	4.3	5.6	1.8	5.1	1.5	3.6	3.5	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.9	20.6	18.4	43.6	26.5	30.4	43.9	30.7	26.8	41.3	24.8	23.9
LnGrp LOS	D	C	B	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		719			918			739			759	
Approach Delay, s/veh		28.4			29.5			31.8			28.4	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	35.9	9.3	30.6	16.0	29.5	14.0	25.9
Change Period (Y+Rc), s	4.0	5.5	4.0	5.5	4.0	5.5	4.0	5.5
Max Green Setting (Gmax), s	16.0	44.5	16.0	44.5	16.0	44.5	16.0	44.5
Max Q Clear Time (g_c+I1), s	6.3	10.2	6.1	10.9	12.0	17.1	10.1	14.4
Green Ext Time (p_c), s	0.0	4.7	0.0	5.2	0.1	6.9	0.1	6.0

Intersection Summary	
HCM 6th Ctrl Delay	29.5
HCM 6th LOS	C



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	154	863	363	991	89	1310	130	860
v/c Ratio	0.58	0.84	0.85	0.83	0.61	0.83	0.73	0.52
Control Delay	67.9	49.6	74.4	45.4	76.7	42.7	80.6	34.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.9	49.6	74.4	45.4	76.7	42.7	80.6	34.3
Queue Length 50th (ft)	68	364	161	406	76	353	111	206
Queue Length 95th (ft)	107	458	#260	531	136	444	187	275
Internal Link Dist (ft)		543		632		486		619
Turn Bay Length (ft)	225		210		140		145	
Base Capacity (vph)	456	1216	456	1265	235	1737	235	1794
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.71	0.80	0.78	0.38	0.75	0.55	0.48

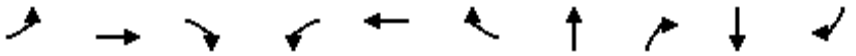
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	5	761	634	85	1353	47	230
v/c Ratio	0.02	0.36	0.45	0.40	0.36	0.21	0.57
Control Delay	10.0	10.3	1.6	40.1	3.6	36.7	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	10.3	1.6	40.1	3.6	36.7	11.0
Queue Length 50th (ft)	1	104	6	47	68	25	0
Queue Length 95th (ft)	7	182	32	m86	79	53	61
Internal Link Dist (ft)		349			384		
Turn Bay Length (ft)	45			55			
Base Capacity (vph)	217	2114	1470	300	3721	391	529
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.36	0.43	0.28	0.36	0.12	0.43

Intersection Summary

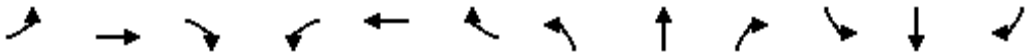
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	116	847	42	19	946	329	12	14	43	521
v/c Ratio	0.51	0.33	0.04	0.05	0.47	0.31	0.06	0.05	0.19	0.78
Control Delay	49.3	2.0	0.4	12.4	13.4	3.4	31.3	0.3	34.4	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.3	2.0	0.4	12.4	13.4	3.4	31.3	0.3	34.4	12.5
Queue Length 50th (ft)	50	11	0	4	143	8	6	0	23	3
Queue Length 95th (ft)	126	57	m1	20	276	61	20	0	48	93
Internal Link Dist (ft)		384			608		543		472	
Turn Bay Length (ft)	70			100		160		20		225
Base Capacity (vph)	497	2535	1184	368	2024	1055	327	417	345	751
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.33	0.04	0.05	0.47	0.31	0.04	0.03	0.12	0.69

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



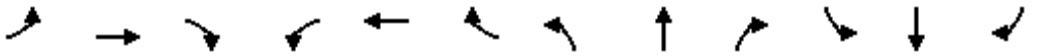
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	210	455	54	89	521	308	85	560	94	170	451	138
v/c Ratio	0.71	0.39	0.09	0.54	0.62	0.51	0.53	0.67	0.21	0.67	0.41	0.23
Control Delay	55.4	27.9	3.0	56.3	36.7	6.9	56.4	37.8	7.9	55.1	28.8	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.4	27.9	3.0	56.3	36.7	6.9	56.4	37.8	7.9	55.1	28.8	6.1
Queue Length 50th (ft)	122	115	0	53	151	0	50	163	0	97	114	0
Queue Length 95th (ft)	#253	176	10	105	208	49	102	224	34	180	174	37
Internal Link Dist (ft)		337			604			581			494	
Turn Bay Length (ft)	195		180	195		445	295		220	210		135
Base Capacity (vph)	294	1638	776	294	1638	895	294	1638	782	294	1638	805
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.28	0.07	0.30	0.32	0.34	0.29	0.34	0.12	0.58	0.28	0.17

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
1: Carson Street & Avalon Boulevard

01/13/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	837	106	350	701	106	101	723	494	214	908	184
Future Volume (veh/h)	183	837	106	350	701	106	101	723	494	214	908	184
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	185	845	107	354	708	107	102	730	499	216	917	186
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	236	957	121	401	1081	163	125	1115	519	217	1616	327
Arrive On Green	0.07	0.30	0.30	0.12	0.35	0.35	0.07	0.33	0.33	0.12	0.38	0.38
Sat Flow, veh/h	3456	3173	402	3456	3096	468	1781	3404	1585	1781	4259	860
Grp Volume(v), veh/h	185	473	479	354	406	409	102	730	499	216	732	371
Grp Sat Flow(s),veh/h/ln	1728	1777	1798	1728	1777	1786	1781	1702	1585	1781	1702	1715
Q Serve(g_s), s	7.1	34.3	34.3	13.7	26.1	26.2	7.7	24.9	41.8	16.4	23.0	23.2
Cycle Q Clear(g_c), s	7.1	34.3	34.3	13.7	26.1	26.2	7.7	24.9	41.8	16.4	23.0	23.2
Prop In Lane	1.00		0.22	1.00		0.26	1.00		1.00	1.00		0.50
Lane Grp Cap(c), veh/h	236	536	542	401	621	624	125	1115	519	217	1292	651
V/C Ratio(X)	0.78	0.88	0.88	0.88	0.65	0.66	0.82	0.65	0.96	1.00	0.57	0.57
Avail Cap(c_a), veh/h	421	584	591	421	621	624	217	1118	521	217	1292	651
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.1	45.0	45.0	59.0	37.2	37.2	62.1	39.0	44.7	59.4	33.2	33.3
Incr Delay (d2), s/veh	2.2	14.6	14.5	17.9	2.8	2.8	4.9	1.6	29.8	59.6	0.7	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	17.0	17.1	6.9	11.6	11.7	3.6	10.6	20.5	11.0	9.6	9.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.3	59.7	59.5	76.8	40.0	40.0	67.0	40.5	74.4	119.1	33.9	34.7
LnGrp LOS	E	E	E	E	D	D	E	D	E	F	C	C
Approach Vol, veh/h		1137			1169			1331			1319	
Approach Delay, s/veh		60.4			51.1			55.3			48.1	
Approach LOS		E			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	52.8	20.0	49.9	19.2	46.3	13.0	56.9
Change Period (Y+Rc), s	3.5	5.5	3.5	5.5	3.5	5.5	3.5	5.5
Max Green Setting (Gmax), s	16.5	44.5	16.5	44.5	16.5	44.5	16.5	44.5
Max Q Clear Time (g_c+I1), s	9.1	28.2	18.4	43.8	15.7	36.3	9.7	25.2
Green Ext Time (p_c), s	0.1	6.1	0.0	0.5	0.1	4.5	0.0	9.6

Intersection Summary	
HCM 6th Ctrl Delay	53.6
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	1233	925	74	1063	0	16	0	69	0	0	0
Future Volume (veh/h)	7	1233	925	74	1063	0	16	0	69	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	0	1870	0	1870			
Adj Flow Rate, veh/h	7	1298	974	78	1119	0	17	0	73			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	2	2	2	0	2	0	2			
Cap, veh/h	392	2205	1141	198	4003	0	177	0	158			
Arrive On Green	0.62	0.62	0.62	0.22	1.00	0.00	0.10	0.00	0.10			
Sat Flow, veh/h	503	3554	1585	1781	5274	0	1781	0	1585			
Grp Volume(v), veh/h	7	1298	974	78	1119	0	17	0	73			
Grp Sat Flow(s),veh/h/ln	503	1777	1585	1781	1702	0	1781	0	1585			
Q Serve(g_s), s	0.5	19.6	40.2	3.4	0.0	0.0	0.8	0.0	3.9			
Cycle Q Clear(g_c), s	0.5	19.6	40.2	3.4	0.0	0.0	0.8	0.0	3.9			
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00			
Lane Grp Cap(c), veh/h	392	2205	1141	198	4003	0	177	0	158			
V/C Ratio(X)	0.02	0.59	0.85	0.39	0.28	0.00	0.10	0.00	0.46			
Avail Cap(c_a), veh/h	392	2205	1141	303	4003	0	394	0	350			
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	1.00	0.80	0.80	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	6.6	10.2	9.2	32.4	0.0	0.0	36.9	0.0	38.3			
Incr Delay (d2), s/veh	0.1	1.2	8.2	0.8	0.1	0.0	0.2	0.0	2.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.1	6.6	13.0	1.4	0.1	0.0	0.3	0.0	1.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.7	11.4	17.3	33.2	0.1	0.0	37.1	0.0	40.4			
LnGrp LOS	A	B	B	C	A	A	D	A	D			
Approach Vol, veh/h		2279			1197			90				
Approach Delay, s/veh		13.9			2.3			39.8				
Approach LOS		B			A			D				

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	14.7	61.3				76.0		14.0				
Change Period (Y+Rc), s *	4.7	5.4				5.4		5.1				
Max Green Setting (Gmax), s	15.5	39.6				59.6		19.9				
Max Q Clear Time (g_c+I1), s	5.4	42.2				2.0		5.9				
Green Ext Time (p_c), s	0.1	0.0				14.9		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	10.7
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	1144	30	29	584	262	36	32	28	41	12	534
Future Volume (veh/h)	143	1144	30	29	584	262	36	32	28	41	12	534
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	152	1217	32	31	621	279	38	34	30	44	13	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	193	2752	1227	353	2180	972	142	108	173	151	36	
Arrive On Green	0.22	1.00	1.00	0.61	0.61	0.61	0.11	0.11	0.11	0.11	0.11	0.00
Sat Flow, veh/h	1781	3554	1585	445	3554	1585	739	994	1585	737	330	1585
Grp Volume(v), veh/h	152	1217	32	31	621	279	72	0	30	57	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	445	1777	1585	1734	0	1585	1068	0	1585
Q Serve(g_s), s	7.2	0.0	0.0	2.6	7.4	7.4	0.0	0.0	1.5	2.7	0.0	0.0
Cycle Q Clear(g_c), s	7.2	0.0	0.0	2.6	7.4	7.4	3.3	0.0	1.5	5.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.53		1.00	0.77		1.00
Lane Grp Cap(c), veh/h	193	2752	1227	353	2180	972	250	0	173	187	0	
V/C Ratio(X)	0.79	0.44	0.03	0.09	0.28	0.29	0.29	0.00	0.17	0.30	0.00	
Avail Cap(c_a), veh/h	501	2752	1227	353	2180	972	428	0	350	348	0	
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.76	0.76	0.76	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	34.2	0.0	0.0	7.2	8.1	8.2	37.2	0.0	36.4	39.0	0.0	0.0
Incr Delay (d2), s/veh	4.0	0.4	0.0	0.5	0.3	0.7	0.6	0.0	0.5	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.2	0.0	0.3	2.5	2.3	1.5	0.0	0.6	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.2	0.4	0.0	7.7	8.5	8.9	37.8	0.0	36.9	39.9	0.0	0.0
LnGrp LOS	D	A	A	A	A	A	D	A	D	D	A	
Approach Vol, veh/h		1401			931			102			57	A
Approach Delay, s/veh		4.5			8.6			37.5			39.9	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		75.1		14.9	14.5	60.6		14.9				
Change Period (Y+Rc), s		5.4		5.1	* 4.7	5.4		5.1				
Max Green Setting (Gmax), s		59.6		19.9	* 25	29.6		19.9				
Max Q Clear Time (g_c+I1), s		2.0		7.9	9.2	9.4		5.3				
Green Ext Time (p_c), s		18.3		0.1	0.2	7.5		0.3				

Intersection Summary		
HCM 6th Ctrl Delay		8.2
HCM 6th LOS		A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	20	19	104	155	3
Future Vol, veh/h	3	20	19	104	155	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	22	21	113	168	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	325	170	171	0	-	0
Stage 1	170	-	-	-	-	-
Stage 2	155	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	669	874	1406	-	-	-
Stage 1	860	-	-	-	-	-
Stage 2	873	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	658	874	1406	-	-	-
Mov Cap-2 Maneuver	658	-	-	-	-	-
Stage 1	846	-	-	-	-	-
Stage 2	873	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	1.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1406	-	838	-	-
HCM Lane V/C Ratio	0.015	-	0.03	-	-
HCM Control Delay (s)	7.6	0	9.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	2.2

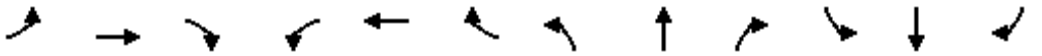
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	101	1094	5	3	734	27	5	0	11	72	0	103
Future Vol, veh/h	101	1094	5	3	734	27	5	0	11	72	0	103
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	75	-	-	-	-	-	-	-	30
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	105	1140	5	3	765	28	5	0	11	75	0	107

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	793	0	0	1145	0	0	1742	2152	573	1565	2140	397
Stage 1	-	-	-	-	-	-	1353	1353	-	785	785	-
Stage 2	-	-	-	-	-	-	389	799	-	780	1355	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	824	-	-	*948	-	-	149	66	*634	*246	68	602
Stage 1	-	-	-	-	-	-	467	436	-	*352	402	-
Stage 2	-	-	-	-	-	-	606	396	-	*597	435	-
Platoon blocked, %		-	-	1	-	-	1	1	1	1	1	
Mov Cap-1 Maneuver	824	-	-	*948	-	-	110	58	*634	*217	59	602
Mov Cap-2 Maneuver	-	-	-	-	-	-	110	58	-	*217	59	-
Stage 1	-	-	-	-	-	-	408	381	-	*307	401	-
Stage 2	-	-	-	-	-	-	496	395	-	*512	379	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0	20.1	19.6
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	255	824	-	-	* 948	-	-	217	602
HCM Lane V/C Ratio	0.065	0.128	-	-	0.003	-	-	0.346	0.178
HCM Control Delay (s)	20.1	10	-	-	8.8	-	-	30.1	12.3
HCM Lane LOS	C	B	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	0.2	0.4	-	-	0	-	-	1.5	0.6

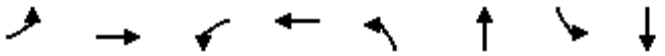
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	758	63	50	362	116	92	377	100	216	673	229
Future Volume (veh/h)	108	758	63	50	362	116	92	377	100	216	673	229
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	115	806	67	53	385	123	98	401	106	230	716	244
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	145	1160	517	67	1003	447	125	807	360	268	1093	488
Arrive On Green	0.08	0.33	0.33	0.04	0.29	0.29	0.07	0.23	0.23	0.15	0.32	0.32
Sat Flow, veh/h	1739	3469	1547	1739	3469	1547	1739	3469	1547	1739	3469	1547
Grp Volume(v), veh/h	115	806	67	53	385	123	98	401	106	230	716	244
Grp Sat Flow(s),veh/h/ln	1739	1735	1547	1739	1735	1547	1739	1735	1547	1739	1735	1547
Q Serve(g_s), s	5.1	15.9	2.4	2.4	7.0	4.9	4.4	7.9	4.5	10.2	14.1	10.1
Cycle Q Clear(g_c), s	5.1	15.9	2.4	2.4	7.0	4.9	4.4	7.9	4.5	10.2	14.1	10.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	145	1160	517	67	1003	447	125	807	360	268	1093	488
V/C Ratio(X)	0.79	0.70	0.13	0.79	0.38	0.28	0.78	0.50	0.29	0.86	0.65	0.50
Avail Cap(c_a), veh/h	352	1954	872	352	1954	872	352	1954	872	352	1954	872
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.5	22.8	18.3	37.7	22.5	21.7	36.1	26.3	25.0	32.6	23.3	22.0
Incr Delay (d2), s/veh	3.6	1.1	0.2	7.7	0.3	0.5	4.0	0.7	0.6	12.3	1.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	6.1	0.8	1.1	2.7	1.7	1.9	3.1	1.6	4.9	5.4	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.1	23.9	18.5	45.4	22.8	22.2	40.1	27.0	25.6	44.8	24.3	23.1
LnGrp LOS	D	C	B	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		988			561			605			1190	
Approach Delay, s/veh		25.3			24.8			28.9			28.0	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	31.9	9.7	30.4	10.6	28.3	16.2	23.9
Change Period (Y+Rc), s	4.0	5.5	4.0	5.5	4.0	5.5	4.0	5.5
Max Green Setting (Gmax), s	16.0	44.5	16.0	44.5	16.0	44.5	16.0	44.5
Max Q Clear Time (g_c+I1), s	4.4	17.9	6.4	16.1	7.1	9.0	12.2	9.9
Green Ext Time (p_c), s	0.0	8.5	0.0	8.8	0.0	4.4	0.1	4.4

Intersection Summary	
HCM 6th Ctrl Delay	26.8
HCM 6th LOS	C



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	185	952	354	815	102	1229	216	1103
v/c Ratio	0.64	0.90	0.87	0.69	0.67	0.89dr	0.98	0.66
Control Delay	70.7	55.6	80.2	41.1	80.9	43.3	114.4	38.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.7	55.6	80.2	41.1	80.9	43.3	114.4	38.9
Queue Length 50th (ft)	85	428	165	325	92	338	~210	299
Queue Length 95th (ft)	123	#530	#251	418	150	398	#379	371
Internal Link Dist (ft)		543		632		486		619
Turn Bay Length (ft)	225		210		140		145	
Base Capacity (vph)	428	1139	428	1207	220	1641	220	1696
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.84	0.83	0.68	0.46	0.75	0.98	0.65

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

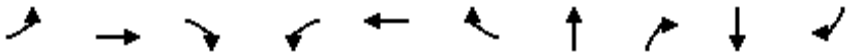
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	7	1298	974	78	1119	17	73
v/c Ratio	0.03	0.62	0.69	0.38	0.31	0.07	0.25
Control Delay	11.0	14.8	4.6	47.6	3.4	31.9	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.0	14.8	4.6	47.6	3.4	31.9	7.8
Queue Length 50th (ft)	1	227	46	46	34	9	0
Queue Length 95th (ft)	10	408	148	m78	98	25	28
Internal Link Dist (ft)		349			384		
Turn Bay Length (ft)	45			55			
Base Capacity (vph)	274	2078	1463	300	3658	391	417
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.62	0.67	0.26	0.31	0.04	0.18

Intersection Summary

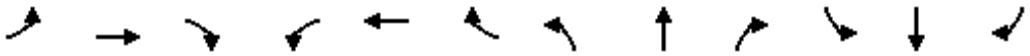
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	152	1217	32	31	621	279	72	30	57	568
v/c Ratio	0.59	0.48	0.03	0.13	0.34	0.28	0.33	0.10	0.29	0.81
Control Delay	54.1	3.7	1.3	15.5	13.6	2.9	37.1	0.6	36.5	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.1	3.7	1.3	15.5	13.6	2.9	37.1	0.6	36.5	13.8
Queue Length 50th (ft)	94	70	0	7	88	0	39	0	31	9
Queue Length 95th (ft)	m151	83	m1	32	176	46	71	0	60	109
Internal Link Dist (ft)		384			608		543		472	
Turn Bay Length (ft)	70			100		160		20		225
Base Capacity (vph)	497	2525	1176	232	1849	983	334	417	301	779
Starvation Cap Reductn	0	146	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.51	0.03	0.13	0.34	0.28	0.22	0.07	0.19	0.73

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



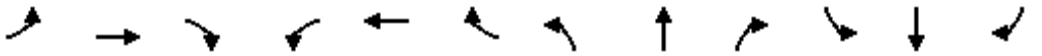
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	115	806	67	53	385	123	98	401	106	230	716	244
v/c Ratio	0.61	0.72	0.12	0.41	0.42	0.25	0.56	0.47	0.23	0.78	0.60	0.38
Control Delay	62.3	35.6	5.0	61.2	32.9	7.3	61.3	34.0	7.4	64.3	32.9	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.3	35.6	5.0	61.2	32.9	7.3	61.3	34.0	7.4	64.3	32.9	13.6
Queue Length 50th (ft)	70	234	0	32	102	0	60	113	0	141	205	40
Queue Length 95th (ft)	163	403	24	90	188	47	143	188	42	#405	351	130
Internal Link Dist (ft)		337			604			581			494	
Turn Bay Length (ft)	195		180	195		445	295		220	210		135
Base Capacity (vph)	294	1636	775	294	1636	796	294	1636	787	294	1636	813
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.49	0.09	0.18	0.24	0.15	0.33	0.25	0.13	0.78	0.44	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
1: Carson Street & Avalon Boulevard

01/13/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	199	713	72	324	804	194	85	849	407	239	802	255
Future Volume (veh/h)	199	713	72	324	804	194	85	849	407	239	802	255
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	221	792	80	360	893	216	94	943	452	266	891	283
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	273	959	97	408	946	229	116	1108	516	223	1480	468
Arrive On Green	0.08	0.29	0.29	0.12	0.33	0.33	0.07	0.33	0.33	0.13	0.39	0.39
Sat Flow, veh/h	3456	3259	329	3456	2838	686	1781	3404	1585	1781	3841	1215
Grp Volume(v), veh/h	221	432	440	360	559	550	94	943	452	266	789	385
Grp Sat Flow(s),veh/h/ln	1728	1777	1811	1728	1777	1747	1781	1702	1585	1781	1702	1652
Q Serve(g_s), s	8.3	29.8	29.9	13.5	40.3	40.4	6.9	34.1	35.5	16.5	24.4	24.6
Cycle Q Clear(g_c), s	8.3	29.8	29.9	13.5	40.3	40.4	6.9	34.1	35.5	16.5	24.4	24.6
Prop In Lane	1.00		0.18	1.00		0.39	1.00		1.00	1.00		0.74
Lane Grp Cap(c), veh/h	273	523	533	408	593	583	116	1108	516	223	1312	637
V/C Ratio(X)	0.81	0.83	0.83	0.88	0.94	0.94	0.81	0.85	0.88	1.19	0.60	0.60
Avail Cap(c_a), veh/h	433	600	612	433	600	590	223	1150	535	223	1312	637
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.7	43.3	43.3	57.2	42.7	42.7	60.8	41.4	41.9	57.6	32.4	32.4
Incr Delay (d2), s/veh	2.7	8.9	8.8	17.1	23.7	24.2	4.9	6.4	15.2	122.1	0.9	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	14.1	14.4	6.8	21.1	20.8	3.2	15.0	15.8	14.9	10.1	10.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.4	52.3	52.1	74.3	66.4	66.9	65.7	47.8	57.1	179.7	33.3	34.4
LnGrp LOS	E	D	D	E	E	E	E	D	E	F	C	C
Approach Vol, veh/h		1093			1469			1489			1440	
Approach Delay, s/veh		54.3			68.5			51.8			60.6	
Approach LOS		D			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	49.4	20.0	48.4	19.1	44.3	12.1	56.3
Change Period (Y+Rc), s	3.5	5.5	3.5	5.5	3.5	5.5	3.5	5.5
Max Green Setting (Gmax), s	16.5	44.5	16.5	44.5	16.5	44.5	16.5	44.5
Max Q Clear Time (g_c+I1), s	10.3	42.4	18.5	37.5	15.5	31.9	8.9	26.6
Green Ext Time (p_c), s	0.1	1.6	0.0	5.5	0.1	5.6	0.0	9.8

Intersection Summary	
HCM 6th Ctrl Delay	59.1
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	801	607	71	1341	0	48	0	200	0	0	0
Future Volume (veh/h)	5	801	607	71	1341	0	48	0	200	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	0	1870	0	1870			
Adj Flow Rate, veh/h	5	871	660	77	1458	0	52	0	217			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	2	2	2	0	2	0	2			
Cap, veh/h	284	1990	1141	198	3693	0	285	0	254			
Arrive On Green	0.56	0.56	0.56	0.22	1.00	0.00	0.16	0.00	0.16			
Sat Flow, veh/h	364	3554	1585	1781	5274	0	1781	0	1585			
Grp Volume(v), veh/h	5	871	660	77	1458	0	52	0	217			
Grp Sat Flow(s),veh/h/ln	364	1777	1585	1781	1702	0	1781	0	1585			
Q Serve(g_s), s	0.6	12.9	18.0	3.3	0.0	0.0	2.3	0.0	12.0			
Cycle Q Clear(g_c), s	0.6	12.9	18.0	3.3	0.0	0.0	2.3	0.0	12.0			
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00			
Lane Grp Cap(c), veh/h	284	1990	1141	198	3693	0	285	0	254			
V/C Ratio(X)	0.02	0.44	0.58	0.39	0.39	0.00	0.18	0.00	0.85			
Avail Cap(c_a), veh/h	284	1990	1141	303	3693	0	394	0	350			
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	1.00	0.73	0.73	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	8.8	11.5	6.0	32.4	0.0	0.0	32.7	0.0	36.8			
Incr Delay (d2), s/veh	0.1	0.7	2.1	0.7	0.2	0.0	0.3	0.0	13.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	4.6	5.3	1.4	0.1	0.0	1.0	0.0	5.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.0	12.2	8.2	33.1	0.2	0.0	33.0	0.0	50.7			
LnGrp LOS	A	B	A	C	A	A	C	A	D			
Approach Vol, veh/h		1536			1535			269				
Approach Delay, s/veh		10.5			1.9			47.3				
Approach LOS		B			A			D				

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	14.7	55.8				70.5		19.5				
Change Period (Y+Rc), s *	4.7	5.4				5.4		5.1				
Max Green Setting (Gmax), s	10.0	39.6				59.6		19.9				
Max Q Clear Time (g_c+I1), s	5.3	20.0				2.0		14.0				
Green Ext Time (p_c), s	0.1	11.8				22.6		0.4				

Intersection Summary	
HCM 6th Ctrl Delay	9.5
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	845	38	17	942	288	10	1	13	15	16	482
Future Volume (veh/h)	122	845	38	17	942	288	10	1	13	15	16	482
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	134	929	42	19	1035	316	11	1	14	16	18	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	191	2832	1263	449	2266	1011	192	14	137	107	97	
Arrive On Green	0.21	1.00	1.00	0.64	0.64	0.64	0.09	0.09	0.09	0.09	0.09	0.00
Sat Flow, veh/h	1781	3554	1585	579	3554	1585	1333	165	1585	558	1124	1585
Grp Volume(v), veh/h	134	929	42	19	1035	316	12	0	14	34	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	579	1777	1585	1498	0	1585	1682	0	1585
Q Serve(g_s), s	6.3	0.0	0.0	1.1	13.4	8.1	0.0	0.0	0.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.3	0.0	0.0	1.1	13.4	8.1	0.5	0.0	0.7	1.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.92		1.00	0.47		1.00
Lane Grp Cap(c), veh/h	191	2832	1263	449	2266	1011	206	0	137	204	0	
V/C Ratio(X)	0.70	0.33	0.03	0.04	0.46	0.31	0.06	0.00	0.10	0.17	0.00	
Avail Cap(c_a), veh/h	501	2832	1263	449	2266	1011	398	0	350	422	0	
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	0.90	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	34.0	0.0	0.0	6.1	8.3	7.4	37.8	0.0	37.9	38.3	0.0	0.0
Incr Delay (d2), s/veh	3.1	0.3	0.0	0.2	0.7	0.8	0.1	0.0	0.3	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.1	0.0	0.1	4.4	2.5	0.2	0.0	0.3	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.1	0.3	0.0	6.3	9.0	8.2	37.9	0.0	38.2	38.6	0.0	0.0
LnGrp LOS	D	A	A	A	A	A	D	A	D	D	A	
Approach Vol, veh/h		1105			1370			26			34	A
Approach Delay, s/veh		4.7			8.8			38.1			38.6	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	2	4	5	6	8
Phs Duration (G+Y+Rc), s	77.1	12.9	14.3	62.8	12.9
Change Period (Y+Rc), s	5.4	5.1	* 4.7	5.4	5.1
Max Green Setting (Gmax), s	59.6	19.9	* 25	29.6	19.9
Max Q Clear Time (g_c+I1), s	2.0	3.5	8.3	15.4	2.7
Green Ext Time (p_c), s	12.1	0.1	0.2	9.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	7.7
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	80	126	0
Future Vol, veh/h	0	0	0	80	126	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	87	137	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	224	137	137	0	-	0
Stage 1	137	-	-	-	-	-
Stage 2	87	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	764	911	1447	-	-	-
Stage 1	890	-	-	-	-	-
Stage 2	936	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	764	911	1447	-	-	-
Mov Cap-2 Maneuver	764	-	-	-	-	-
Stage 1	890	-	-	-	-	-
Stage 2	936	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1447	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	1.9

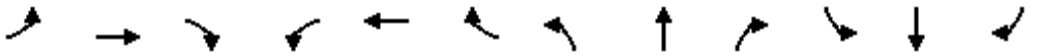
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	53	747	9	7	1097	27	6	0	4	9	0	117
Future Vol, veh/h	53	747	9	7	1097	27	6	0	4	9	0	117
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	75	-	-	-	-	-	-	-	30
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	61	859	10	8	1261	31	7	0	5	10	0	134

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1292	0	0	869	0	0	1633	2294	435	1845	2284	646
Stage 1	-	-	-	-	-	-	986	986	-	1293	1293	-
Stage 2	-	-	-	-	-	-	647	1308	-	552	991	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	532	-	-	1080	-	-	112	41	*804	*69	42	414
Stage 1	-	-	-	-	-	-	518	500	-	*172	231	-
Stage 2	-	-	-	-	-	-	426	228	-	*758	496	-
Platoon blocked, %		-	-	1	-	-	1	1	1	1	1	
Mov Cap-1 Maneuver	532	-	-	1080	-	-	69	36	*804	*62	37	414
Mov Cap-2 Maneuver	-	-	-	-	-	-	69	36	-	*62	37	-
Stage 1	-	-	-	-	-	-	458	443	-	*152	229	-
Stage 2	-	-	-	-	-	-	285	226	-	*667	439	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.1	41.9	21.8
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	109	532	-	-	1080	-	-	62	414
HCM Lane V/C Ratio	0.105	0.115	-	-	0.007	-	-	0.167	0.325
HCM Control Delay (s)	41.9	12.6	-	-	8.4	-	-	74.4	17.8
HCM Lane LOS	E	B	-	-	A	-	-	F	C
HCM 95th %tile Q(veh)	0.3	0.4	-	-	0	-	-	0.6	1.4

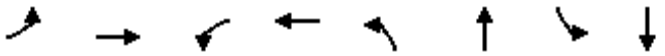
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	171	475	46	75	534	259	69	470	79	143	379	111
Future Volume (veh/h)	171	475	46	75	534	259	69	470	79	143	379	111
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	204	565	55	89	636	308	82	560	94	170	451	132
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	239	1270	567	114	1020	455	105	829	370	204	1028	458
Arrive On Green	0.14	0.36	0.36	0.06	0.29	0.29	0.06	0.24	0.24	0.12	0.29	0.29
Sat Flow, veh/h	1753	3497	1560	1753	3497	1560	1753	3497	1560	1753	3497	1560
Grp Volume(v), veh/h	204	565	55	89	636	308	82	560	94	170	451	132
Grp Sat Flow(s),veh/h/ln	1753	1749	1560	1753	1749	1560	1753	1749	1560	1753	1749	1560
Q Serve(g_s), s	9.9	10.7	2.0	4.4	13.7	15.2	4.0	12.7	4.3	8.3	9.1	5.7
Cycle Q Clear(g_c), s	9.9	10.7	2.0	4.4	13.7	15.2	4.0	12.7	4.3	8.3	9.1	5.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	239	1270	567	114	1020	455	105	829	370	204	1028	458
V/C Ratio(X)	0.85	0.44	0.10	0.78	0.62	0.68	0.78	0.68	0.25	0.83	0.44	0.29
Avail Cap(c_a), veh/h	322	1787	797	322	1787	797	322	1787	797	322	1787	797
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.8	21.1	18.3	40.1	26.7	27.2	40.4	30.2	27.0	37.6	24.9	23.7
Incr Delay (d2), s/veh	12.0	0.3	0.1	4.4	0.9	2.5	4.7	1.4	0.5	5.3	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	4.1	0.7	1.9	5.5	5.6	1.8	5.2	1.6	3.7	3.6	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.8	21.4	18.4	44.5	27.6	29.7	45.0	31.6	27.5	43.0	25.4	24.2
LnGrp LOS	D	C	B	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		824			1033			736			753	
Approach Delay, s/veh		28.0			29.7			32.5			29.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	37.1	9.2	31.1	15.9	30.9	14.2	26.2
Change Period (Y+Rc), s	4.0	5.5	4.0	5.5	4.0	5.5	4.0	5.5
Max Green Setting (Gmax), s	16.0	44.5	16.0	44.5	16.0	44.5	16.0	44.5
Max Q Clear Time (g_c+I1), s	6.4	12.7	6.0	11.1	11.9	17.2	10.3	14.7
Green Ext Time (p_c), s	0.0	5.9	0.0	5.1	0.1	8.2	0.1	6.0

Intersection Summary	
HCM 6th Ctrl Delay	29.8
HCM 6th LOS	C



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	221	872	360	1109	94	1395	266	1174
v/c Ratio	0.70	0.84	0.89	0.99	0.65	0.90	1.24	0.67
Control Delay	72.0	51.8	84.1	68.8	81.3	49.8	189.1	37.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.0	51.8	84.1	68.8	81.3	49.8	189.1	37.9
Queue Length 50th (ft)	100	381	165	510	83	410	~298	307
Queue Length 95th (ft)	143	465	#256	#703	142	487	#487	392
Internal Link Dist (ft)		543		632		486		619
Turn Bay Length (ft)	225		210		140		145	
Base Capacity (vph)	417	1111	417	1121	215	1594	215	1743
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.78	0.86	0.99	0.44	0.88	1.24	0.67

Intersection Summary

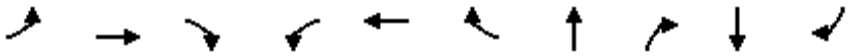
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	5	871	660	77	1458	52	217
v/c Ratio	0.03	0.41	0.47	0.37	0.39	0.23	0.56
Control Delay	9.8	10.6	1.6	38.2	4.1	37.2	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay	9.8	10.6	1.6	38.2	4.2	37.2	11.0
Queue Length 50th (ft)	1	124	5	43	75	28	0
Queue Length 95th (ft)	7	209	29	m75	108	58	59
Internal Link Dist (ft)		349			384		
Turn Bay Length (ft)	45			55			
Base Capacity (vph)	196	2123	1476	300	3721	391	519
Starvation Cap Reductn	0	0	0	0	794	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.41	0.45	0.26	0.50	0.13	0.42

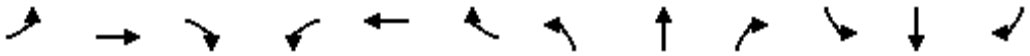
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	134	929	42	19	1035	316	12	14	34	530
v/c Ratio	0.55	0.37	0.04	0.06	0.55	0.32	0.06	0.05	0.14	0.80
Control Delay	51.8	2.3	0.3	13.3	15.8	4.3	30.9	0.3	33.0	13.7
Queue Delay	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.8	2.3	0.3	13.3	15.8	4.3	30.9	0.3	33.0	13.7
Queue Length 50th (ft)	57	11	0	4	167	13	6	0	18	10
Queue Length 95th (ft)	141	56	0	20	321	71	20	0	40	107
Internal Link Dist (ft)		384			608		543		472	
Turn Bay Length (ft)	70			100		160		20		225
Base Capacity (vph)	497	2528	1180	315	1881	985	329	417	361	748
Starvation Cap Reductn	0	429	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.44	0.04	0.06	0.55	0.32	0.04	0.03	0.09	0.71

Intersection Summary



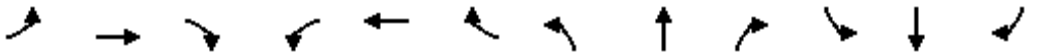
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	204	565	55	89	636	308	82	560	94	170	451	132
v/c Ratio	0.73	0.45	0.09	0.55	0.68	0.48	0.54	0.68	0.21	0.70	0.42	0.23
Control Delay	60.4	28.6	2.9	60.3	37.6	6.2	60.4	40.4	8.2	60.6	31.0	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.4	28.6	2.9	60.3	37.6	6.2	60.4	40.4	8.2	60.6	31.0	6.5
Queue Length 50th (ft)	129	153	0	57	195	0	52	176	0	105	123	0
Queue Length 95th (ft)	#269	225	11	111	260	47	105	240	35	#207	187	38
Internal Link Dist (ft)		337			604			581			494	
Turn Bay Length (ft)	195		180	195		445	295		220	210		135
Base Capacity (vph)	278	1548	738	278	1548	863	278	1548	744	278	1548	765
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.36	0.07	0.32	0.41	0.36	0.29	0.36	0.13	0.61	0.29	0.17

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
1: Carson Street & Avalon Boulevard

01/13/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	297	849	106	349	771	204	121	867	493	372	1037	364
Future Volume (veh/h)	297	849	106	349	771	204	121	867	493	372	1037	364
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	300	858	107	353	779	206	122	876	498	376	1047	368
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	349	965	120	400	885	234	146	1113	518	216	1367	480
Arrive On Green	0.10	0.30	0.30	0.12	0.32	0.32	0.08	0.33	0.33	0.12	0.37	0.37
Sat Flow, veh/h	3456	3179	396	3456	2780	735	1781	3404	1585	1781	3728	1310
Grp Volume(v), veh/h	300	480	485	353	498	487	122	876	498	376	956	459
Grp Sat Flow(s),veh/h/ln	1728	1777	1799	1728	1777	1738	1781	1702	1585	1781	1702	1635
Q Serve(g_s), s	11.6	35.0	35.0	13.7	36.1	36.1	9.2	31.7	41.9	16.5	33.6	33.6
Cycle Q Clear(g_c), s	11.6	35.0	35.0	13.7	36.1	36.1	9.2	31.7	41.9	16.5	33.6	33.6
Prop In Lane	1.00		0.22	1.00		0.42	1.00		1.00	1.00		0.80
Lane Grp Cap(c), veh/h	349	539	546	400	565	553	146	1113	518	216	1248	599
V/C Ratio(X)	0.86	0.89	0.89	0.88	0.88	0.88	0.84	0.79	0.96	1.74	0.77	0.77
Avail Cap(c_a), veh/h	420	582	589	420	582	569	216	1115	519	216	1248	599
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.1	45.1	45.1	59.2	43.9	43.9	61.5	41.5	44.9	59.7	37.9	37.9
Incr Delay (d2), s/veh	12.5	15.4	15.3	17.9	14.7	15.0	11.0	4.0	30.0	350.9	3.1	6.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	17.4	17.6	6.9	17.8	17.5	4.6	13.8	20.5	28.5	14.4	14.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.6	60.6	60.4	77.1	58.6	58.9	72.5	45.5	74.8	410.6	41.0	44.2
LnGrp LOS	E	E	E	E	E	E	E	D	E	F	D	D
Approach Vol, veh/h		1265			1338			1496			1791	
Approach Delay, s/veh		63.4			63.6			57.5			119.4	
Approach LOS		E			E			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.2	48.7	20.0	49.9	19.2	46.8	14.6	55.3
Change Period (Y+Rc), s	3.5	5.5	3.5	5.5	3.5	5.5	3.5	5.5
Max Green Setting (Gmax), s	16.5	44.5	16.5	44.5	16.5	44.5	16.5	44.5
Max Q Clear Time (g_c+I1), s	13.6	38.1	18.5	43.9	15.7	37.0	11.2	35.6
Green Ext Time (p_c), s	0.1	3.9	0.0	0.5	0.1	4.3	0.0	6.7

Intersection Summary	
HCM 6th Ctrl Delay	79.0
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	1381	946	70	1210	0	36	0	63	0	0	0
Future Volume (veh/h)	7	1381	946	70	1210	0	36	0	63	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	0	1870	0	1870			
Adj Flow Rate, veh/h	7	1454	996	74	1274	0	38	0	66			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	2	2	2	0	2	0	2			
Cap, veh/h	348	2193	1141	198	3985	0	183	0	163			
Arrive On Green	0.62	0.62	0.62	0.22	1.00	0.00	0.10	0.00	0.10			
Sat Flow, veh/h	434	3554	1585	1781	5274	0	1781	0	1585			
Grp Volume(v), veh/h	7	1454	996	74	1274	0	38	0	66			
Grp Sat Flow(s),veh/h/ln	434	1777	1585	1781	1702	0	1781	0	1585			
Q Serve(g_s), s	0.6	23.9	42.6	3.2	0.0	0.0	1.8	0.0	3.5			
Cycle Q Clear(g_c), s	0.6	23.9	42.6	3.2	0.0	0.0	1.8	0.0	3.5			
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00			
Lane Grp Cap(c), veh/h	348	2193	1141	198	3985	0	183	0	163			
V/C Ratio(X)	0.02	0.66	0.87	0.37	0.32	0.00	0.21	0.00	0.40			
Avail Cap(c_a), veh/h	348	2193	1141	303	3985	0	394	0	350			
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	1.00	0.75	0.75	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	6.7	11.2	9.5	32.3	0.0	0.0	37.0	0.0	37.8			
Incr Delay (d2), s/veh	0.1	1.6	9.3	0.7	0.2	0.0	0.6	0.0	1.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.1	8.1	14.0	1.3	0.1	0.0	0.8	0.0	1.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.8	12.8	18.8	33.0	0.2	0.0	37.6	0.0	39.4			
LnGrp LOS	A	B	B	C	A	A	D	A	D			
Approach Vol, veh/h		2457			1348			104				
Approach Delay, s/veh		15.2			2.0			38.7				
Approach LOS		B			A			D				

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	14.7	60.9				75.6		14.4				
Change Period (Y+Rc), s	* 4.7	5.4				5.4		5.1				
Max Green Setting (Gmax), s	* 15	39.6				59.6		19.9				
Max Q Clear Time (g_c+I1), s	15.2	44.6				2.0		5.5				
Green Ext Time (p_c), s	0.1	0.0				18.2		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	11.3
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	1273	30	29	697	256	36	32	28	38	12	564
Future Volume (veh/h)	156	1273	30	29	697	256	36	32	28	38	12	564
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	166	1354	32	31	741	272	38	34	30	40	13	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	200	2752	1228	318	2168	967	141	108	172	149	39	
Arrive On Green	0.22	1.00	1.00	0.61	0.61	0.61	0.11	0.11	0.11	0.11	0.11	0.00
Sat Flow, veh/h	1781	3554	1585	390	3554	1585	737	993	1585	725	360	1585
Grp Volume(v), veh/h	166	1354	32	31	741	272	72	0	30	53	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	390	1777	1585	1730	0	1585	1085	0	1585
Q Serve(g_s), s	8.0	0.0	0.0	3.0	9.2	7.3	0.0	0.0	1.5	2.3	0.0	0.0
Cycle Q Clear(g_c), s	8.0	0.0	0.0	3.0	9.2	7.3	3.3	0.0	1.5	5.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.53		1.00	0.75		1.00
Lane Grp Cap(c), veh/h	200	2752	1228	318	2168	967	249	0	172	188	0	
V/C Ratio(X)	0.83	0.49	0.03	0.10	0.34	0.28	0.29	0.00	0.17	0.28	0.00	
Avail Cap(c_a), veh/h	501	2752	1228	318	2168	967	428	0	350	350	0	
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.67	0.67	0.67	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	34.1	0.0	0.0	7.4	8.6	8.3	37.2	0.0	36.4	38.7	0.0	0.0
Incr Delay (d2), s/veh	4.5	0.4	0.0	0.6	0.4	0.7	0.6	0.0	0.5	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.2	0.0	0.3	3.1	2.3	1.5	0.0	0.6	1.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.6	0.4	0.0	8.0	9.1	9.0	37.8	0.0	36.9	39.5	0.0	0.0
LnGrp LOS	D	A	A	A	A	A	D	A	D	D	A	
Approach Vol, veh/h		1552			1044			102			53	A
Approach Delay, s/veh		4.5			9.0			37.5			39.5	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		75.1		14.9	14.8	60.3		14.9				
Change Period (Y+Rc), s		5.4		5.1	* 4.7	5.4		5.1				
Max Green Setting (Gmax), s		59.6		19.9	* 25	29.6		19.9				
Max Q Clear Time (g_c+I1), s		2.0		7.6	10.0	11.2		5.3				
Green Ext Time (p_c), s		21.8		0.1	0.3	8.2		0.3				

Intersection Summary	
HCM 6th Ctrl Delay	8.1
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	104	155	0
Future Vol, veh/h	0	0	0	104	155	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	113	168	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	281	168	168	0	-	0
Stage 1	168	-	-	-	-	-
Stage 2	113	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	709	876	1410	-	-	-
Stage 1	862	-	-	-	-	-
Stage 2	912	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	709	876	1410	-	-	-
Mov Cap-2 Maneuver	709	-	-	-	-	-
Stage 1	862	-	-	-	-	-
Stage 2	912	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1410	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	2.3

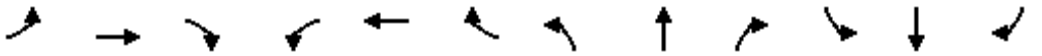
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	87	1234	5	3	857	22	5	0	11	67	0	88
Future Vol, veh/h	87	1234	5	3	857	22	5	0	11	67	0	88
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	75	-	-	-	-	-	-	-	30
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	91	1285	5	3	893	23	5	0	11	70	0	92

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	916	0	0	1290	0	0	1923	2392	645	1736	2383	458
Stage 1	-	-	-	-	-	-	1470	1470	-	911	911	-
Stage 2	-	-	-	-	-	-	453	922	-	825	1472	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	740	-	-	*897	-	-	100	38	*600	*175	39	550
Stage 1	-	-	-	-	-	-	413	392	-	*295	351	-
Stage 2	-	-	-	-	-	-	556	347	-	*565	391	-
Platoon blocked, %		-	-	1	-	-	1	1	1	1	1	
Mov Cap-1 Maneuver	740	-	-	*897	-	-	75	33	*600	*155	34	550
Mov Cap-2 Maneuver	-	-	-	-	-	-	75	33	-	*155	34	-
Stage 1	-	-	-	-	-	-	362	344	-	*259	350	-
Stage 2	-	-	-	-	-	-	462	346	-	*486	343	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0	26	27.2
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	188	740	-	-	* 897	-	-	155	550
HCM Lane V/C Ratio	0.089	0.122	-	-	0.003	-	-	0.45	0.167
HCM Control Delay (s)	26	10.5	-	-	9	-	-	46	12.9
HCM Lane LOS	D	B	-	-	A	-	-	E	B
HCM 95th %tile Q(veh)	0.3	0.4	-	-	0	-	-	2.1	0.6

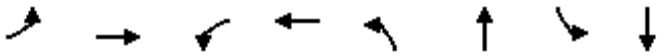
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	896	63	50	480	116	94	377	100	216	673	226
Future Volume (veh/h)	106	896	63	50	480	116	94	377	100	216	673	226
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	113	953	67	53	511	123	100	401	106	230	716	240
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	142	1279	571	67	1130	504	127	774	345	265	1050	468
Arrive On Green	0.08	0.37	0.37	0.04	0.33	0.33	0.07	0.22	0.22	0.15	0.30	0.30
Sat Flow, veh/h	1739	3469	1547	1739	3469	1547	1739	3469	1547	1739	3469	1547
Grp Volume(v), veh/h	113	953	67	53	511	123	100	401	106	230	716	240
Grp Sat Flow(s),veh/h/ln	1739	1735	1547	1739	1735	1547	1739	1735	1547	1739	1735	1547
Q Serve(g_s), s	5.6	20.9	2.5	2.6	10.2	5.1	4.9	8.9	5.0	11.3	15.9	11.2
Cycle Q Clear(g_c), s	5.6	20.9	2.5	2.6	10.2	5.1	4.9	8.9	5.0	11.3	15.9	11.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	142	1279	571	67	1130	504	127	774	345	265	1050	468
V/C Ratio(X)	0.80	0.75	0.12	0.79	0.45	0.24	0.79	0.52	0.31	0.87	0.68	0.51
Avail Cap(c_a), veh/h	318	1765	787	318	1765	787	318	1765	787	318	1765	787
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.4	24.0	18.2	41.7	23.3	21.6	39.9	29.8	28.3	36.2	26.8	25.2
Incr Delay (d2), s/veh	3.8	1.5	0.1	7.5	0.4	0.4	4.1	0.8	0.7	17.1	1.1	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	8.1	0.9	1.2	4.0	1.8	2.2	3.6	1.8	5.8	6.3	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.2	25.5	18.3	49.2	23.7	22.0	44.0	30.6	29.0	53.4	27.9	26.4
LnGrp LOS	D	C	B	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		1133			687			607			1186	
Approach Delay, s/veh		26.8			25.4			32.5			32.6	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.4	37.7	10.4	32.0	11.1	34.0	17.3	25.0
Change Period (Y+Rc), s	4.0	5.5	4.0	5.5	4.0	5.5	4.0	5.5
Max Green Setting (Gmax), s	16.0	44.5	16.0	44.5	16.0	44.5	16.0	44.5
Max Q Clear Time (g_c+I1), s	4.6	22.9	6.9	17.9	7.6	12.2	13.3	10.9
Green Ext Time (p_c), s	0.0	9.3	0.0	8.6	0.0	5.7	0.1	4.4

Intersection Summary	
HCM 6th Ctrl Delay	29.4
HCM 6th LOS	C



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	300	965	353	985	122	1374	376	1415
v/c Ratio	0.81	0.91	0.89	0.91	0.74	0.89	1.76	0.85
Control Delay	76.8	57.8	84.0	56.7	86.0	49.2	393.2	46.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.8	57.8	84.0	56.7	86.0	49.2	393.2	46.0
Queue Length 50th (ft)	138	437	165	444	110	407	~513	422
Queue Length 95th (ft)	190	#557	#250	#575	177	472	#718	#509
Internal Link Dist (ft)		543		632		486		619
Turn Bay Length (ft)	225		210		140		145	
Base Capacity (vph)	416	1106	416	1112	214	1593	214	1669
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.87	0.85	0.89	0.57	0.86	1.76	0.85

Intersection Summary

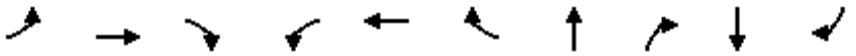
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	7	1454	996	74	1274	38	66
v/c Ratio	0.03	0.70	0.71	0.36	0.35	0.15	0.22
Control Delay	11.3	16.9	4.8	45.1	3.5	33.3	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.3	16.9	4.8	45.1	3.5	33.3	6.3
Queue Length 50th (ft)	1	276	47	44	49	20	0
Queue Length 95th (ft)	10	#536	151	m72	106	43	23
Internal Link Dist (ft)		349			384		
Turn Bay Length (ft)	45			55			
Base Capacity (vph)	232	2071	1464	300	3642	391	417
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.70	0.68	0.25	0.35	0.10	0.16

Intersection Summary

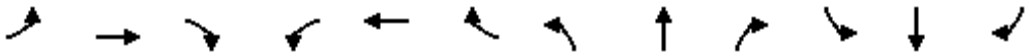
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	166	1354	32	31	741	272	72	30	53	600
v/c Ratio	0.62	0.55	0.03	0.16	0.42	0.29	0.29	0.09	0.23	0.85
Control Delay	57.1	4.1	1.2	18.2	16.1	3.1	34.1	0.5	33.1	18.3
Queue Delay	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.1	4.2	1.2	18.2	16.1	3.1	34.1	0.5	33.1	18.3
Queue Length 50th (ft)	103	73	0	9	125	0	37	0	27	35
Queue Length 95th (ft)	m149	94	m0	34	219	46	71	0	56	#173
Internal Link Dist (ft)		384			608		543		472	
Turn Bay Length (ft)	70			100		160		20		225
Base Capacity (vph)	497	2462	1148	192	1760	946	341	419	312	764
Starvation Cap Reductn	0	132	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.58	0.03	0.16	0.42	0.29	0.21	0.07	0.17	0.79

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



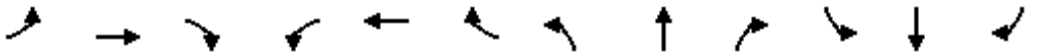
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	113	953	67	53	511	123	100	401	106	230	716	240
v/c Ratio	0.63	0.78	0.11	0.43	0.50	0.23	0.59	0.47	0.23	0.84	0.67	0.41
Control Delay	66.6	37.8	4.9	65.0	33.7	7.0	65.7	36.2	7.5	73.7	37.5	14.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.6	37.8	4.9	65.0	33.7	7.0	65.7	36.2	7.5	73.7	37.5	14.7
Queue Length 50th (ft)	78	304	0	37	147	0	69	127	0	162	237	46
Queue Length 95th (ft)	162	498	24	90	253	47	146	188	42	#405	351	128
Internal Link Dist (ft)		337			604			581			494	
Turn Bay Length (ft)	195		180	195		445	295		220	210		135
Base Capacity (vph)	275	1532	731	275	1532	753	275	1532	744	275	1532	771
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.62	0.09	0.19	0.33	0.16	0.36	0.26	0.14	0.84	0.47	0.31

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
1: Carson Street & Avalon Boulevard

01/13/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	199	717	72	327	808	196	85	849	409	241	802	255
Future Volume (veh/h)	199	717	72	327	808	196	85	849	409	241	802	255
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	221	797	80	363	898	218	94	943	454	268	891	283
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	273	959	96	411	947	230	116	1109	516	223	1480	468
Arrive On Green	0.08	0.29	0.29	0.12	0.33	0.33	0.07	0.33	0.33	0.12	0.39	0.39
Sat Flow, veh/h	3456	3261	327	3456	2836	688	1781	3404	1585	1781	3841	1215
Grp Volume(v), veh/h	221	434	443	363	562	554	94	943	454	268	789	385
Grp Sat Flow(s),veh/h/ln	1728	1777	1811	1728	1777	1747	1781	1702	1585	1781	1702	1652
Q Serve(g_s), s	8.3	30.1	30.2	13.7	40.7	40.8	6.9	34.1	35.7	16.5	24.5	24.6
Cycle Q Clear(g_c), s	8.3	30.1	30.2	13.7	40.7	40.8	6.9	34.1	35.7	16.5	24.5	24.6
Prop In Lane	1.00		0.18	1.00		0.39	1.00		1.00	1.00		0.74
Lane Grp Cap(c), veh/h	273	522	533	411	593	583	116	1109	516	223	1312	636
V/C Ratio(X)	0.81	0.83	0.83	0.88	0.95	0.95	0.81	0.85	0.88	1.20	0.60	0.60
Avail Cap(c_a), veh/h	432	599	611	432	599	589	223	1147	534	223	1312	636
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.8	43.5	43.5	57.2	42.9	42.9	60.9	41.5	42.1	57.8	32.5	32.5
Incr Delay (d2), s/veh	2.7	9.4	9.2	17.5	24.7	25.2	4.9	6.4	15.6	126.3	0.9	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	14.3	14.6	6.9	21.4	21.2	3.3	15.1	16.0	15.2	10.2	10.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.5	52.9	52.8	74.7	67.5	68.1	65.8	47.9	57.7	184.1	33.4	34.4
LnGrp LOS	E	D	D	E	E	E	E	D	E	F	C	C
Approach Vol, veh/h		1098			1479			1491			1442	
Approach Delay, s/veh		54.8			69.5			52.0			61.7	
Approach LOS		D			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	49.6	20.0	48.5	19.2	44.3	12.1	56.4
Change Period (Y+Rc), s	3.5	5.5	3.5	5.5	3.5	5.5	3.5	5.5
Max Green Setting (Gmax), s	16.5	44.5	16.5	44.5	16.5	44.5	16.5	44.5
Max Q Clear Time (g_c+I1), s	10.3	42.8	18.5	37.7	15.7	32.2	8.9	26.6
Green Ext Time (p_c), s	0.1	1.3	0.0	5.3	0.1	5.6	0.0	9.8

Intersection Summary	
HCM 6th Ctrl Delay	59.8
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	813	607	78	1352	0	48	0	212	0	0	0
Future Volume (veh/h)	5	813	607	78	1352	0	48	0	212	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	0	1870	0	1870			
Adj Flow Rate, veh/h	5	884	660	85	1470	0	52	0	230			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	2	2	2	0	2	0	2			
Cap, veh/h	279	1962	1141	198	3652	0	299	0	266			
Arrive On Green	0.55	0.55	0.55	0.22	1.00	0.00	0.17	0.00	0.17			
Sat Flow, veh/h	360	3554	1585	1781	5274	0	1781	0	1585			
Grp Volume(v), veh/h	5	884	660	85	1470	0	52	0	230			
Grp Sat Flow(s),veh/h/ln	360	1777	1585	1781	1702	0	1781	0	1585			
Q Serve(g_s), s	0.6	13.4	18.0	3.7	0.0	0.0	2.3	0.0	12.7			
Cycle Q Clear(g_c), s	0.6	13.4	18.0	3.7	0.0	0.0	2.3	0.0	12.7			
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00			
Lane Grp Cap(c), veh/h	279	1962	1141	198	3652	0	299	0	266			
V/C Ratio(X)	0.02	0.45	0.58	0.43	0.40	0.00	0.17	0.00	0.86			
Avail Cap(c_a), veh/h	279	1962	1141	303	3652	0	394	0	350			
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	1.00	0.72	0.72	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	9.2	12.0	6.0	32.5	0.0	0.0	32.1	0.0	36.4			
Incr Delay (d2), s/veh	0.1	0.8	2.1	0.8	0.2	0.0	0.3	0.0	15.7			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	4.8	5.3	1.5	0.1	0.0	1.0	0.0	6.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.3	12.8	8.2	33.3	0.2	0.0	32.4	0.0	52.1			
LnGrp LOS	A	B	A	C	A	A	C	A	D			
Approach Vol, veh/h		1549			1555			282				
Approach Delay, s/veh		10.8			2.0			48.5				
Approach LOS		B			A			D				

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	14.7	55.1				69.8		20.2				
Change Period (Y+Rc), s	* 4.7	5.4				5.4		5.1				
Max Green Setting (Gmax), s	* 15	39.6				59.6		19.9				
Max Q Clear Time (g_c+I1), s	15.7	20.0				2.0		14.7				
Green Ext Time (p_c), s	0.1	11.9				22.9		0.4				

Intersection Summary	
HCM 6th Ctrl Delay	9.9
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	869	38	17	960	299	10	1	13	23	16	482
Future Volume (veh/h)	122	869	38	17	960	299	10	1	13	23	16	482
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	134	955	42	19	1055	329	11	1	14	25	18	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	191	2815	1255	437	2248	1003	200	15	145	132	79	
Arrive On Green	0.21	1.00	1.00	0.63	0.63	0.63	0.09	0.09	0.09	0.09	0.09	0.00
Sat Flow, veh/h	1781	3554	1585	565	3554	1585	1352	164	1585	754	862	1585
Grp Volume(v), veh/h	134	955	42	19	1055	329	12	0	14	43	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	565	1777	1585	1516	0	1585	1616	0	1585
Q Serve(g_s), s	6.3	0.0	0.0	1.2	14.0	8.7	0.0	0.0	0.7	0.6	0.0	0.0
Cycle Q Clear(g_c), s	6.3	0.0	0.0	1.2	14.0	8.7	0.5	0.0	0.7	2.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.92		1.00	0.58		1.00
Lane Grp Cap(c), veh/h	191	2815	1255	437	2248	1003	215	0	145	211	0	
V/C Ratio(X)	0.70	0.34	0.03	0.04	0.47	0.33	0.06	0.00	0.10	0.20	0.00	
Avail Cap(c_a), veh/h	501	2815	1255	437	2248	1003	400	0	350	414	0	
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	34.0	0.0	0.0	6.3	8.6	7.7	37.4	0.0	37.5	38.0	0.0	0.0
Incr Delay (d2), s/veh	3.1	0.3	0.0	0.2	0.7	0.9	0.1	0.0	0.3	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.1	0.0	0.1	4.6	2.7	0.2	0.0	0.3	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.1	0.3	0.0	6.5	9.3	8.5	37.5	0.0	37.8	38.5	0.0	0.0
LnGrp LOS	D	A	A	A	A	A	D	A	D	D	A	
Approach Vol, veh/h		1131			1403			26			43	A
Approach Delay, s/veh		4.6			9.1			37.7			38.5	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	2		4	5	6		8					
Phs Duration (G+Y+Rc), s	76.7		13.3	14.3	62.3		13.3					
Change Period (Y+Rc), s	5.4		5.1	* 4.7	5.4		5.1					
Max Green Setting (Gmax), s	59.6		19.9	* 25	29.6		19.9					
Max Q Clear Time (g_c+I1), s	2.0		4.0	8.3	16.0		2.7					
Green Ext Time (p_c), s	12.6		0.1	0.2	8.9		0.0					

Intersection Summary												
HCM 6th Ctrl Delay		7.9										
HCM 6th LOS		A										

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	37	42	80	126	7
Future Vol, veh/h	7	37	42	80	126	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	40	46	87	137	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	320	141	145	0	-	0
Stage 1	141	-	-	-	-	-
Stage 2	179	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	673	907	1437	-	-	-
Stage 1	886	-	-	-	-	-
Stage 2	852	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	650	907	1437	-	-	-
Mov Cap-2 Maneuver	650	-	-	-	-	-
Stage 1	856	-	-	-	-	-
Stage 2	852	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	2.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1437	-	853	-	-
HCM Lane V/C Ratio	0.032	-	0.056	-	-
HCM Control Delay (s)	7.6	0	9.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	3.3

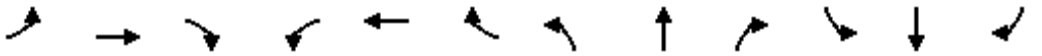
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	85	747	9	7	1097	36	6	0	4	18	0	145
Future Vol, veh/h	85	747	9	7	1097	36	6	0	4	18	0	145
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	75	-	-	-	-	-	-	-	30
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	98	859	10	8	1261	41	7	0	5	21	0	167

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1302	0	0	869	0	0	1707	2378	435	1924	2363	651
Stage 1	-	-	-	-	-	-	1060	1060	-	1298	1298	-
Stage 2	-	-	-	-	-	-	647	1318	-	626	1065	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	528	-	-	1080	-	-	95	35	*804	*57	36	411
Stage 1	-	-	-	-	-	-	453	452	-	*171	230	-
Stage 2	-	-	-	-	-	-	426	225	-	*758	449	-
Platoon blocked, %		-	-	1	-	-	1	1	1	1	1	
Mov Cap-1 Maneuver	528	-	-	1080	-	-	48	28	*804	*48	29	411
Mov Cap-2 Maneuver	-	-	-	-	-	-	48	28	-	*48	29	-
Stage 1	-	-	-	-	-	-	368	368	-	*139	228	-
Stage 2	-	-	-	-	-	-	251	223	-	*613	365	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0.1	59.8	31.6
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	77	528	-	-	1080	-	-	48	411
HCM Lane V/C Ratio	0.149	0.185	-	-	0.007	-	-	0.431	0.406
HCM Control Delay (s)	59.8	13.4	-	-	8.4	-	-	127.9	19.6
HCM Lane LOS	F	B	-	-	A	-	-	F	C
HCM 95th %tile Q(veh)	0.5	0.7	-	-	0	-	-	1.6	1.9

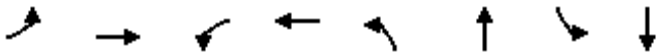
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	477	48	75	536	259	72	470	79	143	379	116
Future Volume (veh/h)	176	477	48	75	536	259	72	470	79	143	379	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	210	568	57	89	638	308	86	560	94	170	451	138
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	245	1279	571	114	1017	454	110	827	369	204	1015	453
Arrive On Green	0.14	0.37	0.37	0.06	0.29	0.29	0.06	0.24	0.24	0.12	0.29	0.29
Sat Flow, veh/h	1753	3497	1560	1753	3497	1560	1753	3497	1560	1753	3497	1560
Grp Volume(v), veh/h	210	568	57	89	638	308	86	560	94	170	451	138
Grp Sat Flow(s),veh/h/ln	1753	1749	1560	1753	1749	1560	1753	1749	1560	1753	1749	1560
Q Serve(g_s), s	10.3	10.8	2.1	4.4	13.9	15.3	4.2	12.8	4.3	8.3	9.2	6.0
Cycle Q Clear(g_c), s	10.3	10.8	2.1	4.4	13.9	15.3	4.2	12.8	4.3	8.3	9.2	6.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	245	1279	571	114	1017	454	110	827	369	204	1015	453
V/C Ratio(X)	0.86	0.44	0.10	0.78	0.63	0.68	0.78	0.68	0.25	0.83	0.44	0.30
Avail Cap(c_a), veh/h	319	1772	790	319	1772	790	319	1772	790	319	1772	790
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.9	21.1	18.3	40.5	27.0	27.5	40.6	30.5	27.2	38.0	25.4	24.3
Incr Delay (d2), s/veh	13.5	0.3	0.1	4.4	0.9	2.5	4.5	1.4	0.5	5.7	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	4.2	0.7	2.0	5.6	5.7	1.9	5.3	1.6	3.7	3.7	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.4	21.4	18.4	44.8	27.9	30.0	45.1	31.9	27.8	43.6	25.8	24.8
LnGrp LOS	D	C	B	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		835			1035			740			759	
Approach Delay, s/veh		28.5			30.0			32.9			29.6	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	37.6	9.5	31.0	16.3	31.0	14.2	26.3
Change Period (Y+Rc), s	4.0	5.5	4.0	5.5	4.0	5.5	4.0	5.5
Max Green Setting (Gmax), s	16.0	44.5	16.0	44.5	16.0	44.5	16.0	44.5
Max Q Clear Time (g_c+I1), s	6.4	12.8	6.2	11.2	12.3	17.3	10.3	14.8
Green Ext Time (p_c), s	0.0	5.9	0.0	5.2	0.1	8.2	0.1	6.0

Intersection Summary	
HCM 6th Ctrl Delay	30.2
HCM 6th LOS	C



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	221	877	363	1116	94	1397	268	1174
v/c Ratio	0.69	0.84	0.90	1.00	0.65	0.90	1.25	0.67
Control Delay	71.9	52.1	84.8	70.2	81.4	50.0	192.3	37.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.9	52.1	84.8	70.2	81.4	50.0	192.3	37.9
Queue Length 50th (ft)	101	384	168	516	83	413	~302	308
Queue Length 95th (ft)	143	469	#260	#711	142	489	#493	392
Internal Link Dist (ft)		543		632		486		619
Turn Bay Length (ft)	225		210		140		145	
Base Capacity (vph)	417	1110	417	1121	215	1593	215	1743
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.79	0.87	1.00	0.44	0.88	1.25	0.67

Intersection Summary

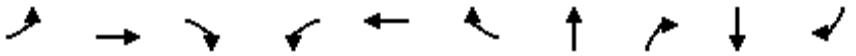
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	5	884	660	85	1470	52	230
v/c Ratio	0.03	0.42	0.47	0.40	0.40	0.23	0.57
Control Delay	10.2	11.0	1.7	38.6	4.2	37.0	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay	10.2	11.0	1.7	38.6	4.3	37.0	11.0
Queue Length 50th (ft)	1	127	9	48	76	28	0
Queue Length 95th (ft)	7	218	36	m82	115	57	61
Internal Link Dist (ft)		349			384		
Turn Bay Length (ft)	45			55			
Base Capacity (vph)	192	2112	1469	300	3717	391	529
Starvation Cap Reductn	0	0	0	0	763	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.42	0.45	0.28	0.50	0.13	0.43

Intersection Summary

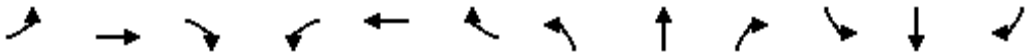
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	134	955	42	19	1055	329	12	14	43	530
v/c Ratio	0.55	0.38	0.04	0.06	0.56	0.33	0.06	0.05	0.19	0.80
Control Delay	52.4	2.4	0.3	13.4	16.0	4.5	30.9	0.3	34.0	13.8
Queue Delay	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.4	2.5	0.3	13.4	16.0	4.5	30.9	0.3	34.0	13.8
Queue Length 50th (ft)	61	11	0	4	172	15	6	0	23	10
Queue Length 95th (ft)	141	58	m1	20	330	76	20	0	48	108
Internal Link Dist (ft)		384			608		543		472	
Turn Bay Length (ft)	70			100		160		20		225
Base Capacity (vph)	497	2527	1180	307	1880	987	327	417	345	747
Starvation Cap Reductn	0	397	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.45	0.04	0.06	0.56	0.33	0.04	0.03	0.12	0.71

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



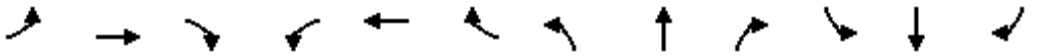
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	210	568	57	89	638	308	86	560	94	170	451	138
v/c Ratio	0.76	0.45	0.09	0.56	0.68	0.48	0.54	0.68	0.21	0.70	0.42	0.24
Control Delay	62.1	28.6	3.2	60.4	37.6	6.1	60.3	40.4	8.2	60.6	31.3	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.1	28.6	3.2	60.4	37.6	6.1	60.3	40.4	8.2	60.6	31.3	6.5
Queue Length 50th (ft)	133	154	0	57	196	0	55	176	0	105	124	0
Queue Length 95th (ft)	#281	226	12	111	261	47	109	240	35	#207	188	39
Internal Link Dist (ft)		337			604			581			494	
Turn Bay Length (ft)	195		180	195		445	295		220	210		135
Base Capacity (vph)	278	1547	737	278	1547	862	278	1547	744	278	1547	768
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.37	0.08	0.32	0.41	0.36	0.31	0.36	0.13	0.61	0.29	0.18

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
1: Carson Street & Avalon Boulevard

01/13/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	297	852	106	350	774	205	121	867	494	373	1037	364
Future Volume (veh/h)	297	852	106	350	774	205	121	867	494	373	1037	364
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	300	861	107	354	782	207	122	876	499	377	1047	368
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	349	967	120	401	886	235	146	1112	518	216	1365	480
Arrive On Green	0.10	0.30	0.30	0.12	0.32	0.32	0.08	0.33	0.33	0.12	0.37	0.37
Sat Flow, veh/h	3456	3181	395	3456	2779	736	1781	3404	1585	1781	3728	1310
Grp Volume(v), veh/h	300	481	487	354	500	489	122	876	499	377	956	459
Grp Sat Flow(s),veh/h/ln	1728	1777	1799	1728	1777	1738	1781	1702	1585	1781	1702	1635
Q Serve(g_s), s	11.6	35.2	35.2	13.7	36.3	36.3	9.2	31.8	42.1	16.5	33.7	33.7
Cycle Q Clear(g_c), s	11.6	35.2	35.2	13.7	36.3	36.3	9.2	31.8	42.1	16.5	33.7	33.7
Prop In Lane	1.00		0.22	1.00		0.42	1.00		1.00	1.00		0.80
Lane Grp Cap(c), veh/h	349	540	547	401	567	554	146	1112	518	216	1246	598
V/C Ratio(X)	0.86	0.89	0.89	0.88	0.88	0.88	0.84	0.79	0.96	1.75	0.77	0.77
Avail Cap(c_a), veh/h	419	581	588	419	581	568	216	1113	518	216	1246	598
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.2	45.2	45.2	59.3	43.9	43.9	61.6	41.6	45.0	59.8	38.0	38.0
Incr Delay (d2), s/veh	12.5	15.7	15.5	18.1	15.0	15.3	11.1	4.1	30.6	354.0	3.1	6.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	17.5	17.7	6.9	17.9	17.6	4.6	13.8	20.7	28.6	14.4	14.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.7	60.9	60.7	77.3	58.9	59.2	72.7	45.6	75.6	413.8	41.1	44.3
LnGrp LOS	E	E	E	E	E	E	E	D	E	F	D	D
Approach Vol, veh/h		1268			1343			1497			1792	
Approach Delay, s/veh		63.6			63.9			57.8			120.4	
Approach LOS		E			E			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.3	48.9	20.0	49.9	19.3	46.9	14.6	55.3
Change Period (Y+Rc), s	3.5	5.5	3.5	5.5	3.5	5.5	3.5	5.5
Max Green Setting (Gmax), s	16.5	44.5	16.5	44.5	16.5	44.5	16.5	44.5
Max Q Clear Time (g_c+I1), s	13.6	38.3	18.5	44.1	15.7	37.2	11.2	35.7
Green Ext Time (p_c), s	0.1	3.8	0.0	0.3	0.0	4.2	0.0	6.7

Intersection Summary			
HCM 6th Ctrl Delay		79.4	
HCM 6th LOS		E	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	1386	946	74	1215	0	36	0	69	0	0	0
Future Volume (veh/h)	7	1386	946	74	1215	0	36	0	69	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	0	1870	0	1870			
Adj Flow Rate, veh/h	7	1459	996	78	1279	0	38	0	73			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	2	2	2	0	2	0	2			
Cap, veh/h	346	2188	1141	198	3978	0	186	0	165			
Arrive On Green	0.62	0.62	0.62	0.22	1.00	0.00	0.10	0.00	0.10			
Sat Flow, veh/h	432	3554	1585	1781	5274	0	1781	0	1585			
Grp Volume(v), veh/h	7	1459	996	78	1279	0	38	0	73			
Grp Sat Flow(s),veh/h/ln	432	1777	1585	1781	1702	0	1781	0	1585			
Q Serve(g_s), s	0.6	24.1	42.6	3.4	0.0	0.0	1.8	0.0	3.9			
Cycle Q Clear(g_c), s	0.6	24.1	42.6	3.4	0.0	0.0	1.8	0.0	3.9			
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00			
Lane Grp Cap(c), veh/h	346	2188	1141	198	3978	0	186	0	165			
V/C Ratio(X)	0.02	0.67	0.87	0.39	0.32	0.00	0.20	0.00	0.44			
Avail Cap(c_a), veh/h	346	2188	1141	303	3978	0	394	0	350			
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	1.00	0.75	0.75	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	6.8	11.3	9.5	32.4	0.0	0.0	36.9	0.0	37.9			
Incr Delay (d2), s/veh	0.1	1.6	9.3	0.7	0.2	0.0	0.5	0.0	1.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.1	8.2	14.0	1.4	0.1	0.0	0.8	0.0	1.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.9	12.9	18.8	33.1	0.2	0.0	37.4	0.0	39.7			
LnGrp LOS	A	B	B	C	A	A	D	A	D			
Approach Vol, veh/h		2462			1357			111				
Approach Delay, s/veh		15.3			2.1			38.9				
Approach LOS		B			A			D				

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	14.7	60.8				75.5		14.5				
Change Period (Y+Rc), s	* 4.7	5.4				5.4		5.1				
Max Green Setting (Gmax), s	* 15	39.6				59.6		19.9				
Max Q Clear Time (g_c+I1), s	15.4	44.6				2.0		5.9				
Green Ext Time (p_c), s	0.1	0.0				18.4		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	11.4
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	1284	30	29	707	262	36	32	28	41	12	564
Future Volume (veh/h)	156	1284	30	29	707	262	36	32	28	41	12	564
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	166	1366	32	31	752	279	38	34	30	44	13	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	200	2752	1227	315	2167	967	142	108	173	151	36	
Arrive On Green	0.22	1.00	1.00	0.61	0.61	0.61	0.11	0.11	0.11	0.11	0.11	0.00
Sat Flow, veh/h	1781	3554	1585	386	3554	1585	739	994	1585	737	330	1585
Grp Volume(v), veh/h	166	1366	32	31	752	279	72	0	30	57	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	386	1777	1585	1734	0	1585	1068	0	1585
Q Serve(g_s), s	8.0	0.0	0.0	3.1	9.4	7.5	0.0	0.0	1.5	2.7	0.0	0.0
Cycle Q Clear(g_c), s	8.0	0.0	0.0	3.1	9.4	7.5	3.3	0.0	1.5	5.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.53		1.00	0.77		1.00
Lane Grp Cap(c), veh/h	200	2752	1227	315	2167	967	250	0	173	187	0	
V/C Ratio(X)	0.83	0.50	0.03	0.10	0.35	0.29	0.29	0.00	0.17	0.30	0.00	
Avail Cap(c_a), veh/h	501	2752	1227	315	2167	967	428	0	350	348	0	
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.67	0.67	0.67	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	34.1	0.0	0.0	7.4	8.7	8.3	37.2	0.0	36.4	39.0	0.0	0.0
Incr Delay (d2), s/veh	4.5	0.4	0.0	0.6	0.4	0.8	0.6	0.0	0.5	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.2	0.0	0.3	3.2	2.4	1.5	0.0	0.6	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.6	0.4	0.0	8.1	9.1	9.1	37.8	0.0	36.9	39.9	0.0	0.0
LnGrp LOS	D	A	A	A	A	A	D	A	D	D	A	
Approach Vol, veh/h		1564			1062			102			57	A
Approach Delay, s/veh		4.5			9.1			37.5			39.9	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		75.1		14.9	14.8	60.3		14.9				
Change Period (Y+Rc), s		5.4		5.1	* 4.7	5.4		5.1				
Max Green Setting (Gmax), s		59.6		19.9	* 25	29.6		19.9				
Max Q Clear Time (g_c+I1), s		2.0		7.9	10.0	11.4		5.3				
Green Ext Time (p_c), s		22.1		0.1	0.3	8.3		0.3				

Intersection Summary	
HCM 6th Ctrl Delay	8.2
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	20	19	104	155	3
Future Vol, veh/h	3	20	19	104	155	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	22	21	113	168	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	325	170	171	0	-	0
Stage 1	170	-	-	-	-	-
Stage 2	155	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	669	874	1406	-	-	-
Stage 1	860	-	-	-	-	-
Stage 2	873	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	658	874	1406	-	-	-
Mov Cap-2 Maneuver	658	-	-	-	-	-
Stage 1	846	-	-	-	-	-
Stage 2	873	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	1.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1406	-	838	-	-
HCM Lane V/C Ratio	0.015	-	0.03	-	-
HCM Control Delay (s)	7.6	0	9.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	2.9

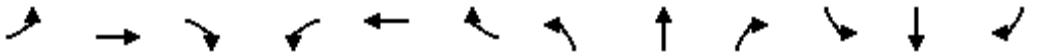
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	101	1234	5	3	857	27	5	0	11	72	0	103
Future Vol, veh/h	101	1234	5	3	857	27	5	0	11	72	0	103
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	75	-	-	-	-	-	-	-	30
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	105	1285	5	3	893	28	5	0	11	75	0	107

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	921	0	0	1290	0	0	1951	2425	645	1766	2413	461
Stage 1	-	-	-	-	-	-	1498	1498	-	913	913	-
Stage 2	-	-	-	-	-	-	453	927	-	853	1500	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	737	-	-	*897	-	-	91	35	*600	*161	36	547
Stage 1	-	-	-	-	-	-	385	373	-	*294	350	-
Stage 2	-	-	-	-	-	-	556	345	-	*565	371	-
Platoon blocked, %		-	-	1	-	-	1	1	1	1	1	
Mov Cap-1 Maneuver	737	-	-	*897	-	-	65	30	*600	*140	31	547
Mov Cap-2 Maneuver	-	-	-	-	-	-	65	30	-	*140	31	-
Stage 1	-	-	-	-	-	-	331	320	-	*252	349	-
Stage 2	-	-	-	-	-	-	445	344	-	*475	319	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0	28.8	31.3
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	168	737	-	-	* 897	-	-	140	547
HCM Lane V/C Ratio	0.099	0.143	-	-	0.003	-	-	0.536	0.196
HCM Control Delay (s)	28.8	10.7	-	-	9	-	-	57.1	13.2
HCM Lane LOS	D	B	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	0.3	0.5	-	-	0	-	-	2.6	0.7

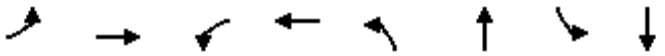
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	897	64	50	482	116	95	377	100	216	673	229
Future Volume (veh/h)	108	897	64	50	482	116	95	377	100	216	673	229
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	115	954	68	53	513	123	101	401	106	230	716	244
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	144	1279	570	67	1125	502	128	777	346	265	1049	468
Arrive On Green	0.08	0.37	0.37	0.04	0.32	0.32	0.07	0.22	0.22	0.15	0.30	0.30
Sat Flow, veh/h	1739	3469	1547	1739	3469	1547	1739	3469	1547	1739	3469	1547
Grp Volume(v), veh/h	115	954	68	53	513	123	101	401	106	230	716	244
Grp Sat Flow(s),veh/h/ln	1739	1735	1547	1739	1735	1547	1739	1735	1547	1739	1735	1547
Q Serve(g_s), s	5.7	21.0	2.5	2.7	10.3	5.1	5.0	8.9	5.0	11.3	15.9	11.4
Cycle Q Clear(g_c), s	5.7	21.0	2.5	2.7	10.3	5.1	5.0	8.9	5.0	11.3	15.9	11.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	144	1279	570	67	1125	502	128	777	346	265	1049	468
V/C Ratio(X)	0.80	0.75	0.12	0.79	0.46	0.25	0.79	0.52	0.31	0.87	0.68	0.52
Avail Cap(c_a), veh/h	317	1761	785	317	1761	785	317	1761	785	317	1761	785
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.5	24.1	18.3	41.8	23.5	21.7	40.0	29.9	28.4	36.3	26.9	25.3
Incr Delay (d2), s/veh	3.8	1.5	0.1	7.5	0.4	0.4	4.1	0.8	0.7	17.3	1.1	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	8.2	0.9	1.2	4.0	1.8	2.2	3.6	1.8	5.9	6.3	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.3	25.6	18.4	49.3	23.9	22.1	44.0	30.6	29.1	53.6	28.0	26.6
LnGrp LOS	D	C	B	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		1137			689			608			1190	
Approach Delay, s/veh		27.0			25.5			32.6			32.7	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.4	37.8	10.4	32.0	11.3	33.9	17.3	25.1
Change Period (Y+Rc), s	4.0	5.5	4.0	5.5	4.0	5.5	4.0	5.5
Max Green Setting (Gmax), s	16.0	44.5	16.0	44.5	16.0	44.5	16.0	44.5
Max Q Clear Time (g_c+I1), s	4.7	23.0	7.0	17.9	7.7	12.3	13.3	10.9
Green Ext Time (p_c), s	0.0	9.3	0.0	8.6	0.0	5.7	0.1	4.4

Intersection Summary	
HCM 6th Ctrl Delay	29.5
HCM 6th LOS	C



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	300	968	354	989	122	1375	377	1415
v/c Ratio	0.81	0.91	0.89	0.91	0.74	0.89	1.76	0.85
Control Delay	76.9	58.1	84.2	57.0	86.1	49.3	395.2	46.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.9	58.1	84.2	57.0	86.1	49.3	395.2	46.0
Queue Length 50th (ft)	138	440	165	447	110	407	~515	422
Queue Length 95th (ft)	190	#561	#251	#579	177	473	#719	#509
Internal Link Dist (ft)		543		632		486		619
Turn Bay Length (ft)	225		210		140		145	
Base Capacity (vph)	416	1105	416	1112	214	1592	214	1668
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.88	0.85	0.89	0.57	0.86	1.76	0.85

Intersection Summary

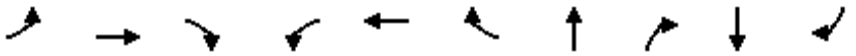
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	7	1459	996	78	1279	38	73
v/c Ratio	0.03	0.71	0.71	0.38	0.35	0.15	0.24
Control Delay	11.4	17.2	5.0	45.2	3.5	33.2	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.4	17.2	5.0	45.2	3.5	33.2	7.6
Queue Length 50th (ft)	2	278	50	46	49	20	0
Queue Length 95th (ft)	10	#542	167	m76	106	43	28
Internal Link Dist (ft)		349			384		
Turn Bay Length (ft)	45			55			
Base Capacity (vph)	230	2064	1459	300	3639	391	417
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.71	0.68	0.26	0.35	0.10	0.18

Intersection Summary

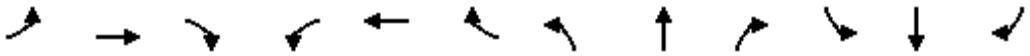
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	166	1366	32	31	752	279	72	30	57	600
v/c Ratio	0.62	0.56	0.03	0.16	0.43	0.29	0.29	0.09	0.25	0.85
Control Delay	57.1	4.2	1.2	18.3	16.2	3.1	34.1	0.5	33.5	18.3
Queue Delay	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.1	4.2	1.2	18.3	16.2	3.1	34.1	0.5	33.5	18.3
Queue Length 50th (ft)	103	73	0	9	128	0	37	0	29	36
Queue Length 95th (ft)	m148	96	m0	34	223	46	71	0	60	#175
Internal Link Dist (ft)		384			608		543		472	
Turn Bay Length (ft)	70			100		160		20		225
Base Capacity (vph)	497	2461	1148	190	1758	949	340	419	308	763
Starvation Cap Reductn	0	130	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.59	0.03	0.16	0.43	0.29	0.21	0.07	0.19	0.79

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	115	954	68	53	513	123	101	401	106	230	716	244
v/c Ratio	0.64	0.78	0.11	0.43	0.51	0.23	0.59	0.47	0.23	0.84	0.67	0.42
Control Delay	66.8	37.8	5.0	65.1	33.8	7.0	65.7	36.2	7.5	73.9	37.6	14.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.8	37.8	5.0	65.1	33.8	7.0	65.7	36.2	7.5	73.9	37.6	14.8
Queue Length 50th (ft)	79	305	0	37	148	0	69	127	0	162	237	47
Queue Length 95th (ft)	163	498	26	90	254	47	146	188	42	#405	351	130
Internal Link Dist (ft)		337			604			581			494	
Turn Bay Length (ft)	195		180	195		445	295		220	210		135
Base Capacity (vph)	275	1530	730	275	1530	752	275	1530	743	275	1530	771
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.62	0.09	0.19	0.34	0.16	0.37	0.26	0.14	0.84	0.47	0.32

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

APPENDIX E:
MEMORANDUM OF UNDERSTANDING

FEHR PEERS

Memorandum

Date: December 13, 2021

To: Ryan Kim and Nick Lowe, City of Carson
CC: Stefanie Edmondson, City of Carson
Darren Embry, Faring

From: Drew Heckathorn and Michael Kennedy, Fehr & Peers

Subject: 21611 South Perry Street Self-Storage/Mixed-Use Project Traffic Study Methodology and Assumptions

LB21-0049

This document summarizes the methodology and assumptions for the study to address transportation analysis requirements and potential improvements for the 21611 South Perry Street Self-Storage/Mixed-Use project in the City of Carson.

Overall Methodology

The assessment of the proposed project will involve evaluating intersection level of service (LOS) and queueing for the following scenarios during weekday AM and PM peak hour conditions:

- Existing
- Existing plus Ambient Growth with Project
- Future Base
- Future with Project

Any adverse project traffic effects will be defined by comparing Existing LOS to Existing plus Ambient Growth with Project LOS and Future Base LOS to Future with Project LOS for weekday AM and PM peak periods. Specific LOS methodology and thresholds are defined below.

LOS Methodology

All study intersections will be analyzed using the Highway Capacity Manual (HCM), 6th Edition method.

Project Traffic Threshold

Study intersections will be considered adversely affected if the project's traffic would contribute to unacceptable queuing, defined as:

- Spill over from turn pockets into through lanes
- Spill over into intersections

Existing Conditions

Existing Transportation Network

The study report will include a description of the following existing transportation network elements:

- Freeway and street characteristics within the study area
- Pedestrian infrastructure within ¼ mile of the project site
- Bicycle infrastructure within 2 miles of the project site
- Transit available within ¼ mile of the project site

Existing Traffic Volumes

Recent traffic studies in the City of Carson will be reviewed to determine if there are available turning movement count data at any of the proposed study intersections. Due to significant changes in travel behavior caused by the COVID-19 pandemic, this study will utilize AM and PM peak hour traffic counts collected in the year prior to the start of the pandemic (March 2019-March 2020). If pre-pandemic counts are not available at any location, new AM and PM peak hour traffic counts will be collected. If appropriate, an adjustment factor will be applied to the new counts to estimate pre-pandemic traffic levels. The list of study intersections is shown below and in **Figure 1**:

1. Avalon Boulevard & Carson Street
2. I-405 Southbound Ramps & Carson Street
3. I-405 Northbound Ramps & Carson Street
4. Perry Street & Proposed Project Driveway (Future Intersection)
5. Perry Street & Carson Street
6. Wilmington Avenue & Carson Street

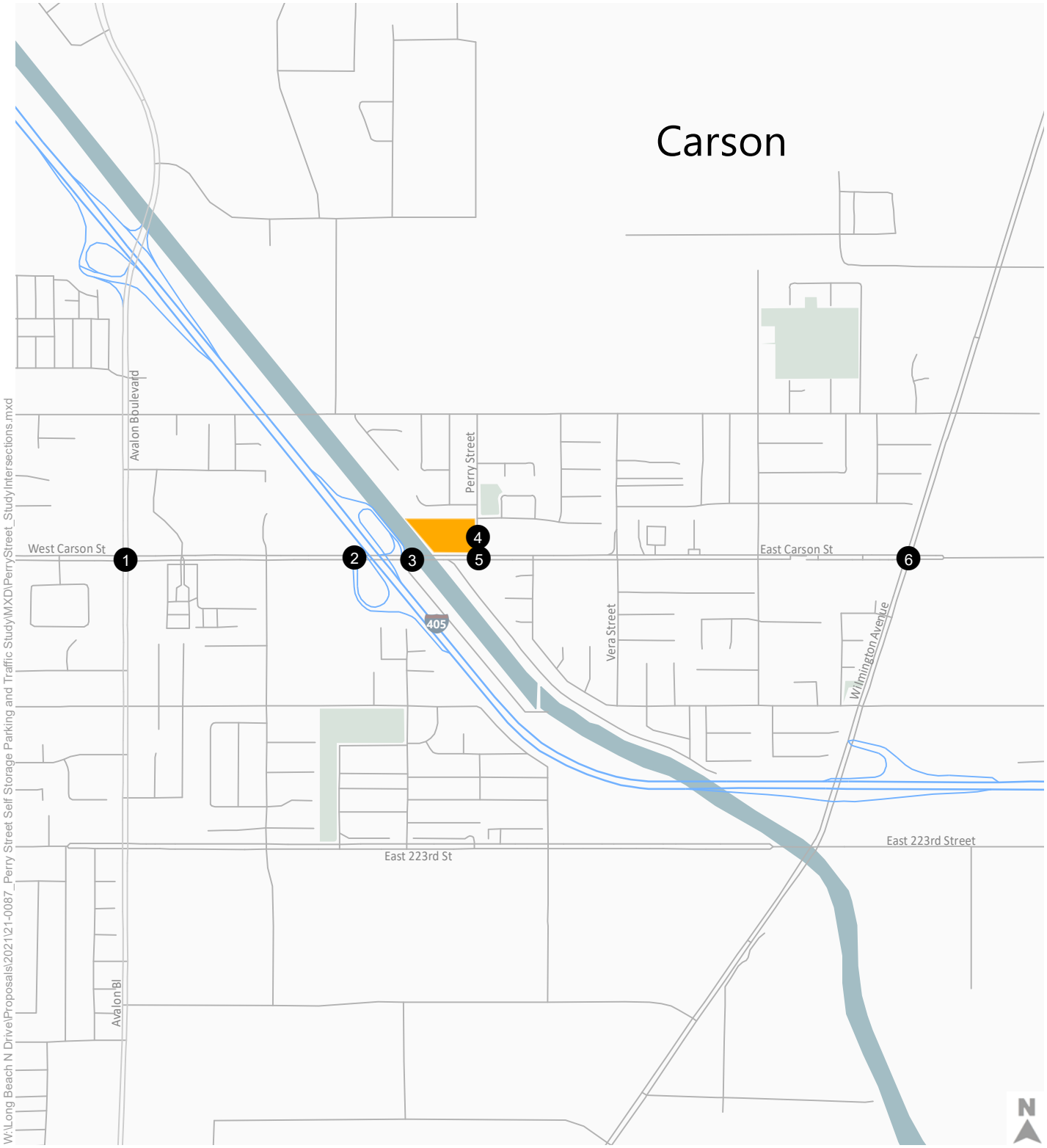


Figure 1

Study Intersections

Existing Plus Ambient Growth Conditions

Existing plus Ambient Growth volumes will account for ambient growth in the study area up to the project buildout year. Specific assumptions are listed below:

- Project Buildout Year – 2023
- Ambient linear growth factor – 0.5% per year (for a total of 2% over 4 years)

Future Base Conditions

The Future Base volumes will account for the Existing plus Ambient Growth volumes and trips associated with known related projects and any planned network changes. Related projects are shown in **Table 1** and **Figure 2** (list of projects provided by the City of Carson).

Project Description

The project as analyzed will include:

- Self-Storage Warehouse 109,039 square feet (725 storage units)
    - Self-Storage Office 2,425 square feet
- Retail Space 700 square feet
- Restaurant Space 1,550 square feet

Project Trip Generation

The total trip generation for the project is based on ITE rates with credits for internal capture and pass-by informed by NCHRP internal capture guidelines and ITE data for pass-by credits. Trip generation rates and credits are shown in **Table 2**.

Trip Distribution

The geographic trip distribution of the project trips is based on several factors including the type and density of the proposed land uses, the geographic distribution of population and activity centers in the surrounding area, and the location of the project access points in relation to the surrounding street and freeway system.

Figure 3 illustrates the trip distribution pattern of the project trips.

Other Traffic and Parking Study Components

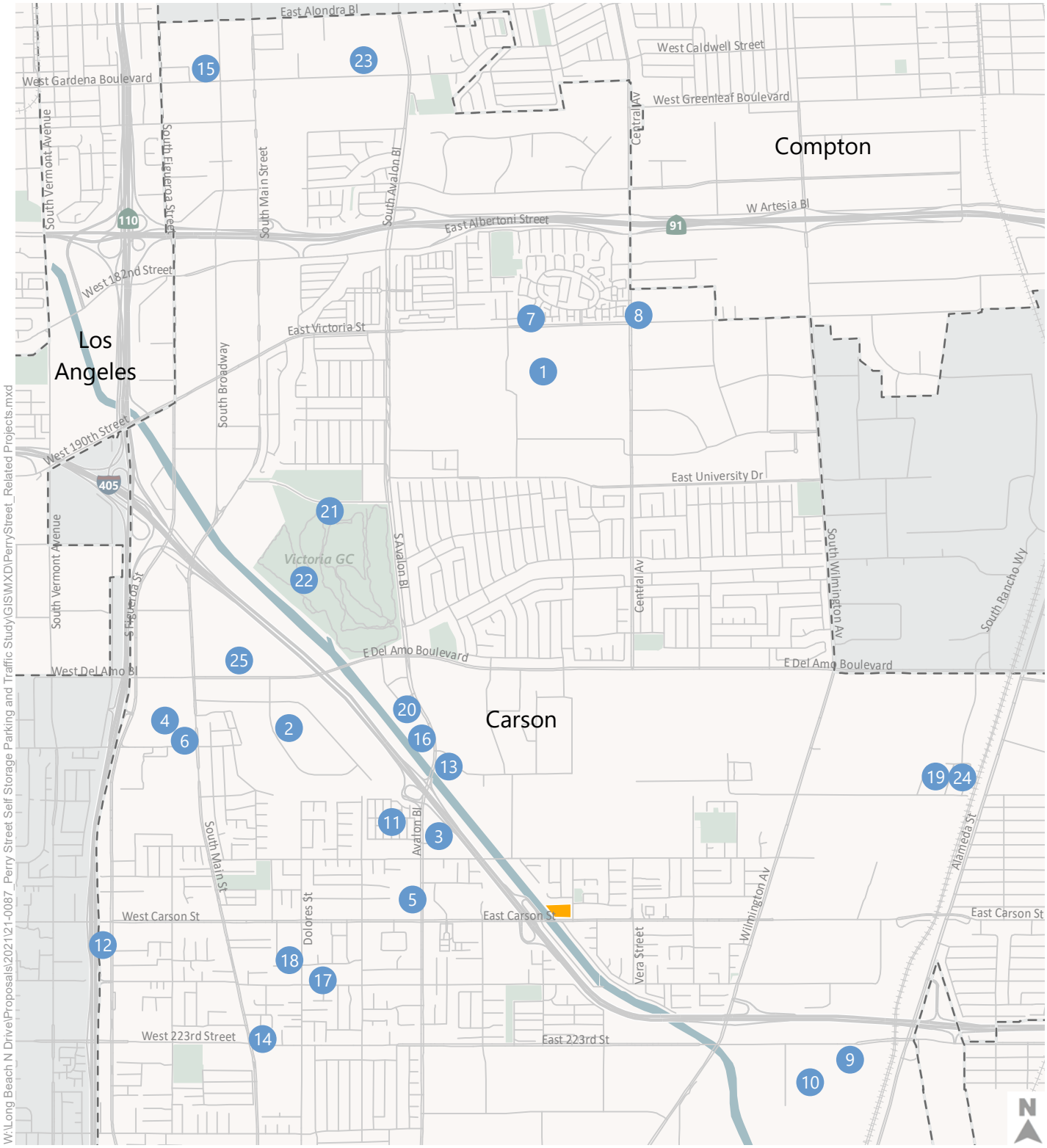
Site Access Analysis

This analysis will involve a review of the project's proposed access including an analysis of driveways and pedestrian entry points.

TABLE 1
PERRY STREET SELF STORAGE PROJECT
RELATED PROJECTS

No.	Project Location	Land Use	Size		Trip Generation						
						AM			PM		
					Daily	IN	OUT	TOTAL	IN	OUT	TOTAL
1	CSUDH Master Plan	Mixed Use	[1]	[1]	N/A	2,299	1,415	3,714	1,940	2,286	4,226
2	The District at South Bay	Mixed Use	[1]	[1]	42,791	1,490	1,349	2,838	1,809	1,997	3,805
3	21212 Avalon Blvd	Mixed Use	[1]	[1]	9,779	171	347	518	391	268	659
4	20601 S Main St	Industrial Park	267	ksf	900	87	20	107	22	85	107
5	Union South Bay (21521 S Avalon Blvd)	Multifamily	357	du	3,685	54	156	210	199	137	335
		Shopping	31	ksf							
6	225 W Torrance Blvd	Multifamily	356	du	1,937	33	95	128	96	61	157
7	1007 E Victoria St	Multifamily	35	du	278	4	13	17	13	8	21
8	NEC Victoria and Central	Multifamily	175	du	1,281	19	62	81	62	36	98
9	2254 E 223rd St	Warehousing	121	ksf	429	29	8	36	10	29	39
10	2112 E 223rd St	Warehousing	292	ksf	507	38	12	50	14	41	55
11	21207 Avalon Blvd	Mixed Use	[1]	[1]	5,586	125	277	402	283	174	457
12	21809-21811 S Figueroa St	Multifamily	32	du	234	3	11	14	11	7	18
13	888 E Dominguez St	Hotel	118	keys	905	32	22	54	36	35	71
14	123 E 223rd st	Multifamily	10	du	36	2	1	3	1	2	3
15	333 W Gardena Blvd	Warehousing	146	ksf	276	19	6	25	7	21	28
16	20707 Avalon Blvd	Retail	3	ksf	608	26	26	52	22	20	42
17	345/349 E 220th St	Multifamily	35	du	256	4	12	16	12	7	19
18	21915 S Dolores St	Multifamily	5	du	37	1	2	3	2	2	4
19	2315 E Dominguez St	Warehousing	14	ksf	68	1	1	2	1	2	3
20	20501 Avalon Blvd	Retail	5	ksf	1,013	44	43	86	37	34	70
21	Carol Kimmelman Campus	Mixed Use	[1]	[1]	3,808	105	83	188	244	192	436
22	Creek Dominguez Hills	Mixed Use	[1]	[1]	16,132	580	384	964	727	669	1,396
23	439 E Gardena Blvd	Warehousing	4	ksf	52	1	0	1	0	1	1
24	20950 Brant Ave	Retail	4	ksf	151	2	2	4	7	8	15
25	20330 S Main St	Multifamily	300	du	1,580	27	109	136	84	45	129
				Total	92,329	5,196	4,456	9,649	6,030	6,167	12,194

Notes:
du = dwelling unit
ksf = one thousand square feet
[1] Mixed Use developments contain more than one independent variable to calculate trip generation.
Related projects list is based on information provided by the City of Carson, the County of Los Angeles, publicly available environmental documentation, and trip generation rates contained in ITE Trip Generation, 10th Edition.



Proposed Project Site

Cities

Related Projects

Figure 2

Related Projects

TABLE 2
PERRY STREET SELF-STORAGE PROJECT
ESTIMATED PROJECT TRIP GENERATION

Land Use	ITE Land Use Code	Size	Trip Generation Rates [a]							Estimated Trip Generation						
				AM Peak Hour			PM Peak Hour				AM Peak Hour Trips			PM Peak Hour Trips		
			Daily	Rate	In%	Out%	Rate	In%	Out%	Daily	In	Out	Total	In	Out	Total
PROPOSED PROJECT																
Mini-Warehouse	151	7 Units (100s)	17.96	1.21	51%	49%	1.68	50%	50%	130	5	4	9	6	6	12
Less: Internal capture			*0%*		*0%*	*0%*		*0%*	*0%*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Less: Walk/Bike/Transit Credit [b]			*0%*	*0%*			*0%*			*0*	*0*	*0*	*0*	*0*	*0*	*0*
Net External Vehicle Trips										130	5	4	9	6	6	12
Coffee/Donut Shop without Drive-Through Window [c]	936	1.55 KSF	450.49	93.08	51%	49%	32.29	50%	50%	698	73	71	144	25	25	50
Less: Internal capture			*0%*		*0%*	*0%*		*0%*	*0%*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Less: Walk/Bike/Transit Credit [b]			*0%*	*0%*			*0%*			*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total Driveway Trips										698	73	71	144	25	25	50
Less: Pass-by			*43%*	*43%*			*43%*			*(300)*	*(31)*	*(31)*	*(62)*	*(11)*	*(11)*	*(22)*
Net External Vehicle Trips										398	42	40	82	14	14	28
Copy, Print, and Express Ship Store [d]	920	0.7 KSF	74.2	2.78	75%	25%	7.42	44%	56%	52	2	0	2	2	3	5
Less: Internal capture			*0%*		*0%*	*0%*		*0%*	*0%*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Less: Walk/Bike/Transit Credit [b]			*0%*	*0%*			*0%*			*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total Driveway Trips										52	2	0	2	2	3	5
Less: Pass-by			*0%*	*0%*			*0%*			*0*	*0*	*0*	*0*	*0*	*0*	*0*
Net External Vehicle Trips										52	2	0	2	2	3	5
TOTAL DRIVEWAY TRIPS										880	80	75	155	33	34	67
TOTAL PROJECT EXTERNAL VEHICLE TRIPS										580	49	44	93	22	23	45
EXISTING USE CREDIT																
Vacant Lot	-		-	-	-	-	-	-	-	0	0	0	0	0	0	0
TOTAL EXISTING DRIVEWAY TRIPS										0	0	0	0	0	0	0
NET INCREMENTAL EXTERNAL TRIPS										580	49	44	93	22	23	45

Notes:

[a] Source: Institute of Transportation Engineers (ITE), *Trip Generation, 11th Edition* , 2021

[b] A 0% Walk/Bike/Transit Credit was used based on the site's general suburban context.

[c] ITE use 933 - Fast-Food Restaurant without Drive-Through Window used for daily rate due to lack of daily rate data for ITE use 936 - Coffee/Donut Shop without Drive-Through Window.

[d] ITE use 920 does not have a daily rate. The daily rate is estimated to be 10 times greater than the PM peak hour traffic volume for the use.

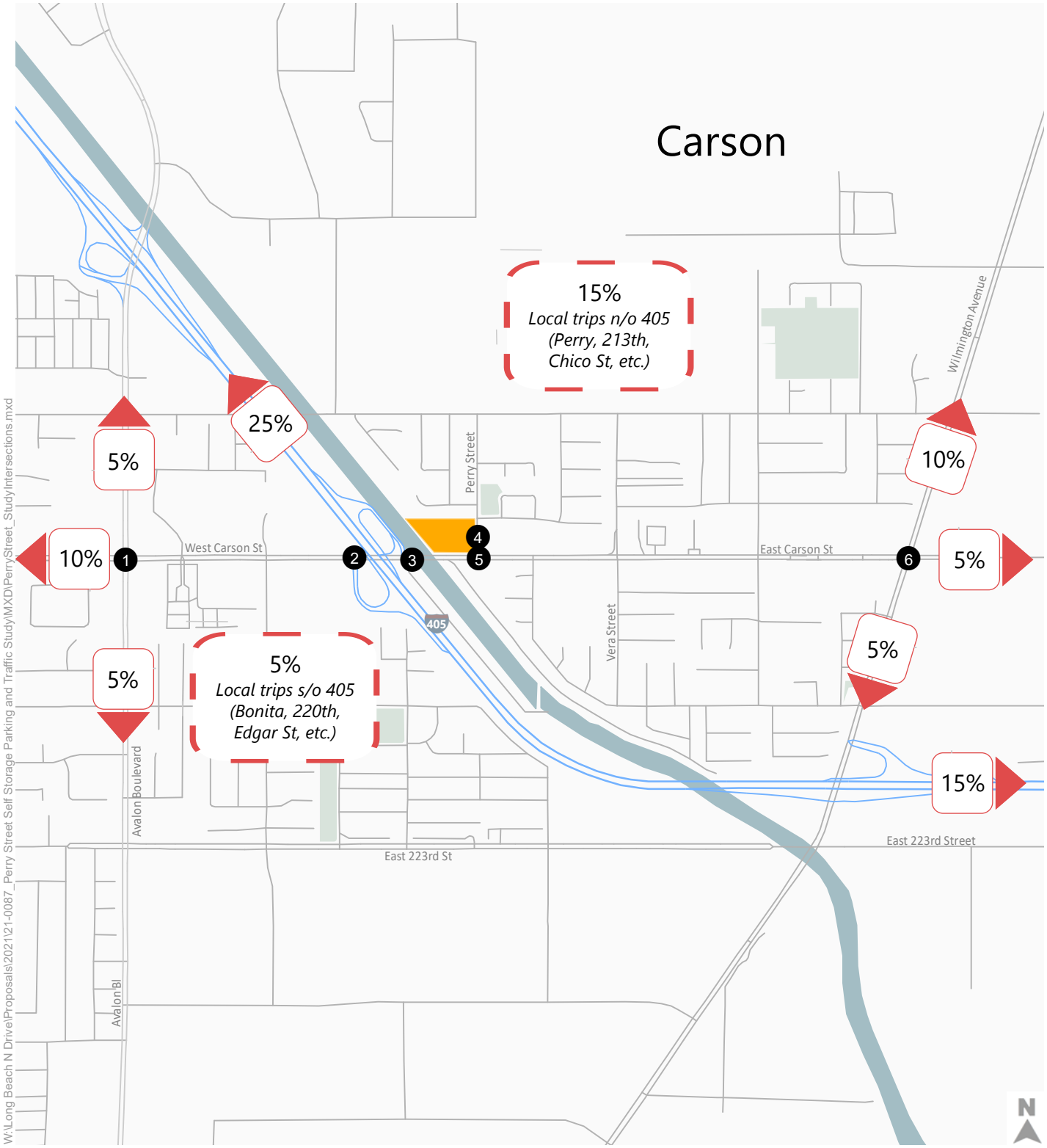


Figure 3

Trip Distribution

Parking Demand Analysis

This analysis will assess if the proposed on-site parking supply is adequate to accommodate peak parking demand. In addition to estimating peak parking demand, the analysis will consider potential spillover effects into adjacent residential neighborhoods, shared parking efficiencies, and TDM strategies.

The parking demand analysis will include a summary of minimum parking requirements for the project based on the Carson Municipal Code. The analysis will then consider national best practice standards, such as the ITE *Parking Generation* manual and ULI *Shared Parking* manual, to see if lower parking ratios can be justified given the project's land use types and local context. The ULI *Shared Parking* methodology will also be utilized to determine shared parking efficiencies through complementary on-site land uses (i.e., land uses with peak parking demand occurring at different times of day or season).

Potential Improvements

Any adverse effects of project traffic on the study intersections will be identified. If the project traffic creates adverse effects (according to the City of Carson guidelines described in the Project Traffic Threshold section of this memorandum), physical and/or operational improvements necessary to accommodate project trips will be investigated and defined at a conceptual level.

VMT Analysis

The proposed project can be classified as local-serving retail, and therefore based on standard OPR guidance can screen out from conducting VMT analysis for CEQA purposes. As described in the OPR technical advisory: "By adding retail opportunities into the urban fabric and thereby improving retail destination proximity, local-serving retail development tends to shorten trips and reduce VMT." This approach will be described qualitatively in any environmental documents necessary for the project.

Appendix M
AB 52 and SB 18 Notification

ESA

CITY OF CARSON

October 28, 2021

Gabrieleno/Tongva Nation
Sandonne Goad, Chairperson
106 ½ Judge John Aiso St. #231
Los Angeles, CA 90012

Subject: AB 52 Project Notification and Request to Consult Letter for the Proposed 21611 Perry Street, Carson, California

Dear Chairperson Goad:

Pursuant to California Assembly Bill 52 the City of Carson (City) is providing you with notification of the 21611 Perry Street Self Storage Project (Project). Under California State law, the Project is subject to the California Environmental Quality Act (CEQA) and the City is required to prepare an Initial Study/Mitigated Negative Declaration (IS/MND) to assess impacts for the construction and operation of the Project. The Project Site is comprised of a 2.80-acre (121,968 square foot) lot located at 21611 South Perry Street in the City of Carson. The Project Site is bordered by East Carson Street to the south, South Perry Street to the east, residential uses directly adjacent to and north of the Project Site, and the Dominguez Flood Control Channel, which is located to the west of the Project Site between the Project Site and Interstate 405. The Project Site is currently a vacant and undeveloped lot.

The Project proposes the development of a self-storage facility with three buildings totaling approximately 118,928 square feet. The self-storage facility would be comprised of a mix of one- and two-story buildings with a maximum height of approximately 25 feet to parapet and 31 feet to peak of roof elements. The self-storage facility would include a 1,641 square foot lobby, a 1,550 square foot retail use (likely a cafe), and a 1,575 square foot retail use (likely a mail service store such as a UPS or FedEx). In total, the lobby and retail uses would comprise 4,766 square feet. The Project would provide 41 parking spaces that would be accessed from one driveway providing ingress/egress off South Perry Street. The Project would provide approximately 23,000 square feet of landscaping, which would be predominately provided along the Project Site's northern edge as a way to shield the residential uses directly adjacent to and north of the Project Site.

The Project must comply with California Public Resources Code Section 21080.3.1 (Assembly Bill [AB] 52 of 2014), which requires local governments to conduct meaningful consultation with California Native American tribes that have requested to be notified by lead agencies of proposed projects in the geographic area with which the tribe is traditionally and culturally affiliated.

The input of your tribe is important to the City's planning process. We respectfully request a written response within 30 days from receipt of this letter if you wish to consult on the Project. Please provide your contact information and mail your request to Ms. Stefanie Edmondson, Senior Planner,

Community Development Department, City of Carson, 701 E. Carson Street, Carson, CA 90745, sedmondson@carsonca.gov, (310) 952-1761 Ext. 1322.

Thank you for your assistance with our efforts to address tribal cultural resources that may be affected by the Project.

Sincerely,

Stefanie Edmondson
Senior Planner

CITY OF CARSON

October 28, 2021

Charles Alvarez, Chairperson
Gabrielino-Tongova Tribe
23454 Vanowen Street
West Hills, California 91307

Subject: AB 52 Project Notification and Request to Consult Letter for the Proposed 21611 Perry Street, Carson, California

Dear Mr. Alvarez:

Pursuant to California Assembly Bill 52 the City of Carson (City) is providing you with notification of the 21611 Perry Street Self Storage Project (Project). Under California State law, the Project is subject to the California Environmental Quality Act (CEQA) and the City is required to prepare an Initial Study/Mitigated Negative Declaration (IS/MND) to assess impacts for the construction and operation of the Project. The Project Site is comprised of a 2.80-acre (121,968 square foot) lot located at 21611 South Perry Street in the City of Carson. The Project Site is bordered by East Carson Street to the south, South Perry Street to the east, residential uses directly adjacent to and north of the Project Site, and the Dominguez Flood Control Channel, which is located to the west of the Project Site between the Project Site and Interstate 405. The Project Site is currently a vacant and undeveloped lot.

The Project proposes the development of a self-storage facility with three buildings totaling approximately 118,928 square feet. The self-storage facility would be comprised of a mix of one- and two-story buildings with a maximum height of approximately 25 feet to parapet and 31 feet to peak of roof elements. The self-storage facility would include a 1,641 square foot lobby, a 1,550 square foot retail use (likely a cafe), and a 1,575 square foot retail use (likely a mail service store such as a UPS or FedEx). In total, the lobby and retail uses would comprise 4,766 square feet. The Project would provide 41 parking spaces that would be accessed from one driveway providing ingress/egress off South Perry Street. The Project would provide approximately 23,000 square feet of landscaping, which would be predominately provided along the Project Site's northern edge as a way to shield the residential uses directly adjacent to and north of the Project Site.

The Project must comply with California Public Resources Code Section 21080.3.1 (Assembly Bill [AB] 52 of 2014), which requires local governments to conduct meaningful consultation with California Native American tribes that have requested to be notified by lead agencies of proposed projects in the geographic area with which the tribe is traditionally and culturally affiliated.

The input of your tribe is important to the City's planning process. We respectfully request a written response within 30 days from receipt of this letter if you wish to consult on the Project. Please provide your contact information and mail your request to Ms. Stefanie Edmondson, Senior Planner,

Community Development Department, City of Carson, 701 E. Carson Street, Carson, CA 90745, sedmondson@carsonca.gov, (310) 952-1761 Ext. 1322.

Thank you for your assistance with our efforts to address tribal cultural resources that may be affected by the Project.

Sincerely,

Stefanie Edmondson
Senior Planner

CITY OF CARSON

October 28, 2021

Robert Dorame, Chairperson
Gabrielino Tongva Indians of California Tribal Council
P.O. Box 490
Bellflower, California 90707

Subject: AB 52 Project Notification and Request to Consult Letter for the Proposed 21611 Perry Street, Carson, California

Dear Mr. Dorame:

Pursuant to California Assembly Bill 52 the City of Carson (City) is providing you with notification of the 21611 Perry Street Self Storage Project (Project). Under California State law, the Project is subject to the California Environmental Quality Act (CEQA) and the City is required to prepare an Initial Study/Mitigated Negative Declaration (IS/MND) to assess impacts for the construction and operation of the Project. The Project Site is comprised of a 2.80-acre (121,968 square foot) lot located at 21611 South Perry Street in the City of Carson. The Project Site is bordered by East Carson Street to the south, South Perry Street to the east, residential uses directly adjacent to and north of the Project Site, and the Dominguez Flood Control Channel, which is located to the west of the Project Site between the Project Site and Interstate 405. The Project Site is currently a vacant and undeveloped lot.

The Project proposes the development of a self-storage facility with three buildings totaling approximately 118,928 square feet. The self-storage facility would be comprised of a mix of one- and two-story buildings with a maximum height of approximately 25 feet to parapet and 31 feet to peak of roof elements. The self-storage facility would include a 1,641 square foot lobby, a 1,550 square foot retail use (likely a cafe), and a 1,575 square foot retail use (likely a mail service store such as a UPS or FedEx). In total, the lobby and retail uses would comprise 4,766 square feet. The Project would provide 41 parking spaces that would be accessed from one driveway providing ingress/egress off South Perry Street. The Project would provide approximately 23,000 square feet of landscaping, which would be predominately provided along the Project Site's northern edge as a way to shield the residential uses directly adjacent to and north of the Project Site.

The Project must comply with California Public Resources Code Section 21080.3.1 (Assembly Bill [AB] 52 of 2014), which requires local governments to conduct meaningful consultation with California Native American tribes that have requested to be notified by lead agencies of proposed projects in the geographic area with which the tribe is traditionally and culturally affiliated.

The input of your tribe is important to the City's planning process. We respectfully request a written response within 30 days from receipt of this letter if you wish to consult on the Project. Please provide your contact information and mail your request to Ms. Stefanie Edmondson, Senior Planner,

Community Development Department, City of Carson, 701 E. Carson Street, Carson, CA 90745, sedmondson@carsonca.gov, (310) 952-1761 Ext. 1322.

Thank you for your assistance with our efforts to address tribal cultural resources that may be affected by the Project.

Sincerely,

Stefanie Edmondson
Senior Planner

CITY OF CARSON

October 28, 2021

Gabrieleno Band of Mission Indians- Kizh Nation
Andrew Salas, Chairperson
P.O. Box 393
Covina, CA 91723

Subject: AB 52 Project Notification and Request to Consult Letter for the Proposed 21611 Perry Street, Carson, California

Dear Mr. Salas:

Pursuant to California Assembly Bill 52 the City of Carson (City) is providing you with notification of the 21611 Perry Street Self Storage Project (Project). Under California State law, the Project is subject to the California Environmental Quality Act (CEQA) and the City is required to prepare an Initial Study/Mitigated Negative Declaration (IS/MND) to assess impacts for the construction and operation of the Project. The Project Site is comprised of a 2.80-acre (121,968 square foot) lot located at 21611 South Perry Street in the City of Carson. The Project Site is bordered by East Carson Street to the south, South Perry Street to the east, residential uses directly adjacent to and north of the Project Site, and the Dominguez Flood Control Channel, which is located to the west of the Project Site between the Project Site and Interstate 405. The Project Site is currently a vacant and undeveloped lot.

The Project proposes the development of a self-storage facility with three buildings totaling approximately 118,928 square feet. The self-storage facility would be comprised of a mix of one- and two-story buildings with a maximum height of approximately 25 feet to parapet and 31 feet to peak of roof elements. The self-storage facility would include a 1,641 square foot lobby, a 1,550 square foot retail use (likely a cafe), and a 1,575 square foot retail use (likely a mail service store such as a UPS or FedEx). In total, the lobby and retail uses would comprise 4,766 square feet. The Project would provide 41 parking spaces that would be accessed from one driveway providing ingress/egress off South Perry Street. The Project would provide approximately 23,000 square feet of landscaping, which would be predominately provided along the Project Site's northern edge as a way to shield the residential uses directly adjacent to and north of the Project Site.

The Project must comply with California Public Resources Code Section 21080.3.1 (Assembly Bill [AB] 52 of 2014), which requires local governments to conduct meaningful consultation with California Native American tribes that have requested to be notified by lead agencies of proposed projects in the geographic area with which the tribe is traditionally and culturally affiliated.

The input of your tribe is important to the City's planning process. We respectfully request a written response within 30 days from receipt of this letter if you wish to consult on the Project. Please provide your contact information and mail your request to Ms. Stefanie Edmondson, Senior Planner,

Community Development Department, City of Carson, 701 E. Carson Street, Carson, CA 90745, sedmondson@carsonca.gov, (310) 952-1761 Ext. 1322.

Thank you for your assistance with our efforts to address tribal cultural resources that may be affected by the Project.

Sincerely,

Stefanie Edmondson

Stefanie Edmondson
Senior Planner

CITY OF CARSON

October 28, 2021

Saboba Band of Luiseno Indians
Scott Cozart, Chairperson
P.O. Box 487
San Jacinto, CA 92583

Subject: AB 52 Project Notification and Request to Consult Letter for the Proposed 21611 Perry Street, Carson, California

Dear Chairperson Cozart:

Pursuant to California Assembly Bill 52 the City of Carson (City) is providing you with notification of the 21611 Perry Street Self Storage Project (Project). Under California State law, the Project is subject to the California Environmental Quality Act (CEQA) and the City is required to prepare an Initial Study/Mitigated Negative Declaration (IS/MND) to assess impacts for the construction and operation of the Project. The Project Site is comprised of a 2.80-acre (121,968 square foot) lot located at 21611 South Perry Street in the City of Carson. The Project Site is bordered by East Carson Street to the south, South Perry Street to the east, residential uses directly adjacent to and north of the Project Site, and the Dominguez Flood Control Channel, which is located to the west of the Project Site between the Project Site and Interstate 405. The Project Site is currently a vacant and undeveloped lot.

The Project proposes the development of a self-storage facility with three buildings totaling approximately 118,928 square feet. The self-storage facility would be comprised of a mix of one- and two-story buildings with a maximum height of approximately 25 feet to parapet and 31 feet to peak of roof elements. The self-storage facility would include a 1,641 square foot lobby, a 1,550 square foot retail use (likely a cafe), and a 1,575 square foot retail use (likely a mail service store such as a UPS or FedEx). In total, the lobby and retail uses would comprise 4,766 square feet. The Project would provide 41 parking spaces that would be accessed from one driveway providing ingress/egress off South Perry Street. The Project would provide approximately 23,000 square feet of landscaping, which would be predominately provided along the Project Site's northern edge as a way to shield the residential uses directly adjacent to and north of the Project Site.

The Project must comply with California Public Resources Code Section 21080.3.1 (Assembly Bill [AB] 52 of 2014), which requires local governments to conduct meaningful consultation with California Native American tribes that have requested to be notified by lead agencies of proposed projects in the geographic area with which the tribe is traditionally and culturally affiliated.

The input of your tribe is important to the City's planning process. We respectfully request a written response within 30 days from receipt of this letter if you wish to consult on the Project. Please provide your contact information and mail your request to Ms. Stefanie Edmondson, Senior Planner,

Community Development Department, City of Carson, 701 E. Carson Street, Carson, CA 90745, sedmondson@carsonca.gov, (310) 952-1761 Ext. 1322.

Thank you for your assistance with our efforts to address tribal cultural resources that may be affected by the Project.

Sincerely,

Stefanie Edmondson

Stefanie Edmondson
Senior Planner

CITY OF CARSON

October 28, 2021

Anthony Morales, Tribal Chairman
Gabrieleno/Tongva San Gabriel Band of Mission Indians
P.O. Box 693
San Gabriel, CA, 91778

Subject: AB 52 Project Notification and Request to Consult Letter for the Proposed 21611 Perry Street, Carson, California

Dear Mr. Morales:

Pursuant to California Assembly Bill 52 the City of Carson (City) is providing you with notification of the 21611 Perry Street Self Storage Project (Project). Under California State law, the Project is subject to the California Environmental Quality Act (CEQA) and the City is required to prepare an Initial Study/Mitigated Negative Declaration (IS/MND) to assess impacts for the construction and operation of the Project. The Project Site is comprised of a 2.80-acre (121,968 square foot) lot located at 21611 South Perry Street in the City of Carson. The Project Site is bordered by East Carson Street to the south, South Perry Street to the east, residential uses directly adjacent to and north of the Project Site, and the Dominguez Flood Control Channel, which is located to the west of the Project Site between the Project Site and Interstate 405. The Project Site is currently a vacant and undeveloped lot.

The Project proposes the development of a self-storage facility with three buildings totaling approximately 118,928 square feet. The self-storage facility would be comprised of a mix of one- and two-story buildings with a maximum height of approximately 25 feet to parapet and 31 feet to peak of roof elements. The self-storage facility would include a 1,641 square foot lobby, a 1,550 square foot retail use (likely a cafe), and a 1,575 square foot retail use (likely a mail service store such as a UPS or FedEx). In total, the lobby and retail uses would comprise 4,766 square feet. The Project would provide 41 parking spaces that would be accessed from one driveway providing ingress/egress off South Perry Street. The Project would provide approximately 23,000 square feet of landscaping, which would be predominately provided along the Project Site's northern edge as a way to shield the residential uses directly adjacent to and north of the Project Site.

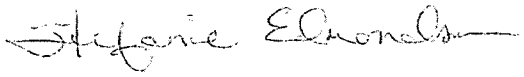
The Project must comply with California Public Resources Code Section 21080.3.1 (Assembly Bill [AB] 52 of 2014), which requires local governments to conduct meaningful consultation with California Native American tribes that have requested to be notified by lead agencies of proposed projects in the geographic area with which the tribe is traditionally and culturally affiliated.

The input of your tribe is important to the City's planning process. We respectfully request a written response within 30 days from receipt of this letter if you wish to consult on the Project. Please provide your contact information and mail your request to Ms. Stefanie Edmondson, Senior Planner,

Community Development Department, City of Carson, 701 E. Carson Street, Carson, CA 90745, sedmondson@carsonca.gov, (310) 952-1761 Ext. 1322.

Thank you for your assistance with our efforts to address tribal cultural resources that may be affected by the Project.

Sincerely,



Stefanie Edmondson
Senior Planner

CITY OF CARSON

October 28, 2021

Santa Rosa Band of Cahuilla Indians
Lovina Redner, Tribal Chair
P.O. Box 391820
Anza, CA 92539

Subject: AB 52 Project Notification and Request to Consult Letter for the Proposed 21611 Perry Street, Carson, California

Dear Chairperson Redner:

Pursuant to California Assembly Bill 52 the City of Carson (City) is providing you with notification of the 21611 Perry Street Self Storage Project (Project). Under California State law, the Project is subject to the California Environmental Quality Act (CEQA) and the City is required to prepare an Initial Study/Mitigated Negative Declaration (IS/MND) to assess impacts for the construction and operation of the Project. The Project Site is comprised of a 2.80-acre (121,968 square foot) lot located at 21611 South Perry Street in the City of Carson. The Project Site is bordered by East Carson Street to the south, South Perry Street to the east, residential uses directly adjacent to and north of the Project Site, and the Dominguez Flood Control Channel, which is located to the west of the Project Site between the Project Site and Interstate 405. The Project Site is currently a vacant and undeveloped lot.

The Project proposes the development of a self-storage facility with three buildings totaling approximately 118,928 square feet. The self-storage facility would be comprised of a mix of one- and two-story buildings with a maximum height of approximately 25 feet to parapet and 31 feet to peak of roof elements. The self-storage facility would include a 1,641 square foot lobby, a 1,550 square foot retail use (likely a cafe), and a 1,575 square foot retail use (likely a mail service store such as a UPS or FedEx). In total, the lobby and retail uses would comprise 4,766 square feet. The Project would provide 41 parking spaces that would be accessed from one driveway providing ingress/egress off South Perry Street. The Project would provide approximately 23,000 square feet of landscaping, which would be predominately provided along the Project Site's northern edge as a way to shield the residential uses directly adjacent to and north of the Project Site.

The Project must comply with California Public Resources Code Section 21080.3.1 (Assembly Bill [AB] 52 of 2014), which requires local governments to conduct meaningful consultation with California Native American tribes that have requested to be notified by lead agencies of proposed projects in the geographic area with which the tribe is traditionally and culturally affiliated.

The input of your tribe is important to the City's planning process. We respectfully request a written response within 30 days from receipt of this letter if you wish to consult on the Project. Please provide your contact information and mail your request to Ms. Stefanie Edmondson, Senior Planner,

Community Development Department, City of Carson, 701 E. Carson Street, Carson, CA 90745, sedmondson@carsonca.gov, (310) 952-1761 Ext. 1322.

Thank you for your assistance with our efforts to address tribal cultural resources that may be affected by the Project.

Sincerely,

Stefanie Edmondson

Stefanie Edmondson
Senior Planner

CITY OF CARSON

December 6, 2021

by email to: nahc@nahc.ca.gov

Native American Heritage Commission
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691

Subject: Senate Bill 18 Local Government Tribal Consultation List Request

The City of Carson requests that the Native American Heritage Commission provide a list of local Tribal contacts per Government Code 65352.3 for the following Local Action:

_____ General Plan _____ General Plan Element _____ General Plan Amendment

___X___ Specific Plan _____ Specific Plan Amendment _____ Pre-Planning Outreach Activity

Project Title: 21611 Perry Street Self Storage Project

Project Location: The Project Site is comprised of a 2.80-acre (121,968 square foot) lot located at 21611 South Perry Street in the City of Carson. The Project Site is bordered by East Carson Street to the south, South Perry Street to the east, residential uses directly adjacent to and north of the Project Site, and the Dominguez Flood Control Channel, which is located to the west of the Project Site between the Project Site and Interstate 405. The Project Site is currently a vacant and undeveloped lot.

Project Description: The Project proposes the development of a self-storage facility with three buildings totaling approximately 118,928 square feet. The self-storage facility would be comprised of a mix of one- and two-story buildings with a maximum height of approximately 25 feet to parapet and 31 feet to peak of roof elements. The self-storage facility would include a 1,641 square foot lobby, a 1,550 square foot retail use (likely a cafe), and a 1,575 square foot retail use (likely a mail service store such as a UPS or FedEx). In total, the lobby and retail uses would comprise 4,766 square feet. The Project would provide 41 parking spaces that would be accessed from one driveway providing ingress/egress off South Perry Street. The Project would provide approximately 23,000 square feet of landscaping, which would be predominately provided along the Project Site's northern edge

to shield the residential uses directly adjacent to and north of the Project Site.

The project will require a Site Plan and Design Review, a Specific Plan, and a Development Agreement.

Please return the local Tribal contacts list to me as soon as possible at:

Email: sedmondson@carsonca.gov
Mail: 701 E. Carson St., Carson, CA 90745

Please contact me with any questions or concerns at 310.952.1761 Ext. 1322.

Sincerely,

Stefanie Edmondson

Stefanie Edmondson
Senior Planner

Project Location: 21611 Perry Street

Project Site: Existing Conditions

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

February 2, 2022

Stefanie Edmondson
City of Carson

Via Email to: sedmondson@carsonca.gov

Re: Native American Consultation, Pursuant to Senate Bill 18, Government Code §65352.3 and §65352.4, 21611 Perry Street Self Storage Project, Los Angeles County

Dear Ms. Edmondson:

Attached is a consultation list of tribes with traditional lands or cultural places located within the boundaries of the above referenced counties.

Government Code §65352.3 and §65352.4 require local governments to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose of avoiding, protecting, and/or mitigating impacts to cultural places when creating or amending General Plans, Specific Plans and Community Plans.

The law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction. The NAHC believes that this is the best practice to ensure that tribes are consulted commensurate with the intent of the law.

The NAHC also believes that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

    - A listing of any and all known cultural resources that have already been recorded or are adjacent to the APE, such as known archaeological sites;
    - Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
    - Whether the records search indicates a low, moderate or high probability that unrecorded cultural resources are located in the APE; and
    - If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

    - Any report that may contain site forms, site significance, and suggested mitigation measures.

All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code §6254.10.

3. The result of the Sacred Lands File (SLF) check conducted through the Native American Heritage Commission. The request form can be found at http://nahc.ca.gov/wp-content/uploads/2015/08/Local-Government-Tribal-Consultation-List-Request-Form-Update.pdf.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event, that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we are able to assure that our consultation list remains current.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Tribal Consultation List
Los Angeles County
2/2/2022

Gabrieleno Band of Mission Indians - Kizh Nation
Andrew Salas, Chairperson
P.O. Box 393
Covina, CA, 91723
Phone: (626) 926 - 4131
admin@gabrielenoindians.org
Gabrieleno

Gabrieleno/Tongva San Gabriel Band of Mission Indians
Anthony Morales, Chairperson
P.O. Box 693
San Gabriel, CA, 91778
Phone: (626) 483 - 3564
Fax: (626) 286-1262
GTTribalcouncil@aol.com
Gabrieleno

Gabrielino /Tongva Nation
Sandonne Goad, Chairperson
106 1/2 Judge John Aiso St., #231
Los Angeles, CA, 90012
Phone: (951) 807 - 0479
sgoad@gabrielino-tongva.com
Gabrielino

Gabrielino Tongva Indians of California Tribal Council
Robert Dorame, Chairperson
P.O. Box 490
Bellflower, CA, 90707
Phone: (562) 761 - 6417
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gtongva@gmail.com
Gabrielino

Gabrielino Tongva Indians of California Tribal Council
Christina Conley, Tribal Consultant and Administrator
P.O. Box 941078
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christina.marsden@alumni.usc.edu
Gabrielino

Gabrielino-Tongva Tribe
Charles Alvarez,
23454 Vanowen Street
West Hills, CA, 91307
Phone: (310) 403 - 6048
roadkingcharles@aol.com
Gabrielino

Santa Rosa Band of Cahuilla Indians
Lovina Redner, Tribal Chair
P.O. Box 391820
Anza, CA, 92539
Phone: (951) 659 - 2700
Fax: (951) 659-2228
lsaul@santarosa-nsn.gov
Cahuilla

Soboba Band of Luiseno Indians
Joseph Ontiveros, Cultural Resource Department
P.O. BOX 487
San Jacinto, CA, 92581
Phone: (951) 663 - 5279
Fax: (951) 654-4198
jontiveros@soboba-nsn.gov
Cahuilla
Luiseno

Soboba Band of Luiseno Indians
Isaiah Vivanco, Chairperson
P. O. Box 487
San Jacinto, CA, 92581
Phone: (951) 654 - 5544
Fax: (951) 654-4198
ivivanco@soboba-nsn.gov
Cahuilla
Luiseno

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 6097.98 of the Public Resources Code and section 5097.98 of the Public Resources Code.

This list is only applicable for consultation with Native American tribes under Government Code Sections 65352.3 and 65352.4 et seq for the proposed 21611 Perry Street Self Storage Project, Los Angeles County.

CITY OF CARSON

March 9, 2022

Andrew Salas, Chairperson
Gabrieleno Band of Mission Indians – Kizh Nation
P.O. Box 393
Covina, CA 91723

Via Email: gabrielenoindians.org & Via U.S. Mail

Re: 21611 Perry Street Self Storage Project in the City of Carson – Notification per Senate Bill 18 (SB 18)

Dear Andrew Salas:

The City of Carson has initiated the preparation of an Initial Study pursuant to California Environmental Quality Act (CEQA) for the 21611 Perry Street Self Storage Project in the City of Carson, Los Angeles County (see enclosed map of the project site).

The Project Site is comprised of a 2.80-acre (121,968 square foot) lot located at 21611 South Perry Street in the City of Carson. The Project Site is bordered by East Carson Street to the south, South Perry Street to the east, residential uses directly adjacent to and north of the Project Site, and the Dominguez Flood Control Channel, which is located to the west of the Project Site between the Project Site and Interstate 405. The Project Site is currently a vacant and undeveloped lot.
The Project proposes the development of a self-storage facility with three buildings totaling approximately 118,928 square feet. The self-storage facility would be comprised of a mix of one- and two-story buildings with a maximum height of approximately 25 feet to parapet and 31 feet to peak of roof elements. The self-storage facility would include a 1,641 square foot lobby, a 1,550 square foot retail use (likely a cafe), and a 1,575 square foot retail use (likely a mail service store such as a UPS or FedEx). In total, the lobby and retail uses would comprise 4,766 square feet. The Project would provide 41 parking spaces that would be accessed from one driveway providing ingress/egress off South Perry Street. The Project would provide approximately 23,000 square feet of landscaping, which would be predominately provided along the Project Site's northern edge to shield the residential uses directly adjacent to and north of the Project Site.
This project will require a General Plan Amendment, Zone Change, Site Plan and Design Review, a Specific Plan, and a Development Agreement.

As part of the City's responsibilities pursuant to Senate Bill 18 and Government Code 65352.3, local Native American tribes must be notified of any General Plan Amendment for the purpose of offering a consultation to protect any cultural resources that may exist in the planning area. Your tribe is on the Native American Heritage Commission (NAHC)'s list of tribes to be notified for Los Angeles County.

Your tribal group is invited to contact the City of Carson and participate in SB 18 consultation with the City regarding the proposed project. If your tribal group wishes to consult with the City about any cultural resources located in the project area, please contact me within the next 90 days. Apart from a cultural resource consultation, please also contact me if you would like to be notified of public hearings for the proposed project.

Please provide your contact information and email or mail your request to Stefanie Edmondson, Senior Planner, Community Development Department, City of Carson, 701 E. Carson Street, Carson, CA 90745, sedmondson@carsonca.gov or (310) 952-1761 Ext. 1322.

Thank you for your assistance with our efforts to address tribal cultural resources that may be affected by the Project.

Sincerely,

Stefanie Edmondson

Stefanie Edmondson
Senior Planner

Enc: Location Map

Project Location – 21611 Perry Street

Aerial View of the existing site

CITY OF CARSON

March 9, 2022

Anthony Morales, Chairperson
Gabrieleno/Tongva San Gabriel
Band of Mission Indians
P.O. Box 693
San Gabriel, CA 91778

Via Email: GTTribalcouncil@aol.com & Via U.S. Mail

Re: 21611 Perry Street Self Storage Project in the City of Carson –
Notification per Senate Bill 18 (SB 18)

Dear Chairperson Morales:

The City of Carson has initiated the preparation of an Initial Study pursuant to California Environmental Quality Act (CEQA) for the 21611 Perry Street Self Storage Project in the City of Carson, Los Angeles County (see enclosed map of the project site).

The Project Site is comprised of a 2.80-acre (121,968 square foot) lot located at 21611 South Perry Street in the City of Carson. The Project Site is bordered by East Carson Street to the south, South Perry Street to the east, residential uses directly adjacent to and north of the Project Site, and the Dominguez Flood Control Channel, which is located to the west of the Project Site between the Project Site and Interstate 405. The Project Site is currently a vacant and undeveloped lot.
The Project proposes the development of a self-storage facility with three buildings totaling approximately 118,928 square feet. The self-storage facility would be comprised of a mix of one- and two-story buildings with a maximum height of approximately 25 feet to parapet and 31 feet to peak of roof elements. The self-storage facility would include a 1,641 square foot lobby, a 1,550 square foot retail use (likely a cafe), and a 1,575 square foot retail use (likely a mail service store such as a UPS or FedEx). In total, the lobby and retail uses would comprise 4,766 square feet. The Project would provide 41 parking spaces that would be accessed from one driveway providing ingress/egress off South Perry Street. The Project would provide approximately 23,000 square feet of landscaping, which would be predominately provided along the Project Site's northern edge to shield the residential uses directly adjacent to and north of the Project Site.
This project will require a General Plan Amendment, Zone Change, Site Plan and Design Review, a Specific Plan, and a Development Agreement.

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Sincerely,

Stefanie Edmondson

Stefanie Edmondson
Senior Planner

Enc: Location Map

Project Location – 21611 Perry Street

Aerial View of the existing site

CITY OF CARSON

March 9, 2022

Sandonne Goad, Chairperson
Gabrielino/Tongva Nation
106 ½ Judge John Aiso Street, #231
Los Angeles, CA 90012

Via Email: sgoad@gabrielino-tongva.com & Via U.S. Mail

Re: 21611 Perry Street Self Storage Project in the City of Carson –
Notification per Senate Bill 18 (SB 18)

Dear Chairperson Morales:

The City of Carson has initiated the preparation of an Initial Study pursuant to California Environmental Quality Act (CEQA) for the 21611 Perry Street Self Storage Project in the City of Carson, Los Angeles County (see enclosed map of the project site).

The Project Site is comprised of a 2.80-acre (121,968 square foot) lot located at 21611 South Perry Street in the City of Carson. The Project Site is bordered by East Carson Street to the south, South Perry Street to the east, residential uses directly adjacent to and north of the Project Site, and the Dominguez Flood Control Channel, which is located to the west of the Project Site between the Project Site and Interstate 405. The Project Site is currently a vacant and undeveloped lot.
The Project proposes the development of a self-storage facility with three buildings totaling approximately 118,928 square feet. The self-storage facility would be comprised of a mix of one- and two-story buildings with a maximum height of approximately 25 feet to parapet and 31 feet to peak of roof elements. The self-storage facility would include a 1,641 square foot lobby, a 1,550 square foot retail use (likely a cafe), and a 1,575 square foot retail use (likely a mail service store such as a UPS or FedEx). In total, the lobby and retail uses would comprise 4,766 square feet. The Project would provide 41 parking spaces that would be accessed from one driveway providing ingress/egress off South Perry Street. The Project would provide approximately 23,000 square feet of landscaping, which would be predominately provided along the Project Site's northern edge to shield the residential uses directly adjacent to and north of the Project Site.
This project will require a General Plan Amendment, Zone Change, Site Plan and Design Review, a Specific Plan, and a Development Agreement.

As part of the City's responsibilities pursuant to Senate Bill 18 and Government Code 65352.3, local Native American tribes must be notified of any General Plan Amendment for the purpose of offering a consultation to protect any cultural resources that may exist in the planning area. Your tribe is on the Native American Heritage Commission (NAHC)'s list of tribes to be notified for Los Angeles County.

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Please provide your contact information and email or mail your request to Stefanie Edmondson, Senior Planner, Community Development Department, City of Carson, 701 E. Carson Street, Carson, CA 90745, sedmondson@carsonca.gov or (310) 952-1761 Ext. 1322.

Thank you for your assistance with our efforts to address tribal cultural resources that may be affected by the Project.

Sincerely,

Stefanie Edmondson

Stefanie Edmondson
Senior Planner

Enc: Location Map

Project Location – 21611 Perry Street

Aerial View of the existing site

CITY OF CARSON

March 9, 2022

Robert Dorame, Chairperson
Gabrielino Tongva Indians of California Tribal Council
P.O. Box 490
Bellflower, CA 90707

Via Email: gtongva@gmail.com & Via U.S. Mail

Re: 21611 Perry Street Self Storage Project in the City of Carson – Notification per Senate Bill 18 (SB 18)

Dear Chairperson Dorame:

The City of Carson has initiated the preparation of an Initial Study pursuant to California Environmental Quality Act (CEQA) for the 21611 Perry Street Self Storage Project in the City of Carson, Los Angeles County (see enclosed map of the project site).

The Project Site is comprised of a 2.80-acre (121,968 square foot) lot located at 21611 South Perry Street in the City of Carson. The Project Site is bordered by East Carson Street to the south, South Perry Street to the east, residential uses directly adjacent to and north of the Project Site, and the Dominguez Flood Control Channel, which is located to the west of the Project Site between the Project Site and Interstate 405. The Project Site is currently a vacant and undeveloped lot.
The Project proposes the development of a self-storage facility with three buildings totaling approximately 118,928 square feet. The self-storage facility would be comprised of a mix of one- and two-story buildings with a maximum height of approximately 25 feet to parapet and 31 feet to peak of roof elements. The self-storage facility would include a 1,641 square foot lobby, a 1,550 square foot retail use (likely a cafe), and a 1,575 square foot retail use (likely a mail service store such as a UPS or FedEx). In total, the lobby and retail uses would comprise 4,766 square feet. The Project would provide 41 parking spaces that would be accessed from one driveway providing ingress/egress off South Perry Street. The Project would provide approximately 23,000 square feet of landscaping, which would be predominately provided along the Project Site's northern edge to shield the residential uses directly adjacent to and north of the Project Site.
This project will require a General Plan Amendment, Zone Change, Site Plan and Design Review, a Specific Plan, and a Development Agreement.

As part of the City's responsibilities pursuant to Senate Bill 18 and Government Code 65352.3, local Native American tribes must be notified of any General Plan Amendment for the purpose of offering a consultation to protect any cultural resources that may exist in the planning area. Your tribe is on the Native American Heritage Commission (NAHC)'s list of tribes to be notified for Los Angeles County.

Your tribal group is invited to contact the City of Carson and participate in SB 18 consultation with the City regarding the proposed project. If your tribal group wishes to consult with the City about any cultural resources located in the project area, please contact me within the next 90 days. Apart from a cultural resource consultation, please also contact me if you would like to be notified of public hearings for the proposed project.

Please provide your contact information and email or mail your request to Stefanie Edmondson, Senior Planner, Community Development Department, City of Carson, 701 E. Carson Street, Carson, CA 90745, sedmondson@carsonca.gov or (310) 952-1761 Ext. 1322.

Thank you for your assistance with our efforts to address tribal cultural resources that may be affected by the Project.

Sincerely,

Stefanie Edmondson

Stefanie Edmondson
Senior Planner

Enc: Location Map

Project Location – 21611 Perry Street

Aerial View of the existing site

CITY OF CARSON

March 9, 2022

Gabrielino-Tongva Indians of California Tribal Council
Christina Conley, Tribal Consultant and Administrator
P.O. Box 941078
Simi Valley, CA 93094

Via Email: christina.marsden@alumni.usc.edu & Via U.S. Mail

Re: 21611 Perry Street Self Storage Project in the City of Carson – Notification per Senate Bill 18 (SB 18)

Dear Ms. Conley:

The City of Carson has initiated the preparation of an Initial Study pursuant to California Environmental Quality Act (CEQA) for the 21611 Perry Street Self Storage Project in the City of Carson, Los Angeles County (see enclosed map of the project site).

The Project Site is comprised of a 2.80-acre (121,968 square foot) lot located at 21611 South Perry Street in the City of Carson. The Project Site is bordered by East Carson Street to the south, South Perry Street to the east, residential uses directly adjacent to and north of the Project Site, and the Dominguez Flood Control Channel, which is located to the west of the Project Site between the Project Site and Interstate 405. The Project Site is currently a vacant and undeveloped lot.
The Project proposes the development of a self-storage facility with three buildings totaling approximately 118,928 square feet. The self-storage facility would be comprised of a mix of one- and two-story buildings with a maximum height of approximately 25 feet to parapet and 31 feet to peak of roof elements. The self-storage facility would include a 1,641 square foot lobby, a 1,550 square foot retail use (likely a cafe), and a 1,575 square foot retail use (likely a mail service store such as a UPS or FedEx). In total, the lobby and retail uses would comprise 4,766 square feet. The Project would provide 41 parking spaces that would be accessed from one driveway providing ingress/egress off South Perry Street. The Project would provide approximately 23,000 square feet of landscaping, which would be predominately provided along the Project Site's northern edge to shield the residential uses directly adjacent to and north of the Project Site.
This project will require a General Plan Amendment, Zone Change, Site Plan and Design Review, a Specific Plan, and a Development Agreement.

As part of the City's responsibilities pursuant to Senate Bill 18 and Government Code 65352.3, local Native American tribes must be notified of any General Plan Amendment for the purpose of offering a consultation to protect any cultural resources that may exist in the planning area. Your tribe is on the Native American Heritage Commission (NAHC)'s list of tribes to be notified for Los Angeles County.

Your tribal group is invited to contact the City of Carson and participate in SB 18 consultation with the City regarding the proposed project. If your tribal group wishes to consult with the City about any cultural resources located in the project area, please contact me within the next 90 days. Apart from a cultural resource consultation, please also contact me if you would like to be notified of public hearings for the proposed project.

Please provide your contact information and email or mail your request to Stefanie Edmondson, Senior Planner, Community Development Department, City of Carson, 701 E. Carson Street, Carson, CA 90745, sedmondson@carsonca.gov or (310) 952-1761 Ext. 1322.

Thank you for your assistance with our efforts to address tribal cultural resources that may be affected by the Project.

Sincerely,

Stefanie Edmondson

Stefanie Edmondson
Senior Planner

Enc: Location Map

Project Location – 21611 Perry Street

Aerial View of the existing site

CITY OF CARSON

March 9, 2022

Gabrielino-Tongva Tribe
Charles Alvarez, Tribal Chair
23454 Vanowen Street
West Hills, CA 91307

Via Email: roadkingcharles@aol.com & Via U.S. Mail

Re: 21611 Perry Street Self Storage Project in the City of Carson – Notification per Senate Bill 18 (SB 18)

Dear Tribal Chair Alvarez:

The City of Carson has initiated the preparation of an Initial Study pursuant to California Environmental Quality Act (CEQA) for the 21611 Perry Street Self Storage Project in the City of Carson, Los Angeles County (see enclosed map of the project site).

The Project Site is comprised of a 2.80-acre (121,968 square foot) lot located at 21611 South Perry Street in the City of Carson. The Project Site is bordered by East Carson Street to the south, South Perry Street to the east, residential uses directly adjacent to and north of the Project Site, and the Dominguez Flood Control Channel, which is located to the west of the Project Site between the Project Site and Interstate 405. The Project Site is currently a vacant and undeveloped lot.

The Project proposes the development of a self-storage facility with three buildings totaling approximately 118,928 square feet. The self-storage facility would be comprised of a mix of one- and two-story buildings with a maximum height of approximately 25 feet to parapet and 31 feet to peak of roof elements. The self-storage facility would include a 1,641 square foot lobby, a 1,550 square foot retail use (likely a cafe), and a 1,575 square foot retail use (likely a mail service store such as a UPS or FedEx). In total, the lobby and retail uses would comprise 4,766 square feet. The Project would provide 41 parking spaces that would be accessed from one driveway providing ingress/egress off South Perry Street. The Project would provide approximately 23,000 square feet of landscaping, which would be predominately provided along the Project Site's northern edge to shield the residential uses directly adjacent to and north of the Project Site.
This project will require a General Plan Amendment, Zone Change, Site Plan and Design Review, a Specific Plan, and a Development Agreement.

As part of the City's responsibilities pursuant to Senate Bill 18 and Government Code 65352.3, local Native American tribes must be notified of any General Plan Amendment for the purpose of offering a consultation to protect any cultural resources that may exist in the planning area. Your tribe is on the Native American Heritage Commission (NAHC)'s list of tribes to be notified for Los Angeles County.

Your tribal group is invited to contact the City of Carson and participate in SB 18 consultation with the City regarding the proposed project. If your tribal group wishes to consult with the City about any cultural resources located in the project area, please contact me within the next 90 days. Apart from a cultural resource consultation, please also contact me if you would like to be notified of public hearings for the proposed project.

Please provide your contact information and email or mail your request to Stefanie Edmondson, Senior Planner, Community Development Department, City of Carson, 701 E. Carson Street, Carson, CA 90745, sedmondson@carsonca.gov or (310) 952-1761 Ext. 1322.

Thank you for your assistance with our efforts to address tribal cultural resources that may be affected by the Project.

Sincerely,

Stefanie Edmondson

Stefanie Edmondson
Senior Planner

Enc: Location Map

Project Location – 21611 Perry Street

Aerial View of the existing site

CITY OF CARSON

March 9, 2022

Santa Rosa Band of Cahuilla Indians
Lovina Redner, Tribal Chair
P.O. Box 391820
Anza, CA 92539

Via Email: Isaul@santarosa.nsn.gov & Via U.S. Mail

Re: 21611 Perry Street Self Storage Project in the City of Carson –
Notification per Senate Bill 18 (SB 18)

Dear Tribal Chair Redner:

The City of Carson has initiated the preparation of an Initial Study pursuant to California Environmental Quality Act (CEQA) for the 21611 Perry Street Self Storage Project in the City of Carson, Los Angeles County (see enclosed map of the project site).

The Project Site is comprised of a 2.80-acre (121,968 square foot) lot located at 21611 South Perry Street in the City of Carson. The Project Site is bordered by East Carson Street to the south, South Perry Street to the east, residential uses directly adjacent to and north of the Project Site, and the Dominguez Flood Control Channel, which is located to the west of the Project Site between the Project Site and Interstate 405. The Project Site is currently a vacant and undeveloped lot.

The Project proposes the development of a self-storage facility with three buildings totaling approximately 118,928 square feet. The self-storage facility would be comprised of a mix of one- and two-story buildings with a maximum height of approximately 25 feet to parapet and 31 feet to peak of roof elements. The self-storage facility would include a 1,641 square foot lobby, a 1,550 square foot retail use (likely a cafe), and a 1,575 square foot retail use (likely a mail service store such as a UPS or FedEx). In total, the lobby and retail uses would comprise 4,766 square feet. The Project would provide 41 parking spaces that would be accessed from one driveway providing ingress/egress off South Perry Street. The Project would provide approximately 23,000 square feet of landscaping, which would be predominately provided along the Project Site's northern edge to shield the residential uses directly adjacent to and north of the Project Site.
This project will require a General Plan Amendment, Zone Change, Site Plan and Design Review, a Specific Plan, and a Development Agreement.

As part of the City's responsibilities pursuant to Senate Bill 18 and Government Code 65352.3, local Native American tribes must be notified of any General Plan Amendment for the purpose of offering a consultation to protect any cultural resources that may exist in the planning area. Your tribe is on the Native American Heritage Commission (NAHC)'s list of tribes to be notified for Los Angeles County.

Your tribal group is invited to contact the City of Carson and participate in SB 18 consultation with the City regarding the proposed project. If your tribal group wishes to consult with the City about any cultural resources located in the project area, please contact me within the next 90 days. Apart from a cultural resource consultation, please also contact me if you would like to be notified of public hearings for the proposed project.

Please provide your contact information and email or mail your request to Stefanie Edmondson, Senior Planner, Community Development Department, City of Carson, 701 E. Carson Street, Carson, CA 90745, sedmondson@carsonca.gov or (310) 952-1761 Ext. 1322.

Thank you for your assistance with our efforts to address tribal cultural resources that may be affected by the Project.

Sincerely,

Stefanie Edmondson

Stefanie Edmondson
Senior Planner

Enc: Location Map

Project Location – 21611 Perry Street

Aerial View of the existing site

CITY OF CARSON

March 9, 2022

Soboba Band of Luiseno Indians
Joseph Ontiveros, Cultural Resource Department
P.O. Box 487
San Jacinto, CA 92581

Via Email: jontiveros@soboba-nsn.gov & Via U.S. Mail

Re: 21611 Perry Street Self Storage Project in the City of Carson – Notification per Senate Bill 18 (SB 18)

Dear Mr. Ontiveros:

The City of Carson has initiated the preparation of an Initial Study pursuant to California Environmental Quality Act (CEQA) for the 21611 Perry Street Self Storage Project in the City of Carson, Los Angeles County (see enclosed map of the project site).

The Project Site is comprised of a 2.80-acre (121,968 square foot) lot located at 21611 South Perry Street in the City of Carson. The Project Site is bordered by East Carson Street to the south, South Perry Street to the east, residential uses directly adjacent to and north of the Project Site, and the Dominguez Flood Control Channel, which is located to the west of the Project Site between the Project Site and Interstate 405. The Project Site is currently a vacant and undeveloped lot.

The Project proposes the development of a self-storage facility with three buildings totaling approximately 118,928 square feet. The self-storage facility would be comprised of a mix of one- and two-story buildings with a maximum height of approximately 25 feet to parapet and 31 feet to peak of roof elements. The self-storage facility would include a 1,641 square foot lobby, a 1,550 square foot retail use (likely a cafe), and a 1,575 square foot retail use (likely a mail service store such as a UPS or FedEx). In total, the lobby and retail uses would comprise 4,766 square feet. The Project would provide 41 parking spaces that would be accessed from one driveway providing ingress/egress off South Perry Street. The Project would provide approximately 23,000 square feet of landscaping, which would be predominately provided along the Project Site's northern edge to shield the residential uses directly adjacent to and north of the Project Site.
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Thank you for your assistance with our efforts to address tribal cultural resources that may be affected by the Project.

Sincerely,

Stefanie Edmondson

Stefanie Edmondson
Senior Planner

Enc: Location Map

Project Location – 21611 Perry Street

Aerial View of the existing site

CITY OF CARSON

March 9, 2022

Soboba Band of Luiseno Indians
Isaiah Vivanco, Chairperson
P.O. Box 487
San Jacinto, CA 92581

Via Email: ivivanco@soboba-nsn.gov & Via U.S. Mail

Re: 21611 Perry Street Self Storage Project in the City of Carson – Notification per Senate Bill 18 (SB 18)

Chairperson Vivanco:

The City of Carson has initiated the preparation of an Initial Study pursuant to California Environmental Quality Act (CEQA) for the 21611 Perry Street Self Storage Project in the City of Carson, Los Angeles County (see enclosed map of the project site).

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The Project proposes the development of a self-storage facility with three buildings totaling approximately 118,928 square feet. The self-storage facility would be comprised of a mix of one- and two-story buildings with a maximum height of approximately 25 feet to parapet and 31 feet to peak of roof elements. The self-storage facility would include a 1,641 square foot lobby, a 1,550 square foot retail use (likely a cafe), and a 1,575 square foot retail use (likely a mail service store such as a UPS or FedEx). In total, the lobby and retail uses would comprise 4,766 square feet. The Project would provide 41 parking spaces that would be accessed from one driveway providing ingress/egress off South Perry Street. The Project would provide approximately 23,000 square feet of landscaping, which would be predominately provided along the Project Site's northern edge to shield the residential uses directly adjacent to and north of the Project Site.
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Thank you for your assistance with our efforts to address tribal cultural resources that may be affected by the Project.

Sincerely,

Stefanie Edmondson

Stefanie Edmondson
Senior Planner

Enc: Location Map

Project Location – 21611 Perry Street

Aerial View of the existing site

GABRIELENO BAND OF MISSION INDIANS - KIZH NATION
Historically known as The Gabrielino Tribal Council - San Gabriel Band of Mission Indians
recognized by the State of California as the aboriginal tribe of the Los Angeles basin

November 10,2021

Project Name: 21611 Perry Street Self Storage Project located: 21611 Perry Street, Carson, California

Dear Stefanie Edmondson,

Thank you for your letter dated October 28,2021 regarding AB52 consultation. The above proposed project location is within our Ancestral Tribal Territory; therefore, our Tribal Government requests to schedule a consultation with you as the lead agency, to discuss the project and the surrounding location in further detail.

Please contact us at your earliest convenience. ***Please Note:AB 52, "consultation" shall have the same meaning as provided in SB 18 (Govt. Code Section 65352.4).***

Thank you for your time,

Andrew Salas, Chairman
Gabrieleno Band of Mission Indians – Kizh Nation
1(844)390-0787

CITY OF CARSON

March 28, 2022

Andrew Salas, Chairperson
Gabrieleno Band of Mission Indians – Kizh Nation
P.O. Box 393
Covina, CA 91723

Via Email: gabrielenoindians.org & Via U.S. Mail

Re: 21611 Perry Street Self Storage Project in the City of Carson

Dear Andrew Salas:

Pursuant to the provisions of Assembly Bill 52 (AB 52) and PRC § 21080.3.1 (b), as the lead agency under the California Environmental Quality Act (CEQA), the City of Carson (City) formally requested to consult on the Project on October 28, 2021. The tribe responded on November 10, 2021 that you wished to consult.

Thank you for consulting on this project. In conversations with the City on February 1st and March 16th we discussed proposed mitigation measures re: Kizh Nation Cultural Resources and via email on March 25th you agreed with the mitigation measures forwarded on March 22nd (see attachment). This letter is to notify the Gabrieleno Band of Mission Indians – Kizh Nation that the City is formally closing the period of consultation on March 30th prior to the release of the Draft Mitigated Negative Declaration (MND)

We look forward to continuing to build upon our relationship with the Gabrieleno Band of Mission Indians – Kizh Nation. The Gabrieleno Band of Mission Indians – Kizh Nation will receive a Notice of Availability of the Draft MND in the mail notifying you of the public review and comment period, public meeting, and reviewing locations.

Sincerely,

Stefanie Edmondson
Stefanie Edmondson, AICP
Senior Planner

Enc: Perry Street TCR – Cultural Resources Mitigation Measures