

State Water Resources Control Board

UST CASE CLOSURE SUMMARY

Agency Information

Agency Name: Los Angeles Regional Water Quality Control Board (Regional Board)	Address: 320 West 4 th Street, Suite 200 Los Angeles, CA 90013
Agency Caseworker: David Bjostad	Case No.: 908130634

Case Information

USTCF Claim No.: not applicable	Global ID: T0603792998
Site Name: Eagle Industries (Former)	Site Address: 1517 West Esther Street Long Beach, CA 90813 (Site)
Responsible Party: Mr. Norman Dillinger	Address: Private Residence
USTCF Expenditures to Date: not applicable	Number of Years Case Open: 13

URL: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0603792998

Summary

The Low-Threat Underground Storage Tank Case Closure Policy (Policy) contains general and media-specific criteria, and cases that meet those criteria are appropriate for closure pursuant to the Low-Threat Policy. This Case does **NOT** satisfy **GENERAL CRITERIA b** of the Policy, which requires the unauthorized release to consist only of petroleum. This Site meets all of the required criteria of the State Water Resources Control Board Resolution 92-49. A summary evaluation of compliance with the Resolution 92-49 is shown in **Attachment 1: Compliance with State Water Board Policies and State Law**. The Conceptual Site Model (CSM) upon which the evaluation of the case has been made is described in **Attachment 2: Summary of Basic Site Information**. Highlights of the CSM upon which the evaluation of the Case has been made are as follows:

The release at this Site was discovered in 2000 after a site investigation was conducted. Three underground storage tanks (USTs) existed on-Site and stored gasoline and dry-cleaning solvents. A Phase I Environmental Site Assessment, completed in 2011, indicates that an additional UST or an above ground storage tank may have also existed on the Site. One 280 gallon UST was removed from the Site in March 1973. The remaining USTs were removed from the Site between 1973 and 1998. The tank pits are reported to be filled with concrete. The Site record contains limited groundwater data, however the Site is upgradient and adjacent to a former UST site (Los Angeles Regional Water Quality Control Board [Regional Water Board] Case No. 908100143, aka Castle Car Wash) that was closed in 1998. Prior to case closure, groundwater monitoring wells installed at the Castle Car Wash provided delineation of the Site plume. The Castle Car Wash groundwater monitoring wells were located directly downgradient of the Site and exhibited decreasing trends from 1993 to case closure in 1998.

Eagle Industries (Former)
1517 West Esther Street, Long Beach

One of the grab groundwater samples collected at the Site in April 2000 contained a low concentration of cis-1,2-Dichloroethene (cis-1,2-DCE). However, this volatile organic compound (VOC) is not a risk driver at the Site for the following reasons:

- The concentration is only slightly above Water Quality Objectives (WQOs). Due to the age of the sample, it is likely that the concentration has reduced to below WQOs;
- The concentration is significantly lower than San Francisco Bay Regional Water Board Environmental Screening Levels (ESL) for Vapor Intrusion to Indoor Air from groundwater;
- This constituent is not present in the grab groundwater samples collected in 2012 south of the facility; and
- All soil data analyzed for VOCs were non-detect for cis-1,2-DCE.

VOC 1,2-dichloroethane (1,2-DCA) was also detected at low concentrations in groundwater in 2000. 1,2-DCA was used as a lead scavenger and is usually associated with petroleum releases. As such, the State Water Board staff considers the primary release at the Site to be petroleum hydrocarbons from the USTs.

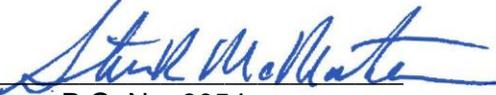
The petroleum release is limited to the shallow soil and shallow groundwater. The affected groundwater is not currently being used as a source of drinking water or for any other designated beneficial use, and it is highly unlikely that the affected groundwater will be used as a source of drinking water or for any other beneficial use in the foreseeable future. Public supply wells are usually constructed with competent sanitary seals and intake screens that are in deeper more protected aquifers. Remaining petroleum constituents are limited, stable, and declining. Remedial actions have been implemented and further remediation would be ineffective and expensive. Additional assessment/monitoring will not likely change the CSM. Any remaining petroleum constituents do not pose significant risk to human health, safety or the environment under current conditions.

Objections to Closure

The Regional Water Board does not object to closure of the Site for the petroleum hydrocarbons or the residual VOCs.

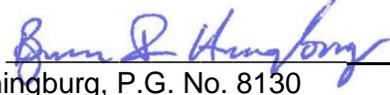
Recommendation for Closure

The corrective action performed at this Site ensures the protection of human health, safety, the environment and is consistent with chapter 6.7 of the Health and Safety Code and implementing regulations, applicable state policies for water quality control and the applicable water quality control plan, and case closure is recommended.

Prepared By: 
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Engineering Geologist

9/13/2013

Date

Reviewed By: 
Benjamin Heningburg, P.G. No. 8130
Senior Engineering Geologist

9/13/2013

Date

Eagle Industries (Former)
 1517 West Esther Street, Long Beach

ATTACHMENT 1: COMPLIANCE WITH STATE WATER BOARD POLICIES AND STATE LAW

The Site complies with State Water Board policies and state law. Section 25296.10 of the Health and Safety Code requires that sites be cleaned up to protect human health, safety, and the environment. Based on available information, any residual petroleum constituents at the Site do not pose significant risk to human health, safety, or the environment.

The Site complies with the requirements of Resolution 92-49 as described below.

<p>Will corrective action performed ensure the protection of human health, safety, and the environment? The information included in this UST Case Closure Summary supports a determination that corrective action performed at this Site will ensure the protection of human health, safety, and the environment.</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>Is corrective action consistent with Chapter 6.7 of the Health and Safety Code and implementing regulations? The corrective action provisions contained in Chapter 6.7 of the Health and Safety Code and the implementing regulations govern the entire corrective action process at leaking UST sites. If it is determined, at any stage in the corrective action process, that UST case closure is appropriate, further compliance with corrective action requirements is not necessary. Corrective action at this Site has been consistent with Chapter 6.7 of the Health and Safety Code and implementing regulations and, since this Site meets applicable case-closure requirements, further corrective action is not necessary, unless the activity is necessary for case closure.</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>Have waste discharge requirements or any other orders issued pursuant to Division 7 of the Water Code been issued at this Site?</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p>Are corrective action and UST case closure consistent with State Water Board Resolution 92-49?</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>If achieving background water quality is not feasible: Is the alternative cleanup level consistent with the maximum benefit to the people of the State? It is impossible to determine the precise level of water quality that will be attained given the uncertainties about the rates of dissolution and degradation. In light of all the factors discussed above and the fact that the residual petroleum constituents will not unreasonably affect present and anticipated beneficial uses of groundwater, an acceptable level of water quality will be attained that is consistent with the maximum benefit to the people of the state.</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>Will the alternative cleanup level unreasonably affect present and anticipated beneficial uses of water? The aquifer beneath the Site will reach WQOs within a reasonable period of time and the surrounding aquifer is below WQOs. Groundwater concentrations will continue to reduce through natural attenuation.</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>

<p>Will the alternative level of water quality result in water quality less than that prescribed in applicable Basin Plan?</p> <p>The final step in determining whether cleanup to a level of water quality less stringent than background is appropriate for this Site requires a determination that the alternative level of water quality will not result in water quality less than that prescribed in the relevant basin plan. Pursuant to State Water Board Resolution 92-49, a site may be closed if the basin plan requirements will be met within a reasonable time frame. Natural attenuation will continue to reduce groundwater concentrations.</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p>Have factors contained in title 23 of the California Code of Regulations, section 2550.4 been considered?</p> <p>In approving an alternative level of water quality less stringent than background, the State Water Board considers the factors contained in California Code of Regulations, title 23, section 2550.4, subdivision (d).</p> <p>The adverse effect on shallow groundwater will be minimal and localized, and there will be little adverse effect on the groundwater contained in deeper aquifers, given the physical and chemical characteristics of petroleum constituents, the hydrogeological characteristics of the Site and surrounding land. In addition, the potential for adverse effects on beneficial uses of groundwater is low, in light of the proximity of the groundwater supply wells, the current and potential future uses of groundwater in the area, the existing quality of groundwater, the potential for health risks caused by human exposure, the potential damage to wildlife, crops, vegetation, and physical structures, and the persistence and permanence of potential effects.</p> <p>Finally, a level of water quality less stringent than background is unlikely to have any impact on surface water quality, in light of the volume and physical and chemical characteristics of petroleum constituents; the hydrogeological characteristics of the Site and surrounding land; the quantity and quality of groundwater and direction of groundwater flow, the patterns of precipitation in the region, and the proximity of residual petroleum to surface waters.</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>Will the requisite level of water quality be met within a reasonable time?</p> <p>Although WQOs may not have been met at the Site, the approximate time period in which the requisite level of water quality will be met for constituents of concern is decades to hundreds of years. This is a reasonable period in which to meet the requisite level of water quality because current and future beneficial uses are not impaired. Impacted groundwater is not currently being used as a source of drinking water and it is highly unlikely that impacted groundwater will be used as a source of drinking water in the future. Residential and commercial water users are currently connected to the municipal drinking water supply. Public supply wells are constructed with competent sanitary seals and intake screens that are in deeper more protected aquifers. The site conditions do not represent a substantial threat to human health, safety, or the environment, and case closure is appropriate.</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>

ATTACHMENT 2: SUMMARY OF BASIC INFORMATION (Conceptual Site Model)

Site Location/ History

- Location: The Site is located approximately 100 feet west of the intersection of Caspian Avenue and West Esther Street in Long Beach, California. The Site is currently used as an artist's studio and small engine repair and storage. The Site was formally used as a dry cleaning facility, a fiberglass boat manufacturing facility, and an industrial tube cleaning facility. The USTs were removed prior to the current use of the Site.
- The Site is bounded by commercial businesses to the west, east, north, and south.
- Nature of Contaminants of Concern: Petroleum constituents and chlorinated solvents.
- Primary Source of Release: UST system.
- Discovery Date: 2000.
- Release Type: Petroleum¹; potential minor chlorinated solvents.
- Free Product: Not reported.

Table A: USTs

Tank	Size in Gallons	Contents	Status	Date
1 UST	1,000	Gasoline or Solvent	Removed	1973 to 1998
1 UST	550	Gasoline or Solvent	Removed	1973 to 1998
1 UST	280	Gasoline or Solvent	Removed	1973 to 1998
1 UST	280	Gasoline or Solvent	Removed	1973

Receptors

- Groundwater Basin: Coastal Plain of Los Angeles Groundwater Basin (West Coast subbasin).
- Groundwater Beneficial Uses: Municipal and domestic supply (MUN), agricultural supply (AGR), industrial supply (IND), and industrial process supply (PRO).
- Designated Land Use: Commercial.
- Public Water System: City of Long Beach.
- Distance to Nearest Supply Wells: No supply wells exist within 1,000 feet of the Site.
- Distance to Nearest Surface Waters: Los Angeles River is located greater than 1,000 feet to the east.

Geology/ Hydrogeology

- Average Groundwater Depth: ~ 14 to 25 feet bgs.
- Minimum Groundwater Depth: ~ 14 feet.
- Geology: The Site overlies alluvial deposits consisting primarily of sand, silty sand, and silt from surface to between 18 and 25 feet bgs. Silty clay underlies the sand and silty sand deposits to a maximum depth explored of 35 feet bgs.
- Hydrogeology: Groundwater beneath the Site is unconfined between 25 and 30 feet bgs. Perched groundwater may also exist at the Site at approximately 14 feet bgs. Groundwater flows to the southeast.

¹ "Petroleum" means crude oil, or any fraction thereof, which is liquid at standard conditions of temperature and pressure, which means at 60 degrees Fahrenheit and 14.7 pounds per square inch absolute.
(Health & Safety Code, § 25299.2)

Corrective Actions

- Three to four USTs removed from the Site between 1973 and 1998. Tank pits were reported to be back filled with concrete.

Table B: Concentrations of Petroleum Constituents in Soil

Sample ID	Date	Depth (ft)	TPHd (mg/kg)	TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	MTBE (mg/kg)
Screening Levels									
LA Region 4 Screening Levels			100	100	0.011	0.45	2.0	5.3	0.013
Policy (Direct Contact) (0 to 5')					1.9		21		
Policy (Direct Contact) (5 to 10')					2.8		32		
Soil Sample Results									
GB1-5'	4/10/2000	5	<1.0	<1.0	<0.005	<0.005	<0.005	<0.015	<5.0
GB1-10'	4/10/2000	10	<1.0	<1.0	0.035	<0.005	0.0081	0.017	<5.0
GB1-15'	4/10/2000	15	<1.0	60	0.124	0.158	0.856	0.866	<5.0
GB1-20'	4/10/2000	20	<1.0	830	5.23	27.9	9.5	55	<5.0
GB1-25'	4/10/2000	25	<1.0	18	0.811	0.466	0.205	0.693	<5.0
GB1-30'	4/10/2000	30	<1.0	<1.0	0.196	0.093	0.038	0.124	<5.0
GB2-5'	4/10/2000	5	<1.0	<1.0	<0.005	<0.005	<0.005	<0.015	<5.0
GB2-10'	4/10/2000	10	<1.0	237	0.523	2.04	1.39	6.07	<5.0
GB2-15'	4/10/2000	15	<1.0	525	5.6	13.1	5.07	26.4	<5.0
GB2-20'	4/10/2000	20	<1.0	18	0.294	0.0363	0.175	0.616	<5.0
GB2-25'	4/10/2000	25	<1.0	<1.0	0.098	<0.005	0.0069	0.0161	<5.0
GB2-30'	4/10/2000	30	<1.0	<1.0	<0.005	<0.005	<0.005	<0.015	<5.0
GB2-35'	4/10/2000	35	<1.0	<1.0	<0.005	<0.005	<0.005	<0.015	<5.0
GB3-5'	4/10/2000	5	<1.0	<1.0	<0.005	<0.005	<0.005	<0.015	<5.0
GB3-10'	4/10/2000	10	<1.0	<1.0	<0.005	<0.005	<0.005	<0.015	<5.0
GB3-15'	4/10/2000	15	<1.0	16	0.334	0.0577	0.101	1.05	<5.0
GB3-20'	4/10/2000	20	<1.0	35	0.712	0.162	0.35	1.71	<5.0
GB3-25'	4/10/2000	25	<1.0	<1.0	0.24	<0.005	0.029	0.016	<5.0
GB3-30'	4/10/2000	30	<1.0	<1.0	<0.005	<0.005	<0.005	<0.015	<5.0
E1-S1	6/13/2012	13	<15	14	<0.0016	0.00054	<0.0016	<0.0031	<0.0023
E1-S2	6/13/2012	19	<15	8.2	1.9	0.25	0.39	0.68	<0.083
E1-S2	6/13/2012	11	<5.0	<0.29	<0.0015	<0.0015	<0.0015	<0.003	<0.0022
E1-S2	6/13/2012	19	<15	190	3.2	5.3	5.9	22.8	<0.0022
E1-S1	6/13/2012	13	<5.0	0.64	<0.0015	<0.0015	<0.0015	<0.0029	<0.0022
E1-S2	6/13/2012	18	<15	27	0.074	<0.079	2.0	3.57	<0.079
E1-S1	6/14/2012	6	<5.0	<0.31	<0.0016	<0.0016	<0.0016	<0.0032	<0.0024
E1-S2	6/14/2012	9	<5.0	<0.27	<0.0014	<0.0014	<0.0016	<0.0028	<0.0021
E1-S3	6/14/2012	13	<5.0	<0.29	<0.0015	<0.0015	<0.0015	<0.0029	<0.0022
E1-S1	6/14/2012	3	<5.0	<0.33	<0.0015	<0.0015	<0.0015	<0.003	<0.0023
E1-S2	6/14/2012	7	<5.0	<0.28	<0.0014	<0.0014	<0.0014	<0.0028	<0.0021
E1-S3	6/14/2012	11	<5.0	<0.29	<0.0016	<0.0016	<0.0016	<0.0031	<0.0023

Notes:

TPHd - total petroleum hydrocarbons as diesel

TPHg - total petroleum hydrocarbons as gasoline

TPH - total petroleum hydrocarbons

Xylenes - total xylenes

MTBE - methyl tert-butyl ether

mg/kg - milligrams per kilogram

bold - indicates result exceeds LA Region 4 Screening Levels

<' - identifies result is below laboratory reporting limit

LA Region 4 Screening Levels - Los Angeles Regional Water Quality Control Board UST Closure Criteria, dated 2006.

(Silt Soil & GW <20 feet)

Policy - State Water Resources Control Board Low-Threat Underground Storage Tank Case Closure Policy

(Resolution No. 2012-0016)

Table C. Concentrations of Selected Volatile Organic Compounds in Soil

Sample ID	Date	Depth (ft)	Isopropylbenzene (mg/kg)	Napthalene (mg/kg)	1,2-Dichloroethane (mg/kg)	cis-1,2-Dichloroethene (mg/kg)	N-Propylbenzene (mg/kg)	1,2,4-Trimethylbenzene (mg/kg)	1,3,5-Trimethylbenzene (mg/kg)
Screening Levels									
LA Region 4 Screening Levels			--	3.6	0.0045 ¹	0.19 ¹	3,400	62	780
Policy (Direct Contact) (0 to 5')				9.7					
Policy (Direct Contact) (5 to 10')				9.7					
Soil Sample Results									
GB1-5'	4/10/2000	5	--	--	--	--	--	--	--
GB1-10'	4/10/2000	10	--	--	--	--	--	--	--
GB1-15'	4/10/2000	15	--	--	--	--	--	--	--
GB1-20'	4/10/2000	20	<0.005	2.22	<0.05	<0.05	27.1	31.5	9.75
GB1-25'	4/10/2000	25	--	--	--	--	--	--	--
GB1-30'	4/10/2000	30	--	--	--	--	--	--	--
GB2-5'	4/10/2000	5	--	--	--	--	--	--	--
GB2-10'	4/10/2000	10	--	--	--	--	--	--	--
GB2-15'	4/10/2000	15	<0.005	0.824	<0.05	<0.05	6.5	11.6	3.78
GB2-20'	4/10/2000	20	--	--	--	--	--	--	--
GB2-25'	4/10/2000	25	--	--	--	--	--	--	--
GB2-30'	4/10/2000	30	--	--	--	--	--	--	--
GB2-35'	4/10/2000	35	--	--	--	--	--	--	--
GB3-5'	4/10/2000	5	--	--	--	--	--	--	--
GB3-10'	4/10/2000	10	--	--	--	--	--	--	--
GB3-15'	4/10/2000	15	--	--	--	--	--	--	--
GB3-20'	4/10/2000	20	--	--	--	--	--	--	--
GB3-25'	4/10/2000	25	--	--	--	--	--	--	--
GB3-30'	4/10/2000	30	--	--	--	--	--	--	--
E11-S1	6/13/2012	13	0.0028	0.0098	<0.0016	<0.0016	0.016	<0.0039	<0.0016
E11-S2	6/13/2012	19	0.035	0.14	<0.083	<0.083	0.13	0.41	0.094
E12-S1	6/13/2012	11	0.0012	<0.0037	<0.0015	<0.0015	<0.0015	<0.0037	<0.0015
E12-S2	6/13/2012	19	0.4	0.8	<0.083	<0.083	1.8	13	4.0
E13-S1	6/13/2012	13	0.0011	<0.0037	<0.0015	<0.0015	<0.0015	<0.0037	<0.0015
E13-S2	6/13/2012	18	0.13	0.67	<0.079	<0.079	0.51	4.3	0.98
E14-S1	6/14/2012	6	<0.0016	<0.004	<0.0016	<0.0016	<0.0016	<0.004	<0.0016
E14-S2	6/14/2012	9	<0.0014	<0.0034	<0.0014	<0.0014	<0.0014	<0.0034	<0.0014
E14-S3	6/14/2012	13	<0.0015	<0.0037	<0.0015	<0.0015	<0.0015	<0.0037	<0.0015
E15-S1	6/14/2012	3	<0.0015	<0.004	<0.0015	<0.0015	<0.0015	<0.0038	<0.0015
E15-S2	6/14/2012	7	<0.0014	<0.0035	<0.0014	<0.0014	<0.0014	<0.0035	<0.0014
E15-S3	6/14/2012	11	<0.0016	<0.0039	<0.002	<0.002	<0.0016	<0.0039	<0.0016

Notes:

mg/kg - milligrams per kilogram

<' - identifies result is below laboratory reporting limit

--' not analyzed

bold - identifies result is above LA Region 4 Screening Levels

LA Region 4 Screening Levels - Los Angeles Regional Water Quality Control Board UST Closure Criteria, dated 2006. (Silt Soil & GW <20 feet)

1 - San Francisco Bay Regional Water Quality Control Board Environmental Screening Level for soil.

Policy - State Water Resources Control Board Low-Threat Underground Storage Tank Case Closure Policy (Resolution No. 2012-0016)

Table D. Concentrations of Constituents in Groundwater

Sample ID	Date	DTW ¹ (ft)	TPHd (µg/L)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	1,2-Dichloroethane (µg/L)	cis-1,2-DCE (µg/L)	Naphthalene (µg/L)	1,2,4-TMB (µg/L)	1,3,5-TMB (µg/L)
Groundwater grab sample results														
GB1-GW	4/10/2000	27 (15)	<200	58,000	19,400	6,760	1,330	5,510	<1.0	57	<0.4	170	1,150	370
GB2-GW	4/10/2000	27 (10)	<200	8,800	4,000	<0.8	241	<1.0	<1.0	14	14	<1.4	<0.9	<0.7
GB3-GW	4/10/2000	25 (15)	<200	17,300	2,030	47	335	128	<1.0	--	--	--	--	--
EI4-GW	6/14/2012	14	96	200	<0.50	<0.50	<0.50	<2.0	<0.50	<2.0	<2.0	<5.0	<2.0	<2.0
EI5-GW	6/14/2012	14	<470	<50	<0.50	<0.50	<0.50	<2.0	<5.0	<2.0	<2.0	<5.0	<5.0	<2.0
WQO			--	--	1.0	150	300	1,750	13.0	0.5	6.0	0.14	330[*]	330[*]

Castle Car Wash Groundwater Sample Results (Adjacent Property)

Well ID	Date ²	DTW (ft)	TPHd (µg/L)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)
MW-1 (B4)	Dec-1993	--	--	7,840	620	210	<50	680	--
	Oct-1996	--	--	13,000	1,700	1,200	240	640	130
	Jan-1998	31.0	--	740	45.1	ND	ND	ND	ND
MW-2 (B2)	Dec-1993	--	--	5,670	400	1,090	<50	570	--
	Oct-1996	--	--	400	76	1.1	2.6	0.6	5.2
	Jan-1998	30.9	--	350	22.1	ND	ND	ND	ND
MW-3 (B3)	Dec-1993	--	--	32,670	3,050	5,460	<50	6,070	--
	Oct-1996	--	--	1,400	82	4.2	4.5	3.7	9.9
	1/29/1998	29.7	--	1,050	228	ND	ND	ND	ND
MW-4 (B1)	Dec-1993	--	--	11,330	410	800	<50	630	--
	Oct-1996	--	--	1,400	200	15	5.3	7.5	11
	Jan-1998	30.8	--	220	38.5	ND	ND	ND	ND
WQO			--	--	1.0	150	300	1,750	13.0

Notes:

DTW - depth to water	<' - identifies result is below laboratory reporting limit
TPHd - total petroleum hydrocarbons as diesel	ND - sample result reported as non-detect; laboratory reporting limit unknown
TPHg - total petroleum hydrocarbons as gasoline	bold - identifies that result exceeds WQO
Xylenes - total xylenes	1 - DTW for GB1 through GB3 show first water (15) in addition to static water level observed during drilling
MTBE - methyl tert-butyl ether	WQO - Water Quality Objective - Los Angeles Regional Water Quality Control Board.
DCE - dichloroethane	2 - exact sampling date unknown
TMB - Trimethylbenzene	Only selected volatile organic compounds that exceed WQO are shown.
µg/L - micrograms per liter	* - Department of Public Health Notification Level
'--' - not available/not analyzed	ft - feet

Groundwater Trends

Table D above shows groundwater concentrations for both the Site and for the adjacent off-site Castle Car Wash facility. Groundwater data is limited for the Site; however, groundwater concentration trends for the Site's plume can be inferred with the Castle Car Wash data. Table D show decreasing concentrations for all groundwater monitoring wells located at the Castle Car Wash facility.

Evaluation of Risk Criteria

- Maximum Petroleum Constituent Plume Length above WQOs: The groundwater plume is less than 250 feet in length.
- Petroleum Constituent Plume Determined Stable or Decreasing: Yes
- Soil/Groundwater Sampled for MTBE: Yes, see Table D above
- Residual Petroleum Constituents Pose Significant Risk to the Environment: No
- Residual Petroleum Constituents Pose Significant Vapor Intrusion Risk to Human Health: No – Petroleum constituents most likely to pose a threat for vapor intrusion were removed during tank removal. Recent petroleum constituent concentrations in soil are significantly lower than 2000 samples. Additionally, petroleum constituents in the upper ten feet of soil are minimal to non-detect. Shallow groundwater appears to be approximately 25 to 30 feet bgs, thus volatiles in groundwater will have little chance to get to surface through the large bioattenuation

zone. Site conditions demonstrate that the residual petroleum constituents in soil and groundwater are protective of human health.

- Residual Petroleum Constituents Pose a Nuisance² at the Site: No
- Residual Petroleum Constituents in Soil Pose Significant Risk of Adversely Affecting Human Health: No – The shallow soil has minimal residual contamination.
- Residual Petroleum Constituents Pose Significant Direct Contact and Outdoor Air Exposure to Human Health: No – Petroleum constituents appear to be only present between 15 and 25 feet bgs and concentrations for recent samples are below the Commercial/Industrial limits provided in Table 1 of the Policy. There are limited soil samples results in the case record for naphthalene. However, the relative concentration of naphthalene in soil can be conservatively estimated using the published relative concentrations of naphthalene and benzene in gasoline. Taken from Potter and Simmons (1998), gasoline mixtures contain approximately 2% benzene and 0.25% naphthalene. Therefore, benzene concentrations can be directly substituted for naphthalene concentrations with a safety factor of eight. Benzene concentrations from the Site are below the naphthalene thresholds in Table 1 of the Policy. Therefore, estimated naphthalene concentrations meet the thresholds in Table 1 and the Policy criteria for direct contact by a factor of eight. It is highly unlikely that naphthalene concentrations in the soil, if any, exceed the threshold.
- Residual Chlorinated Solvents in Soil Pose Significant Direct Contact and Outdoor Air Exposure to Human Health: No – Soil data does not indicate chlorinated solvent constituents in soil at concentration that may indicate a health concern.
- Chlorinated Solvents in Groundwater Pose Risk to Human Health: No – Only one grab groundwater sample contained cis-1,2-DCE at a concentration that slightly exceeded WQOs. This sample was collected in 2000; it is likely this concentration has reduced through natural attenuation at the Site.
- Chlorinated Solvents Pose Significant Vapor Intrusion Risk to Human Health: No – The concentration of cis-1,2-DCE is two orders of magnitude lower than San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels for Vapor Intrusion to Indoor Air from groundwater and soil.

² Nuisance as defined in California Water Code, section 13050, subdivision (m).

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