UST CASE CLOSURE SUMMARY

Agency Information

Agency Name: Central Valley Regional Water Quality Control Board (Region Water Board)	Address: 11020 Sun Center Drive, Suite 200 Rancho Cordova, CA 95670
Agency Caseworker: Mr. Kenneth D. Jones	Case No.: 5T10000676

Case Information

USTCF Claim No.: 18700	Global ID: T0601900655
Site Name: California-Fresno Oil Company	Address: 2585 East South Avenue Fresno, CA 93709 Fresno County (Site)
Petitioner: Mr. Bud Ruschhaupt California-Fresno Investment Company	Address: 3242 East Garret Avenue Fresno, CA 93706
USTCF Expenditures to Date: $42,777	Number of Years Case Open: 15

URL: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0601900655

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 meets all of the required criteria of the Policy. A summary evaluation of compliance with the Policy is shown in **Attachment 1: Compliance with State Water Board Policies and State Law**. The Conceptual Site Model upon which the evaluation of the Case has been made is described in **Attachment 2: Summary of Basic Site Information.** Highlights of the Conceptual Site Model of the Case are as follows:

The release at the Site was discovered during a dispenser and piping upgrade in March 1990. Five underground storage tanks (USTs) were removed in May 1998. There is currently an operating truck stop and automobile fueling facility on-Site. Soil sampling conducted between 1990 and 2008 indicated elevated levels of petroleum constituents in soil located beneath the former USTs and dispenser islands. Grab groundwater samples collected in 2008 indicated methyl tertiary-butyl ether (MTBE) concentrations were slightly above Water Quality Objectives (WQOs), while concentrations for benzene, toluene, ethylbenzene, and xylenes are below WQOs.

The petroleum release is limited to soil and groundwater to a depth of approximately 100 feet below ground surface (bgs). The nearest surface bodies are the stormwater retention basins located approximately 2,400 feet southwest and 3,900 feet northeast of the Site. The nearest public supply wells regulated by the California Department of Public Health are located approximately 2,000 feet north and 4,000 feet south of the Site. Public water is supplied by the City of Fresno. The affected

groundwater is not currently being used as a source of drinking water or any other designated beneficial use, and it is highly unlikely that the affected groundwater will be used as a source of drinking water or any other beneficial use in the foreseeable future. Public supply wells are usually constructed with competent sanitary seals. Production intervals are in deeper protected aquifers. Remaining petroleum constituents are limited, stable, and declining. Corrective actions have been implemented and additional corrective actions are not necessary. Additional assessment/monitoring will not likely change the conceptual model. Remaining petroleum constituents do not pose significant risk to human health, safety, or the environment.

Rationale for Closure under the Policy

- General Criteria – Site **MEETS ALL EIGHT GENERAL CRITERIA** under the Policy.

- Groundwater Media-Specific Criteria – Site meets the criterion in **CLASS 2**. The contaminant plume that exceeds water quality objectives is less than 250 feet in length. There is no free product. The nearest existing water supply well or surface water body is greater than 1,000 feet from the defined plume boundary. The dissolved concentration of benzene is less than 3,000 micrograms per liter (µg/L), and the dissolved concentration of MTBE is less than 1,000 µg/L.

- Petroleum Vapor Intrusion to Indoor Air –Site meets the **EXCEPTION.** The Site operates as an active commercial fueling facility and has no release characteristics that can be reasonably believed to pose an unacceptable health risk.

- Direct Contact and Outdoor Air Exposure – Site meets **CRITERIA (3) b**. A site-specific risk assessment from exposure shows that maximum concentrations of petroleum constituents in soil will have no significant risk of adversely affecting the human health.

  There are no soil sample 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. The contaminated soil is covered by the service station with slab-on grade concrete. Therefore, dermal exposure and outdoor air exposure is highly unlikely unless future construction results in soil excavation. If this is the case, appropriately trained personnel should conduct the work and a community health and safety plan should be prepared.

Objections to Closure

Regional Water Board staff objected to UST case closure because:

1. The extent of the release in soil and groundwater, and impacts to offsite properties must be defined.
   RESPONSE: Residual concentrations of total petroleum hydrocarbons as diesel (TPHd) and MTBE are the primary constituents of concern in soil between approximately 5 and 60 feet beneath former USTs and facility piping. Soil data indicates that residual petroleum constituents are laterally delineated. Source area borings B-102 and B-107 indicate that elevated concentrations of petroleum hydrocarbons are present. However, borings advanced outside of the source area reported low to non-detectable concentrations of petroleum hydrocarbons. Residual petroleum constituents are vertically delineated in soil to a depth of 90 feet bgs.

Grab groundwater samples collected during 2008 indicate that groundwater contamination is delineated by B-106 to the west and by B-105 to the north. Groundwater concentrations at both locations are below WQOs.

2. The mass of petroleum hydrocarbons in soil and groundwater must be calculated.
   RESPONSE: The soil and groundwater data collected at the Site are adequate to determine that the Site meets the Policy criteria.

3. An assessment of the threat to groundwater posed by the remaining petroleum hydrocarbons in soil must be performed.
   RESPONSE: Soil and grab groundwater data collected at the Site supports a conceptual site model which indicates that residual petroleum constituents present a low threat to human health, safety and the environment.

4. It must be demonstrated that the groundwater plume is stable and decreasing.
   RESPONSE: With the exception of MTBE, grab groundwater samples collected in 2008 indicated that all petroleum hydrocarbons were below WQOs. MTBE in groundwater is non-detect in B-105 and B-106. However, concentrations of MTBE in source area borings B-102 and B-107 were slightly above the WQOs.

   The source of the release was removed in 1998 and secondary source areas indicate that residual petroleum hydrocarbons in soil are unlikely to increase the size and strength of the plume. Site conditions indicate that the plume is stable and will continue to decrease in length.

5. The presence of smear zone below a depth of 65 feet indicates that at least historically, floating product was present beneath the Site. Groundwater monitoring wells are necessary to assess the presence of floating product.
   RESPONSE: Free product was not reported in any of the four groundwater grab samples collected beneath the Site. Field screening data reported on soil boring logs do not indicate the presence of free product or sheen in the unsaturated/vadose zone.

6. A sensitive receptor survey must be performed.
   RESPONSE: The nearest surface bodies are the stormwater retention basins located approximately 2,400 feet southwest and 3,900 feet northeast of the Site. According to the information available on GeoTracker, the distance to the nearest supply wells are approximately 2,000 feet north and 4,000 feet south of the Site.

7. The practicality of remediating the site must be assessed.
   RESPONSE: Corrective actions have been implemented and additional corrective actions are not necessary.

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: _____ 5/1/2013
Charlow Arzadon — Date
Water Resource Control Engineer

Reviewed By: _____ 5/1/2013
Benjamin Heningburg, PG No. 8130 — Date
Senior Engineering Geologist

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

The Site complies with State Water Resources Control 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 the Low-Threat Underground Storage Tank (UST) Case Closure Policy as described below.[1]

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 case meets applicable case-closure requirements, further corrective action is not necessary, unless the activity is necessary for case closure.	☒ Yes ☐ No
Have waste discharge requirements or any other orders issued pursuant to Division 7 of the Water Code been issued at this Site?	☐ Yes ☒ No
If so, was the corrective action performed consistent with any order?	☐ Yes ☐ No ☒ NA
General Criteria General criteria that must be satisfied by all candidate sites:	
Is the unauthorized release located within the service area of a public water system?	☒ Yes ☐ No
Does the unauthorized release consist only of petroleum?	☒ Yes ☐ No
Has the unauthorized ("primary") release from the UST system been stopped?	☒ Yes ☐ No
Has free product been removed to the maximum extent practicable?	☐ Yes ☐ No ☒ NA
Has a conceptual site model that assesses the nature, extent, and mobility of the release been developed?	☒ Yes ☐ No

[1] Refer to the Low-Threat Underground Storage Tank Case Closure Policy for closure criteria for low-threat petroleum UST sites.

Has secondary source been removed to the extent practicable?	☒ Yes ☐ No
Has soil or groundwater been tested for MTBE and results reported in accordance with Health and Safety Code, Section 25296.15?	☒ Yes ☐ No
Does nuisance as defined by Water Code, section 13050 exist at the Site?	☐ Yes ☒ No
Are there unique Site attributes or Site-specific conditions that demonstrably increase the risk associated with residual petroleum constituents?	☐ Yes ☒ No
<u>Media-Specific Criteria</u> Candidate sites must satisfy all three of these media-specific criteria: **1. Groundwater:** To satisfy the media-specific criteria for groundwater, the contaminant plume that exceeds water quality objectives must be stable or decreasing in areal extent, and meet all of the additional characteristics of one of the five classes of sites:	
Is the contaminant plume that exceeds water quality objectives stable or decreasing in areal extent?	☒ Yes ☐ No ☐ NA
Does the contaminant plume that exceeds water quality objectives meet all of the additional characteristics of one of the five classes of sites? If YES, check applicable class: ☐ **1** ☒ **2** ☐ **3** ☐ **4** ☐ **5**	☒ Yes ☐ No ☐ NA
For sites with releases that have not affected groundwater, do mobile constituents (leachate, vapors, or light non-aqueous phase liquids) contain sufficient mobile constituents to cause groundwater to exceed the groundwater criteria?	☐ Yes ☐ No ☒ NA
2. Petroleum Vapor Intrusion to Indoor Air: The Site is considered low-threat for vapor intrusion to indoor air if Site-specific conditions satisfy all of the characteristics of one of the three classes of sites (a through c) or if the exception for active commercial fueling facilities applies.	
Is the Site an active commercial petroleum fueling facility? Exception: Satisfaction of the media-specific criteria for petroleum vapor intrusion to indoor air is not required at active commercial petroleum fueling facilities, except in cases where release characteristics can be reasonably believed to pose an unacceptable health risk.	☒ Yes ☐ No
a. Do Site-specific conditions at the release Site satisfy all of the applicable characteristics and criteria of scenarios 1 through 3 or all of the applicable characteristics and criteria of scenario 4? If YES, check applicable scenarios: ☐ **1** ☐ **2** ☐ **3** ☐ **4**	☐Yes ☐ No ☒ NA
b. Has a Site-specific risk assessment for the vapor intrusion pathway been conducted and demonstrates that human health is protected to the satisfaction of the regulatory agency?	☐ Yes ☐ No ☒ NA

c. As a result of controlling exposure through the use of mitigation measures or through the use of institutional or engineering controls, has the regulatory agency determined that petroleum vapors migrating from soil or groundwater will have no significant risk of adversely affecting human health?	☐ Yes ☐ No ☒ NA
3. Direct Contact and Outdoor Air Exposure: The Site is considered low-threat for direct contact and outdoor air exposure if Site-specific conditions satisfy one of the three classes of sites (a through c).	
a. Are maximum concentrations of petroleum constituents in soil less than or equal to those listed in Table 1 for the specified depth below ground surface (bgs)?	☐ Yes ☐ No ☒ NA
b. Are maximum concentrations of petroleum constituents in soil less than levels that a Site-specific risk assessment demonstrates will have no significant risk of adversely affecting human health?	☒ Yes ☐ No ☐ NA
c. As a result of controlling exposure through the use of mitigation measures or through the use of institutional or engineering controls, has the regulatory agency determined that the concentrations of petroleum constituents in soil will have no significant risk of adversely affecting human health?	☐ Yes ☐ No ☒ NA

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

Site Location/History

- The Site is located at the intersection of East South Avenue and East Garret Avenue in Fresno. The Site is an operating petroleum fueling facility.
- The Site is bounded by commercial properties. A closed UST site is located to the southwest.
- Nature of Contaminants of Concern: Petroleum hydrocarbons only.
- Primary Source of Release: UST system
- Discovery Date: 1998
- Release Type: Petroleum[2]
- Free Product: None reported

Table A: USTs

Tank No.	Size	Contents	Status	Date
1	20,000-gallon	Diesel	Removed	1998
2	20,000-gallon	Diesel	Removed	1998
3	20,000-gallon	Gasoline	Removed	1998
4	20,000-gallon	Gasoline	Removed	1998
5	20,000-gallon	Gasoline	Removed	1998
6	20,000-gallon	Diesel	Installed	1998
7	20,000-gallon	Diesel	Installed	1998
8	15,000-gallon	Gasoline	Installed	1998
9	3,000-gallon	Gasoline	Installed	1998

Receptors

- Groundwater Basin: San Joaquin Valley
- Groundwater Beneficial Uses: Municipal and domestic water supply (MUN), agricultural supply (AGR), industrial service supply (IND), and industrial process supply (PROC).
- Designated Land Use: General Commercial (GC)
- Public Water System: City of Fresno
- Distance to Nearest Supply Wells: Supply well is greater than 1,000 feet southwest
- Distance to Nearest Surface Waters: Retention basin is located greater than 1,000 feet west

Geology/Hydrogeology

- Average Groundwater Depth: approximately 86 feet
- Minimum Groundwater Depth: approximately 85 feet
- Groundwater Flow Direction: South-southwesterly
- Geology The Site is generally underlain by silty sand and very dense sand is encountered below approximately 71 feet bgs.
- Hydrology: The San Joaquin Valley basin is an area of substantial groundwater withdrawal and recharge due to municipal, industrial, and agricultural use. The nearest surface bodies are stormwater retention basins located approximately 2,400 feet southwest and 3,900 feet northeast of

[2] "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)

the Site. Depth-to-groundwater at grab groundwater sample locations indicates a flat gradient with a slight dip to the southwest.

Corrective Actions

- Soil assessments in 1990 and 1997.
- Five USTs were removed and tank excavation samples were collected in 1998.
- Soil and groundwater assessments in 2008.

Table B: Concentrations of Petroleum Constituents in Soil

Constituent	Maximum 0-5 ft. bgs (mg/kg)	Maximum 5-10 ft. bgs (mg/kg)
Benzene	<0.02	300
Ethylbenzene	<0.02	230
Naphthalene	Not Analyzed	Not Analyzed
PAHs*	Not Analyzed	Not Analyzed

*Poly-aromatic hydrocarbons as benzo(a)pyrene toxicity equivalent

Table C: Concentrations of Petroleum Constituents in Soil

Sample	Sample Date	TPHd (mg/kg)	TPHg (mg/kg)	Benzene (mg/kg)	Ethylbenzene (mg/kg)
DI-1-6.0'	3/2/1990	26,000	560	18	1.2
DI-1-9.0'	3/6/1990	NA	<0.6	<0.02	<0.02
DI-6-8.0'	3/2/1990	NA	8,400	300	230
B-5-8.0'	4/4/1997	NA	11,000	1.7	220
B-5-12.0'	4/4/1997	NA	45	<0.02	0.34
B-5-16.0'	4/4/1997	NA	5,300	3.6	65
B-5-22.0'	4/4/1997	NA	<1.0	<0.005	0.006
B-15-12.0'	4/4/1997	2,100	230	<0.01	0.1
B-15-16.0'	4/4/1997	22,000	NA	NA	NA
B-15-20.0'	4/4/1997	14,000	NA	NA	NA
B-15-24.0'	4/4/1997	1,400	NA	NA	NA
B-16-16.0'	4/4/1997	NA	<1.0	<0.005	<0.005
B-16-20.0'	4/4/1997	1.3	<1.0	<0.005	<0.005
B-16-24.0'	4/4/1997	3.5	<1.0	NA	NA
B-17-12.0'	4/4/1997	1.8	NA	NA	NA
B-17-16.0'	4/4/1997	1.8	NA	NA	NA
B-17-20.0'	4/4/1997	2.0	NA	NA	NA
B-18-10.0'	4/4/1997	1.6	<1.0	<0.005	<0.005
6 @17'	5/29/1998	3.0	NA	NA	NA
7 @19'	5/29/1998	25,000	NA	NA	NA
B-101-15'	9/9/2008	5.3	NA	NA	NA
B-101-35'	9/9/2008	<2.0	NA	NA	NA
B-102-25'	9/9/2008	14,000	110	<0.005	0.99
B-102-60'	9/9/2008	3,200	130	<0.005	1.2
B-102-65'	9/9/2008	9,600	92	0.35	0.82
B-102-75'	9/9/2008	1,200	10	0.015	0.15
B-102-80'	9/9/2008	200	2.8	<0.010	<0.010
B-102-85'	9/9/2008	<2.0	<1.0	<0.005	<0.005

Continued on next page

Table C: Concentrations of Petroleum Constituents in Soil (Cont.)

Sample	Sample Date	TPHd (mg/kg)	TPHg (mg/kg)	Benzene (mg/kg)	Ethylbenzene (mg/kg)
B-103-15'	9/9/2008	6,700	6.6	<0.025	0.069
B-103-60'	9/9/2008	<2.0	<1.0	<0.005	<0.005
B-105-70'	9/9/2008	3,300	18	0.024	0.035
B-105-80'	9/9/2008	20	<1.0	<0.005	0.005
B-105-85'	9/9/2008	2.6	<1.0	<0.005	<0.005
B-106-70'	9/9/2008	4,000	<100	<0.5	<0.5
B-106-85'	9/9/2008	<2.0	<1.0	<0.005	<0.005
B-106-90'	9/9/2008	<2.0	<1.0	<0.005	<0.005
B-107-40'	9/9/2008	9,200	230	0.59	2.1
B-107-85'	9/9/2008	240	<1.0	<0.005	<0.005
B-107-90'	9/9/2008	96	1.0	<0.005	0.005

Table D: Concentrations of Petroleum Constituents of Concern in Groundwater

Sample	Sample Date	TPHg (ppb)	TPHd (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Total Xylenes (ppb)	MTBE (ppb)
B-102	12/9/08	<50	300	<0.3	0.86	0.33	<0.3	**8.6**
B-105	12/9/08	<50	67	<0.3	<2.8	<0.3	1.2	<5
B-106	12/9/08	<50	<50	<0.3	<2.5	<0.3	<0.3	<5
B-107	12/9/08	<50	<50	<0.3	<1.0	<0.3	<0.3	**7.1**
WQOs	-	-	-	**1.0**	**150**	**300**	**1,750**	**5.0**

WQOs - Water Quality Objectives
Bold = above WQOs
ppb = parts per billion
TPHg = Total Petroleum Hydrocarbons quantified as gasoline
TPHd = Total Petroleum Hydrocarbons quantified as diesel
MTBE = methyl tert-Butyl ether
< = less than the indicated reporting limit

Evaluation of Risk Criteria

- Maximum Petroleum Constituent Plume Length above WQOs: MTBE groundwater plume is ~150 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. Site meets the exception for vapor intrusion to indoor air. The Site is an active commercial petroleum fueling facility and has no release characteristics that can be reasonably believed to pose an unacceptable health risk.
- Residual Petroleum Constituents Pose a Nuisance[3] at the Site: No.
- Residual Petroleum Constituents in Soil Pose Significant Risk of Adversely Affecting Human Health: No.

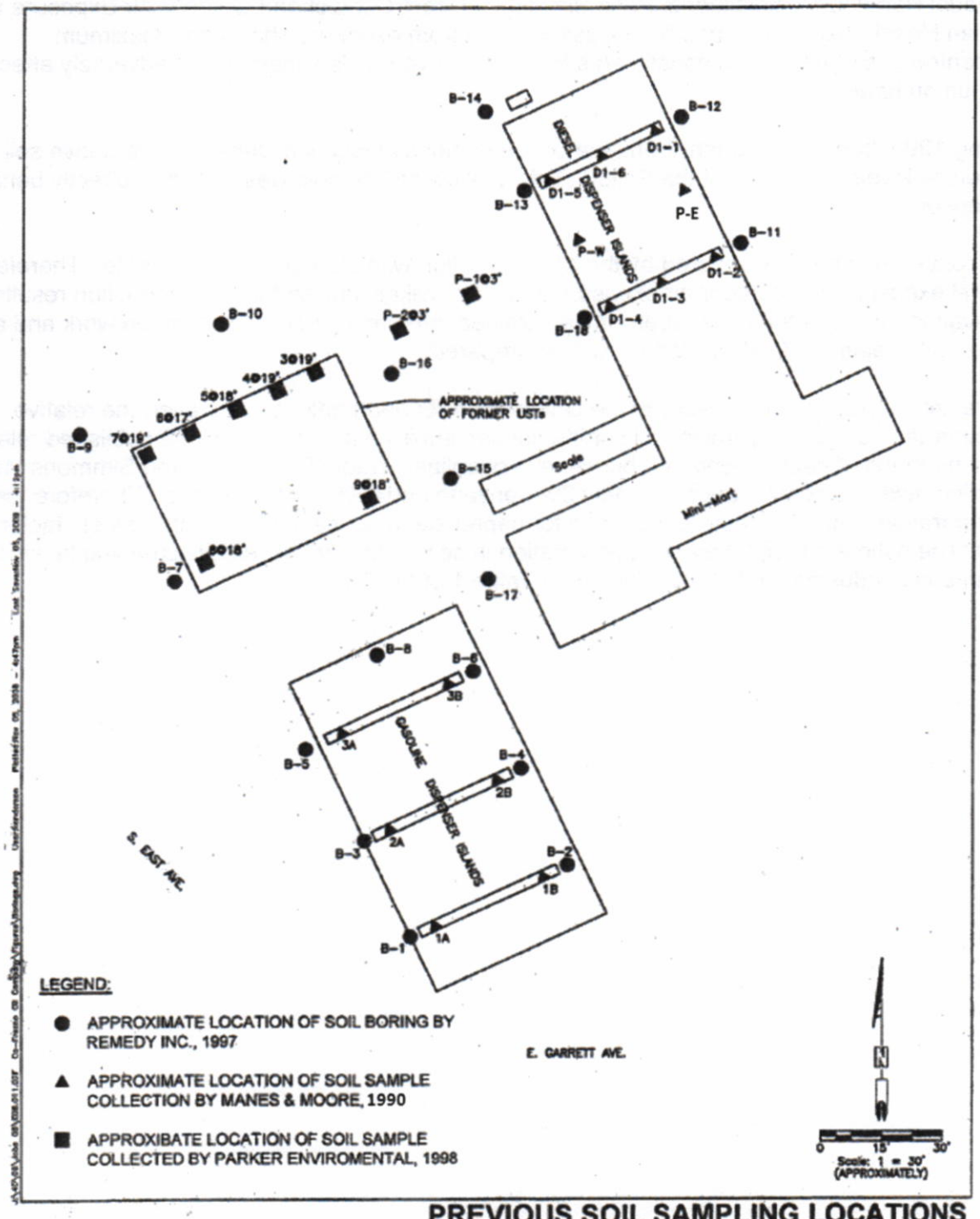
[3] Nuisance as defined in California Water Code, section 13050, subdivision (m).

- Residual Petroleum Constituents Pose Significant Direct Contact and Outdoor Air Exposure to Human Health: No. A site-specific risk assessment from exposure shows that maximum concentrations of petroleum constituents in soil will have no significant risk of adversely affecting the human health.

  During 1990, benzene and ethylbenzene concentrations at location DI-6-8.0 were above soil screening levels in Table 1 of the Policy. This shallow soil sample was collected directly beneath a dispenser.

  The contaminated soil is covered by the service station with slab-on grade concrete. Therefore, dermal exposure and outdoor air exposure is highly unlikely unless future construction results in soil excavation. If this is the case, appropriately trained personnel should conduct the work and a community health and safety plan should be prepared.

  There are no 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. The estimated naphthalene concentration in soil is slightly above soil screening levels for Commercial/Industrial and Utility Workers in Table 1 of the Policy.



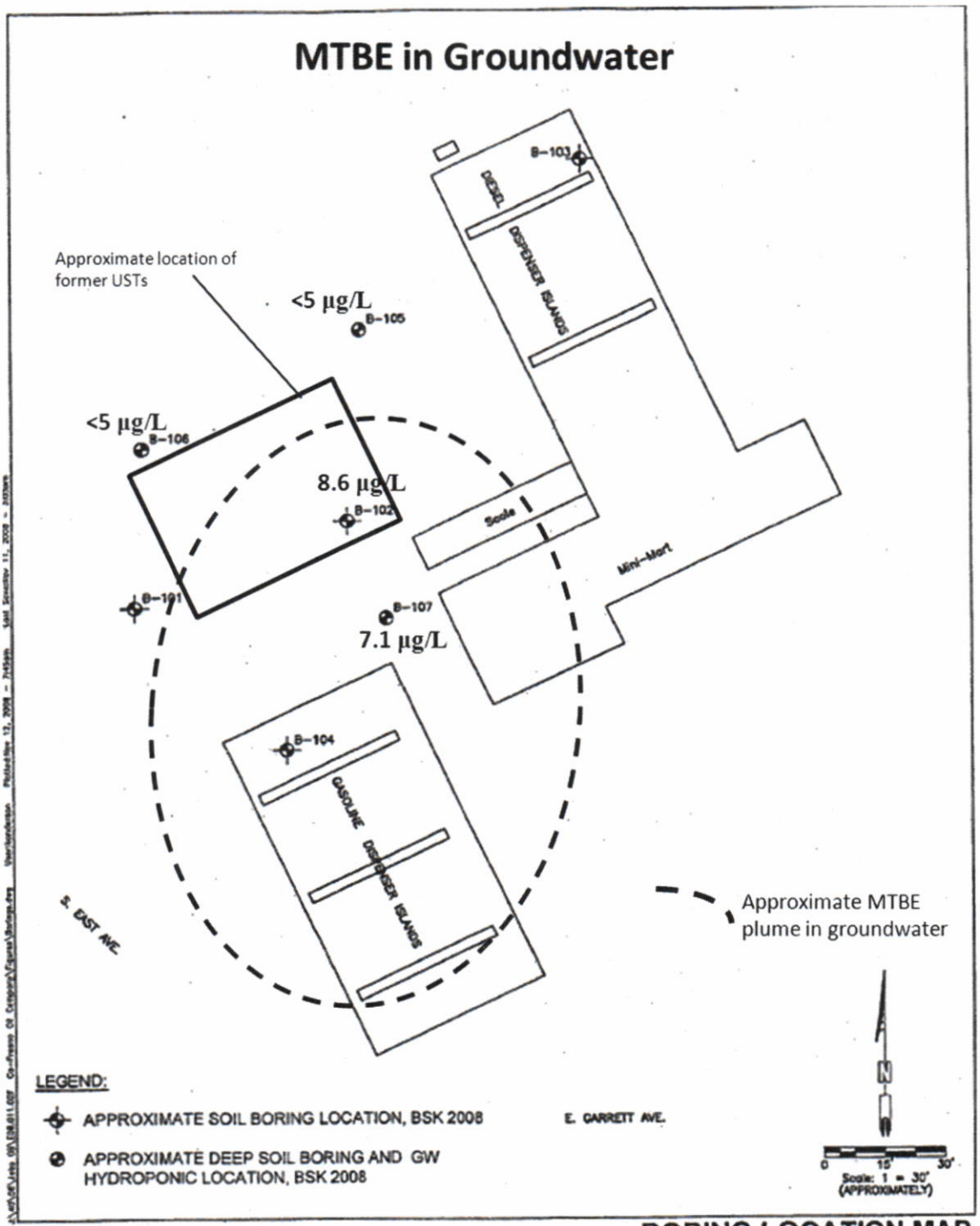
PREVIOUS SOIL SAMPLING LOCATIONS

BSK

Site Assessment Report
California-Fresno Oil Company
Fresno, California

606.011.02F RKA Borings.dwg 11/04/08 FIGURE 2

Modified by SWRCB



BORING LOCATION MAP

BSK

Site Assessment Report
California-Fresno Oil Company
Fresno, California

E08.011.00F RKA Borings.dwg 11/04/08 FIGURE 3

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