PELCO SALES AND SERVICE
A DIVISION OF APEX REFRIGERATION

June 9, 2015

Mr. Mark E. Detterman
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Transmittal
Site Management Plan
Apex Refrigeration, Inc., 1550 Park Avenue, Emeryville, California

Dear Mr. Detterman:

Apex Refrigeration, Inc, (Apex) is pleased to submit this Site Management Plan addressing potential contaminants of concern should excavation or construction activities occur in areas of residual contamination related to Alameda County Environmental Health Fuel Leak Case No. RO0003069, located at 1550 Park Avenue in Emeryville, California. This report was prepared by Engineering/Remediation Resources Group, Inc. (ERRG) on behalf of Apex in compliance with Alameda County Environmental Health directives related to Fuel Leak Case No. RO0003069.

> *I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge.*

If you have any questions, please contact me at (510) 653-9850 or via e-mail at pelco1969@sbcglobal.com.

Sincerely,

Pennie Barger

Pennie Barger
Secretary-Treasure

enc: Site Management Plan, Apex Refrigeration, Inc., 1550 Park Avenue, Emeryville, California.

cc: Brad Hall, ERRG
Pennie Barger, Apex Refrigeration, Inc.
Michael O. Lamphere, Lamphere Law Offices
ERRG Project File

Site Management Plan
Apex Refrigeration, Inc.
1550 Park Avenue
Emeryville, California

June 2015

ERRG Project No. 2013-094

Prepared for:

Apex Refrigeration, Inc.
1550 Park Avenue
Emeryville, California 94608

Prepared by:

Engineering/Remediation Resources Group, Inc.
4585 Pacheco Blvd, Suite 200
Martinez, California 94553
(925) 969-0750

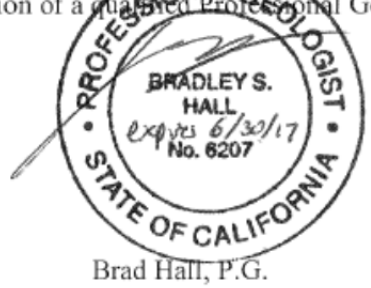
Site Management Plan
Apex Refrigeration, Inc.
1550 Park Avenue
Emeryville, California

Submitted by:
Engineering/Remediation Resources Group, Inc.

Signature	June 9, 2015 Date
Erik Oehlschlager Name	Project Manager Title
Signature	June 9, 2015 Date
Brad Hall Name	Vice President Title

CERTIFICATION

This document was prepared under the direction and supervision of a qualified Professional Geologist



Brad Hall, P.G.
California Professional Geologist 6207

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Abbreviations and Acronyms

ACEH	Alameda County Environmental Health
Apex	Apex Refrigeration, Inc.
BMPs	best management practices
BTEX	benzene, toluene, ethylbenzene, and xylenes
DCA	dichloroethane
EDB	ethylene dibromide
EPA	Environmental Protection Agency
ERRG	Engineering/Remediation Resources Group, Inc.
ESLs	environmental screening levels
HASP	health and safety plan
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
Policy	Low-Threat Underground Storage Tank Case Closure Policy
PPE	personal protective equipment
SMP	Site Management Plan
STLC	soluble threshold limit concentration
SWRCB	State Water Resources Control Board
TDS	total dissolved solids
TPH	total petroleum hydrocarbons
TPH-d	total petroleum hydrocarbons as diesel
TPH-g	total petroleum hydrocarbons as gasoline
TPH-mo	total petroleum hydrocarbons as motor oil
UST	underground storage tank
Water Board	San Francisco Bay Regional Water Quality Control Board
µg/L	micrograms per liter

Section 1. Introduction

On behalf of Apex Refrigeration, Inc. (Apex), Engineering/Remediation Resources Group, Inc. (ERRG) has prepared this Site Management Plan (SMP) for Alameda County Environmental Health (ACEH) Fuel Leak Case No. RO0003069 located at 1550 Park Avenue, Emeryville, California (hereinafter referred to as "the Site") (Figure 1). Following recently approved consideration for case closure (ACEH, 2015), this SMP was prepared to identify the activities to be implemented to protect future onsite construction workers if excavation or construction activities occur in onsite areas containing residual soil or groundwater contamination.

This SMP will be provided to contractors that will be performing ground-disturbing work at the Site. Contractors will be responsible for maintaining safety and complying with this and any other plans pertaining to the site. As conditions change, this SMP may require modification to maintain its relevance. Conditions that may require a modification to this plan include regulations, environmental factors, scope of work that is not addressed by this plan, presence of chemicals not addressed by this plan, etc.

1.1. SITE BACKGROUND

In November 2009, an underground storage tank (UST) was discovered during street improvements adjacent to the building located at 1550 Park Avenue in Emeryville, California (P&D Environmental, Inc., 2010). The City of Emeryville removed the UST on February 8, 2010. After removal of the UST, two soil samples (T1 and T2 as shown on Figure 2) were collected from the bottom of the excavation pit using a backhoe bucket. In addition, a four-point composite sample (SP1) was also collected from the excavated soil for waste characterization purposes. The samples were analyzed for total petroleum hydrocarbons (TPH) as diesel (TPH-d) using U.S. Environmental Protection Agency (EPA) Method 3550C in conjunction with modified EPA Method 8015C; benzene, toluene, ethylbenzene, and xylenes (BTEX) and the lead scavengers ethylene dibromide (EDB) and 1,2-dichloroethane (DCA) by EPA Method 5030B in conjunction with EPA Method 8260B. In addition, sample SP1 was analyzed for Leaking Underground Fuel Tank 5 metals (cadmium, total chromium, lead, nickel, and zinc) using EPA Method 3050B in conjunction with EPA Method 6010B, and for the soluble threshold limit concentration (STLC) of total chromium using California 22 Waste Extraction Test extraction methods and EPA Method 6010B for disposal characterization purposes (P&D Environmental, Inc., 2010).

TPH-d was detected in samples T1, T2, and SP1 at concentrations of 15, 5.8, and 830 milligrams per kilogram (mg/kg), respectively. BTEX, EDB, and 1,2-DCA were not detected at concentrations greater than the laboratory reporting limits in samples T1, T2, and SP1. Cadmium was not detected at concentrations greater than laboratory reporting limits in sample SP1. Total chromium, lead, nickel, and

zinc were reported in sample SP1 at concentrations of 54, 26, 57, and 110 mg/kg, respectively. The STLC total chromium result for sample SP1 was 0.23 milligrams per liter (mg/L) (P&D Environmental, Inc., 2010).

A tank closure report was prepared and submitted to ACEH for review. ACEH subsequently submitted a letter to Apex, dated June 11, 2011, requiring that a soil and groundwater investigation be performed to delineate the lateral and vertical extent of potential petroleum contamination related to the UST. On March 1, 2013, ERRG performed a soil and groundwater investigation (ERRG, 2013). The following analytes were detected in soil and groundwater samples at concentrations exceeding the San Francisco Bay Regional Water Quality Control Board's (Water Board) environmental screening levels (ESLs) under commercial/industrial land use scenarios where groundwater is not a current or potential source of drinking water (Water Board, 2013):

- Soil: TPH as gasoline (TPH-g) and TPH-d at locations S2 and S4
- Groundwater: TPH-g and TPH-d at locations S1 through S4; TPH as motor oil (TPH-mo) at locations S1, S2, and S4; and benzo(b)fluoranthene at boring S2

BTEX, methyl tertiary-butyl ether, and the remaining polycyclic aromatic hydrocarbons were either not detected at concentrations exceeding their respective laboratory limits or were detected at concentrations less than the Water Board ESLs in soil and groundwater. Figure 2 shows the locations where samples were collected and the TPH results for soil and groundwater.

ERRG submitted a soil and groundwater investigation summary report to ACEH, which included a recommendation to collect additional data and further investigate the nature and extent of contamination in accordance with the criteria established in the State Water Resources Control Board's (SWRCB) "Low-Threat Underground Storage Tank Case Closure Policy" (Policy) (SWRCB, 2012). After evaluating the data and recommendations, ACEH requested that additional investigation be conducted to address data gaps at the Site based on the Policy criteria.

In April and May 2014, ERRG performed a data gaps investigation at the Site. ERRG collected 18 soil samples and 7 grab groundwater samples from 7 borings (S5 through S10 and S13). In addition, ERRG installed a groundwater monitoring well (MW-1) on the west side of the former UST (Figure 2), where the highest concentration of TPH was previously reported in a grab groundwater sample. TPH-d, TPH-g, and TPH-mo were all detected in soil and groundwater samples at concentrations exceeding their respective ESLs (ERRG, 2014b).

In September and December 2014, ERRG collected quarterly groundwater samples at MW-1. During both sampling events, groundwater sample results indicated the following (ERRG, 2015 and 2014c):

- TPH-d was detected at a concentration less than the ESL of 640 micrograms per liter (µg/L) (i.e., groundwater is not a potential drinking water resource) but greater than the ESL of 100 µg/L (i.e., groundwater is a potential drinking water resource).
- TPH-g was detected at a concentration less than the ESL of 500 µg/L (i.e., groundwater is not a potential drinking water resource) but greater than the ESL of 100 µg/L (i.e., groundwater is a potential drinking water resource) during September 2014, but was less than the ESL of 100 µg/L during December 2014.
- TPH-mo was not detected at a concentrations greater than its reporting limit.
- Total dissolved solids (TDS) were detected at a concentration (1,220 mg/L) exceeding Water Board's water quality objective of 500 mg/L for municipal supply during September 2014, but was detected at a concentration (220 mg/L) less than water quality objective during December 2014.

Following ACEH review of the 2014 monitoring data, ACEH requested that Apex prepare a SMP as potential case closure under a commercial land use scenario is considered for this fuel leak case (ACEH, 2015). The Site is to be entered into the City of Emeryville's Permit Tracking System because residual contamination remains on site. This SMP addresses potential contaminants that may be encountered if excavation or construction activities occur in areas of residual contamination. Tables 1 and 2 present the historical soil and groundwater analytical results obtained from investigations related to this fuel leak case. The following briefly summarizes the nature and extent of residual soil and groundwater contamination at the site.

1.1.1. Residual Soil Contamination

Soil analytical results indicate residual petroleum contamination (TPH-g up to 1,200 mg/kg; TPH-d up to 4,700 mg/kg, and TPH-mo up to 1,200 mg/kg) is present in soil at the Site (Figure 2). The lateral extent of contamination is not fully defined east and north of the former UST. However, sufficient data exist west (downgradient) and south (cross-gradient) of the former UST to conclude that residual soil contamination from this fuel leak case is localized close to the former UST and between 3 and 7 feet below ground surface. Potential risks are posed to future construction workers based on the residual concentrations of TPH-d that exceed the Water Board ESL of 900 mg/kg under a construction/trench worker exposure scenario (900 mg/kg) (Table 1). Ecological risks are not present at the site because (1) no viable habitat is present at or around the Site and (1) exposure pathways to ecological receptors are incomplete based on the depth of the remaining contamination and durable cover provided by pavement and buildings.

1.1.2. Residual Groundwater Contamination

TPH-d, TPH-g, and TPH-mo are the primary contaminants that have been detected in groundwater at the Site, with TPH concentrations from monitoring well MW-1 less than or equal to 350 µg/L. The most recent groundwater sampling results (December 2014) indicated concentrations of TPH-d and TPH-g are

less than the ESL for groundwater not being used as a potential drinking water resource but exceed the ESL for groundwater as a potential drinking water resource. Grab groundwater samples collected from open soil borings have produced concentrations of TPH-d as high as 83,000 µg/L. Light nonaqueous-phase liquids were not observed in site groundwater during the development of well MW-1 nor in the quarterly samples collected in September and December 2014. Groundwater laboratory analytical results are summarized in Table 2.

1.2. DOCUMENT PURPOSE

The purpose of this document is to outline the best practices for potential future handling of contaminated soil and groundwater and highlight risks involved with conducting ground-disturbing activities at the Site.

Section 2. Soil Management Activities

This section describes the procedures to be implemented if ground-disturbing activities are conducted in areas containing residual contamination. Future contractors will be responsible for maintaining safety of workers and complying with the procedures discussed below.

2.1. HEALTH AND SAFETY PLAN

Prior to conducting any earthwork activities, a site-specific health and safety plan (HASP) must be prepared for use by personnel implementing the work. The HASP must address the planned scope of work, and a copy of the HASP must be available on site during the work. Subcontractors performing field activities must also be provided with a copy of the HASP prior to initiating work. The HASP must include a comprehensive list of chemicals that may be encountered while performing the work and the Safety Data Sheets for the chemicals, as well as other chemicals brought on site. In addition, the HASP must detail the proper procedures and personal protective equipment (PPE) required when handling soil and groundwater within areas of potential residual contamination.

2.2. HANDLING CONTAMINATED SOIL

If soil is excavated during future site development activities, soil must be considered potentially contaminated and handled in accordance with applicable regulations, health and safety requirements, and the applicable procedures described in this SMP. Soil from areas of residual soil and groundwater contamination related to the UST must be characterized, managed, and disposed of in accordance with the Resource Conservation and Recovery Act and State of California hazardous waste regulations.

All excavated soil must be segregated and profiled. Profiling must consist of sample collection and laboratory analysis to evaluate whether the excavated soil should be considered hazardous waste. At a minimum, all excavated soil must be analyzed for TPH-purgeables and extractables by EPA Method 8015B and California Leaking Underground Fuel Tank metals (cadmium, chromium, lead, nickel, and zinc) by EPA Method 6010B to identify the correct waste classification (i.e., hazardous or nonhazardous) in accordance with federal and state regulations. Analytical results must be compared against applicable screening criteria to ascertain whether the soil is suitable to be reused on site or if additional waste classification is needed prior to offsite disposal. Additional analyses may be requested by landfill facilities prior to accepting the waste. Soil must be transported in compliance with all state and federal regulations to a permitted disposal site and disposed of in accordance with standard procedures.

2.2.1. Soil Stockpile Management Protocols

Soil excavated from areas of residual soil and groundwater contamination related to the UST must be stockpiled and staged within the site access controls of the project boundary. If stockpiles must be placed outside of the site boundary (assuming permission is first obtained from the necessary regulatory agencies), then separate fencing and access control for such stockpiles may be required. Best management practices (BMPs) for erosion and sediment control must be implemented, as necessary, during construction activities. BMPs may include covering stockpiles, diversion of drainage from the stockpiles, and installation of silt fencing/straw bale filter barriers on the downgradient toe of the stockpile slope. Stockpiles must be inspected to ensure runoff and dust controls (as discussed in Section 2.2.2) are functioning adequately.

2.2.2. Dust Control Program

Dust control measures must be implemented at the Site to minimize the amount of airborne particulates that may be emitted during site construction and demolition activities. These measures include, but are not limited to, the following:

- Exposed soil at the Site must be lightly sprayed with potable water to minimize dust during construction activities, including demolition and site grading
- All active construction areas must be watered at least twice daily or as necessary to prevent visible dust plumes from migrating outside of the site limit
- Water must be misted or sprayed while loading transportation vehicles
- Drop heights must be minimized while loading transportation vehicles
- All paved access routes, parking areas, and staging areas must be swept daily, if visibly soiled

2.3. HANDLING CONTAMINATED GROUNDWATER

TPH-d, TPH-g, and TPH-mo are the primary contaminants that have been detected in groundwater at the Site, with TPH concentrations from monitoring well MW-1 less than or equal to 350 µg/L. Grab groundwater samples collected from open soil borings have produced concentrations of TPH-d as high as 83,000 µg/L. As a result, groundwater generated from dewatering activities associated with excavations should be considered potentially contaminated and should not be discharged to the ground or storm sewer drains without appropriate regulatory approval. Unless otherwise approved, all generated groundwater must be containerized, sampled, and analyzed to adequately determine the waste classification and appropriate disposal method. At a minimum, generated groundwater must be analyzed for TPH-purgeables and extractables by EPA Method 8015B and California Leaking Underground Fuel Tank metals (cadmium, chromium, lead, nickel, and zinc) by EPA Method 6010B to select the correct waste classification (i.e., hazardous or nonhazardous) in accordance with federal and state regulations. Additional analyses may be requested by landfill facilities prior to accepting the waste. All generated

waste must be stored, handled, transported, and disposed of in compliance with all state and federal regulations. Caution should be taken when performing any work that may put humans into direct contact with potentially contaminated groundwater and proper PPE should be used at all times.

2.4. DECONTAMINATION

Detergents, such as alconox or bleach, must be used on equipment that has contacted contaminated or possibly contaminated soils and/or fluids. Equipment and vehicles may also be dry decontaminated by removing large amounts of loose soil with a shovel or brush as necessary. Equipment and personnel must not depart from the Site until proper decontamination is completed. Soil and water generated from decontamination procedures must be handled in the same manner as contaminated soil and groundwater.

Workers must perform good hygienic practices to prevent nuisance dust or dirt from being ingested or inhaled. Workers must wash their hands and face with soap and water and brush loose soil from boots as needed.

Section 3. References

Alameda County Environmental Health Department (ACEH), 2015. Letter regarding Landowner Identification for Case Closure Consideration for Fuel Leak Case No. RO0003069 and GeoTracker Global ID T1000002519, Pellegrini Refrigeration & Restaurant Equipment Company, 1550 Park Avenue, Emeryville, CA 94608. From Mark Detterman, Senior Hazardous Materials Specialist, ACEH. To Pennie Barger, Apex Refrigeration Corp. and Pellegrini Refrigeration & Restaurant Equipment Co. March 13.

Engineering/Remediation Resources Group, Inc., 2014a. "Data Gaps Investigation Summary Report, Apex Refrigeration, Inc., 1550 Park Avenue, Emeryville, California." July.

Engineering/Remediation Resources Group, Inc., 2014b. "September 2014 Groundwater Monitoring, Apex Refrigeration, Inc., Fuel Leak Case No. RO0003069, Emeryville, California." October.

Engineering/Remediation Resources Group, Inc., 2015. "December 2014 Groundwater Monitoring, Apex Refrigeration, Inc., Fuel Leak Case No. RO0003069, Emeryville, California." January.

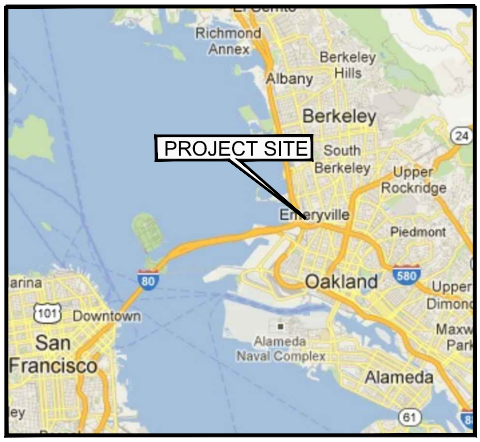
Engineering/Remediation Resources Group, Inc., 2013. "Soil and Groundwater Investigation Summary Report, Apex Refrigeration, Inc., 1550 Park Avenue, Emeryville, California." May.

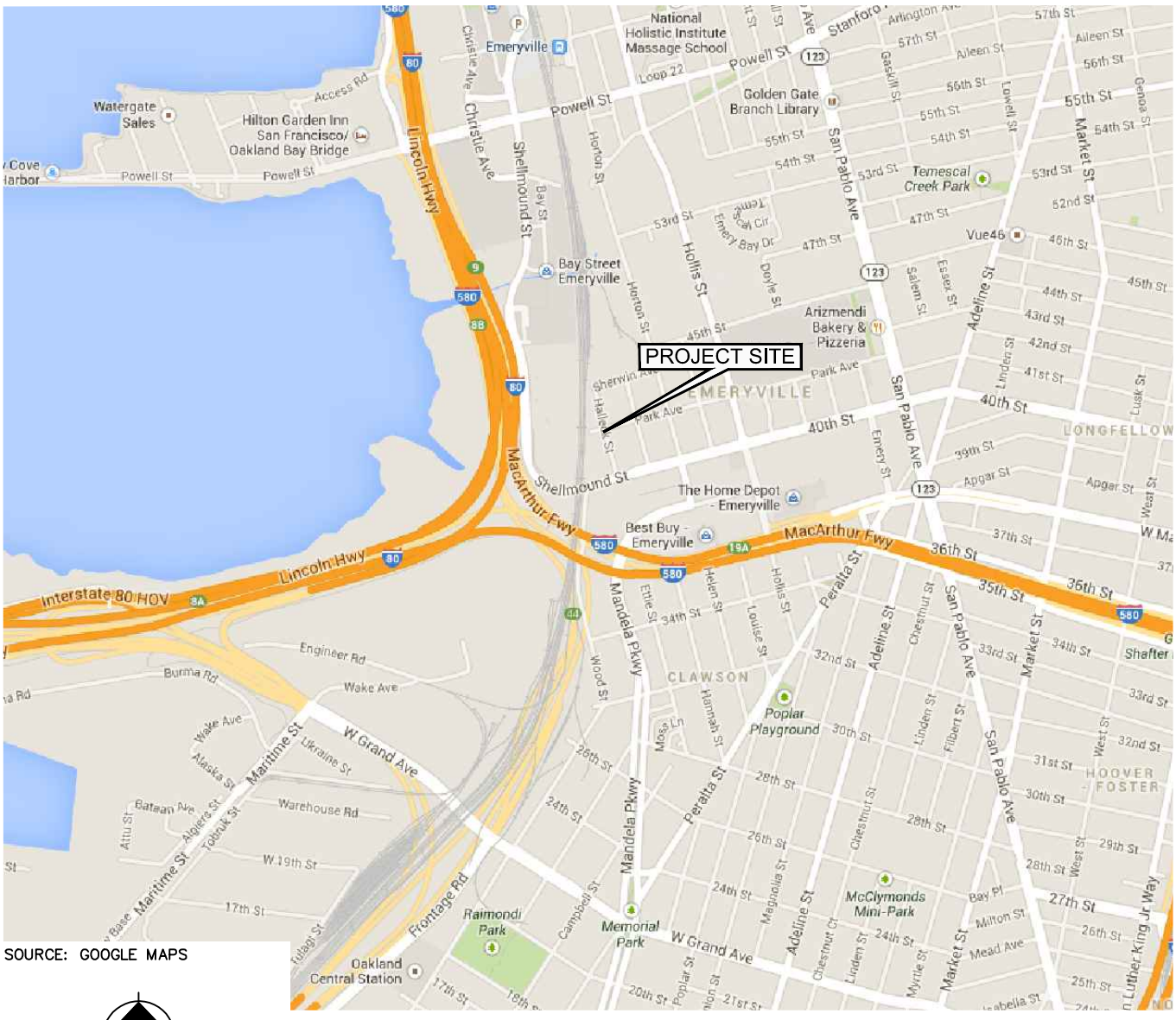
P&D Environmental, Inc. (P&D) 2010. "Underground Storage Tank Removal Report, 1550 Park Avenue, Emeryville, CA." March 12.

San Francisco Regional Water Quality Control Board (Water Board), 2013. "Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater." Interim Final. February. Available Online at: <http://www.waterboards.ca.gov/rwqcb2/water_issues/programs/esl.shtml>.

State Water Resources Control Board (SWRCB), 2012. "Low-Threat Underground Storage Tank Case Closure Policy." August 17. Available Online at: <http://www.waterboards.ca.gov/ust/lt_cls_plcy.shtml#policy081712>.

Figures





SOURCE: GOOGLE MAPS

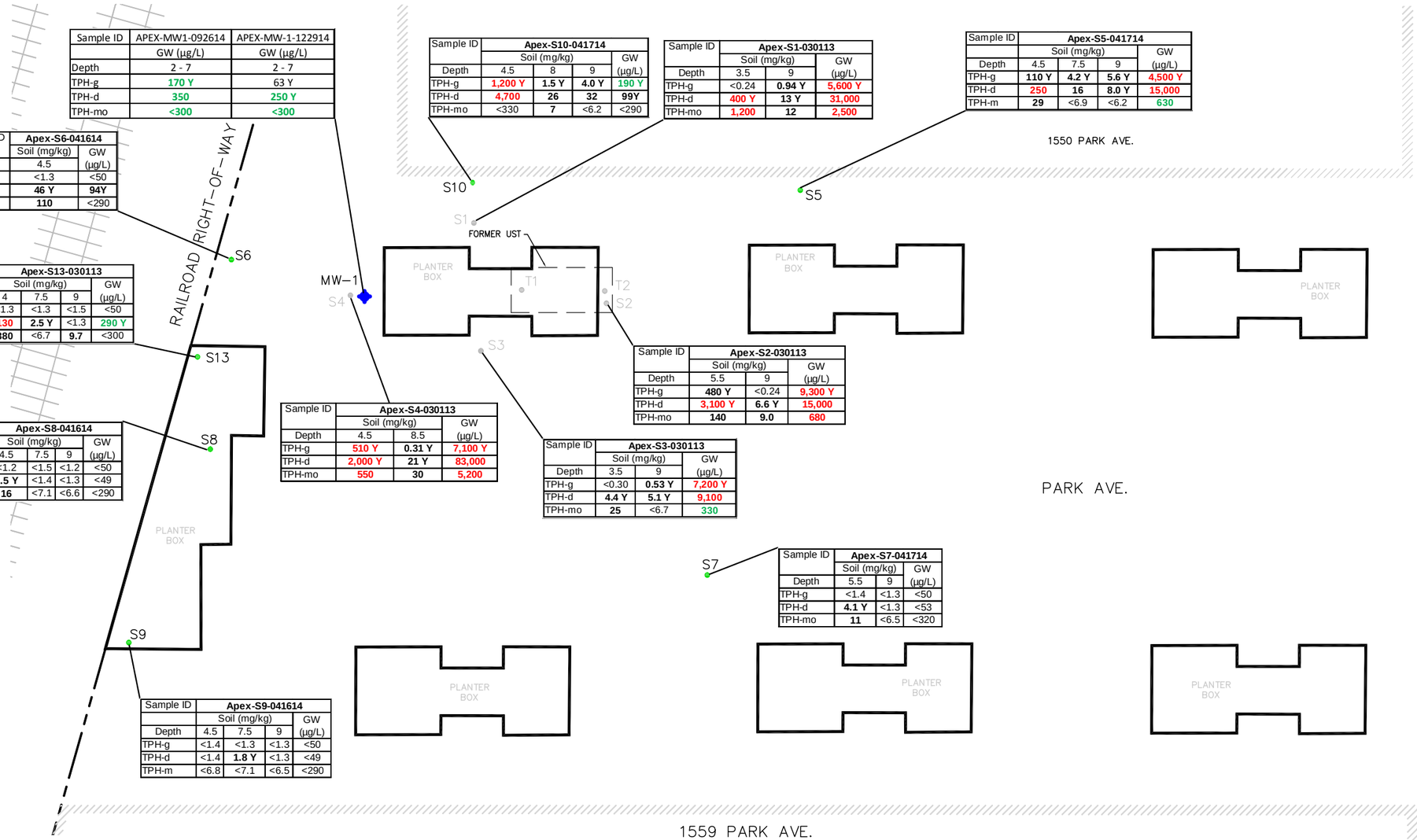
N

0' 1200'

APPROXIMATE SCALE: 1"=1200'

Engineering/Remediation Resources Group, Inc. 4585 Pacheco Blvd., Suite 200 Martinez, California 94553 (925) 969-0750	CLIENT: APEX REFRIGERATION, INC. EMERYVILLE, CALIFORNIA	SITE LOCATION MAP			
	LOCATION: 1550 PARK AVENUE EMERYVILLE, CALIFORNIA	DRAWN BY: RDB 10/28/13	CHECKED BY: EKO 10/28/13	PROJECT NO. 2013-094	FIG NO. 1

FILE NAME: N:\Graphics\2013\2013-094 APEX Emeryville\Site Location Map 2.dwg LAYOUT NAME: 1 PLOTTED: Monday, October 28, 2013 - 3:01pm



Sample ID	APEX-MW1-092614	APEX-MW-1-122914
	GW (µg/L)	GW (µg/L)
Depth	2 - 7	2 - 7
TPH-g	170 Y	63 Y
TPH-d	350	250 Y
TPH-mo	<300	<300

Sample ID	Apex-S10-041714			
	Soil (mg/kg)			GW
Depth	4.5	8	9	(µg/L)
TPH-g	1,200 Y	1.5 Y	4.0 Y	190 Y
TPH-d	4,700	26	32	99Y
TPH-mo	<330	7	<6.2	<290

Sample ID	Apex-S1-030113		
	Soil (mg/kg)		GW
Depth	3.5	9	(µg/L)
TPH-g	<0.24	0.94 Y	5,600 Y
TPH-d	400 Y	13 Y	31,000
TPH-mo	1,200	12	2,500

Sample ID	Apex-S5-041714			
	Soil (mg/kg)			GW
Depth	4.5	7.5	9	(µg/L)
TPH-g	110 Y	4.2 Y	5.6 Y	4,500 Y
TPH-d	250	16	8.0 Y	15,000
TPH-m	29	<6.9	<6.2	630

Sample ID	Apex-S6-041614	
	Soil (mg/kg)	GW
Depth	4.5	(µg/L)
TPH-g	<1.3	<50
TPH-d	46 Y	94Y
TPH-mo	110	<290

Sample ID	Apex-S13-030113			
	Soil (mg/kg)			GW
Depth	4	7.5	9	(µg/L)
TPH-g	<1.3	<1.3	<1.5	<50
TPH-d	130	2.5 Y	<1.3	290 Y
TPH-mo	380	<6.7	9.7	<300

Sample ID	Apex-S2-030113		
	Soil (mg/kg)		GW
Depth	5.5	9	(µg/L)
TPH-g	480 Y	<0.24	9,300 Y
TPH-d	3,100 Y	6.6 Y	15,000
TPH-mo	140	9.0	680

Sample ID	Apex-S4-030113		
	Soil (mg/kg)		GW
Depth	4.5	8.5	(µg/L)
TPH-g	510 Y	0.31 Y	7,100 Y
TPH-d	2,000 Y	21 Y	83,000
TPH-mo	550	30	5,200

Sample ID	Apex-S3-030113		
	Soil (mg/kg)		GW
Depth	3.5	9	(µg/L)
TPH-g	<0.30	0.53 Y	7,200 Y
TPH-d	4.4 Y	5.1 Y	9,100
TPH-mo	25	<6.7	330

Sample ID	Apex-S8-041614			
	Soil (mg/kg)			GW
Depth	4.5	7.5	9	(µg/L)
TPH-g	<1.2	<1.5	<1.2	<50
TPH-d	2.5 Y	<1.4	<1.3	<49
TPH-mo	16	<7.1	<6.6	<290

Sample ID	Apex-S7-041714		
	Soil (mg/kg)		GW
Depth	5.5	9	(µg/L)
TPH-g	<1.4	<1.3	<50
TPH-d	4.1 Y	<1.3	<53
TPH-mo	11	<6.5	<320

Sample ID	Apex-S9-041614			
	Soil (mg/kg)			GW
Depth	4.5	7.5	9	(µg/L)
TPH-g	<1.4	<1.3	<1.3	<50
TPH-d	<1.4	1.8 Y	<1.3	<49
TPH-m	<6.8	<7.1	<6.5	<290

NOTES:

1 = WATER BOARD ESL, Table B-2, Shallow Soil Screening Levels (≤3m bgs), Commercial/Industrial Land Use (groundwater is not a current or potential drinking water resource), December, 2013.

2 = WATER BOARD ESL, Table A-2, Shallow Soil Screening Levels (≤3m bgs), Commercial/Industrial Land Use (groundwater is a current or potential drinking water resource), December, 2013.

d = diesel

Depth = feet below ground surface

ESL = environmental screening level

GW = groundwater

ID = identification

mg/kg = milligrams per kilogram

µg/L = micrograms per liter

WATER BOARD = San Francisco Bay Regional Water Quality Control Board

TPH = total petroleum hydrocarbons

TPH-g = total petroleum hydrocarbons as gasoline

TPH-d = total petroleum hydrocarbons as diesel

TPH-mo = total petroleum hydrocarbons as motor oil

Y = sample result chromatographic pattern, which does not resemble standard

25 = sample result exceeds the laboratory reporting limit

130 = sample result exceeds ESL where groundwater is a current or potential drinking water resource

330 = sample result is less than ESL for " is not a drinking water resource" but exceeds ESL for "is a drinking water source"

LEGEND:

S3 — PREVIOUS SOIL SAMPLE LOCATION

S5 — SOIL AND GROUNDWATER SAMPLE LOCATION

MW-1 — GROUNDWATER MONITORING WELL

Environmental Screening Levels				
	Soil (mg/kg)		Groundwater (µg/L)	
TPH-g	500 [1]	500 [2]	500 [1]	100 [2]
TPH-d	110 [1]	110 [2]	640 [1]	100 [2]
TPH-mo	500 [1]	500 [2]	640 [1]	100 [2]

N

0' 16'

APPROXIMATE SCALE: 1"=16'

ERRG Engineering/Remediation Resources Group, Inc.
4585 Pacheco Blvd, Suite 200
Martinez, California 94553
(925) 969-0750

CLIENT: APEX REFRIGERATION, INC. EMERYVILLE, CALIFORNIA

LOCATION: 1550 PARK AVENUE EMERYVILLE, CALIFORNIA

TPH CONCENTRATIONS IN SOIL AND GROUNDWATER

DRAWN BY:	CHECKED BY:	PROJECT NO.	FIG NO.
SC 06/09/15	EKO 06/09/15	2013-094	2

Tables

Table 1. Soil Analytical Results

Location	Sample Date	Sample Name	Depth (feet bgs)	Total Petroleum Hydrocarbons (by EPA Method 8015B) (mg/kg)			Purgeable Aromatics (Select VOCs by EPA Method 8260B) (µg/kg)						Priority Pollutant Polycyclic Aromatic Hydrocarbons (EPA Method 8270 SIM) (µg/kg)														
				TPH-gasoline	TPH-diesel[1]	TPH-motor oil[1]	MTBE	Benzene	Toluene	Ethylbenzene	m,p-Xylenes	o-Xylenes	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene
		Water Board ESLs [2]		*500*	*110*	*500*	*0.023*	*0.044*	*2.9*	*3.3*	*2.3*	*2.3*	*1.2*	*13*	*16*	*8.9*	*11*	*2.8*	*40*	*85*	*1.3*	*13*	*1.3*	*1.3*	*0.13*	*1.3*	*0.38*	*27*
		Water Board ESLs [3]		*500*	*110*	*500*	*8.4*	*1.2*	*9.3*	*4.7*	*11*	*11*	*4.8*	*13*	*19*	*8.9*	*11*	*2.8*	*40*	*85*	*1.3*	*13*	*1.3*	*1.3*	*0.13*	*1.3*	*0.38*	*27*
		Water Board ESLs [4]		*2,700*	*900*	*28,000*	*3.8E+06*	*7.1E+04*	*4.3E+06*	*4.9E+05*	*2.5E+06*	*2.5E+06*	*3.7E+05*	*NV*	*8.6E+06*	*5.7E+06*	*NV*	*4.3E+07*	*5.7E+06*	*8.6E+06*	*8.3E+03*	*8.3E+04*	*8.3E+03*	*8.3E+03*	*8.3E+02*	*8.3E+03*	*2.4E+03*	*NV*
S1	3/1/2013	Apex-S1-3.5-030113	3.5	<0.24	**400 Y**	**1,200**	<5.9	<5.9	<5.9	<5.9	<5.9	<5.9	<29	<29	<29	<29	**240**	**42**	**490**	**570**	**180**	**310**	**270**	**81**	**170**	**57**	<29	**67**
S1	3/1/2013	Apex-S1-9.0-030113	9	**0.94 Y**	**13 Y**	**12**	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.4	<6.4	<6.4	<6.4	**18**	<6.4	**9.2**	**9.8**	<6.4	<6.4	<6.4	<6.4	<6.4	<6.4	<6.4	<6.4
S2	3/1/2013	Apex-S2-5.5-030113	5.5	**480 Y**	**3,100 Y**	**140**	<680	<680	<680	<680	<680	<680	<34	<34	**46**	<34	<34	<34	<34	<34	<34	<34	<34	<34	<34	<34	<34	<34
S2	3/1/2013	Apex-S2-9.0-030113	9	<0.24	**6.6 Y**	**9.0**	<6.2	<6.2	<6.2	<6.2	<6.2	<6.2	<6.5	<6.5	<6.5	<6.5	<6.5	<6.5	<6.5	<6.5	<6.5	<6.5	<6.5	<6.5	<6.5	<6.5	<6.5	<6.5
S3	3/1/2013	Apex-S3-3.5-030113	3.5	<0.30	**4.4 Y**	**25**	<6.8	<6.8	<6.8	<6.8	<6.8	<6.8	<7.0	<7.0	<7.0	<7.0	**7.2**	<7.0	**11**	**15**	<7.0	**7**	**8.7**	<7.0	**8.1**	**7.2**	<7.0	**10**
S3	3/1/2013	Apex-S3-9.0-030113	9	**0.53 Y**	**5.1 Y**	<6.7	<6.2	<6.2	<6.2	<6.2	<6.2	<6.2	<6.7	<6.7	<6.7	<6.7	<6.7	<6.7	<6.7	<6.7	<6.7	<6.7	<6.7	<6.7	<6.7	<6.7	<6.7	<6.7
S4	3/1/2013	Apex-S4-4.5-030113	4.5	**510 Y**	**2,000 Y**	**550**	<330	<330	<330	<330	<330	<330	<26	<26	<26	<26	<26	**44**	<26	<26	<26	<26	<26	<26	<26	<26	<26	<26
S4	3/1/2013	Apex-S4-8.5-030113	9	**0.31 Y**	**21 Y**	**30**	<5.7	<5.7	<5.7	<5.7	<5.7	<5.7	<6.5	<6.5	<6.5	<6.5	<6.5	<6.5	<6.5	<6.5	<6.5	<6.5	<6.5	<6.5	<6.5	<6.5	<6.5	<6.5
S5	4/17/2014	APEX-S5-4.5-041714	4.5	**110 Y**	**250**	**29**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S5	4/17/2014	APEX-S5-7.5-041714	7.5	**4.2 Y**	**16**	<6.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S5	4/17/2014	APEX-S5-9.0-041714	9	**5.6 Y**	**8.0 Y**	<6.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S6	4/16/2014	APEX-S6-4.5-041614	4.5	<1.3	**46 Y**	**110**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S7	4/17/2014	APEX-S7-5.5-041714	5.5	<1.4	**4.1 Y**	**11**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S7	4/17/2014	APEX-S7-9.0-041714	9	<1.3	<1.3	<6.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S8	4/16/2014	APEX-S8-4.5-041614	4.5	<1.2	**2.5 Y**	**16**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S8	4/16/2014	APEX-S8-7.5-041614	7.5	<1.5	<1.4	<7.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S8	4/16/2014	APEX-S8-9.0-041614	9	<1.2	<1.3	<6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S9	4/16/2014	APEX-S9-4.5-041614	4.5	<1.4	<1.4	<6.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S9	4/16/2014	APEX-S9-7.5-041614	7.5	<1.3	**1.8Y**	<7.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S9	4/16/2014	APEX-S9-9.0-041614	9	<1.3	<1.3	<6.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S10	4/17/2014	APEX-S10-4.5-041714	4.5	**1,200 Y**	**4,700**	<330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S10	4/17/2014	APEX-S10-8.0-041714	8	**1.5 Y**	**26**	**7.1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S10	4/17/2014	APEX-S10-9.0-041714	9	**4.0 Y**	**32**	<6.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S13	4/17/2014	APEX-S13-4.0-041714	4	<1.3	**130**	**380**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S13	4/17/2014	APEX-S13-7.5-041714	7.5	<1.3	**2.5 Y**	<6.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S13	4/17/2014	APEX-S13-9.0-041714	9	<1.5	<1.3	**9.7**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

1 = Analysis run with silica gel cleanup

2 = Water Board ESLs, Table A-2, "Shallow Soil Screening Levels (≤3 m bgs), Commercial/Industrial Land Use (groundwater is a current or potential drinking water resource)," December 2013

3 = Water Board ESLs, Table B-2, "Shallow Soil Screening Levels (≤3 m bgs), Commercial/Industrial Land Use (groundwater is **not** a current or potential drinking water resource)," December 2013

4 = Water Board ESLs, Table K-3, "Direct Exposure Soil Screening Levels Construction/Trench Worker Exposure Scenario," December 2013.

Bold = Sample result exceeds the laboratory reporting limit for the given analyte

Bold Red = Sample result exceeds the Water Board ESLs

bgs = below ground surface
EPA = U.S. Environmental Protection Agency
ESLs = environmental screening levels
mg/kg = milligrams per kilogram
MTBE = methyl tert-butyl ether
NA = not analyzed
NV = no value
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
Water Board = San Francisco Bay Regional Water Quality Control Board
Y = sample resembles chromatographic pattern, which does not resemble standard
<0.30 = sample result is less than the laboratory reporting limit for the given analyte
µg/kg = micrograms per kilogram

Table 2. Groundwater Analytical Results

Location	Sample Date	Sample Name	Depth (feet bgs)	Total Dissolved Solids (by SM 2540C) (mg/L)	Total Petroleum Hydrocarbons (by EPA Method 8015B) (µg/L)			Purgeable Aromatics (Select VOCs by EPA Method 8260B) (µg/L)						Priority Pollutant Polycyclic Aromatic Hydrocarbons (EPA Method 8270 SIM) (µg/L)															
				Total Dissolved Solids	TPH-gasoline	TPH-diesel[1]	TPH-motor oil[1]	MTBE	Benzene	Toluene	Ethylbenzene	m,p-Xylenes	o-Xylenes	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo (a) anthracene	Chrysene	Benzo (b) fluoranthene	Benzo (k) fluoranthene	Benzo (a) pyrene	Indeno (1,2,3-cd) pyrene	Dibenz (a,h) anthracene	Benzo (g,h,i) perylene
Water Board ESLs [2]				*NL*	*100*	*100*	*100*	*5.0*	*1.0*	*40*	*30*	*20*	*20*	*6.1*	*30*	*20*	*3.9*	*4.6*	*0.73*	*8.0*	*2.0*	*0.027*	*0.35*	*0.056*	*0.056*	*0.014*	*0.056*	*0.016*	*0.10*
Water Board ESLs [3]				*NL*	*500*	*640*	*640*	*1800*	*27*	*130*	*43*	*100*	*100*	*24*	*30*	*23*	*3.9*	*4.6*	*0.73*	*8.0*	*2.0*	*0.027*	*0.35*	*0.056*	*0.056*	*0.014*	*0.056*	*0.25*	*0.10*
Water Quality Objectives for Municipal Supply [4]				*500*	*NL*	*NL*	*NL*	*130/5.0*	*1.0*	*150*	*700*	*1,750*	*1,750*	*NL*	*NL*	*NL*	*NL*	*NL*	*NL*	*NL*	*NL*	*NL*	*NL*	*NL*	*NL*	*NL*	*NL*	*NL*	*NL*
S1	3/1/2013	Apex-S1-GW-030113	3.5–9.0	NA	**5,600 Y**	**31,000**	**2,500**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.9**	<0.7	**0.8**	**1.9**	**5.8**	**2.2**	**1.2**	**1.3**	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
S2	3/1/2013	Apex-S2-GW-030113	3.5–9.0	NA	**9,300 Y**	**15,000**	**680**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.7	<0.7	**0.9**	<0.7	**2.4**	**1.3**	**1.6**	**1.7**	<0.7	**1.0**	**0.9**	<0.7	<0.7	<0.7	<0.7	<0.7
S3	3/1/2013	Apex-S3-GW-030113	4.0–9.0	NA	**7,200 Y**	**9,100**	**330**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
S4	3/1/2013	Apex-S4-GW-030113	4.0–9.0	NA	**7,100 Y**	**83,000**	**5,200**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S5	4/17/2014	APEX-S5-GW-041714	4.5–7.0	NA	**4,500 Y**	**15,000**	**630**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S6	4/16/2014	APEX-S6-GW-041614	4.5–6.0	NA	<50	**94 Y**	<290	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S7	4/17/2014	APEX-S7-GW-041714	5.5–7.0	NA	<50	<53	<320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S8	4/16/2014	APEX-S8-GW-041614	4.5–6.0	NA	<50	<49	<290	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S9	4/16/2014	APEX-S9-GW-041614	4.75–6.0	NA	<50	<49	<290	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S10	4/17/2014	APEX-S10-GW-041714	4.0–6.0	NA	**190 Y**	<52	<310	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S10	4/17/2014	APEX-S14-GW-041714	4.0–6.0	NA	**180 Y**	**99 Y**	<290	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S13	4/17/2014	APEX-S13-GW-041714	4.25–6.0	NA	<50 [5]	**290 Y** [5]	<300 [5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW1	9/26/2014	APEX-MW1-092614	2.0-7.0	**1,220**	**170 Y**	**350**	<300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW1	9/26/2014	APEX-MW1-092614-FD	2.0-7.0	**1,280**	**160 Y**	**350**	<300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW1	12/29/2014	APEX-MW1-122914	2.0-7.0	**220**	**63 Y**	**250 Y**	<300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW1	12/29/2014	APEX-MW1-122914-FD	2.0-7.0	**240**	**58 Y**	**250 Y**	<300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

1 = Analysis run with silica gel cleanup

2 = Water Board ESL, Table F-1a, "Groundwater Screening Levels (groundwater is a current or potential drinking water resource)," December 2013.

3 = Water Board ESL, Table F-1b, "Groundwater Screening Levels (groundwater is not a current or potential drinking water resource)," December 2013.

4 = Water Board Basin Plan, Table 3-5: Water Quality Objectives for Municipal Supply

5 = prepared and analyzed outside of hold time

Bold = Result is greater than the laboratory reporting limits for the given parameter but does not exceed listed comparison value

Bold Blue = Result exceeds parameter objective in Water Board Basin Plan, Table 3-5: Water Quality Objectives for Municipal Supply

Bold Green = Result is less than Water Board ESL for "is **not** a drinking water resource" but greater than for "is a drinking water source"

Bold Red = Sample result exceeds the Water Board ESL

bgs = below ground surface
EPA = U.S. Environmental Protection Agency
ESLs = environmental screening levels
MTBE = methyl tert-butyl ether
NA = not analyzed
NL = not listed
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
Water Board = San Francisco Bay Regional Water Quality Control Board
Y = sample resembles chromatographic pattern, which does not resemble standard
<0.30 = sample result is less than the laboratory reporting limit for the given analyte