PELCO SALES AND SERVICE
A DIVISION OF APEX REFRIGERATION

October 31, 2014

RECEIVED
By Alameda County Environmental Health at 11:09 am, Jan 28, 2015

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

Transmittal
September 2014 Groundwater Monitoring
Apex Refrigeration, Inc., Fuel Leak Case No. RO0003069, Emeryville, California

Dear Mr. Detterman:

Apex Refrigeration, Inc, (Apex) is pleased to submit this report to document September 2014 groundwater monitoring activities conducted at Apex, 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: Data Transmittal, September 2014 Groundwater Monitoring, Apex Refrigeration, Inc., Fuel Leak Case No. RO0003069, Emeryville, California

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

ERRG
Engineering/Remediation Resources Group, Inc.
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October 31, 2014 Ref.: 2013-094

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

Data Transmittal
September 2014 Groundwater Monitoring
Apex Refrigeration, Inc., Fuel Leak Case No. RO0003069, Emeryville, California

Dear Mr. Detterman:

Engineering/Remediation Resources Group, Inc. (ERRG) has prepared this data transmittal to summarize activities conducted in September 2014 to monitor groundwater at the Apex Refrigeration, Inc. facility (hereinafter referred to as "the Site"), located at 1550 Park Avenue in Emeryville, California (Enclosure 1, Figure 1). The data presented in this transmittal are intended to supplement and update results presented in the "Data Gaps Investigation Summary Report, Apex Refrigeration, Inc., 1550 Park Avenue, Emeryville, California," which ERRG submitted to Alameda County Environmental Health (ACEH) in July 2014. If necessary, the next quarterly monitoring event is scheduled to occur in December 2014.

On February 3, 2014, ACEH requested that quarterly groundwater monitoring be initiated upon installation of monitoring well MW-1 (Enclosure 1, Figure 2), which was installed in April 2014[1]. Quarterly groundwater monitoring, originally scheduled for June and September 2014, was delayed while Apex was securing necessary funding from the State of California's Underground Storage Tank Cleanup Fund. As a result, ERRG did not mobilize to the Site to perform groundwater monitoring until September 26, 2014.

The purpose of the groundwater monitoring event was to collect groundwater samples from monitoring well MW-1 for analysis of total petroleum hydrocarbons (TPH) and total dissolved solids to verify previous results. TPH was previously identified at elevated concentrations in a grab groundwater sample collected from well S4, which is collocated with well MW-1.

On September 26, 2014, ERRG personnel gauged the monitoring well with an oil/water interface probe to verify that light nonaqueous-phase liquid was not present in the well as floating free product. No free product was detected in the well, and depth to water was measured at 2.53 feet below top of casing. Prior to sample collection, three well volumes were purged with a disposable bailer and water quality parameters (temperature, pH, and electrical conductivity) were measured using an YSI 556 water quality instrument. Samples were then collected from well MW-1.

[1] ACEH, 2014. Letter regarding Modified Data Gap Work Plan Approval: Fuel Leak Case No. RO0003069 and GeoTracker Global ID T1000002519, Pelligrini Refrigeration & Restaurant Equipment Company, 1550 Park Avenue, Emeryville, CA 94608. From Mark Detterman. To Pennie Barger. February 3.

ERRG

Samples were submitted to Curtis & Tompkins Laboratories in Berkeley, California, for analysis of:

- TPH-extractables (TPH as diesel and TPH as motor oil) by U.S. Environmental Protection Agency (EPA) Method 8015B (with silica gel cleanup)
- TPH-purgeables (TPH as gasoline) by EPA Method 8015B
- TDS by Standard Method 2540C

Sample results were compared with the San Francisco Bay Regional Water Quality Control Board's (SFRWQCB) environmental screening levels (ESLs) for TPH[2] and the water quality objective for TDS[3], respectively. Comparison results indicated the following:

- TPH as diesel was detected at a concentration of 350 micrograms per liter (µg/L), which was less than the ESL of 640 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 as motor oil was not detected at a concentration greater than its reporting limit
- TPH as gasoline was detected at a concentration of 170 µg/L, which was 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)
- TDS was detected at a concentration of 1,220 milligram per liter (mg/L), which was greater than the water quality objective for TDS of 500 mg/L

The TPH results were significantly less than results for the grab groundwater sample collected at collocated S4 (i.e., TPH-d at 83,000 µg/L, TPH-mo at 5,200 µg/L, and TPH-g at 7,100 µg/L). The TPH concentrations at S4, which are skewed orders of magnitude higher than TPH concentrations at well MW-1, indicate that TPH contamination in groundwater at the site is significantly less than originally suspected. Additionally, the TDS results suggest that the appropriate classification for shallow groundwater beneath the site is "not suitable for municipal supply."

Enclosure 2 includes the groundwater monitoring field logs. Enclosure 3, Tables 1 and 2, summarizes all of the site's historical analytical results for soil and groundwater samples. Enclosure 3, Table 3, presents an updated Conceptual Site Model, and Enclosure 4 provides the laboratory analytical report for the 2014 groundwater monitoring event.

If you have any questions or comments regarding this data transmittal, please contact me at (925) 839-2274 or at erik.oehlschlager@errg.com.

Sincerely,

Erik Oehlschlager
Project Manager

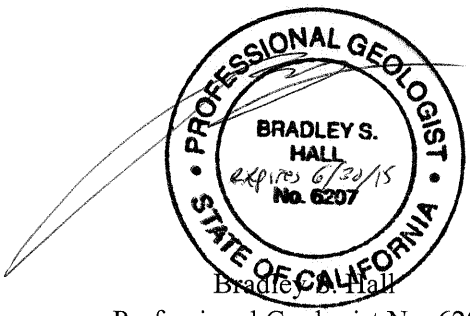
[2] SFRWQCB, 2013. Table F-1a, "Groundwater Screening Levels (groundwater is a current or potential drinking water resource)" and Table F-1b, "Groundwater Screening Levels (groundwater is not a current or potential drinking water resource)" found in the Detailed Lookup Tables at: <http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/esl.shtml>.

[3] SFRWQCB, 2013. Table 3-5: Water Quality Objectives for Municipal Supply in ""San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan)." June 29 (incorporating all amendments approved by the Office of Administrative Law). Available Online at: http://www.waterboards.ca.gov/sanfranciscobay/basin_planning.shtml.

ERRG

CERTIFICATION

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

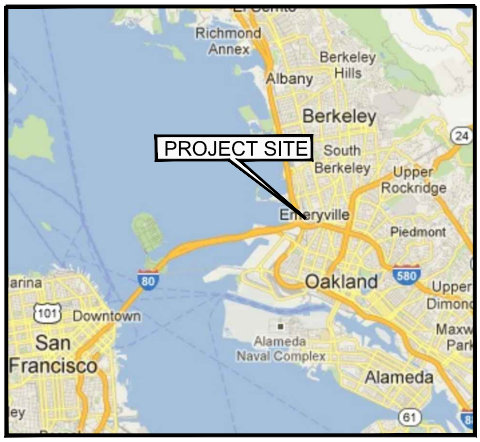


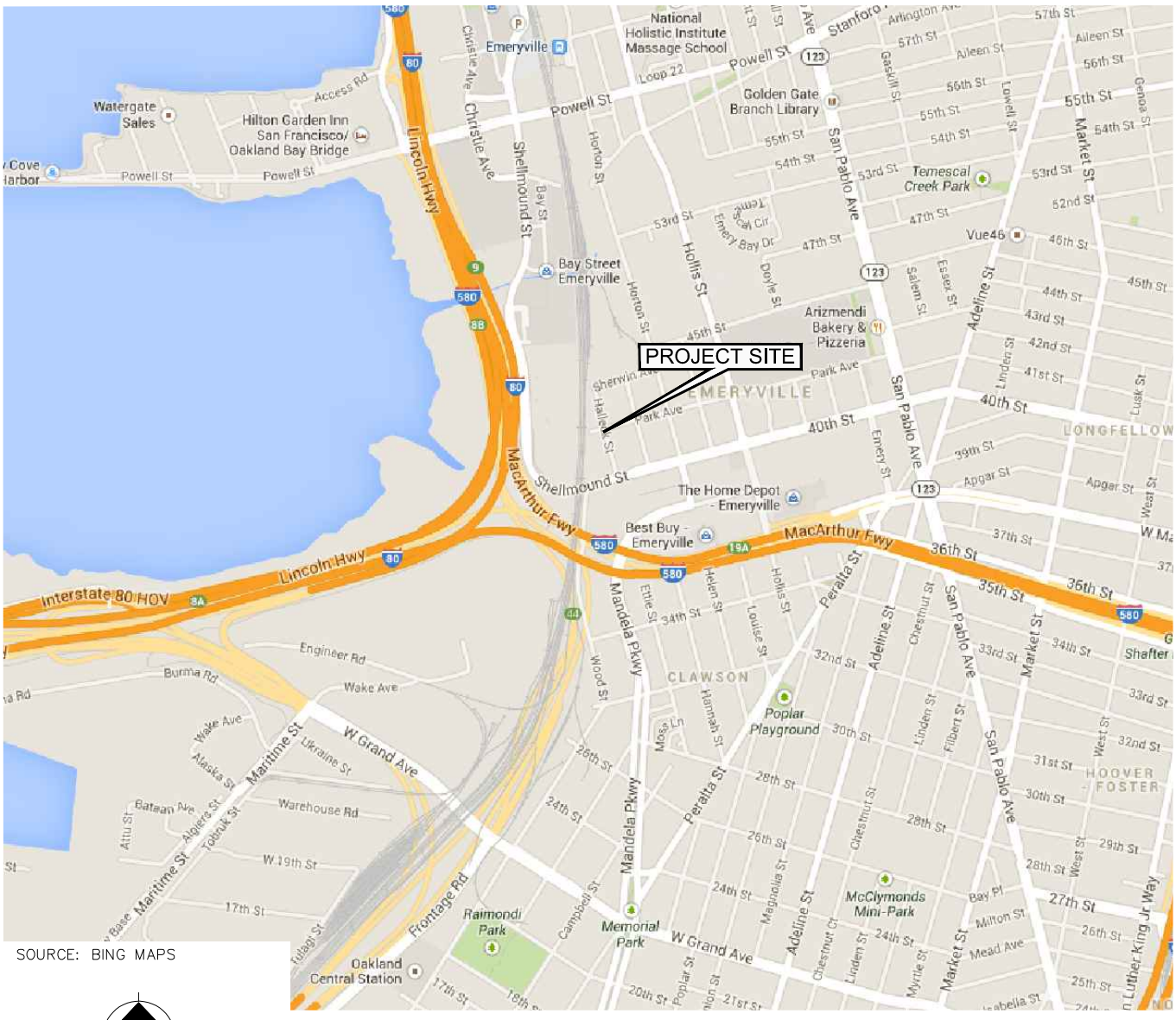
Bradley S. Hall
Professional Geologist No. 6207

Enclosure: 1 – Figures
2 – Field Logs
3 – Tables
4 – Laboratory Analytical Report (Job Number 261264)

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

Enclosure 1. Figures





SOURCE: BING MAPS

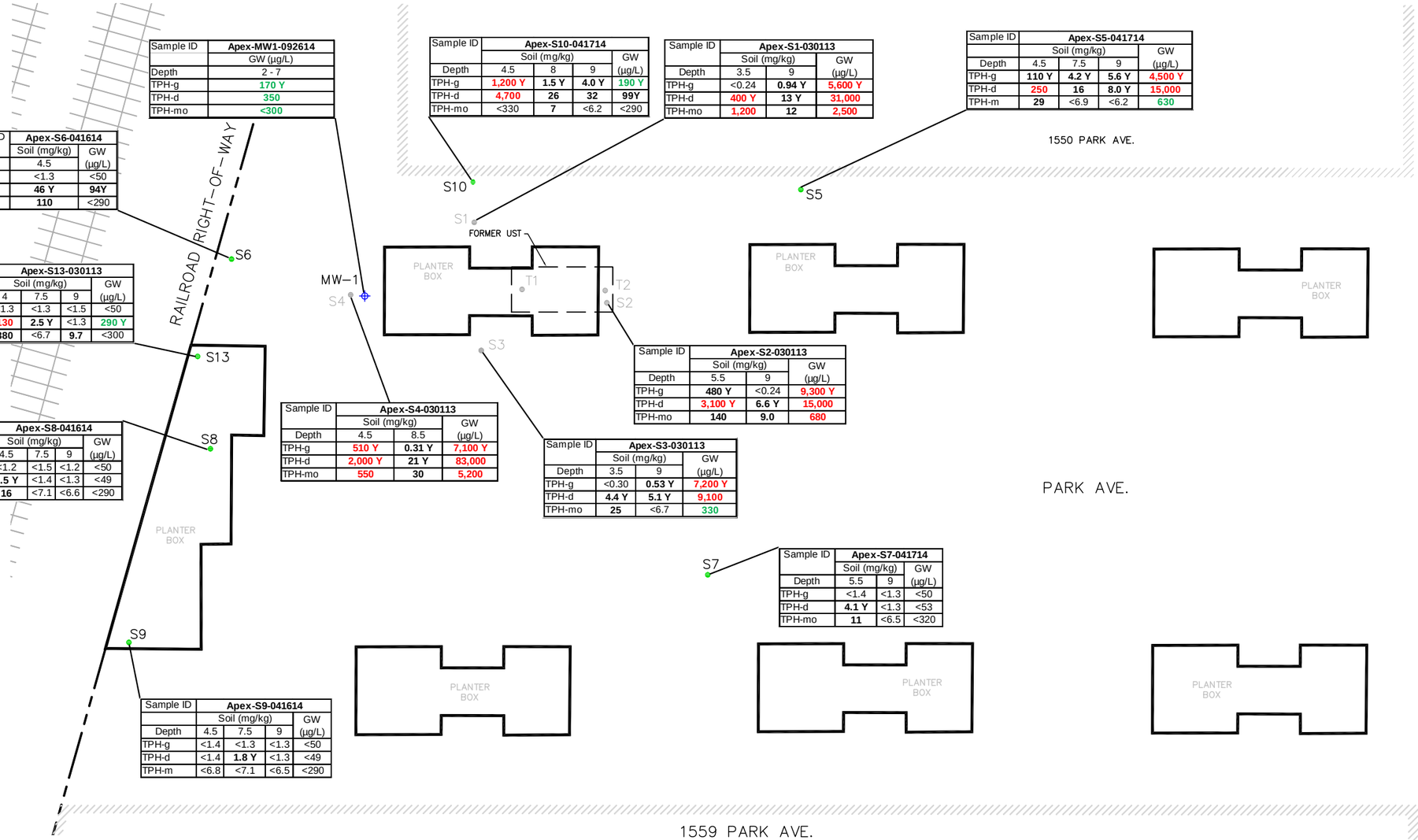
N

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 10/27/14	CHECKED BY: EKO 10/27/14	PROJECT NO. 2013-094	FIG NO. 1

FILE NAME: N:\Graphics\2013\2013-094 APEX Emeryville\Fig1.dwg LAYOUT NAME: 1 PLOTTED: Monday, October 27, 2014 - 6:46am



Sample ID	Apex-MW1-092614
	GW (µg/L)
Depth	2 - 7
TPH-g	170 Y
TPH-d	350
TPH-mo	<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-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-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-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 = SFRWQCB ESLs, 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 = SFRWQCB ESLs, 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

ESLs = environmental screening levels

GW = groundwater

ID = identification

mg/kg = milligrams per kilogram

µg/L = micrograms per liter

SFRWQCB = 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 resembles chromatographic pattern, which does not resemble standard

25 = sample result exceeds the laboratory reporting limit

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

330 = sample results is less than ESLs for " is not a drinking water resource" but greater than 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]

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: SC 10/22/14

CHECKED BY: EKO 10/22/14

PROJECT NO. 2013–094

FIG NO. 2

FILE NAME: N:\Graphics\2013\2013-094 APEX Emeryville\Fig2-GW.dwg LAYOUT NAME: 2 PLOTTED: Wednesday, October 22, 2014 - 7:14am

Enclosure 2. Field Logs

Depth-to-Water and Depth-to-Product Measurement

Apex Former UST Site

1550 Park Avenue

Emeryville, CA

~~Tbeo~~ (beep)

Well I.D.	Date (MM/DD/YY)	Time (HHMM)	Depth to Product (feet btoc)	Depth to Water (feet btoc)	Depth to Bottom (feet btoc)	Comments
S12/MW-1	09/26/14	1449	NONE	2.53	6.91	No Sheen

Groundwater Purge and Sampling Form

ERRG

PROJECT NO:	2013-~~006~~ 094	WELL ID:	MW1
DATE:	9/26/14	SAMPLE ID:	APEX-MW1-092614
CLIENT NAME	APEX	PURGED BY:	JMO
LOCATION:	Apex Refridgeration	SAMPLED BY:	JMO
ARRIVAL	2:30 pm	DEPARTURE	

Casing Diameter (innder diameter) 1.5"
Casing Volume: (gal/foot of depth) 0.09

1 Casing = 0.39 (1476ml)

Total Depth (feet) = 6.91 Depth to Water (feet): 2.53

Purge Calc: 6.91 (TD) - 2.53 (DTW) = 4.38 (Column of water) x 0.09 (Casing volume) x ~~Casing volume~~ x 3 (Three casing volumes) = 1.1826 **Calculated Purge**

Time Started:

Time (2400hr)	Volume (gal)	Temp. ~~(F)~~ °C	Conductivity (µmhos/cm)	pH (units)	EC (µS/cm)	Depth to Water (ft)	Pumped Dry (Y/N)
1512	0.39	25.46	~~2249~~ -19.0	7.32	2249	2.53	Slightly Turbid
1519	0.78	25.35	-22.9	7.23	2180	2.53	Slightly Turbid
1525	1.17	25.31	-25.6	7.27	2092	2.53	Slightly Turbid
Total gallons purged:		1.18			Sample Time:	1530	

PURGING EQUIPMENT

Active Extraction Well Pump ___ Bailer (Teflon) X
Portable Submersible Pump ___ Bailer (PVC) ___
Other ___ Bailer (Stain. Steel) ___
Pump Depth ___ Dedicated ___

SAMPLING EQUIPMENT

Sampling Port ___ Bailer (Teflon) X
Portable Submersible Pump ___ Bailer (PVC) ___
Peristaltic Pump ___ Bailer (Stain. Steel) ___
Other ___

Well Integrity: Good: X Fair: ☐ Poor: ☐

Remarks: No sheen, no odor

Signature: Jack Valentine 9/26/14

Reviewed by ___

EQUIPCO RENTALS

YSI 556MPS RENTAL
CALIBRATION CERTIFICATE

SERVICE TECHNICIAN: WDG

DATE: 09/25/14

INSTRUMENT INFORMATION

RENTAL I.D. NUMBER: YSI-556. 15
SERIAL#:
CUSTOMER.

CALIBRATION INFORMATION

PARAMETERS:	STANDARDS:	PASS ( )	LOT#
1. CONDUCTIVITY	1000 µMhos	X	10932
2. pH ZERO	pH 7	X	38447
3. pH SLOPE	pH 4	X	38366
pH SLOPE	pH 10	X	37982
4. DISSOLVED OXYGEN	Air Calibration Barometric pressure = 760mmHg	X	N/A
5. REDOX (ORP)	232 mV (YSI Zobell solution)	X	091114

2100 Meridian Park Boulevard, Concord, CA. 94520 Phone (925) 609-1088 Fax (925) 609-1080

Enclosure 3. Tables

Table 1. Soil Boring 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
		SFRWQCB 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*
		SFRWQCB 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*
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 = SFRWQCB 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 = SFRWQCB 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

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

Bold Red = Sample result exceeds the SFRWQCB 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

SFRWQCB = San Francisco Bay Regional Water Quality Control Board

TPH = total petroleum hydrocarbons

VOCs = volatile organic compounds

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. Grab 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
SFRWQCB 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*
SFRWQCB 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

Notes:

1 = Analysis run with silica gel cleanup

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

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

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

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

Bold Red = Sample result exceeds the SFRWQCB 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
SFRWQCB = San Francisco Bay Regional Water Quality Control Board
TPH = total petroleum hydrocarbons
VOCs = volatile organic compounds
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

Table 3. Site Conceptual Model

SCM Element	SCM Sub-Element	Description	Data Gap	How to Address
Geology and Hydrogeology	Regional	***Geology:*** The hills along Emeryville and along the San Francisco Peninsula, as well as the down-warped bay plain in between, are part of the central California Coast Range Province. The rock exposed in the hills and underlying the sedimentary deposits of the Bay plain consists of Tertiary-aged sediments and volcanic rock. The uplift of the hills resulted in erosion and deposition of thick alluvial fan deposits on the Bay plain, known as Alameda formation. Approximately 540 feet of tertiary to early quaternary sediments overlies bedrock beneath Emeryville. The unconsolidated sedimentary deposits include artificial fill, estuarine deposits known as Bay Mud, the Merritt sand, Yerba Buena Mud, and the Alameda Formation (Engineering-Science, 1988). The closest major fault, the Hayward Fault, is located about 3 miles east of the property. While the site is located in a seismically active area, it is not within an Alquist-Priolo Special Studies active fault zone, the legislatively defined zone of restricted land use 200 feet around an active fault due to the high probability of ground rupture. ***Hydrogeology:*** Freshwater aquifer beneath Emeryville includes most of the porous sands and gravels of the Alameda and Temescal alluvial deposits and the Merritt Sand. The aquifers are recharged by rainfall on exposed areas of the porous formations, primarily between the SP right-of-way and the Oakland Hills to the east. The water flows downgradient toward the bay. The fresh water contacts higher-density saltwater in the vicinity of the bay margin. The regional groundwater flow direction is westward toward the bay, although local variations may occur due to variations in topography and subsurface lithology. The depth to groundwater varies seasonally and has been measured historically in the site vicinity between 3 to 8 feet bgs (Engineering-Science, 1988).	None	N/A
	Site	***Geology:*** Based on boring logs completed during the initial investigation and this data gaps investigation, the uppermost soil is composed of various fill material, including loam, aggregate base, and gravelly matrices at depths ranging to approximately 1 and 5 feet bgs, with the deepest fill material occurring in the area of the former UST. Below fill material, the soil transitions into native dark-colored clays and extends to at least 9 feet bgs. ***Hydrogeology:*** Shallow groundwater has been encountered at depths of approximately 3 to 5.5 feet bgs. The hydraulic gradient and groundwater flow direction have not been specifically evaluated at the site but is presumed to be to the west in the direction of the bay. The groundwater gradient approximately 1,800 feet north of the site is reported to be 0.033 feet per foot in a westerly direction at the Pfizer Pigments site located at 4650 Shellmound in Emeryville, California (SWRCB, 2010).	None	N/A
Surface Water Bodies	Regional	The closest surface water body is San Francisco Bay, located approximately 1,500 feet to the west of the site.	None	NA
Nearby Wells	Regional	DWR and ACPWA well searches identified one well within a one mile radius of 1550 Park Avenue, Emeryville, California. The well is listed as an industrial use well and is located approximately 0.65 miles to the southeast (upgradient). One domestic well was identified approximately one mile north (sidegradient) of 1550 Park Avenue. Five wells, catagorized as either industrial or irrigation use, were found to be one mile or greater in distance from 1550 Park Avenue, Emeryville, California. No municipal wells were identified in the search.	None	NA
Unauthorized Release	Site	A unauthorized petroleum release was discovered adjacent to the building located at 1550 Park Avenue in Emeryville, California, when a UST was discovered in November 2009 during a street improvement project. The tank was measured to be approximately 10 feet long and 5 feet in diameter, with a calculated volume capacity of 1,500 gallons. The release was stopped when the UST was removed and approximately 20 tons of surrounding soil was excavated and 2,200 gallons of oily water was pumped from the tank and excavation. Results of subsequent soil and groundwater samples revealed the following chemicals of concern associated with the release: TPH-diesel, TPH-gasoline, TPH-motor oil, and benzo(b)fluoranthene.	None	NA
Free Product	Site	Previous data appear to suggest the presence of LNAPL. One shallow monitoring well was installed using hand auger drilling methods. The well is located where the highest total TPH concentrations were reported in a grab groundwater sample (TPH-d: 83,000 µg/L). The well is screened across the water table to allow any LNAPL that is present to infiltrate the well. LNAPL is not present in the well based on measurements with an oil/water interface probe in April and September 2014. Groundwater sampling results from MW-1 in September 2014 show TPH-g and TPH-d concentrations of 170 µg/L and 350 µg/L, respectively. TPH-mo was not detected in groundwater at MW-1 (<300 µg/L).	None	NA
Secondary Source	Site	Soil and grab groundwater samples have been collected from 11 boring locations surrounding the former UST. Seven boring locations form an outer perimeter surrounding the former UST. Comparison of soil and groundwater results with ESLs indicate only three of the seven perimeter locations (S5 to the east, S10 to the north, and S13 to the west) have TPH concentrations exceeding the ESLs. TPH concentrations in soil are highly elevated at S10 and slightly exceed ESLs at S5 and S13. TPH concentrations in groundwater are highly elevated at S5 and slightly exceed ESLs at S10 and S13. No ESL exceedances are found in intermediate and deep soil samples from 7.5 to 9 feet bgs. Based on the soil data, the vertical contamination appears to be confined between approximately 3 to 7 feet bgs, primarily near the water table. TPH concentrations in Soil and groundwater slightly exceeded ESLs at S13, but TPH concentrations in soil and groundwater approximately 15 feet to the south and north of S13 and other locations southwest and southeast did not exceed ESLs. Monitoring well MW-1 groundwater sampling results from September 2014 show that grab groundwater concentrations in this location skew orders of magnitude higher than those obtained from MW-1. In September 2014 concentration of Total Dissolved Solids (TDS) at MW-1 was 1,220 mg/L and exceeds the objective concentration of 500 mg/L listed in SFRWQCB's Basin Plan Table 3-5: Water Quality Objective for Municipal Supply. Although, areal extent of soil and groundwater contamination is not fully defined east and north of the former UST, sufficient data exists west (down gradient) and south (side gradient) to conclude it is likely that secondary source soils are localized close to the former UST between 3 and 7 feet bgs and that groundwater contaminants are below appropriate ESLs. Comparison of TDS results from MW-1 with the Basin Plan's water quality objectives for municipal supply indicate that shallow groundwater at the site is not a suitable municpal supply and that ESLs where groundwater is not a current or potential drinking water resource are appropriate for the site. Secondary source LNAPL is not present at the site based on measurements with an oil/water interface probe at MW-1 in April and September 2014. Monitoring well MW-1 groundwater sampling results from September 2014 show that grab groundwater concentrations (TPH-g: 7,100 µg/L, TPH-d: 83,000 µg/L, TPH-mo: 5,200 µg/L) in this location skew orders of magnitude higher than those obtained from MW-1 (TPH-g: 170 µg/L, TPH-d: 350 µg/L, TPH-mo: <300 µg/L) and that groundwater concentrations are below appropriate ESLs. Secondary source soils are gnerally localized close to the former UST location which is overlain by numerous utiilities and cosmetic elements of the City of Emeryville's recent street improvemnts. These two factors make further soil removal impracticable beyond the soil removal activities undertaken by the City of Emeryville during their discovery and removal of the former UST during the street improvement project.	None	NA
Vapor Intrusion to Indoor Air	Site	The lack of volatile compounds in soil and groundwater beneath the site, in the vicinity of the release, at concentrations exceeding the vapor intrusion levels of concern suggest vapor intrusion is not a risk at the site.	None	N/A
Preferential Pathways	Site	Numerous utility lines were located in the vicinity of the former UST, generally at depths from 2 to 4.5 feet bgs. One soil boring (S7) was located along the main storm drain line, which drains in an upgradient direction of the former UST, to evaluate potential preferential pathways for contaminant migration. TPH concentrations in groundwater were non-detect, and concentrations in soil were either non-detect or less than ESLs.	None	N/A

Notes:

ACPWA = Alameda County Public Works Agency
bgs = ESLs
DWR = California Department of Water Resources
ESLs = environmental screening levels
LNAPL = light non-aqueous phase liquid
N/A = not applicable
SCM = site conceptual model
TPH-d = total petroleum hydrocarbons as diesel
TPH-g = total petroleum hydrocarbons as gasoline
TPH-total petroleum hydrocarbons as motor oil
TDS = total dissolved solids
UST = underground storage tank
µg/L = micrograms per liter

Enclosure 4. Laboratory Analytical Reports (Job Number 261264)


Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 261264
ANALYTICAL REPORT

Engineering/Remediation Resource Grp	Project : 2013-094
4585 Pacheco Blvd.	Location : APEX
Martinez, CA 94553	Level : II

Sample ID	Lab ID
APEX-MW1-092614	261264-001
APEX-MW1-092614-FD	261264-002
APEX-TB-092614	261264-003

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: Tracy Babjar Date: 10/03/2014

Tracy Babjar
Project Manager
tracy.babjar@ctberk.com
(510) 204-2226

CA ELAP# 2896, NELAP# 4044-001

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**261264**
Client:	**Engineering/Remediation Resource Grp**
Project:	**2013-094**
Location:	**APEX**
Request Date:	**09/26/14**
Samples Received:	**09/26/14**

This data package contains sample and QC results for three water samples, requested for the above referenced project on 09/26/14. The samples were received cold and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8015B):
No analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B):
No analytical problems were encountered.

Total Dissolved Solids (TDS) (SM2540C):
No analytical problems were encountered.

CHAIN OF CUSTODY

Curtis & Tompkins Laboratories
ENVIRONMENTAL ANALYTICAL TESTING LABORATORY
In Business Since 1878

2323 Fifth Street
Berkeley, CA 94710

Phone (510) 486-0900
Fax (510) 486-0532

Chain of Custody # _____

C&T LOGIN # 261264

Project No: 2013-094
Project Name: APEX
Project P. O. No: 2013-094
EDD Format: Report Level ☐ II ☐ III ☐ IV
Turnaround Time: ☐ RUSH _____ ☒ Standard

Sampler: Josh Osborne
Report To: Erik Oehlschlager
Company: EBRG
Telephone: 925-839-2274
Email: erik.oehlschlager@ebrg.com

Lab No.	Sample ID.	SAMPLING		MATRIX				# of Containers	CHEMICAL PRESERVATIVE					ANALYTICAL REQUEST		
		Date Collected	Time Collected	Water	Solid				HCl	H2SO4	HNO3	NaOH	None	TPH-g (EPA 8015 B)	TPH-d, mo (EPA 8015 B 4/96)	TDS
1	APEX-MW1-092614	9/26/14	1530	X				6	3				3	X	X	X
2	APEX-MW1-092614-FD	9/26/14	1530	X				6	3				3	X	X	X
3	APEX-TB-092614	9/26/14	1530	X				3	3					X		
								30								

Notes:

SAMPLE RECEIPT
☐ Intact
☐ Cold
☒ On Ice
☐ Ambient

RELINQUISHED BY:
Josh Osborne DATE: 9/26/14 TIME: 4:25pm
_____ DATE: _____ TIME: _____
_____ DATE: _____ TIME: _____

RECEIVED BY:
[signature] DATE: 9/26/14 TIME: 16:25
_____ DATE: _____ TIME: _____
_____ DATE: _____ TIME: _____

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 261264 Date Received 9/26/14 Number of coolers 1
Client DRRI Project 2014-094

Date Opened 9/29 By (print) FJ (sign) [signature]
Date Logged in 9/29 By (print) FJ (sign) [signature]

1. Did cooler come with a shipping slip (airbill, etc) _____ YES NO
   Shipping info _____
2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☐ ~~NO~~
   How many _____ Name _____ Date _____
2B. Were custody seals intact upon arrival? _____ YES NO ~~N/A~~
3. Were custody papers dry and intact when received? _____ ~~YES~~ NO
4. Were custody papers filled out properly (ink, signed, etc)? _____ ~~YES~~ NO
5. Is the project identifiable from custody papers? (If so fill out top of form) ~~YES~~ NO
6. Indicate the packing in cooler: (if other, describe) _____

☐ Bubble Wrap ☑ Foam blocks ☑ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: ☑ Wet ☐ Blue/Gel ☐ None Temp(°C) 6-3°

☐ Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ YES ~~NO~~
   If YES, what time were they transferred to freezer? _____
9. Did all bottles arrive unbroken/unopened? _____ ~~YES~~ NO
10. Are there any missing / extra samples? _____ YES ~~NO~~
11. Are samples in the appropriate containers for indicated tests? _____ ~~YES~~ NO
12. Are sample labels present, in good condition and complete? _____ ~~YES~~ NO
13. Do the sample labels agree with custody papers? _____ YES ~~NO~~
14. Was sufficient amount of sample sent for tests requested? _____ ~~YES~~ NO
15. Are the samples appropriately preserved? _____ ~~YES~~ NO N/A
16. Did you check preservatives for all bottles for each sample? _____ YES NO ~~N/A~~
17. Did you document your preservative check? _____ YES NO ~~N/A~~
18. Did you change the hold time in LIMS for unpreserved VOAs? _____ YES NO ~~N/A~~
19. Did you change the hold time in LIMS for preserved terracores? _____ YES NO ~~N/A~~
20. Are bubbles > 6mm absent in VOA samples? _____ ~~YES~~ NO N/A
21. Was the client contacted concerning this sample delivery? _____ YES ~~NO~~
   If YES, Who was called? _____ By _____ Date: _____

COMMENTS
13) For 003, COC states sample ID is: (APEX-TB-092614) but Sample labels simply state "TRIP"

Rev 10, 9/12

Curtis & Tompkins, Ltd.

Detections Summary for 261264

Results for any subcontracted analyses are not included in this summary.

Client : Engineering/Remediation Resource Grp
Project : 2013-094
Location : APEX

Client Sample ID : APEX-MW1-092614 Laboratory Sample ID : 261264-001

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Gasoline C7-C12	170	Y	50	ug/L	As Recd	1.000	EPA 8015B	EPA 5030B
Diesel C10-C24	350		50	ug/L	As Recd	1.000	EPA 8015B	EPA 3520C
Total Dissolved Solids	1,220		10	mg/L	TOTAL	1.000	SM2540C	METHOD

Client Sample ID : APEX-MW1-092614-FD Laboratory Sample ID : 261264-002

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Gasoline C7-C12	160	Y	50	ug/L	As Recd	1.000	EPA 8015B	EPA 5030B
Diesel C10-C24	350		50	ug/L	As Recd	1.000	EPA 8015B	EPA 3520C
Total Dissolved Solids	1,280		10	mg/L	TOTAL	1.000	SM2540C	METHOD

Client Sample ID : APEX-TB-092614 Laboratory Sample ID : 261264-003

No Detections

Y = Sample exhibits chromatographic pattern which does not resemble standard

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	261264	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5030B
Project#:	2013-094	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	09/26/14
Units:	ug/L	Received:	09/26/14
Diln Fac:	1.000	Analyzed:	09/30/14
Batch#:	215931		

Field ID: APEX-MW1-092614 Lab ID: 261264-001
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	170 Y	50

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	117	77-128

Field ID: APEX-MW1-092614-FD Lab ID: 261264-002
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	160 Y	50

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	115	77-128

Field ID: APEX-TB-092614 Lab ID: 261264-003
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	111	77-128

Type: BLANK Lab ID: QC759734

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	112	77-128

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	261264	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5030B
Project#:	2013-094	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC759733	Batch#:	215931
Matrix:	Water	Analyzed:	09/30/14
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	1,114	111	80-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	114	77-128

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	261264	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5030B
Project#:	2013-094	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	215931
MSS Lab ID:	261260-001	Sampled:	09/26/14
Matrix:	Water	Received:	09/26/14
Units:	ug/L	Analyzed:	09/30/14
Diln Fac:	1.000		

Type: MS Lab ID: QC759735

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	19.19	2,000	1,970	98	74-120

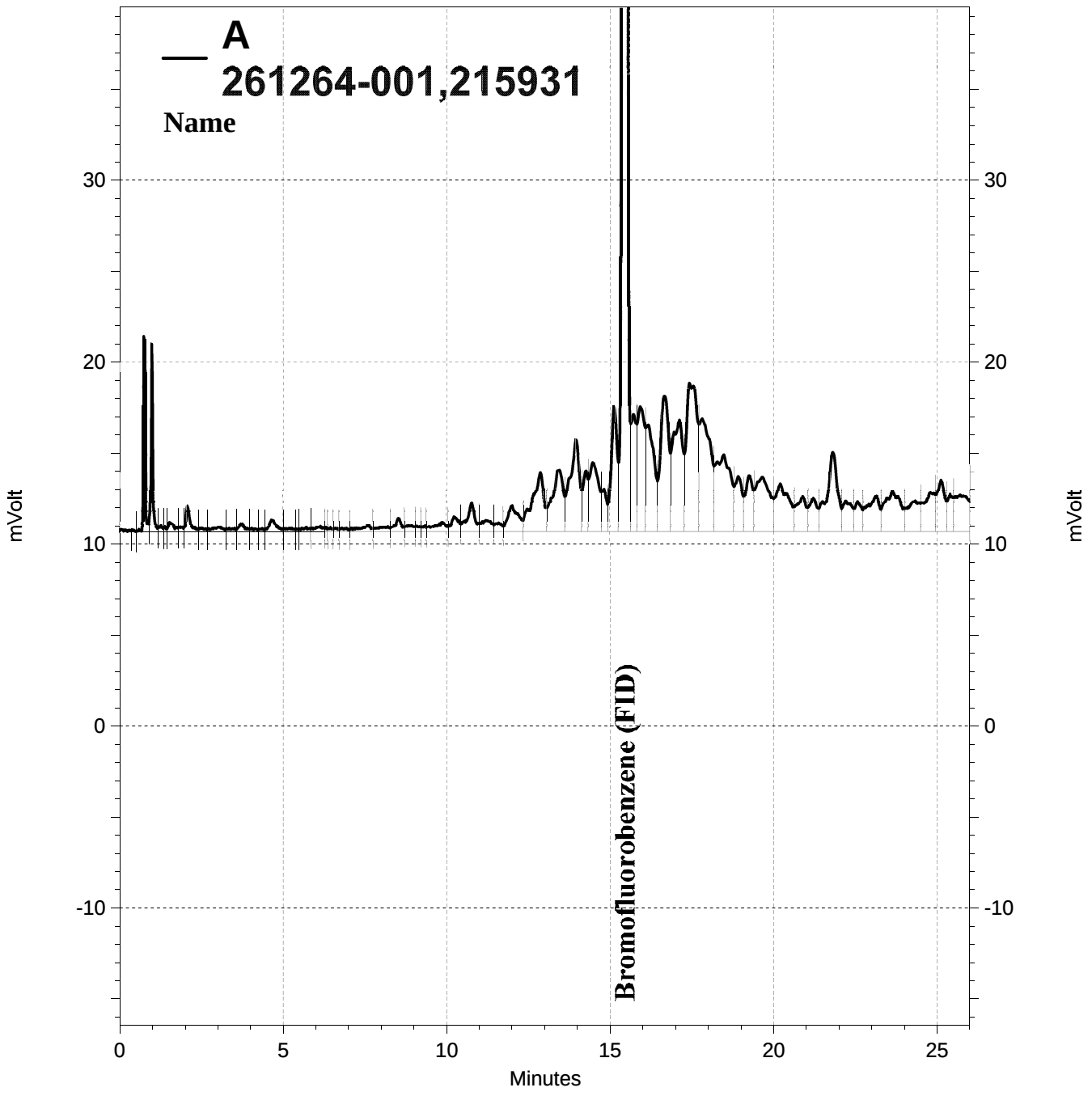
Surrogate	%REC	Limits
Bromofluorobenzene (FID)	101	77-128

Type: MSD Lab ID: QC759736

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	2,042	101	74-120	4	27

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	107	77-128

RPD= Relative Percent Difference



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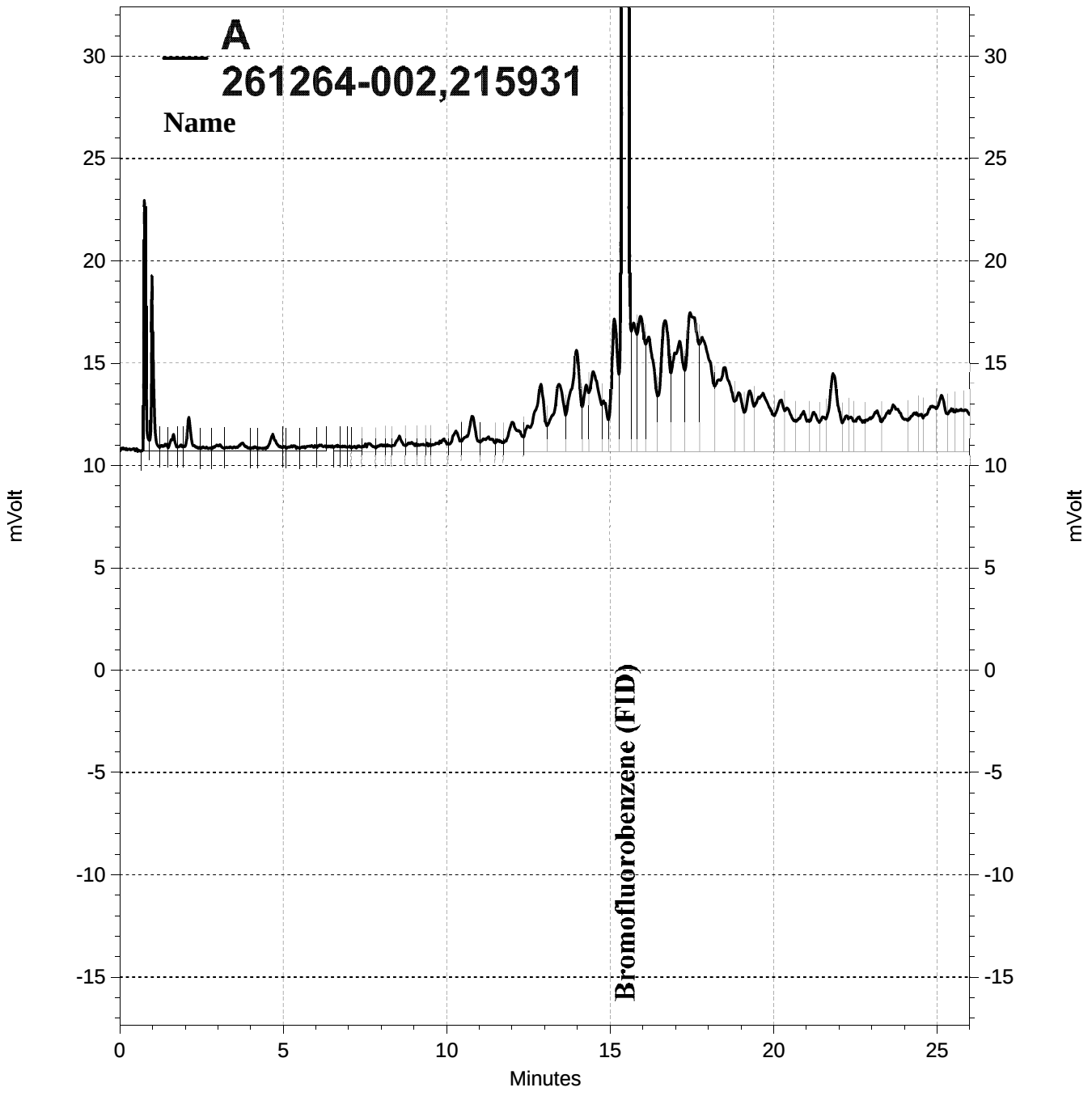
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261264-002,215931
Name
Bromofluorobenzene (FID)
mVolt
mVolt
Minutes
30
25
20
15
10
5
0
-5
-10
-15
0
5
10
15
20
25
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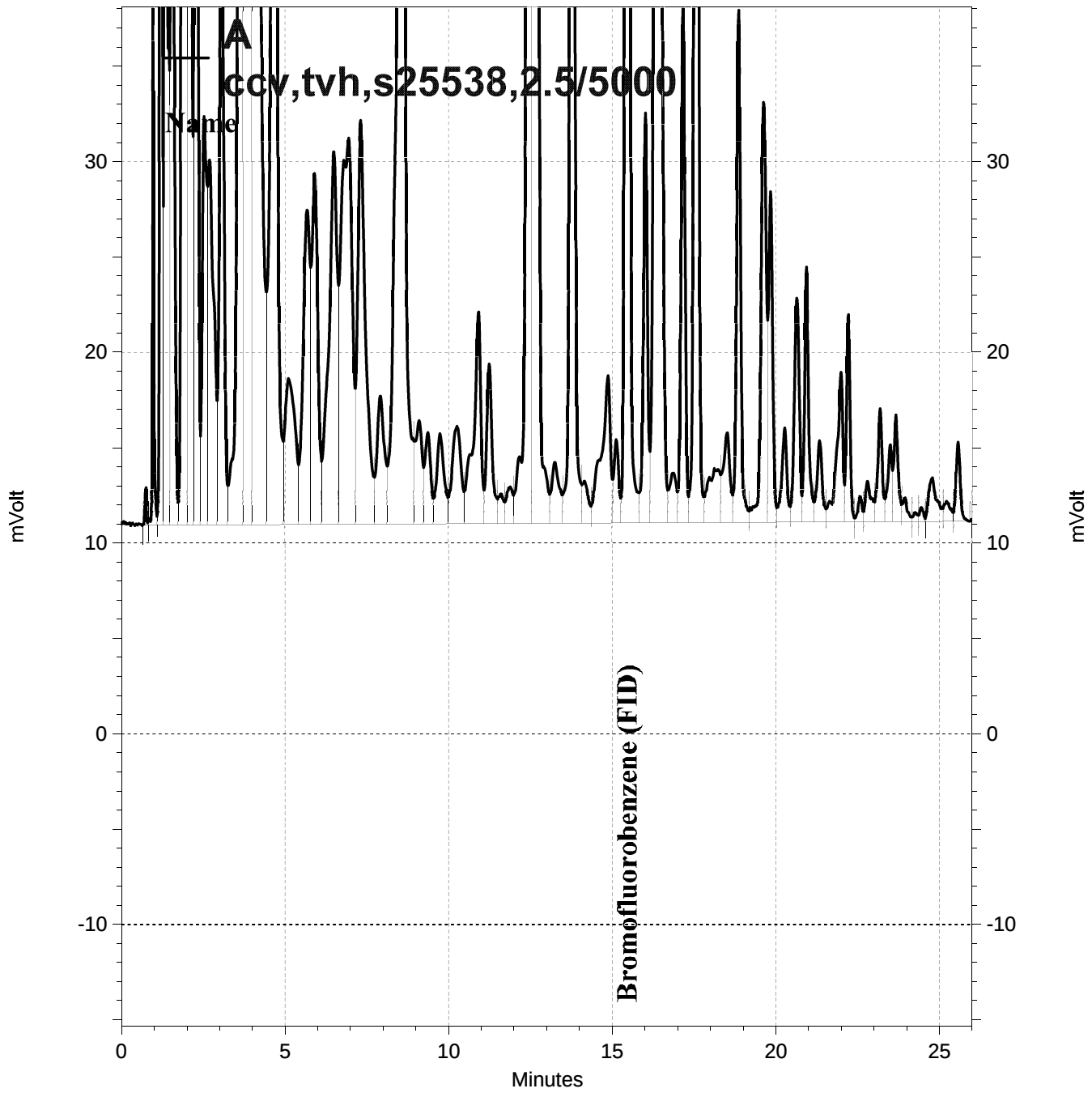

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Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	261264	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3520C
Project#:	2013-094	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	09/26/14
Units:	ug/L	Received:	09/26/14
Diln Fac:	1.000	Prepared:	09/29/14
Batch#:	215897	Analyzed:	09/30/14

Field ID: APEX-MW1-092614 Lab ID: 261264-001
Type: SAMPLE Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	350	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
o-Terphenyl	106	66-129

Field ID: APEX-MW1-092614-FD Lab ID: 261264-002
Type: SAMPLE Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	350	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
o-Terphenyl	105	66-129

Type: BLANK Cleanup Method: EPA 3630C
Lab ID: QC759614

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
o-Terphenyl	104	66-129

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	261264	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3520C
Project#:	2013-094	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	215897
Units:	ug/L	Prepared:	09/29/14
Diln Fac:	1.000	Analyzed:	09/30/14

Type: BS Cleanup Method: EPA 3630C
Lab ID: QC759615

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,334	93	61-120

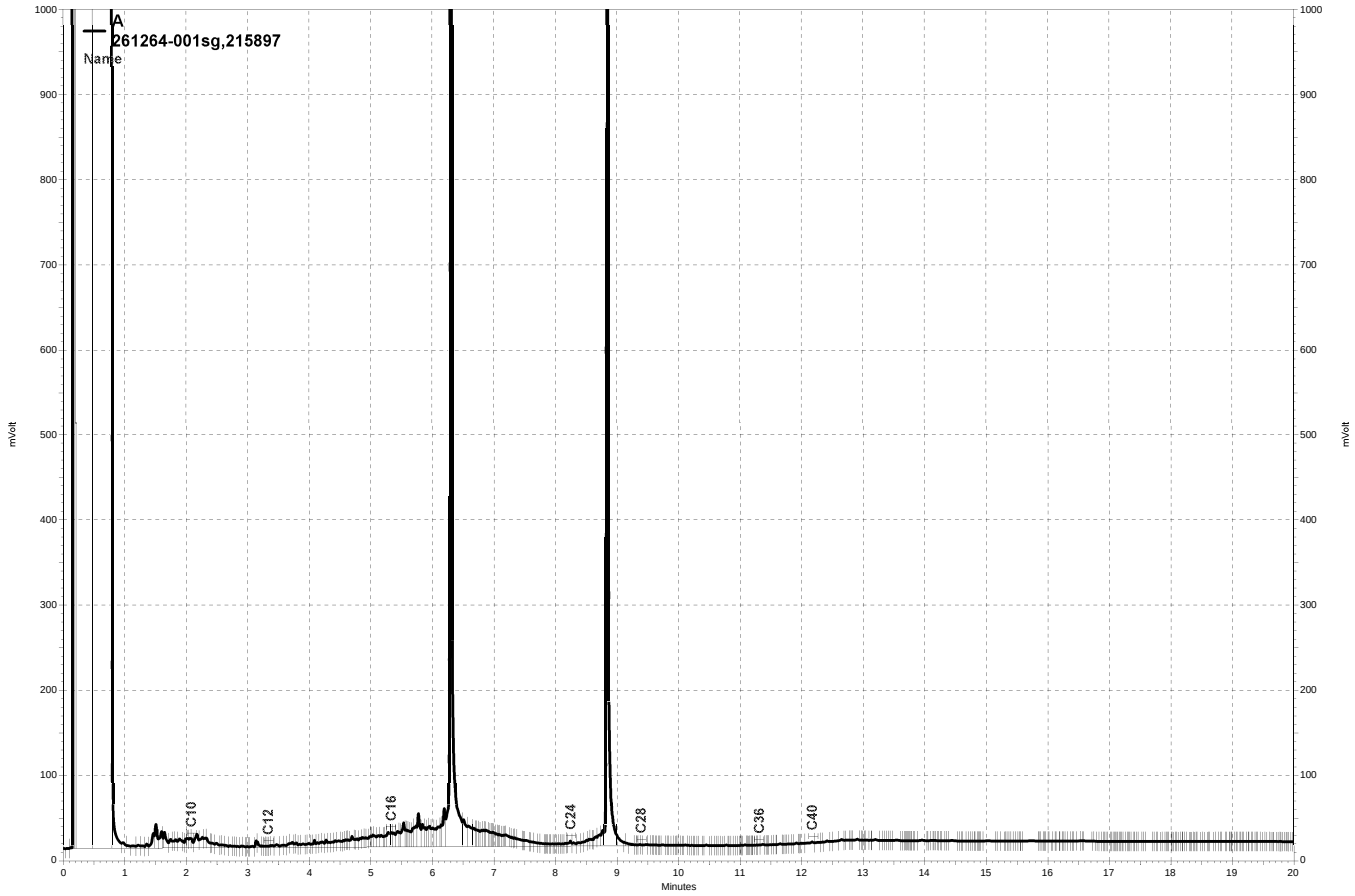
Surrogate	%REC	Limits
o-Terphenyl	124	66-129

Type: BSD Cleanup Method: EPA 3630C
Lab ID: QC759616

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,277	91	61-120	2	45

Surrogate	%REC	Limits
o-Terphenyl	117	66-129

RPD= Relative Percent Difference



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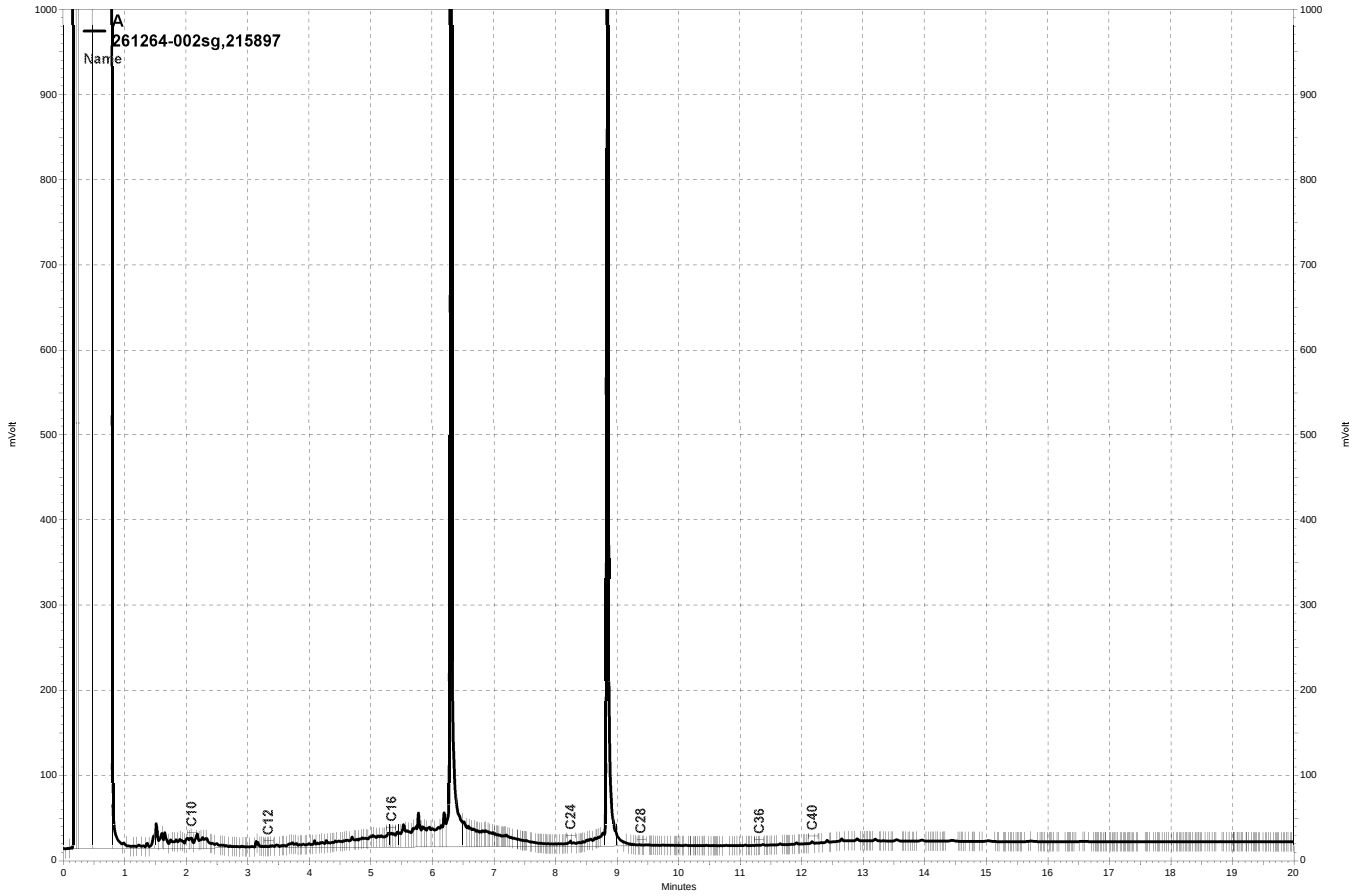

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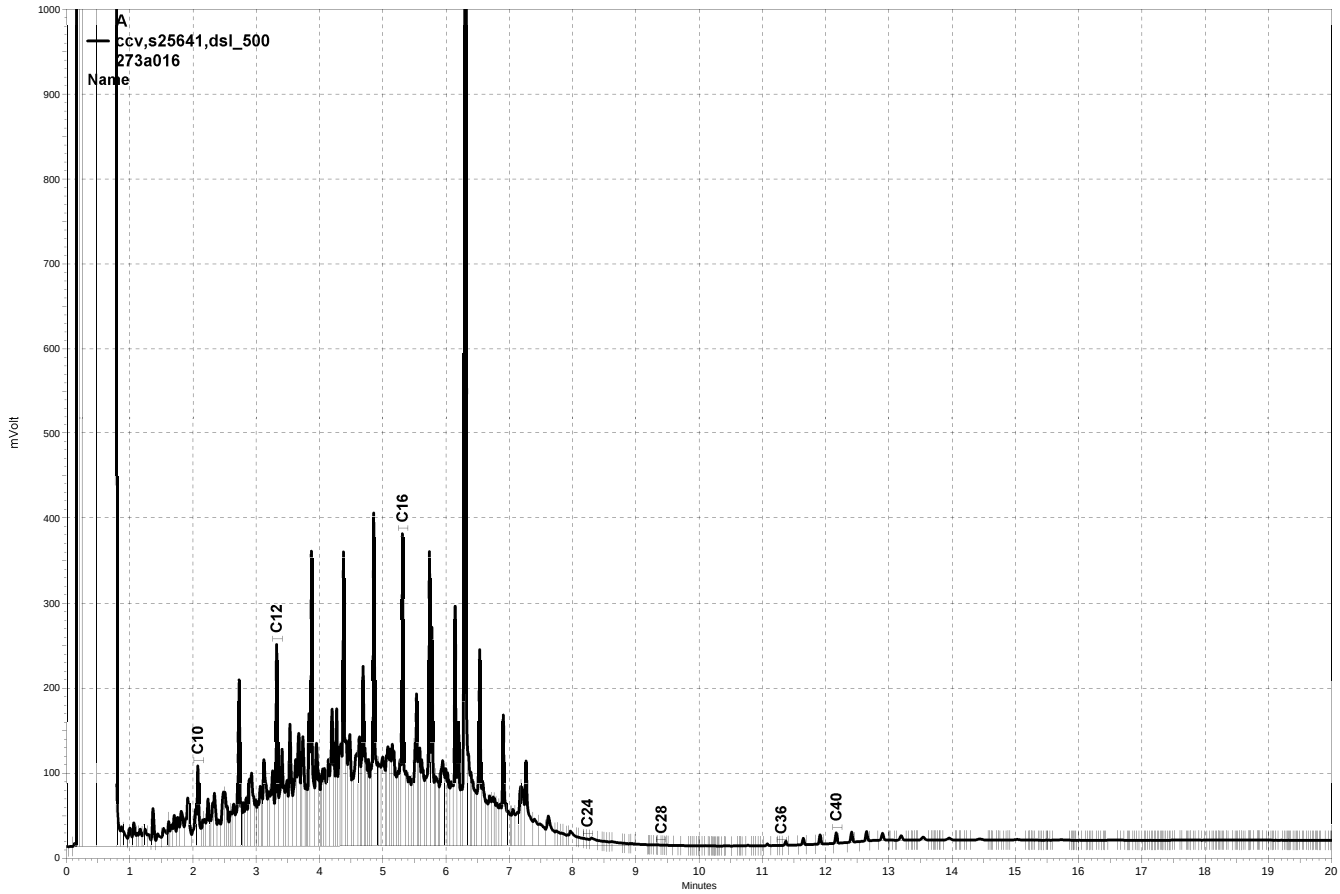

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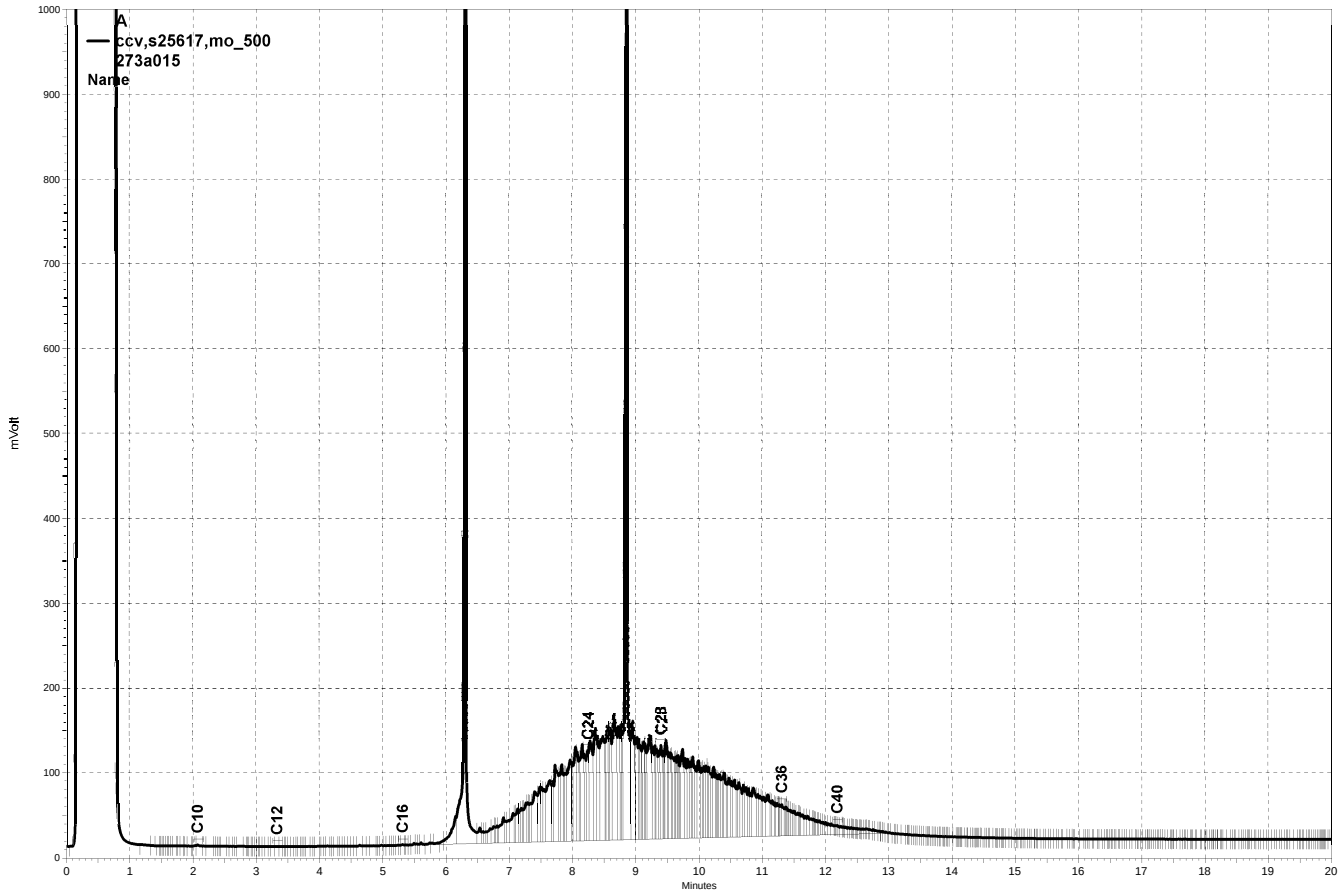

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Curtis & Tompkins, Ltd.

Total Dissolved Solids (TDS)

Lab #:	261264	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	METHOD
Project#:	2013-094	Analysis:	SM2540C
Analyte:	Total Dissolved Solids	Sampled:	09/26/14
Matrix:	Water	Received:	09/26/14
Units:	mg/L	Prepared:	10/01/14
Diln Fac:	1.000	Analyzed:	10/02/14
Batch#:	215970		

Field ID	Type	Lab ID	Result	RL
APEX-MW1-092614	SAMPLE	261264-001	1,220	10
APEX-MW1-092614-FD	SAMPLE	261264-002	1,280	10
	BLANK	QC759875	ND	10

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Dissolved Solids (TDS)

Lab #:	261264	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	METHOD
Project#:	2013-094	Analysis:	SM2540C
Analyte:	Total Dissolved Solids	Batch#:	215970
Field ID:	APEX-MW1-092614	Sampled:	09/26/14
MSS Lab ID:	261264-001	Received:	09/26/14
Matrix:	Water	Prepared:	10/01/14
Units:	mg/L	Analyzed:	10/02/14
Diln Fac:	1.000		

Type	Lab ID	MSS Result	Spiked	Result	RL	%REC	Limits	RPD	Lim
LCS	QC759876		104.0	100.0		96	74-120		
SDUP	QC759877	1,218		1,238	10.00			2	5

RL= Reporting Limit
RPD= Relative Percent Difference