



City of Emeryville

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By Alameda County Environmental Health 8:58 am, Apr 08, 2016

March 31, 2016

Mr. Mark Detterman, PG, CEG
Senior Hazardous Materials Specialist
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502

Subject: Data Gap Investigation Report
for City of Emeryville Fire Station #2 UST Site

Reference: Alameda County Fuel Leak Case No. RO0000061
GeoTracker Global ID T0600101925

Dear Mr. Detterman:

The City of Emeryville is pleased to submit the attached Data Gap Investigation Report for the City-owned Fire Station #2 site. The report was prepared by OTG EnviroEngineering Solutions, Inc. (OTG) under a consultant service contract with the City of Emeryville.

Certification

I certify under penalty of law that this document and all attachments are prepared by OTG under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Please contact Mr. Xinggang Tong at (510) 465-8982 or myself at (510) 596-3728 if you have questions or comments.

Sincerely,
City of Emeryville

Nancy Humphrey
Environmental Programs Analyst

March 31, 2016

Mr. Mark Detterman, PG, CEG
Senior Hazardous Materials Specialist
Alameda County Environmental Health
1131 Harbor Bay Parkway
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GeoTracker Global ID T0600101925

Dear Mr. Detterman:

OTG EnviroEngineering Solutions, Inc. (OTG) is pleased to present this *Data Gap Investigation Report* for the City of Emeryville Fire Station #2 UST Site. Field sampling was conducted on January 29, 2016. The scope of the investigation followed the *Data Gap Investigation Work Plan* (OTG, May 15, 2015) and the approval letter from Alameda County Environmental Health (ACEH, July 7, 2015).

Certification

I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Please call Xinggang Tong at (510) 465-8982 or Nancy Humphrey at (510) 596-3728 if you have questions or comments.

Sincerely,
OTG EnviroEngineering Solutions, Inc.



Xinggang Tong, PhD, PE
Project Manager



Attachments

DATA GAP INVESTIGATION REPORT

CITY OF EMERYVILLE FIRE STATION #2 UST SITE

6303 HOLLIS STREET EMERYVILLE, CALIFORNIA

**Alameda County Fuel Leak Case No. RO0000061
Geotracker Global ID T0600101925**

Prepared for

**City of Emeryville
Public Works Department
1333 Park Avenue
Emeryville, CA94608**

March 31, 2016

Prepared by

OTG
**Enviroengineering
Solutions, Inc.**

7700 Edgewater Drive, Suite 260
Oakland, CA 94621

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1 INTRODUCTION

This report presents the results of field investigation conducted at the City of Emeryville Fire Station #2 located at 6303 Hollis Street, Emeryville, California (the Site or the Fire Station) on January 29, 2016. The scope of the investigation is discussed in *Data Gap Investigation Work Plan* (OTG, May 15, 2015) and incorporates comments in the approval letter from Alameda County Environmental Health (ACEH, July 7, 2015). The purpose of the investigation is to determine current levels of petroleum hydrocarbons identified in on-site subsurface soil and groundwater in 1990s. Specific activities performed include drilling and collection of soil samples from three locations and laboratory analysis of the collected samples for Total Petroleum Hydrocarbons (TPH) as gasoline (TPH-g) and as diesel (TPH-d), and for Benzene, Toluene, Ethylbenzene, & Xylenes (BTEX), Methyl Tert Butyl Ether (MTBE), and Naphthalene. Groundwater was not encountered during the drilling and thus, no groundwater samples were collected during this investigation.

2. BACKGROUND

The Fire Station is located at the northwest corner of Hollis and 63rd Streets in Emeryville, as shown in Figure 1, in a mixed use area with light commercial and residential structures in the area. The Site is located at an approximate elevation of 15 feet above mean seal level and about one half mile east of the edge of San Francisco Bay.

Two underground storage tanks (UST), one 1,000-gallon gasoline UST and one 1,000-gallon diesel UST, were removed from the site in October 1995. A 2"-diameter groundwater monitoring well (MW-1) was installed in the downgradient direction within 15 feet of the former gasoline UST in March 1997. The well was monitored quarterly from the third Quarter 1997 through the second Quarter 1998 and again in the second Quarter 2010. Soil and groundwater investigations conducted prior to, during, and after the UST removal indicated the impact of TPH-g and BTEX in shallow groundwater and soil. Historic investigation results are summarized in tables in Appendix A. Sampling locations are shown on Figure 2.

3. FIELD ACTIVITIES

Boreholes SB-17 through SB-19 were drilled and sampled on January 29, 2016 at the locations shown on Figure 2. SB-17 and SB-18 were designed to verify the detection of TPH-g at 29 mg/L in a grab groundwater from SB-16 collected in March 1997, while SB-19 was designed to verify the detection of TPH-g at 480 mg/kg from a soil sample collected from SB-7 in June 1995.

Pre-drilling activities included:

- Marking drilling locations with white paint on January 13, 2016;

- Notifying Underground Service Alert for the proposed drilling activities on January 14, 2016;
- Obtaining drilling permit from Alameda County Public Works Agency, a copy of the permit is included in Appendix B;
- Arranging 1st Call Utility Locating of El Cerrito CA, a private utility surveyor, to survey underground utilities in the proposed drilling area on January 26, 2016.

PeneCore Drilling, Inc. of Woodland, California performed the drilling under the supervision of an OTG professional civil engineer. The borings were drilled using a Geoprobe™ GH40 direct push rig equipped with DT22 dual-core samplers, which has a 2 ¼" outside diameter (O.D.). Continuous soil core samples were retrieved with 3'-long, 1 3/8"-O.D clear PVC liners for inspection, lithologic logging, and analysis. The retrieved liners with core sample were first cut in 6"-long sections. Both ends of each section were screened for levels of volatile organic compounds (VOCs) with a miniRae 3000 photoionization detector (PID) equipped with a 10.6 eV lamp. The section with the highest PID reading was immediately sealed with Teflon sheeting and plastic end caps and was retained for laboratory analysis. Sections retained for laboratory analysis were sealed, labeled, wrapped individually in Zip-Lock™ plastic bags, and placed on ice in a cooler. Sections not retained for laboratory analysis were cut open for visual examination and lithologic logging. Boring logs are included in Appendix C.

It was expected to encounter groundwater between 5 to 10 feet below ground surface (bgs) based on investigations conducted on the site between 1995 and 1997. However, when SB-17 was first drilled to 15 feet bgs, there was no groundwater. It was then deepened to 20 feet bgs, and again no groundwater was encountered. The soil core sample between 9' and 10' bgs appeared wet, but no free water. SB-18 was drilled to 25 feet bgs and SB-19 was drilled to 20 feet bgs. Again no groundwater was encountered from both boreholes. Even though no free water was observed from any of the retrieved soil core samples, 10-foot section, ¾"-diameter PVC screen followed by riser PVC piping was inserted into each of the three boreholes and then the drilling core sampler was pulled out to 5 feet bgs. All boreholes were still dry after waiting between 3 and 5 hours.

After consultation with the County drilling inspector, it was decided to abandon the boreholes at 4:00 pm on the same day of drilling without further waiting for the possibility of groundwater appearance. The boreholes were backfilled by tremie with a cement grout mixture in accordance with the drilling permit specifications. Soil cuttings were placed in a 55-gallon drum for proper disposal following the receipt of laboratory analytical reports. Decontamination water generated from cleaning of drilling equipment between boreholes was placed in another 55-gallon drum for proper disposal later. The drums were labeled and left on site.

The soil samples selected for analysis were transported under chain-of-custody procedures to Curtis & Tompkins environmental laboratory in Berkeley, California. Analyses included EPA Method 8015B for TPH-g and TPH-d and EPA Method 8260B for BTEX, MTBE, and Naphthalene. Soil samples that met the following criteria were analyzed for TPH-d both with and without silica gel cleanup: 1) elevated PID readings were recorded in field; and 2) TPH-d was reported above 10 mg/kg first without silica gel cleanup.

4. RESULTS

Table 2 presents a summary of laboratory analytical results for the soil samples collected from the boreholes SB-17 through SB-19 on January 29, 2016. Laboratory analytical reports are included in Appendix D.

It appears that a thin layer of subsurface soil between 4 feet and 7 feet bgs that has been impacted with TPH-g (gasoline), BTEX, and naphthalene. Within that layer of soil, TPH-g was detected up to 490 mg/kg, benzene up to 16 ug/kg, toluene up to 480 ug/kg, ethylbenzene up to 2,700 ug/kg, total xylenes up to 12,600 ug/kg, and naphthalene up to 2,800 ug/kg. MTBE was not detected at the concentration as low as 0.4 ug/kg. A review of the laboratory provided chromatographs of the reported TPH-g samples suggests that the gasoline is relatively “old” or has been weathered, i.e. having a higher percentage of longer carbon-chain petroleum hydrocarbons (C10 to C12) as compared with a standard gasoline chromatograph. TPH-g analysis captures C7 to C12 range carbon-chain petroleum hydrocarbons.

The detection of TPH-d (diesel) appears to have no relationship with the detection of TPH-g. SB-17-4 reported 490 mg/kg TPH-g, but no detection of TPH-d; while SB-17-15 reported no detection of TPH-g, but recorded 94 mg/kg TPH-d without silica gel cleanup and 65 mg/kg TPH-d with silica gel cleanup. SB-18-4 reported 330 mg/kg TPH-g and also 110 mg/kg TPH-d without silica gel cleanup and 94 mg/kg TPH-d with silica gel cleanup. SB-17 and SB-18 were separated only by approximately 5 feet. SB-19-6 reported 460 mg/kg TPH-g, but no detection of TPH-d; while SB-19-15 reported no detection of TPH-g, but recorded 120 mg/kg TPH-d without silica gel cleanup and 94 mg/kg TPH-d with silica gel cleanup. A review of the laboratory provided chromatographs indicates that none of the soil sample chromatographs matched a standard diesel chromatograph. The reported TPH-d in soil samples appeared to having a higher percentage of shorter carbon-chain petroleum hydrocarbons (C10 to C13) than the standard diesel. TPH-d analysis captures C10 to C24 range carbon-chain petroleum hydrocarbons.

5. DISCUSSIONS

Concentrations of TPH-g and BTEX reported in this latest verification sampling program did not change significantly from the concentrations reported between 1995 and 1997. This suggests that natural attenuation is insignificant under existing site conditions. Either some forms of remedial actions or enhancements to natural attenuation may be necessary to reduce the concentration of the detected petroleum hydrocarbons to acceptable levels.

The disappearance of the shallow groundwater is likely caused by the drought conditions that have persisted in the past several years in the Bay Area and in the State of California as a whole. Although it had two months of normal rains prior to the sampling date, either the amount of the rain water is insufficient to recharge the shallow groundwater zone or the recharge has not yet reached the site subsurface.

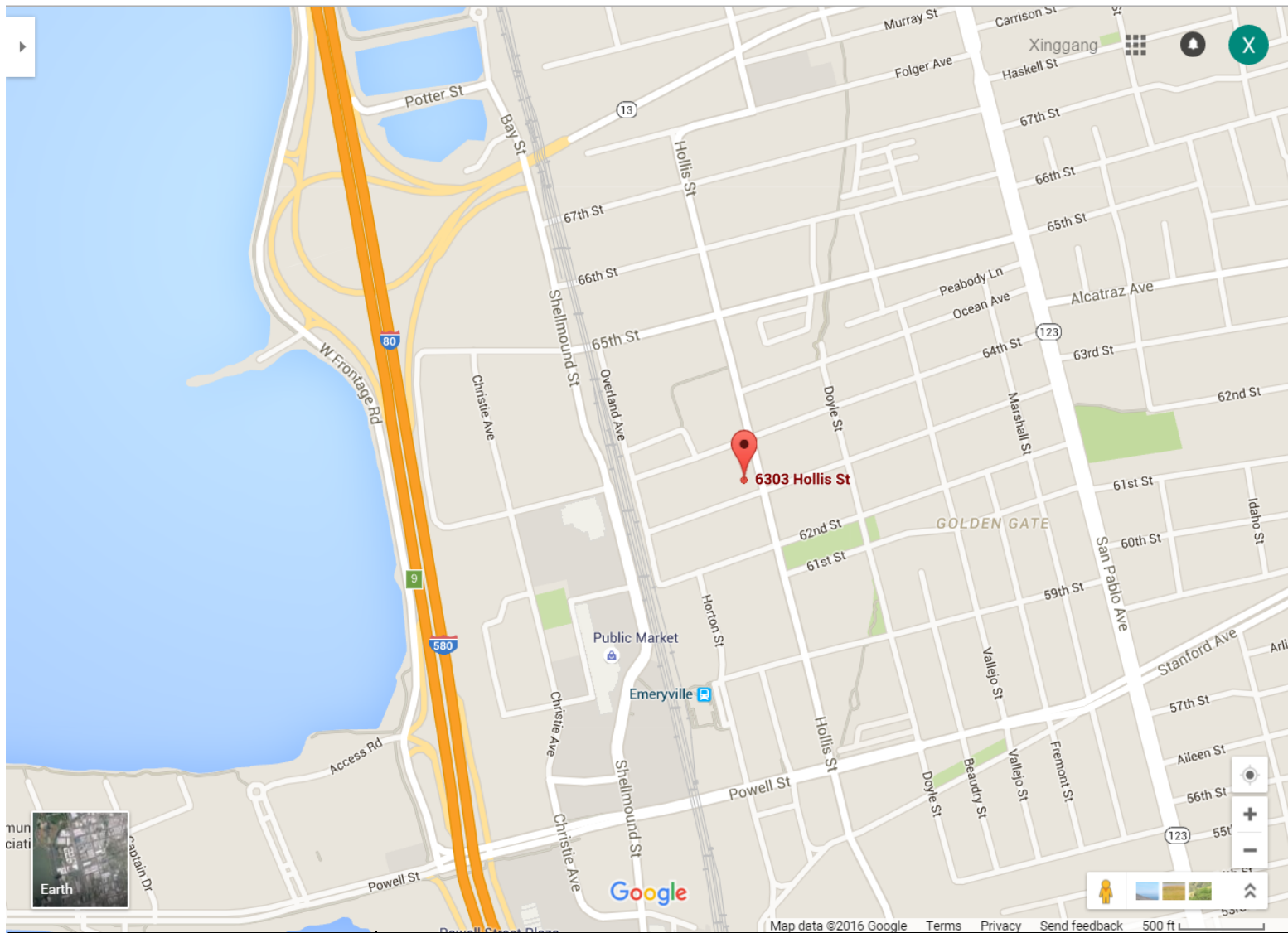
The existing groundwater monitoring well MW-1 is located in the path where heavy fire engines drive through regularly. The area where the well is located has sunk about three to four inches as observed on the drilling day, which is likely caused by the fire engines' drive-through actions over the years. The well's surface seal may thus have been compromised. It rained moderately during the time of the field drilling, and the rainwater pooled on top of the wellhead. After removing the accumulated surface rainwater and removing the well cap, water level inside the well casing was measured at 2.9 feet bgs. However, the water inside the well casing may likely come from the surface rainwater due to compromised well seal. The well was redeveloped by Kleinfelder on April 5, 2010. The well redevelopment log indicated that the turbidity of the water was still over 400 NTU (out of scale) even after surging and removing over 80 gallons of water (30+ casing volumes). This is a strong indication that the well seal and packing has been compromised. It is recommended that this well be properly destroyed and a replacement well be installed in off-traffic area.


6. REFERENCES

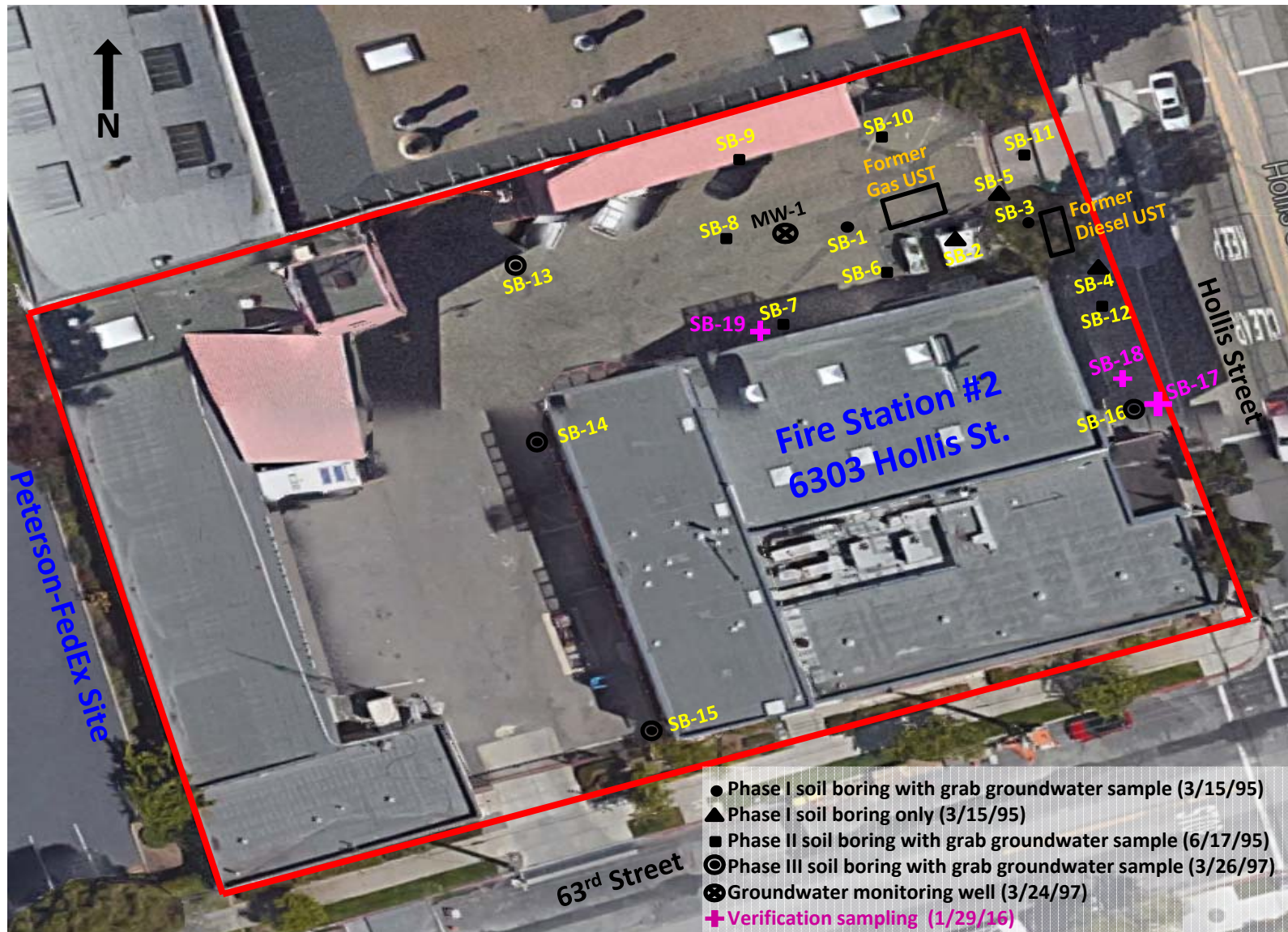
Alameda County Environmental Health, *Request for a Focused SCM and Data Gap Work Plan; Fuel Leak Case No. RO0000061 and Geotracker Global ID T0600101925, City of Emeryville Fire Station #2, 6303 Hollis Street, Emeryville, CA, December 31, 2013.*

Alameda County Environmental Health, *Modified Work Plan Approval; Fuel Leak Case No. RO0000061 and Geotracker Global ID T0600101925, City of Emeryville Fire Station #2, 6303 Hollis Street, Emeryville, CA, July 7, 2015*

OTG EnviroEngineering Solutions, Inc., *Data Gap Investigation Work Plan for City of Emeryville Fire Station #2 UST Site, May 15, 2015.*



	<p>14EMV03.2000</p>	<p>Figure 1. Site Location Map</p>
	<p>January 2016</p>	<p>Fire Station #2, 6303 Hollis Street, Emeryville California, 94608</p>



	14EMV03.2000	Figure 2. Site Plan
	January 2016	Fire Station #2, 6303 Hollis Street, Emeryville, California, 94608

TABLE 1

List of Contract Information

Site Address:
6303 Hollis Street
Emeryville, CA 94608

Site Operator:
Alameda County Fire Department
Administration Office
6363 Clark Avenue
Dublin, CA 94568
Phone (510) 632-3473/925-833-3457

Site Owner:
City of Emeryville
Attention: Ms. Nancy Humphrey
1333 Park Avenue
Emeryville, CA 94608
Phone (510)596-3728
Email: nhumphrey@emeryville.org

Site Consultant:
OTG Enviroengineering Solutions, Inc.
Attention: Mr. Xinggang Tong
7700 Edgewater Drive, Suite 260
Oakland, CA 94621
Phone (510) 465-8982
Email: xtong@otgenv.com

Lead Oversight Agency:
Alameda County of Environmental Health
Attention: Mr. Mark Detterman
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502
Phone (510)567-6876
Email: mark.detterman@acgov.org

TABLE 2
Summary of Soil Analytical Results
City of Emeryville Fire Station #2

Sample ID	Date Sampled	Sampling Depth (ft, bgs)	TPH-gas		TPH-diesel				Benzene		Toluene		Ethyl-benzene		Total Xylenes		MTBE		Naphthalene	
			(mg/kg)	note	w/out silica gel (mg/kg)	note	with silica gel (mg/kg)	note	(ug/kg)	note	(ug/kg)	note	(ug/kg)	note	(ug/kg)	note	(ug/kg)	note	(ug/kg)	note
SB-17-4	1/29/16	4.0 - 4.5	490	(a)	ND (1.0)		ND (1.0)		16	(J)	140	(J)	2,700		12,600		ND (52)		2,100	
SB-17-9	1/29/16	8.5 - 9.0	ND (1.0)		2.6	(Y)	NA		ND (0.9)		ND (0.7)		ND (0.7)		1.5	(J)	ND (1.0)		ND (1.0)	
SB-17-15	1/29/16	14.5 - 15.0	ND (1.0)		94	(b)	65	(b)	ND (0.4)		ND (0.4)		ND (0.3)		ND (0.6)		ND (0.4)		ND (0.9)	
SB-18-4	1/29/16	4.0 - 4.5	330	(a)	110	(b)	94	(b)	ND (27)		480	(J)	1,700		11,300		ND (100)		2,800	
SB-18-8	1/29/16	7.5 - 8.0	ND (1.0)		ND (1.0)		NA		1.7	(J)	ND (0.5)		ND (0.3)		ND (0.7)		ND (0.4)		ND (1.0)	
SB-18-15	1/29/16	14.5 - 15.0	ND (1.0)		1.1	(Y)	NA		ND (0.4)		ND (0.5)		ND (0.3)		ND (0.7)		ND (0.4)		ND (1.0)	
SB-18-25	1/29/16	24.5 - 25.0	ND (0.9)		ND (1.0)		NA		ND (0.4)		ND (0.5)		ND (0.3)		ND (0.7)		ND (0.4)		ND (1.0)	
SB-19-4	1/29/16	3.5 - 4.0	1.8	(a)	6.3	(Y)	2.0	(Y)	ND (0.4)		ND (0.5)		0.74	(J)	1.0	(J)	ND (0.4)		5.5	
SB-19-6	1/29/16	6.0 - 6.5	460	(a)	ND (1.0)		NA		ND (13)		ND (7.0)		720		312		ND (52)		1,800	
SB-19-15	1/29/16	14.5 - 15.0	ND (1.0)		120	(b)	94	(b)	ND (0.9)		ND (0.7)		ND (0.7)		ND (1.2)		ND (1.0)		ND (1.0)	

Notes:

(a): Weathered gasoline chromatographic pattern exhibiting a higher percentage of longer carbon-chain petroleum hydrocarbons (C10-C12).

(b): Sample exhibits chromatographic pattern which does not resemble diesel standard, with higher percentage in C10-C13 range.

(Y): Sample exhibits chromatographic pattern which does not resemble diesel standard.

(J): Estimated value which is below reporting limit (RL), but above method detection limit (MDL). RL was raised due to dilution factors.

APPENDIX A

Historical Soil and Groundwater Investigation Data

TABLE 1
HISTORIC GROUNDWATER DATA
CITY OF EMERYVILLE FIRE STATION NO. 2

Sample No.	Date Sampled	Water level		TPH ^a Gasoline (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (ug/L)	Total Lead (ug/L)	Notes
		TOC (ft)	MSL (ft)								
MW-1	6/2/1998	3.06	13.96	0.078	34	ND (5)	ND (5)	ND (5)	1100	NA	2nd quarter 98
Trip Blank	6/2/1998			ND (0.05)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2)	NA	2nd quarter 98
MW-1	3/13/1998	3.02	14.00	0.76	66	5.7	6.1	17	720	NA	1st quarter 98
Trip Blank	3/13/1998			ND (0.05)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (5)	NA	1st quarter 98
MW-1	12/5/1997	3.02	14.00	0.06	0.7	ND (0.5)	ND (0.5)	ND (2)	120	ND (40)	4th quarter 97
Trip Blank	12/5/1997			ND (0.05)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2)	ND (5)	NA	4th quarter 97
MW-1	9/26/1997	4.36	12.66	ND (0.05)	1.0	ND (0.5)	0.6	ND (2)	18	ND (40)	3rd quarter 97
Trip Blank	9/26/1997			ND (0.05)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2)	ND (5)	NA	3rd quarter 97
MW-1	4/7/2010			2.3	98	25	80	90	69	NA	TPH-d = 0.38
SB-3	3/15/1995	NA	NA	NA	220	3,800	2,500	14,000	NA	NA	Phase I
SB-1	3/15/1995	NA	NA	0.99	6.1	40	33	160	NA	NA	investigation
Trip Blank	3/15/1995	NA	NA	NA	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	NA	NA	
SB-6-W	6/17/1995	NA	NA	0.41	24	27	27	110	NA	NA	Phase II
SB-7-W	6/17/1995	NA	NA	5.50	36	30	180	510	NA	NA	investigation
SB-8-W	6/17/1995	NA	NA	0.46	18	36	27	100	NA	NA	
SB-9-W	6/17/1995	NA	NA	ND (0.05)	ND (0.5)	ND (0.5)	0.7	3.7	NA	NA	Phase II
SB-10-W	6/17/1995	NA	NA	ND (0.05)	ND (0.5)	ND (0.5)	0.6	3.3	NA	NA	investigation
SB-11-W	6/17/1995	NA	NA	0.23	12	8.6	12	44	NA	NA	
SB-12-W	6/17/1995	NA	NA	0.97	40	130	38	170	NA	NA	Phase II
Trip Blank	6/17/1995	NA	NA	ND (0.05)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	NA	NA	investigation
SB-13-W	3/26/1997	NA	NA	ND (0.05)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (5)	NA	additional
SB-14-W	3/26/1997	NA	NA	ND (0.05)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (5)	NA	investigation
SB-15-W	3/26/1997	NA	NA	ND (0.05)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (5)	NA	
SB-16-W	3/26/1997	NA	NA	29	430	1,200	1,000	4,700	ND (500)	NA	additional
Trip Blank	3/26/1997	NA	NA	ND (0.05)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (5)	NA	investigation

Notes: ^a Total petroleum hydrocarbons by EPA Method 8015 (Mod.), quantified as gasoline.
Benzene, toluene, ethylbenzene and xylenes by EPA Method 8020.

TABLE 2
HISTORIC SOIL ANALYTICAL DATA
CITY OF EMERYVILLE
FIRE STATION No. 2

Sample No.	Date Sampled	Sampling Depth	TPH ^a Gasoline (mg/kg)	TPH ^b Diesel (mg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethylbenzene (µg/kg)	Total Xylenes (µg/kg)	MTBE (ug/kg)	Total Lead (mg/kg)	Notes
SB-1-2'	3/15/95	2'-2.5'	2.4	NA	280	12	200	370	NA	NA	Phase I investigation
SB-1-5'	3/15/95	5'-5.5'	540	NA	ND (1,000)	7,000	10,000	51,000	NA	NA	
SB-1-10'	3/15/95	10'-10.5'	ND (1.0)	NA	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	NA	NA	
SB-2-6'	3/15/95	6'-6.5'	3.0	NA	630	5.7	ND (5.0)	15	NA	NA	Phase I investigation
SB-2-10'	3/15/95	10'-10.5'	ND (1.0)	NA	110	ND (5.0)	9.7	6.1	NA	NA	
SB-3-6'	3/15/95	6'-6.5'	NA	ND (1.0)	420	11,000	5,500	27,000	NA	NA	Phase I investigation
SB-3-10'	3/15/95	10'-10.5'	NA	ND (1.0)	47	81	60	80	NA	NA	
SB-4-6'	3/15/95	6'-6.5'	NA	ND (1.0)	ND (50)	54	1,100	3,300	NA	NA	Phase I investigation
SB-4-11'	3/15/95	11'-11.5'	NA	ND (1.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	NA	NA	
SB-5-5.5'	3/15/95	5.5'-6'	NA	ND (1.0)	240	170	2,300	8,200	NA	NA	Phase I investigation
SB-5-10'	3/15/95	10'-10.5'	NA	ND (1.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	NA	NA	
SB-6-5.5	6/17/95	5.5'-6'	440	NA	1,200	4,900	8,600	47,000	NA	NA	Phase II investigation
SB-6-11	6/17/95	11'-11.5'	ND (1.0)	NA	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	NA	NA	
SB-7-5.5	6/17/95	5.5'-6'	480	NA	690	760	7,500	28,000	NA	NA	Phase II investigation
SB-7-11	6/17/95	11'-11.5'	ND (1.0)	NA	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	NA	NA	
SB-8-5.5	6/17/95	5.5'-6'	120	NA	190	230	1,500	3,500	NA	NA	Phase II investigation
SB-8-11	6/17/95	11'-11.5'	ND (1.0)	NA	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	NA	NA	

TABLE 2
HISTORIC SOIL ANALYTICAL DATA
CITY OF EMERYVILLE
FIRE STATION No. 2

Sample No.	Date Sampled	Sampling Depth	TPH ^a Gasoline (mg/kg)	TPH ^b Diesel (mg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethylbenzene (µg/kg)	Total Xylenes (µg/kg)	MTBE (ug/kg)	Total Lead (mg/kg)	Notes
SB-9-5.5	6/17/95	5.5'-6'	ND (1.0)	NA	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	NA	NA	Phase II investigation
SB-9-13	6/17/95	13'-13.5'	ND (1.0)	NA	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	NA	NA	
SB-10-11.5	6/17/95	11.5'-12'	ND (1.0)	NA	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	NA	NA	Phase II investigation
SB-11-5.5	6/17/95	5.5'-6'	170	NA	1,200	5,300	3,300	17,000	NA	NA	Phase II investigation
SB-11-11	6/17/95	11'-11.5'	ND (1.0)	NA	ND (5.0)	ND (5.0)	5.7	26	NA	NA	
SB-12-5.5	6/17/95	5.5'-6'	ND (1.0)	NA	8.3	15	ND (5.0)	24	NA	NA	Phase II investigation
SB-12-11.5	6/17/95	11.5'-12'	ND (1.0)	NA	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	NA	NA	
GE-1-7	10/12/95	7'-7.5'	380	NA	340	4	8,700	42,000	ND (3900)	NA	Tank removal
GW-1-7	10/12/95	7'-7.5'	ND (1.0)	NA	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	280	NA	
Stock-Gas-1	10/12/95		140	NA	ND (100)	220	1,600	6,600	ND (370)	NA	Tank removal
Stock-Gas-2	10/12/95		560	NA	580	1,800	12,000	56,000	ND (1300)	NA	
Stock-Diesel-1	10/12/95		NA	ND (1.0)	NA	NA	NA	NA	NA	NA	
DN-1-7.5	10/12/95	7.5'-8'	NA	ND (1.0)	NA	NA	NA	NA	NA	NA	Tank removal
DS-1-7.5	10/12/95	7.5'-8'	NA	ND (1.0)	NA	NA	NA	NA	NA	NA	
SB-13-5	3/25/97	5'-5.5'	ND (0.5)	NA	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	NA	Mar-97 investigation
SB-13-10	3/25/97	10'-10.5'	ND (0.5)	NA	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	21	2	

TABLE 2
HISTORIC SOIL ANALYTICAL DATA
CITY OF EMERYVILLE
FIRE STATION No. 2

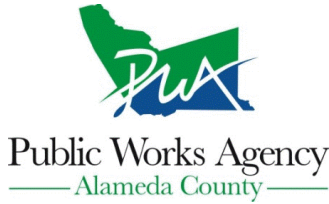
Sample No.	Date Sampled	Sampling Depth	TPH ^a Gasoline (mg/kg)	TPH ^b Diesel (mg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethylbenzene (µg/kg)	Total Xylenes (µg/kg)	MTBE (ug/kg)	Total Lead (mg/kg)	Notes
SB-14-5	3/25/97	5'-5.5'	ND (0.5)	NA	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	NA	Mar-97 investigation
SB-14-10	3/25/97	10'-10.5'	ND (0.5)	NA	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	4	
SB-15-5	3/25/97	5'-5.5'	ND (0.5)	NA	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	NA	Mar-97 investigation
SB-15-10	3/25/97	10'-10.5'	ND (0.5)	NA	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	7	
SB-16-5	3/25/97	5'-5.5'	45	NA	ND (50)	60	260	1,200	ND (50)	NA	Mar-97 investigation
SB-16-12	3/25/97	12'-12.5'	ND (0.5)	NA	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	7	
MW-1-6	3/24/97	6'-6.5'	270	NA	ND (500)	1,300	4,200	21,000	ND (500)	8.2	Mar-97 investigation
MW-1-11	3/24/97	11'-11.5'	ND (0.5)	NA	ND (5.0)	7	9	38	ND (5.0)	3.5	
MW-1-16	3/24/97	16'-16.5'	ND (0.5)	NA	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	5.4	

Notes: ^a Total petroleum hydrocarbons by EPA Method 8015 (Mod.), quantified as gasoline.
^b Total petroleum hydrocarbons by EPA Method 8015 (Mod.), quantified as diesel.
Benzene, toluene, ethylbenzene and xylenes by EPA Method 8020.
NA - Not analyzed; ND - Not detected at or above the detection limit given in parentheses.

APPENDIX B

Copy of Drilling Permit

Alameda County Public Works Agency - Water Resources Well Permit



399 Elmhurst Street
Hayward, CA 94544-1395
Telephone: (510)670-6633 Fax:(510)782-1939

Application Approved on: 01/14/2016 By jamesy

Permit Numbers: W2016-0017
Permits Valid from 01/25/2016 to 01/29/2016

Application Id: 1452306919521
Site Location: 6303 Hollis Street, Emeryville, CA 94608

City of Project Site:Emeryville

Project Start Date: 01/25/2016
Assigned Inspector: Contact Lindsay Furuyama at (925) 956-2311 or Lfuruyama@groundzonees.com

Completion Date:01/29/2016

Applicant: OTG EnviroEngineering Solutions Inc -
Xinggang Tong
7700 Edgewater Drive, Suite 260, Oakland, CA 94621

Phone: 510-465-8982

Property Owner: Nancy Humphrey
City of Emeryville, 1333 Park Avenue, Emeryville, CA 94608

Phone: 510-596-3728

Client: Xinggang Tong
OTG EnviroEngineering, 7700 Edgewater Dr, Ste 260, Oakland, CA 94621

Phone: 510-465-8982

Contact: Xinggang Tong

Phone: 510-465-8982
Cell: 510-612-0857

	Total Due:	\$265.00
Receipt Number: WR2016-0011	Total Amount Paid:	\$265.00
Payer Name : Xinggang Tong	Paid By: VISA	PAID IN FULL

Works Requesting Permits:

Borehole(s) for Investigation-Contamination Study - 3 Boreholes
Driller: PeneCore Drilling Inc - Lic #: 906899 - Method: DP

Work Total: \$265.00

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2016-0017	01/14/2016	04/24/2016	3	2.00 in.	18.00 ft

Specific Work Permit Conditions

1. Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings. All cuttings remaining or unused shall be containerized and hauled off site. The containers shall be clearly labeled to the ownership of the container and labeled hazardous or non-hazardous.

2. Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.

3. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.

4. Prior to any drilling activities, it shall be the applicant's responsibility to contact and coordinate an Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits or agreements required for that Federal, State, County or City, and follow all City or County Ordinances. No work shall begin until all the permits and requirements have been approved or obtained. It shall also be the applicants responsibilities to provide to the Cities

Alameda County Public Works Agency - Water Resources Well Permit

or to Alameda County an Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.

5. Applicant shall contact assigned inspector listed on the top of the permit at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

6. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of \$500.00.

7. Electronic Reporting Regulations (Chapter 30, Division 3 of Title 23 & Division 3 of Title 27, CCR) require electronic submission of any report or data required by a regulatory agency from a cleanup site. Submission dates are set by a Regional Water Board or by a regulatory agency. Once a report/data is successfully uploaded, as required, you have met the reporting requirement (i.e. the compliance measure for electronic submittals is the actual upload itself). The upload date should be on or prior to the regulatory due date.

8. NOTE:

Under California laws, the owner/operator are responsible for reporting the contamination to the governmental regulatory agencies under Section 25295(a). The owner/operator is liable for civil penalties under Section 25299(a)(4) and criminal penalties under Section 25299(d) for failure to report a leak. The owner/operator is liable for civil penalties under Section 25299(b)(4) for knowing failure to ensure compliance with the law by the operator. These penalty provisions do not apply to a potential buyer.

9. Permit is valid only for the purpose specified herein. No changes in construction procedures, as described on this permit application. Boreholes shall not be converted to monitoring wells, without a permit application process.

APPENDIX C

Boring Logs

BORING LOG

Site: **6303 Hollis St., Emeryville, CA 94608**
Client: **City of Emeryville**
Project Number: **14EMV03.2000**
Date(s) Drilled: **01/29/16**
Date(s) Installed: **01/29/16**
Drilling Co./Driller: **PeneCore Drilling**

Ground Elevation: **NA**
T.O.C. Elevation: _____
Coordinates: _____
Drilling Method: **Direct Push, Geoprobe GH40 Rig**
Borehole Total Depth: **20 feet**
Final Borehole Diameter: **2.5 inches**

Drilling Summary: Advanced boring to target depth using direct push Geoprobe GH40 rig equipped with 2.5-inch OD dual-core sampling rods. Inserted 3/4"-diameter Schedule 40 PVC casing and 0.01-inch slot screen (20 to 10 feet bgs) inside outer core and then pulled the outer core sampler to 5 feet bgs to allow potential groundwater from 5 to 20 feet bgs to accumulate inside borehole. Tremie grout the borehole with cement at approx 4 pm.

Well Construction Details	Sample No.	Sample Interval	PID Reading, ppm	Recovery	Blow Counts	Odor	Depth (ft)	Graphic Log	LITHOLOGY/REMARKS
			0.2				1	CONCRETE	0- 0.5' concrete
							2		0.5 - 2' base rock with fines (GM), reddish brown, limited free water seeping out of base rock hand auger to 2'
			1	100			3		2 - 4' clay with some gravels (CL), greenish gray, moist, medium stiff
	SB-17-4		95			yes	4		4 - 5.5' sand-silt-clay mixture with some gravels (SC), gray, moist, medium stiff, petroleum odor
			50			yes	5		
			1	100			6		5.5 - 13' silty/sandy clay (CL), gray to brown, moist, & stiff
			0.6				7		
			0.9	100			8		
	SB-17-9		0.9	100			9		appears wet around 10.5', but no free water
				100			10		
			0.9				11		
			0.9	100			12		13 - 16' clayey sand to sand-clay mixture (SC), light brown to brown, moist, & stiff
	SB-17-15		0.4				13		
				100			14		
			0.1	100			15		16 - 20' silty/sandy clay (CL), light brown to brown, moist, & stiff
				100			16		
			0.4				17		
				100			18		appears wet around 19', but no free water
				100			19		
			0.4				20		
							21		Bottom of boring at 20 feet no groundwater after 5 hrs of borehole opening
							22		
							23		
							24		
							25		

BORING LOG

Boring No. **SB-18**
Well No. _____
Sheet 1 of 1

Site: **6303 Hollis St., Emeryville, CA 94608**
Client: **City of Emeryville**
Project Number: **14EMV03.2000**
Date(s) Drilled: **01/29/16**
Date(s) Installed: **01/29/16**
Drilling Co./Driller: **PeneCore Drilling**

Ground Elevation: **NA**
T.O.C. Elevation: _____
Coordinates: _____
Drilling Method: **Direct Push, Geoprobe GH40 Rig**
Borehole Total Depth: **25 feet**
Final Borehole Diameter: **2.5 inches**

Drilling Summary: Advanced boring to target depth using direct push Geoprobe GH40 rig equipped with 2.5-inch OD dual-core sampling rods. Inserted 3/4"-diameter Schedule 40 PVC casing and 0.01-inch slot screen (25 to 10 feet bgs) inside outer core and then pulled the outer core sampler to 5 feet bgs to allow potential groundwater from 5 to 25 feet bgs to accumulate inside borehole. Tremie grout the borehole with cement at approx 4 pm.

Well Construction Details	Sample No.	Sample Interval	PID Reading, ppm	Recovery	Blow Counts	Odor	Depth (ft)	Graphic Log	LITHOLOGY/REMARKS
							1	CONCRETE	0- 0.5' concrete
			5				2		0.5 - 2' base rock with fines (GM), reddish brown, limited free water seeping out of base rock hand auger to 2'
				100			3		2 - 3.5' clay with some gravels (CL), greenish gray, moist, medium stiff
	SB-18-4		50			yes	4		
			65			yes	5		3.5 - 6' sand-silt-clay mixture with gravels (SC), gray, moist, medium stiff, petroleum odor
			60			yes	6		
			5	100			7		6 - 12.5' silty/sandy clay (CL), gray to yellowish brown, moist, & stiff
			1				8		
	SB-18-8		1	100			9		
			1				10		
			1	100			11		
			1				12		
			1	100			13		
			1				14		12.5 - 19' clayey sand to sand-clay mixture (SC), yellowish brown, moist, & stiff
	SB-18-15		1	100			15		
			0.5				16		
			0.5	100			17		
			0.2				18		
			0.2	100			19		
			0.2				20		19 - 25' silty/sandy clay (CL), gray to yellowish brown, moist, stiff at 19' and becomes softer towards 25'
			0.2	100			21		
			0.2				22		
			0.2	100			23		
			0.2				24		
	SB-18-25		0.2	100			25		Bottom of boring at 25 feet, no groundwater after 3 hrs of borehole opening

BORING LOG

Boring No. **SB-19**
Well No. _____
Sheet 1 of 1

Site: **6303 Hollis St., Emeryville, CA 94608**
Client: **City of Emeryville**
Project Number: **14EMV03.2000**
Date(s) Drilled: **01/29/16**
Date(s) Installed: **01/29/16**
Drilling Co./Driller: **PeneCore Drilling**

Ground Elevation: **NA**
T.O.C. Elevation: _____
Coordinates: _____
Drilling Method: **Direct Push, Geoprobe GH40 Rig**
Borehole Total Depth: **20 feet**
Final Borehole Diameter: **2.5 inches**

Drilling Summary: Advanced boring to target depth using direct push Geoprobe GH40 rig equipped with 2.5-inch OD dual-core sampling rods. Inserted 3/4"-diameter Schedule 40 PVC casing and 0.01-inch slot screen (20 to 10 feet bgs) inside outer core and then pulled the outer core sampler to 5 feet bgs to allow potential groundwater from 5 to 20 feet bgs to accumulate inside borehole. Tremie grout the borehole with cement at approx 4 pm.

Well Construction Details	Sample No.	Sample Interval	PID Reading, ppm	Recovery	Blow Counts	Odor	Depth (ft)	Graphic Log	LITHOLOGY/REMARKS
							1	Asphalt	0- 0.5' asphalt
							2		0.5 - 1.5' base rock with fines (GM), reddish brown hand auger to 1.5'
			1.5				3		1.5 - 3' clay with some gravels (CL), dark brown, moist, medium stiff
	SB-19-4		2	80			4		3 - 7' sand-silt-clay mixture with some gravels (SC), greenish gray, moist, medium stiff, petroleum odor around 6'
			2				5		
			15				6		
	SB-19-6		50			yes	7		
			25	100			8		7 - 20' silty/sandy clay (CL), occasionally with minor gravels
			1.7				9		grayish brown, stiff
				100			10		
			0.5				11		
				100			12		brown and yellow mottled, medium stiff, moist
			0.5				13		
				100			14		
	SB-19-15						15		
			0.2				16		yellowish brown, stiff
				100			17		softer around 17', moist
			0.2				18		
				100			19		
			0.1				20		relatively dry and stiff at 20' bottom of boring at 20 feet, no groundwater after 3 hrs of borehole opening
							21		
							22		
							23		
							24		
							25		

APPENDIX D

Laboratory Analytical Reports for
January 29, 2016 Soil Samples



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 273735
ANALYTICAL REPORT

OTG Enviroengineering Solutions, Inc
7700 Edgewater Drive
Oakland, CA 94621

Project : 14EMV03.2000
Location : Fire Station #2
Level : II

<u>Sample ID</u>	<u>Lab ID</u>
SB-18-4	273735-001
SB-18-8	273735-002
SB-18-15	273735-003
SB-18-25	273735-004
SB-19-4	273735-005
SB-19-6	273735-006
SB-19-15	273735-007
SB-17-4	273735-008
SB-17-9	273735-009
SB-17-15	273735-010

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: _____

Mikelle Chong
Project Manager
mikelle.chong@ctberk.com

Date: 02/12/2016

CASE NARRATIVE

Laboratory number: 273735
Client: OTG Enviroengineering Solutions, Inc
Project: 14EMV03.2000
Location: Fire Station #2
Request Date: 01/29/16
Samples Received: 01/29/16

This data package contains sample and QC results for ten soil samples, requested for the above referenced project on 01/29/16. The samples were received on ice and intact, directly from the field. This report was revised and reissued on 02/12/16.

TPH-Purgeables and/or BTXE by GC (EPA 8015B):

No analytical problems were encountered.

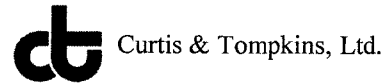
TPH-Extractables by GC (EPA 8015B):

No analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B):

SB-18-4 (lab # 273735-001) was diluted due to high non-target analytes.
SB-19-6 (lab # 273735-006) was diluted due to high hydrocarbons. No other analytical problems were encountered.

COOLER RECEIPT CHECKLIST



Login # 275135 Date Received 1/29/16 Number of coolers 1
Client OTG Environmental Eng. Project Fire Station 2

Date Opened 1/29 By (print) CJN (sign) [Signature]
Date Logged in 1 By (print) J (sign) J

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 NA

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)

Temperature blank(s) included? Thermometer# 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 NA

16. Did you check preservatives for all bottles for each sample? YES NO NA

17. Did you document your preservative check? (pH strip lot#) YES NO NA

18. Did you change the hold time in LIMS for unpreserved VOAs? YES NO NA

19. Did you change the hold time in LIMS for preserved terracores? YES NO NA

20. Are bubbles > 6mm absent in VOA samples? YES NO NA

21. Was the client contacted concerning this sample delivery? YES NO

If YES, Who was called? By Date:

COMMENTS

Blank lines for handwritten comments.

Client Sample ID : SB-19-6

Laboratory Sample ID :

273735-006

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Gasoline C7-C12	460	Y	67		mg/Kg	As Recd	333.3	EPA 8015B	EPA 5030B
Ethylbenzene	720		250	12	ug/Kg	As Recd	50.00	EPA 8260B	EPA 5030B
m,p-Xylenes	260		250	21	ug/Kg	As Recd	50.00	EPA 8260B	EPA 5030B
o-Xylene	52	J	250	13	ug/Kg	As Recd	50.00	EPA 8260B	EPA 5030B
Naphthalene	1,800		250	25	ug/Kg	As Recd	50.00	EPA 8260B	EPA 5030B

Client Sample ID : SB-19-15

Laboratory Sample ID :

273735-007

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Diesel C10-C24	120	Y	1.0		mg/Kg	As Recd	1.000	EPA 8015B	EPA 3550B
Diesel C10-C24	94	Y	1.0		mg/Kg	As Recd	1.000	EPA 8015B	EPA 3550B

Client Sample ID : SB-17-4

Laboratory Sample ID :

273735-008

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Gasoline C7-C12	490	Y	67		mg/Kg	As Recd	333.3	EPA 8015B	EPA 5030B
Benzene	16	J	250	13	ug/Kg	As Recd	50.00	EPA 8260B	EPA 5030B
Toluene	140	J	250	7.0	ug/Kg	As Recd	50.00	EPA 8260B	EPA 5030B
Ethylbenzene	2,700		250	12	ug/Kg	As Recd	50.00	EPA 8260B	EPA 5030B
m,p-Xylenes	10,000		250	21	ug/Kg	As Recd	50.00	EPA 8260B	EPA 5030B
o-Xylene	2,600		250	13	ug/Kg	As Recd	50.00	EPA 8260B	EPA 5030B
Naphthalene	2,100		250	25	ug/Kg	As Recd	50.00	EPA 8260B	EPA 5030B

Client Sample ID : SB-17-9

Laboratory Sample ID :

273735-009

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Diesel C10-C24	2.6	Y	1.0		mg/Kg	As Recd	1.000	EPA 8015B	EPA 3550B
m,p-Xylenes	1.5	J	4.9	1.2	ug/Kg	As Recd	0.9709	EPA 8260B	EPA 5030B

Client Sample ID : SB-17-15

Laboratory Sample ID :

273735-010

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Diesel C10-C24	94	Y	1.0		mg/Kg	As Recd	1.000	EPA 8015B	EPA 3550B
Diesel C10-C24	65	Y	1.0		mg/Kg	As Recd	1.000	EPA 8015B	EPA 3550B

J = Estimated value

Y = Sample exhibits chromatographic pattern which does not resemble standard

Total Volatile Hydrocarbons			
Lab #:	273735	Location:	Fire Station #2
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	14EMV03.2000	Analysis:	EPA 8015B
Matrix:	Soil	Sampled:	01/29/16
Units:	mg/Kg	Received:	01/29/16
Basis:	as received		

Field ID:	SB-18-4	Diln Fac:	250.0
Type:	SAMPLE	Batch#:	231665
Lab ID:	273735-001	Analyzed:	02/02/16

Analyte	Result	RL
Gasoline C7-C12	330 Y	50

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	114	78-138

Field ID:	SB-18-8	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	231627
Lab ID:	273735-002	Analyzed:	02/01/16

Analyte	Result	RL
Gasoline C7-C12	ND	0.99

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	102	78-138

Field ID:	SB-18-15	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	231627
Lab ID:	273735-003	Analyzed:	02/01/16

Analyte	Result	RL
Gasoline C7-C12	ND	0.96

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	95	78-138

Field ID:	SB-18-25	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	231627
Lab ID:	273735-004	Analyzed:	02/01/16

Analyte	Result	RL
Gasoline C7-C12	ND	0.93

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	95	78-138

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

Total Volatile Hydrocarbons			
Lab #:	273735	Location:	Fire Station #2
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	14EMV03.2000	Analysis:	EPA 8015B
Matrix:	Soil	Sampled:	01/29/16
Units:	mg/Kg	Received:	01/29/16
Basis:	as received		

Field ID: SB-19-4 Diln Fac: 1.000
 Type: SAMPLE Batch#: 231627
 Lab ID: 273735-005 Analyzed: 02/01/16

Analyte	Result	RL
Gasoline C7-C12	1.8 Y	0.97

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	104	78-138

Field ID: SB-19-6 Diln Fac: 333.3
 Type: SAMPLE Batch#: 231665
 Lab ID: 273735-006 Analyzed: 02/02/16

Analyte	Result	RL
Gasoline C7-C12	460 Y	67

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	109	78-138

Field ID: SB-19-15 Diln Fac: 1.000
 Type: SAMPLE Batch#: 231627
 Lab ID: 273735-007 Analyzed: 02/01/16

Analyte	Result	RL
Gasoline C7-C12	ND	0.97

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	102	78-138

Field ID: SB-17-4 Diln Fac: 333.3
 Type: SAMPLE Batch#: 231665
 Lab ID: 273735-008 Analyzed: 02/02/16

Analyte	Result	RL
Gasoline C7-C12	490 Y	67

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	110	78-138

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

Total Volatile Hydrocarbons			
Lab #:	273735	Location:	Fire Station #2
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	14EMV03.2000	Analysis:	EPA 8015B
Matrix:	Soil	Sampled:	01/29/16
Units:	mg/Kg	Received:	01/29/16
Basis:	as received		

Field ID:	SB-17-9	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	231627
Lab ID:	273735-009	Analyzed:	02/01/16

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	99	78-138

Field ID:	SB-17-15	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	231627
Lab ID:	273735-010	Analyzed:	02/01/16

Analyte	Result	RL
Gasoline C7-C12	ND	0.95

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	103	78-138

Type:	BLANK	Batch#:	231627
Lab ID:	QC821538	Analyzed:	02/01/16
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	98	78-138

Type:	BLANK	Batch#:	231665
Lab ID:	QC821698	Analyzed:	02/02/16
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	100	78-138

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

Batch QC Report

Total Volatile Hydrocarbons			
Lab #:	273735	Location:	Fire Station #2
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	14EMV03.2000	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC821537	Batch#:	231627
Matrix:	Soil	Analyzed:	02/01/16
Units:	mg/Kg		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1.000	0.9720	97	80-121

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	96	78-138

Batch QC Report

Total Volatile Hydrocarbons			
Lab #:	273735	Location:	Fire Station #2
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	14EMV03.2000	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	273733-001	Batch#:	231627
Matrix:	Soil	Sampled:	01/29/16
Units:	mg/Kg	Received:	01/29/16
Basis:	as received	Analyzed:	02/01/16

Type: MS Lab ID: QC821539

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	1.277	10.10	11.27	99	50-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	98	78-138

Type: MSD Lab ID: QC821540

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	10.10	10.66	93	50-120	6	31

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	99	78-138

RPD= Relative Percent Difference

Batch QC Report

Total Volatile Hydrocarbons			
Lab #:	273735	Location:	Fire Station #2
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	14EMV03.2000	Analysis:	EPA 8015B
Matrix:	Soil	Batch#:	231665
Units:	mg/Kg	Analyzed:	02/02/16
Diln Fac:	1.000		

Type: BS Lab ID: QC821696

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1.000	1.038	104	80-121

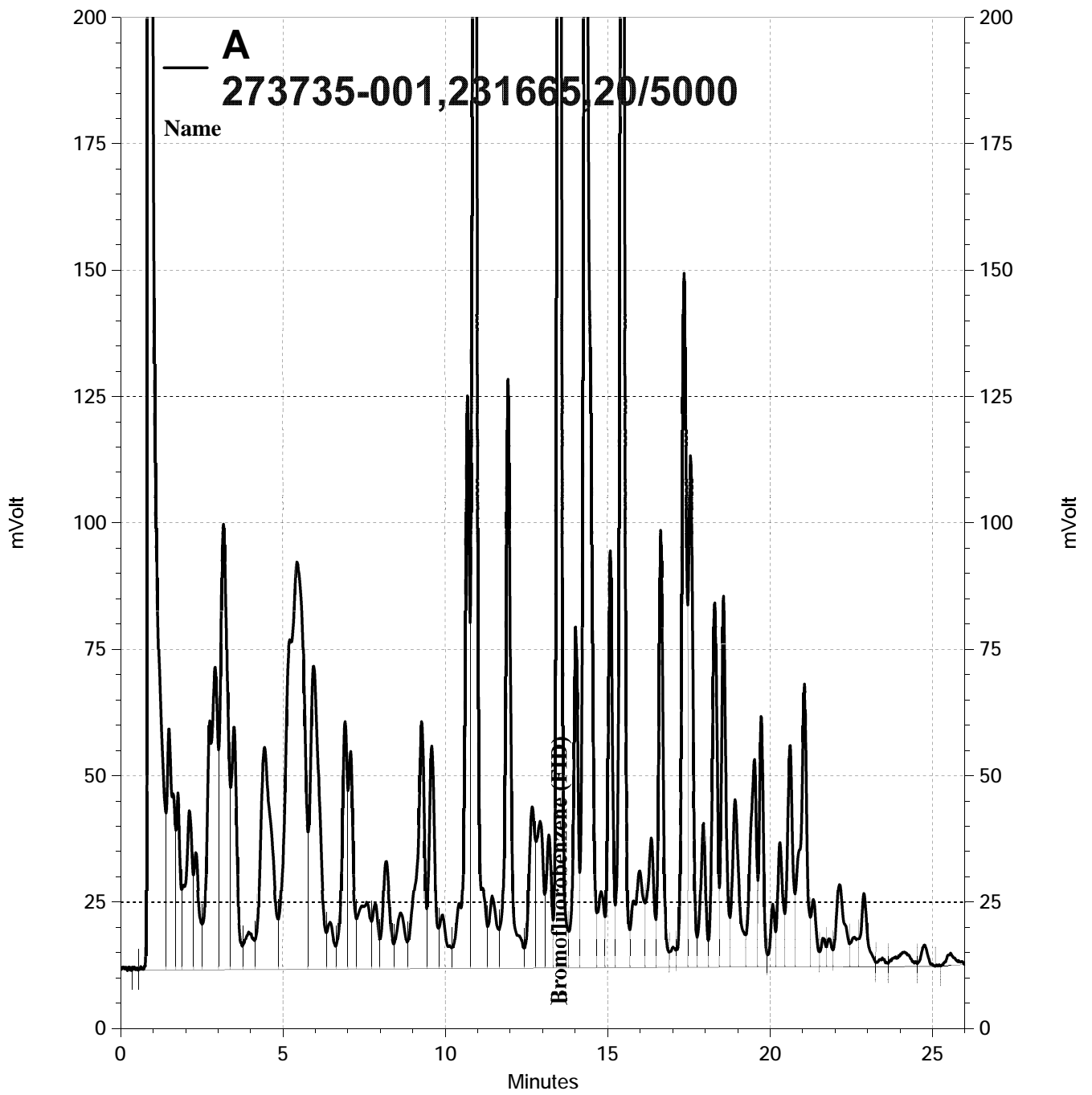
Surrogate	%REC	Limits
Bromofluorobenzene (FID)	108	78-138

Type: BSD Lab ID: QC821697

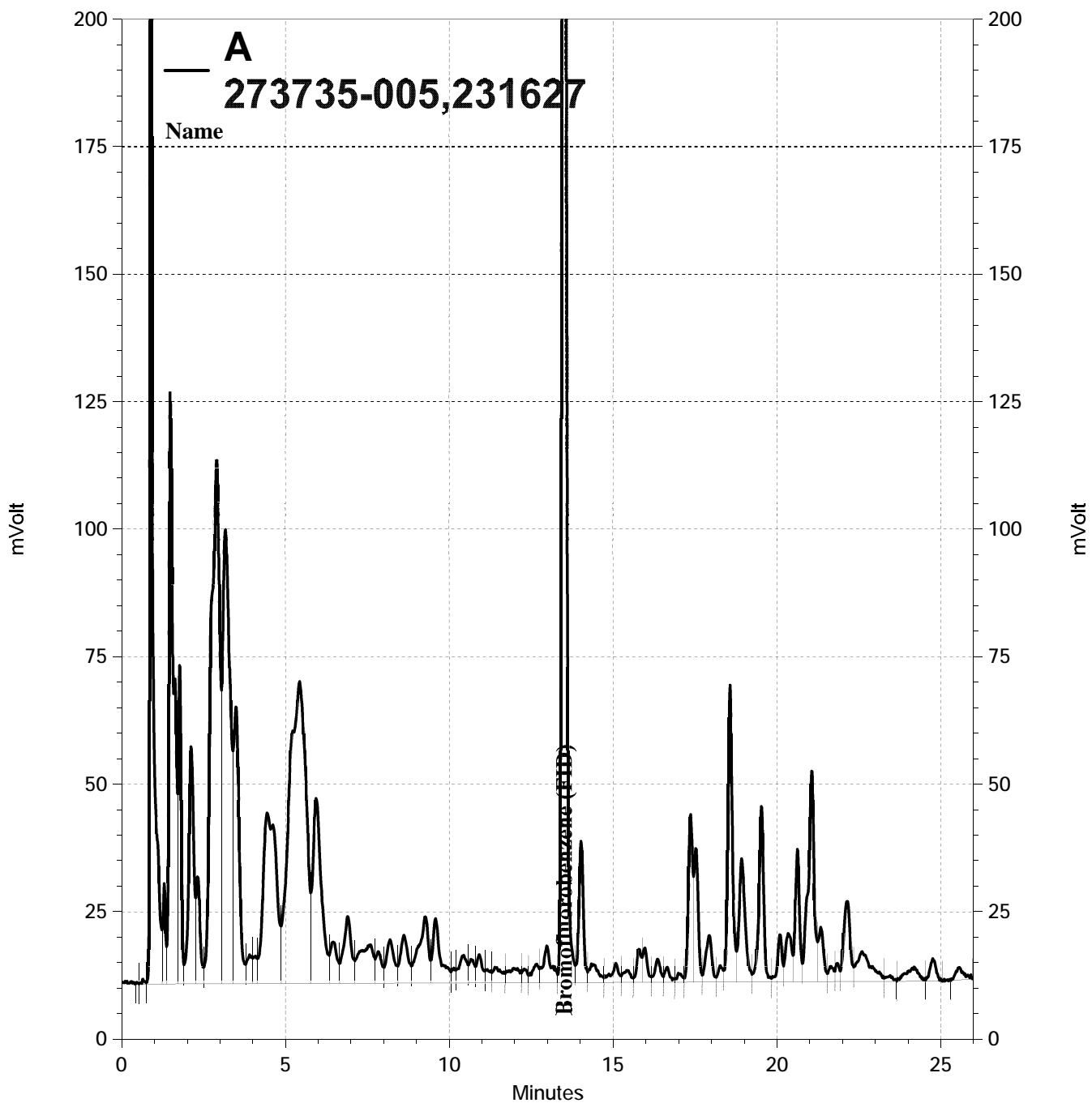
Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	1.000	1.009	101	80-121	3	20

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	104	78-138

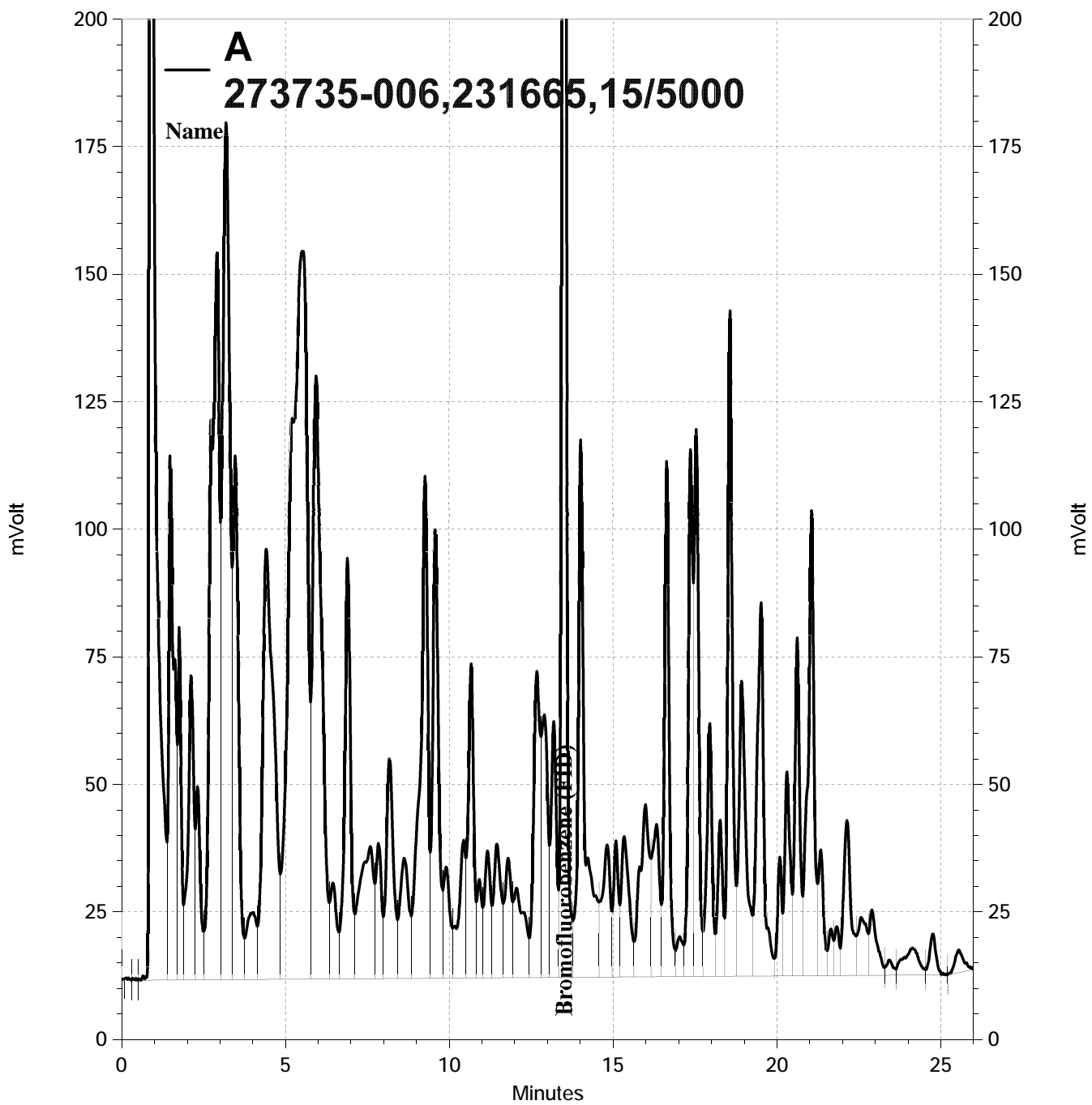
RPD= Relative Percent Difference



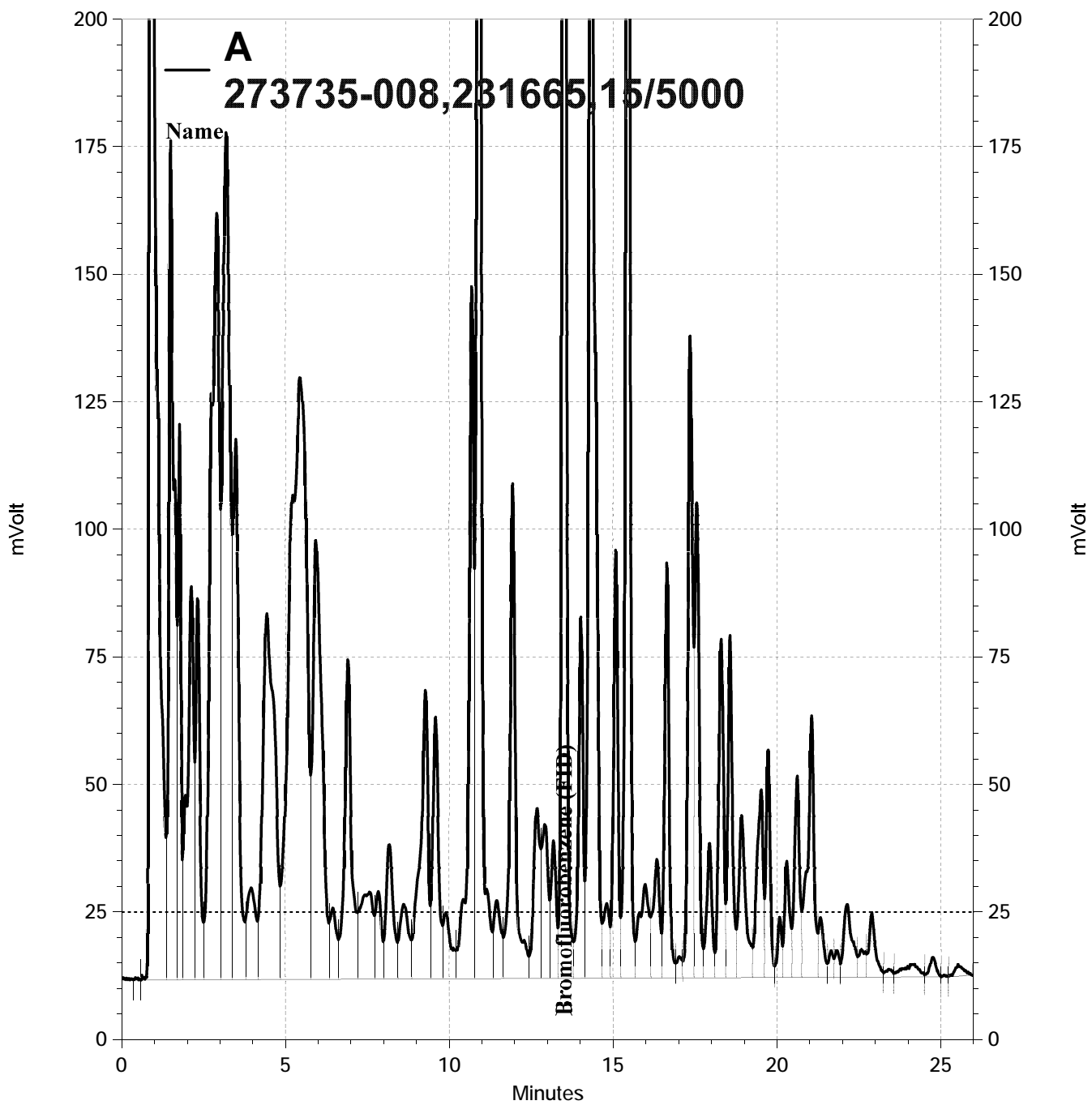
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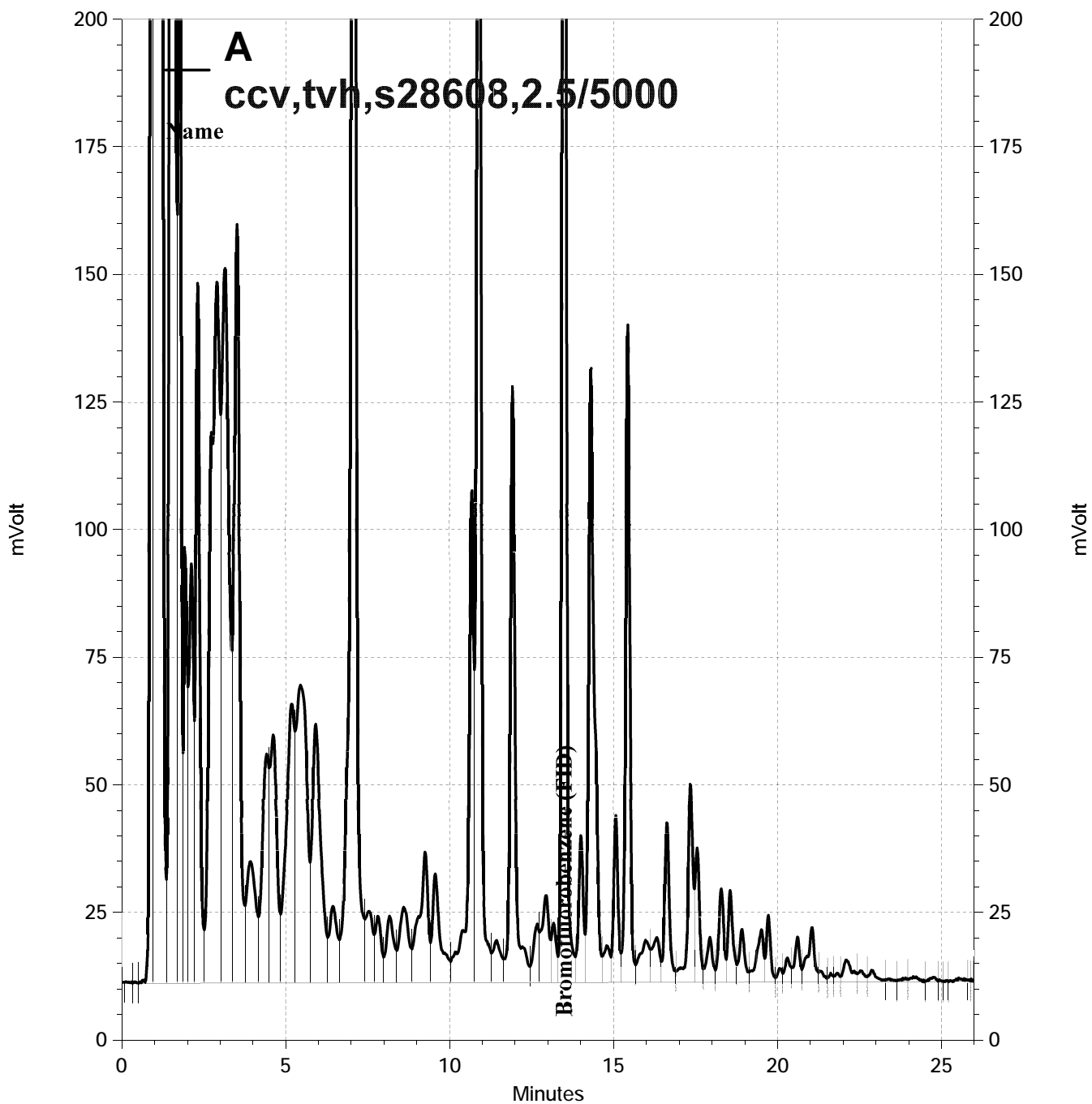
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Total Extractable Hydrocarbons			
Lab #:	273735	Location:	Fire Station #2
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 3550B
Project#:	14EMV03.2000	Analysis:	EPA 8015B
Matrix:	Soil	Diln Fac:	1.000
Units:	mg/Kg	Sampled:	01/29/16
Basis:	as received	Received:	01/29/16

Field ID: SB-19-4 Prepared: 02/01/16
 Type: SAMPLE Analyzed: 02/02/16
 Lab ID: 273735-005 Cleanup Method: EPA 3630C
 Batch#: 231647

Analyte	Result	RL
Diesel C10-C24	6.3 Y	1.0
Diesel C10-C24 (SGCU)	2.0 Y	1.0

Surrogate	%REC	Limits
o-Terphenyl	104	59-140
o-Terphenyl (SGCU)	85	59-140

Field ID: SB-19-6 Batch#: 231647
 Type: SAMPLE Prepared: 02/01/16
 Lab ID: 273735-006 Analyzed: 02/03/16

Analyte	Result	RL
Diesel C10-C24	ND	1.0

Surrogate	%REC	Limits
o-Terphenyl	104	59-140

Field ID: SB-19-15 Batch#: 231647
 Type: SAMPLE Prepared: 02/01/16
 Lab ID: 273735-007 Cleanup Method: EPA 3630C

Analyte	Result	RL	Analyzed
Diesel C10-C24	120 Y	1.0	02/03/16
Diesel C10-C24 (SGCU)	94 Y	1.0	02/11/16

Surrogate	%REC	Limits	Analyzed
o-Terphenyl	88	59-140	02/03/16
o-Terphenyl (SGCU)	80	59-140	02/11/16

Field ID: SB-17-4 Batch#: 231647
 Type: SAMPLE Prepared: 02/01/16
 Lab ID: 273735-008 Cleanup Method: EPA 3630C

Analyte	Result	RL	Analyzed
Diesel C10-C24	ND	0.99	02/03/16
Diesel C10-C24 (SGCU)	ND	0.99	02/02/16

Surrogate	%REC	Limits	Analyzed
o-Terphenyl	104	59-140	02/03/16
o-Terphenyl (SGCU)	82	59-140	02/02/16

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

Batch QC Report

Total Extractable Hydrocarbons			
Lab #:	273735	Location:	Fire Station #2
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 3550B
Project#:	14EMV03.2000	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC821625	Batch#:	231647
Matrix:	Soil	Prepared:	02/01/16
Units:	mg/Kg	Analyzed:	02/02/16

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	49.73	44.52	90	58-137
Diesel C10-C24 (SGCU)	49.73	37.06	75	58-137

Surrogate	%REC	Limits
o-Terphenyl	103	59-140
o-Terphenyl (SGCU)	85	59-140

SGCU= Silica gel cleanup

Batch QC Report

Total Extractable Hydrocarbons			
Lab #:	273735	Location:	Fire Station #2
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 3550B
Project#:	14EMV03.2000	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	231647
MSS Lab ID:	273752-001	Sampled:	02/01/16
Matrix:	Soil	Received:	02/01/16
Units:	mg/Kg	Prepared:	02/01/16
Basis:	as received	Analyzed:	02/02/16
Diln Fac:	2.000		

Type: MS Lab ID: QC821626

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	21.57	49.96	57.41	72	46-154

Surrogate	%REC	Limits
o-Terphenyl	76	59-140

Type: MSD Lab ID: QC821627

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	50.04	68.37	94	46-154	17	50

Surrogate	%REC	Limits
o-Terphenyl	106	59-140

RPD= Relative Percent Difference

Batch QC Report

Total Extractable Hydrocarbons			
Lab #:	273735	Location:	Fire Station #2
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 3550B
Project#:	14EMV03.2000	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC821655	Batch#:	231654
Matrix:	Soil	Prepared:	02/01/16
Units:	mg/Kg	Analyzed:	02/02/16

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	50.39	58.01	115	58-137
Diesel C10-C24 (SGCU)	50.39	46.37	92	58-137

Surrogate	%REC	Limits
o-Terphenyl	106	59-140
o-Terphenyl (SGCU)	85	59-140

SGCU= Silica gel cleanup

Batch QC Report

Total Extractable Hydrocarbons			
Lab #:	273735	Location:	Fire Station #2
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 3550B
Project#:	14EMV03.2000	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	231654
MSS Lab ID:	273758-001	Sampled:	02/01/16
Matrix:	Soil	Received:	02/01/16
Units:	mg/Kg	Prepared:	02/01/16
Basis:	as received	Analyzed:	02/02/16
Diln Fac:	1.000		

Type: MS Lab ID: QC821656

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	2.461	49.85	53.22	102	46-154

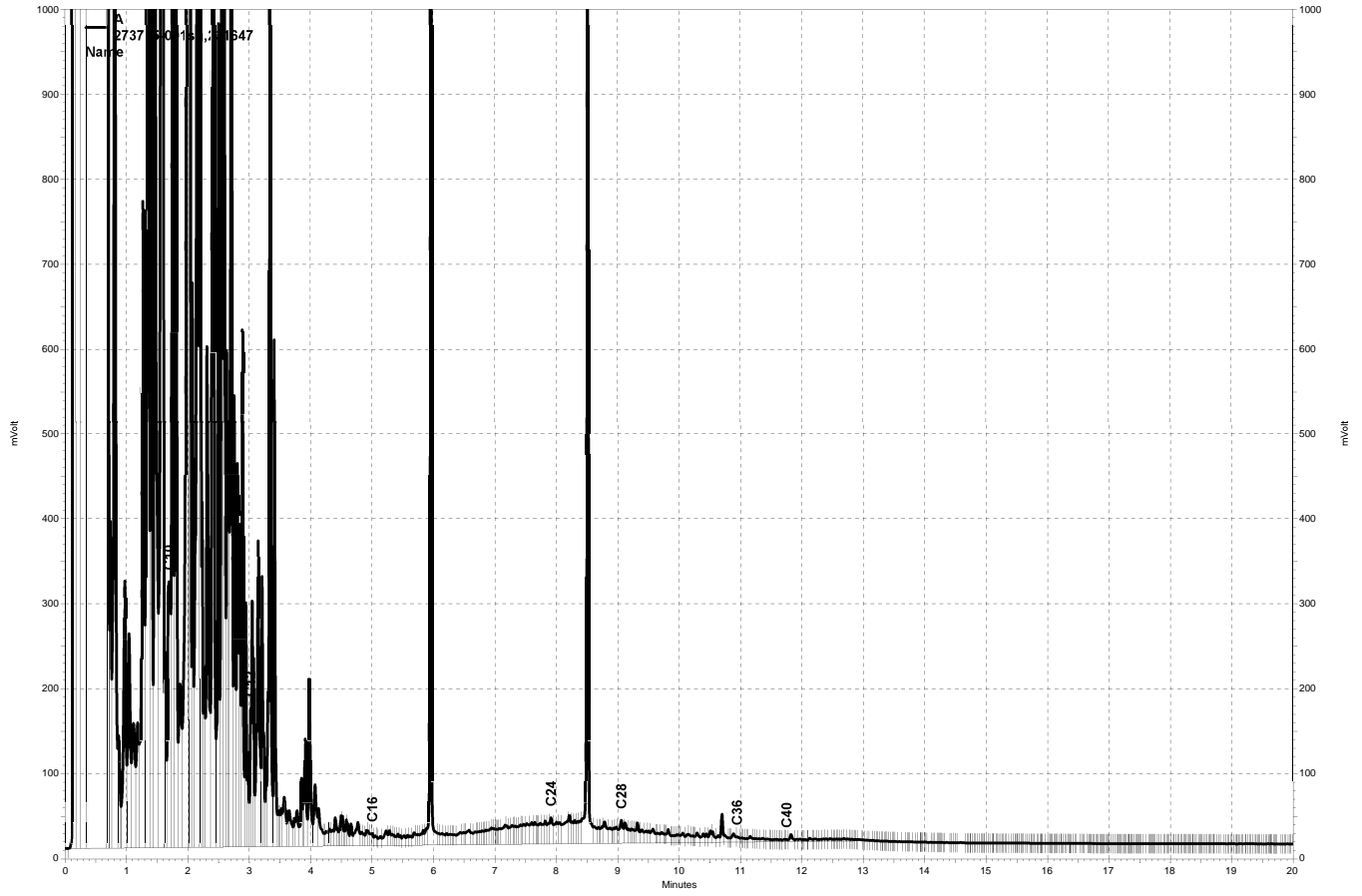
Surrogate	%REC	Limits
o-Terphenyl	99	59-140

Type: MSD Lab ID: QC821657

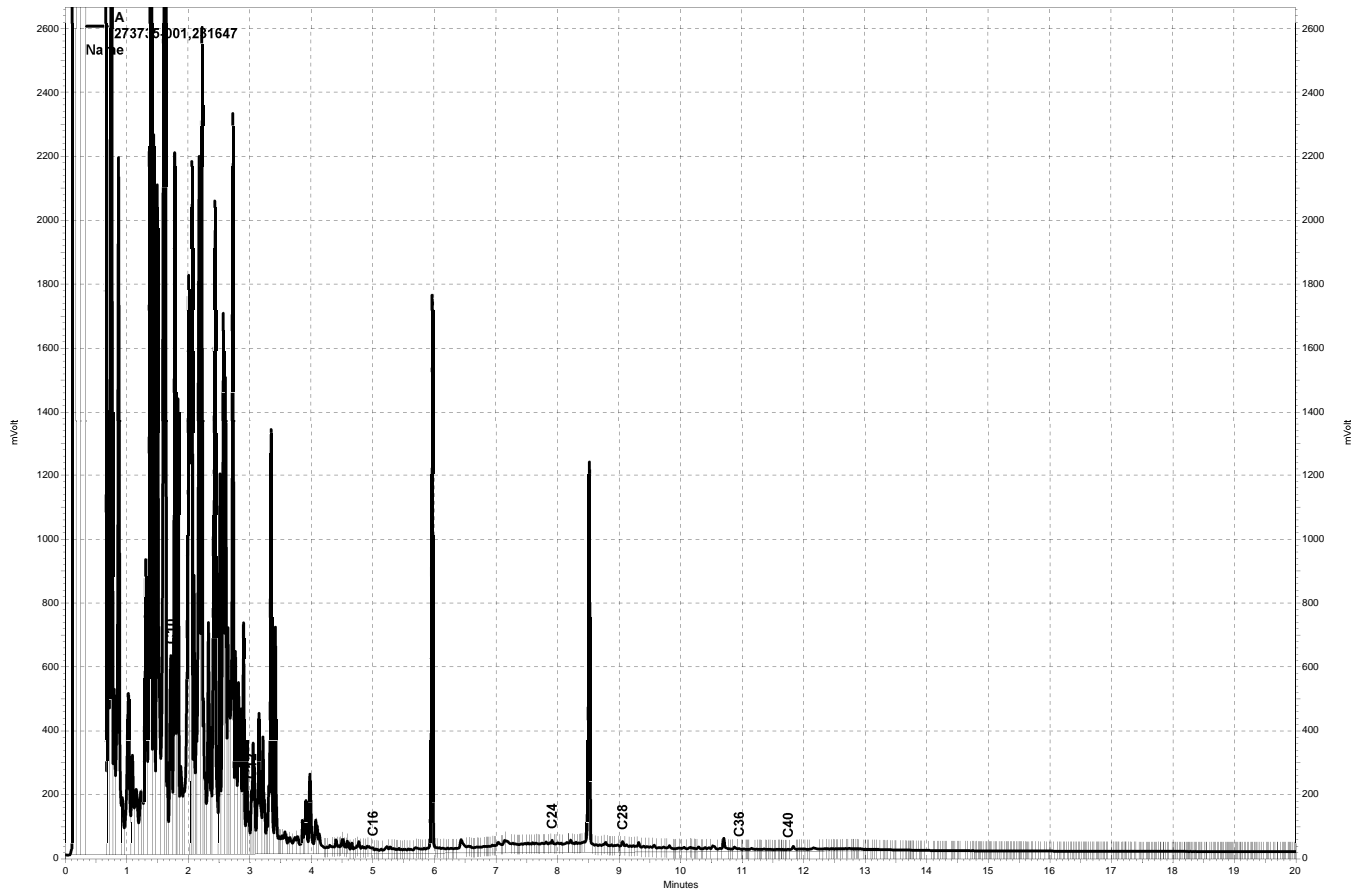
Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	49.86	44.91	85	46-154	17	50

Surrogate	%REC	Limits
o-Terphenyl	84	59-140

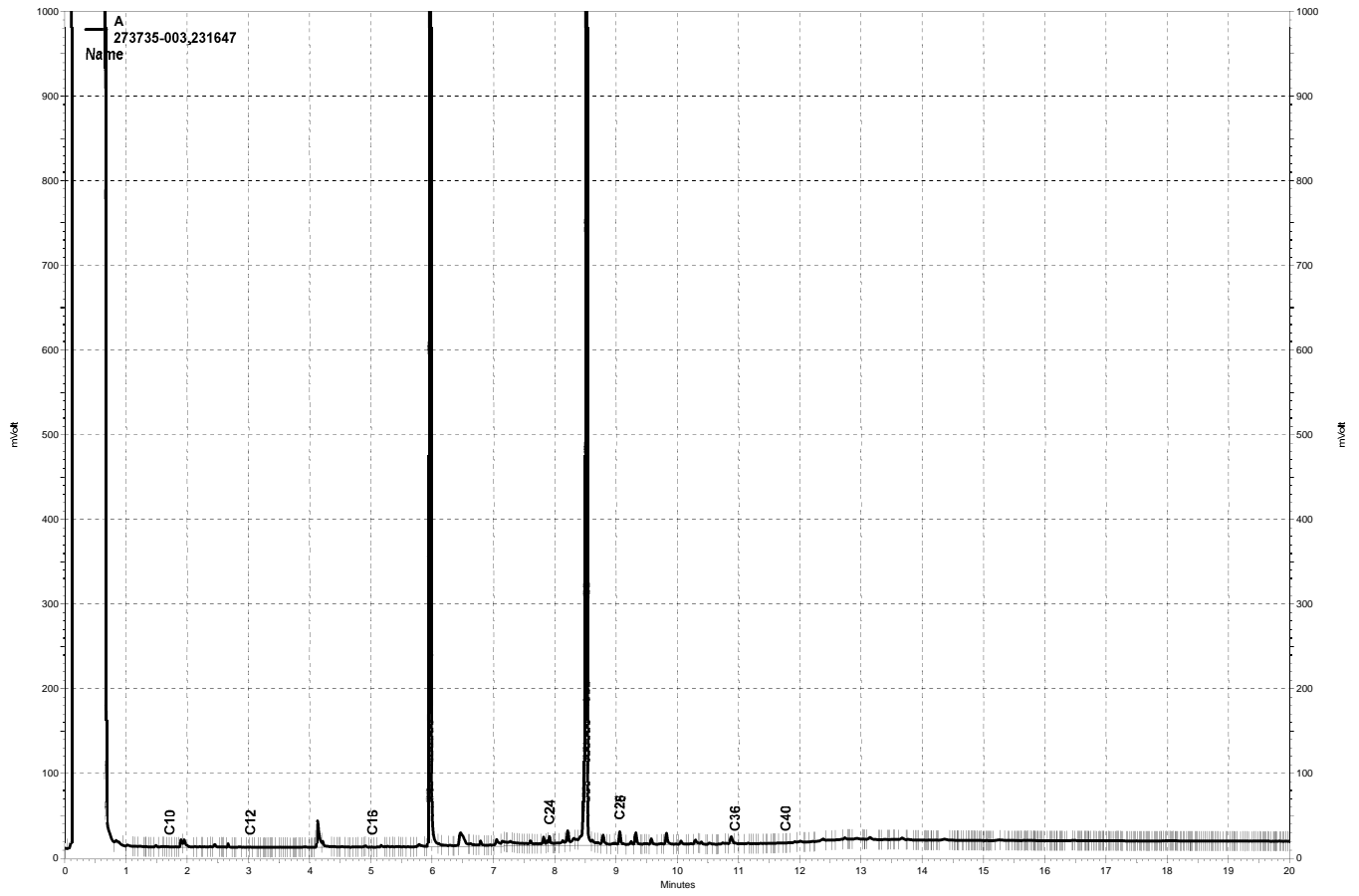
RPD= Relative Percent Difference



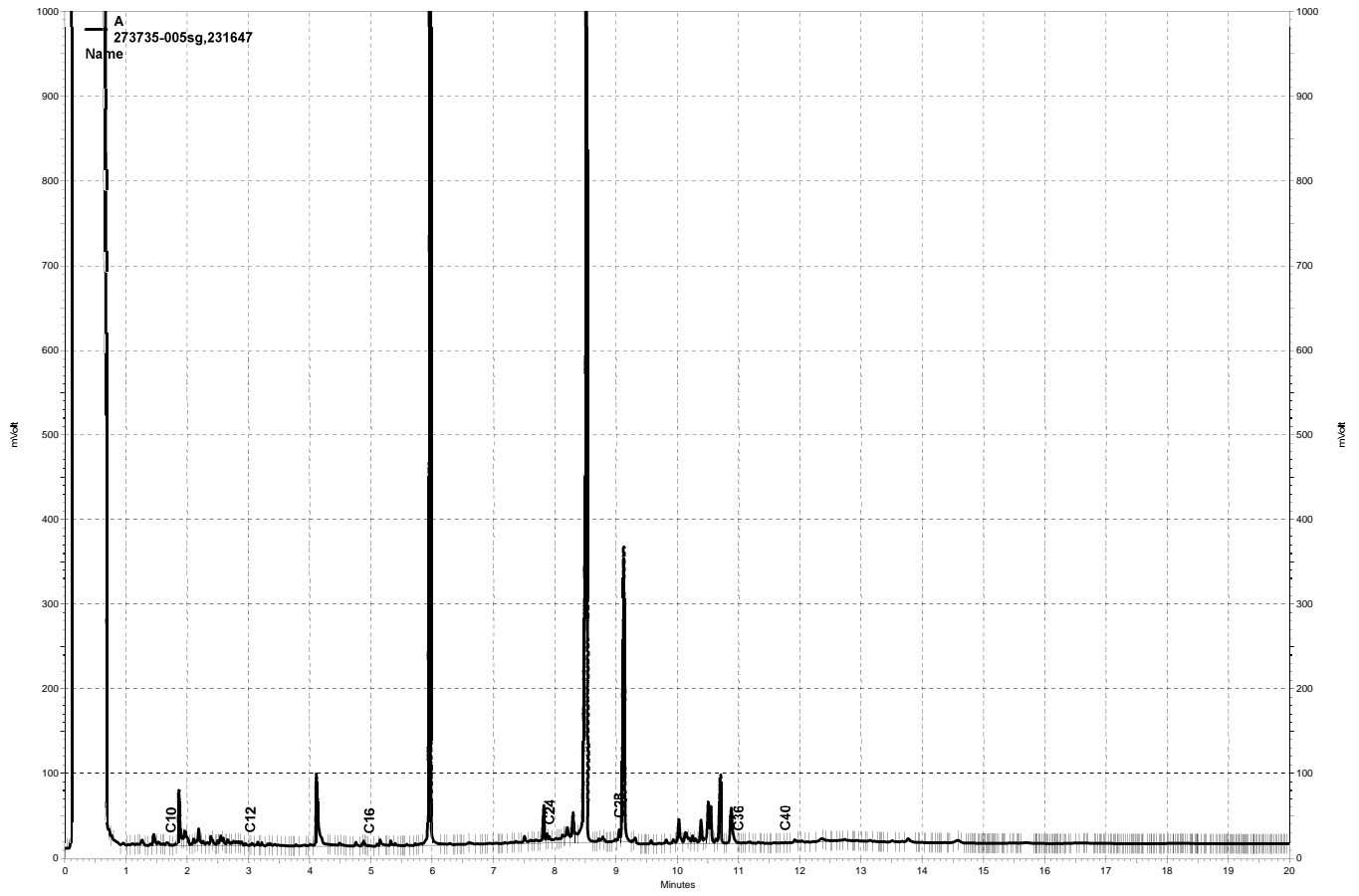
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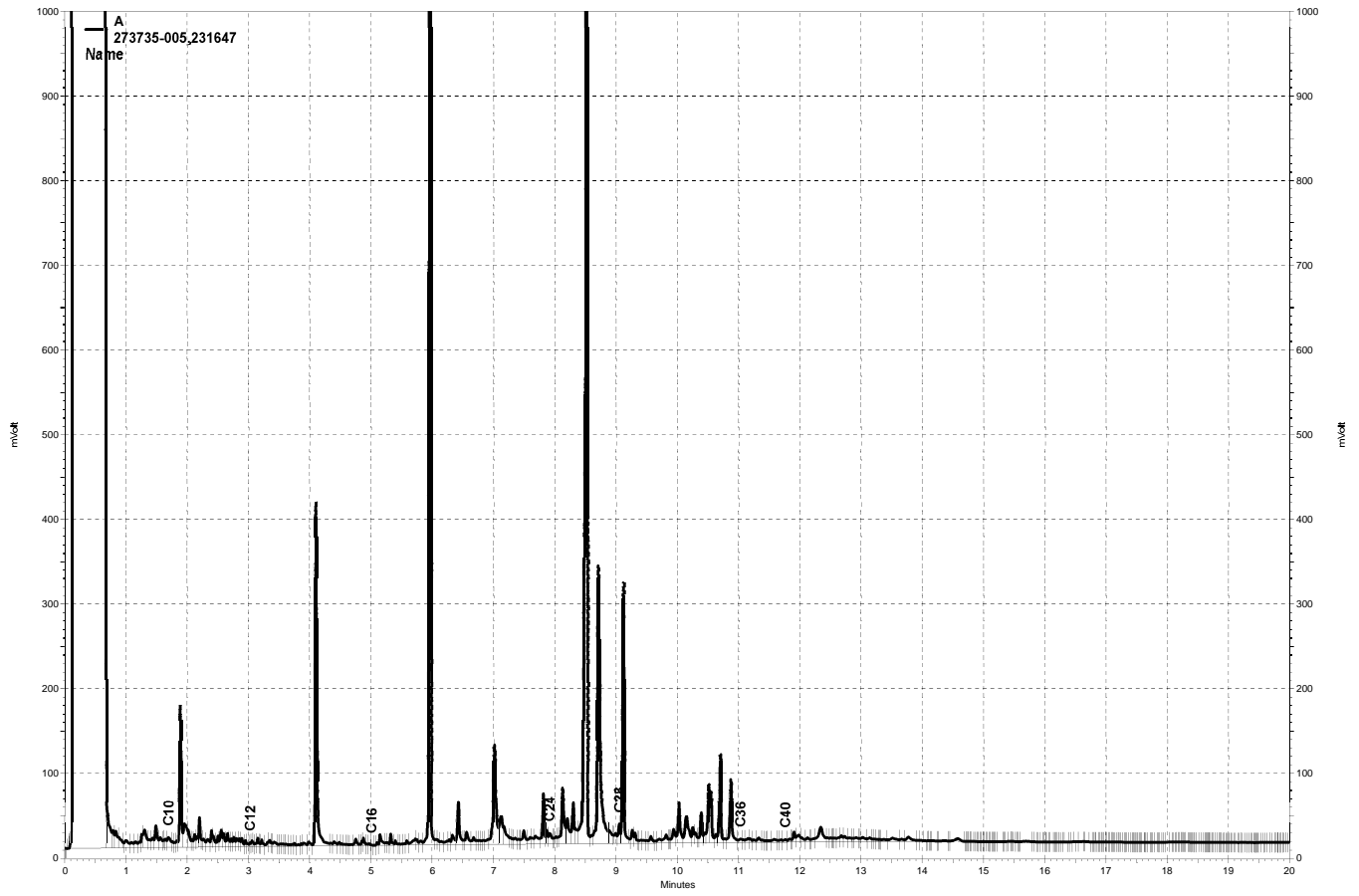
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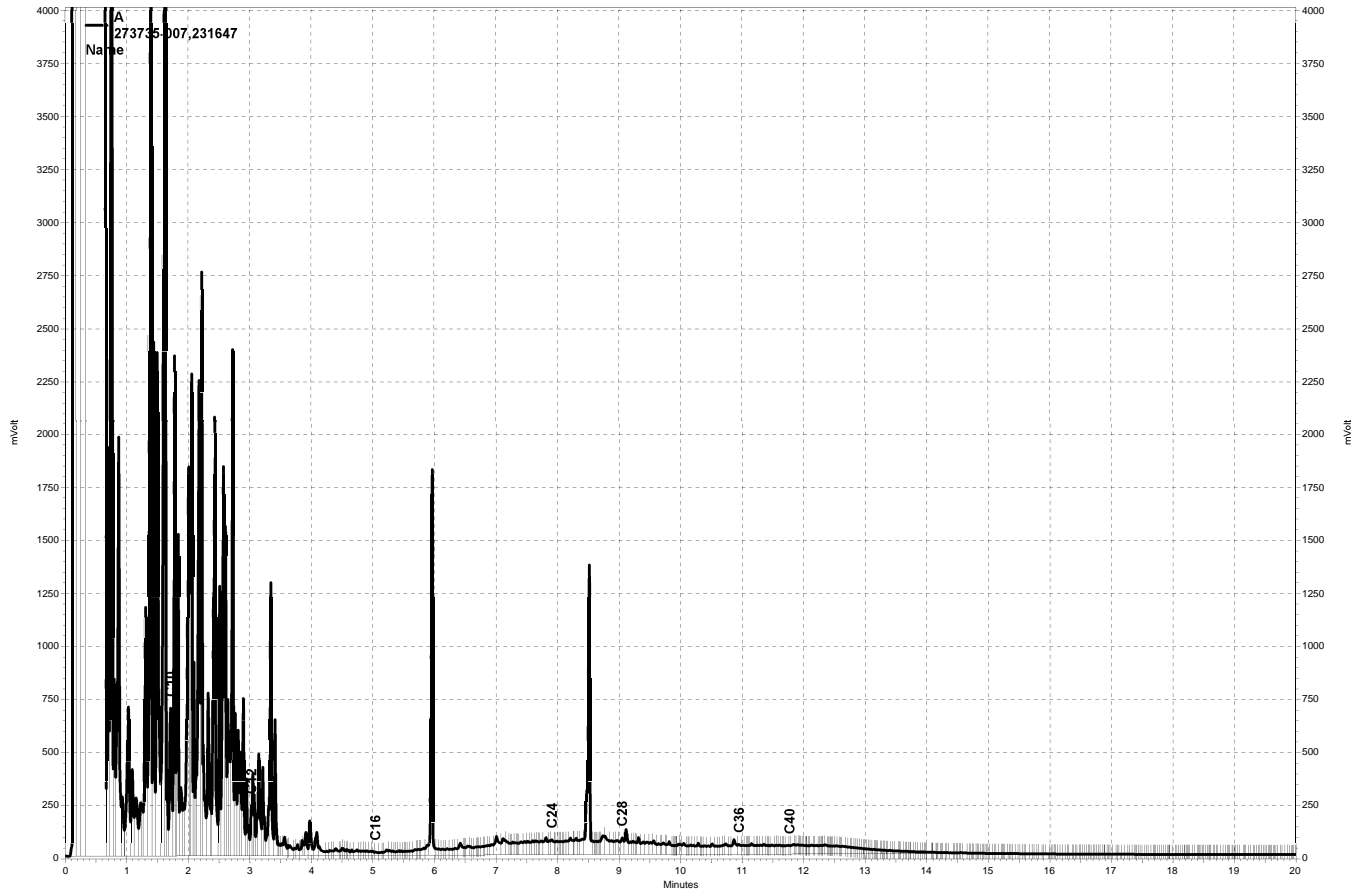
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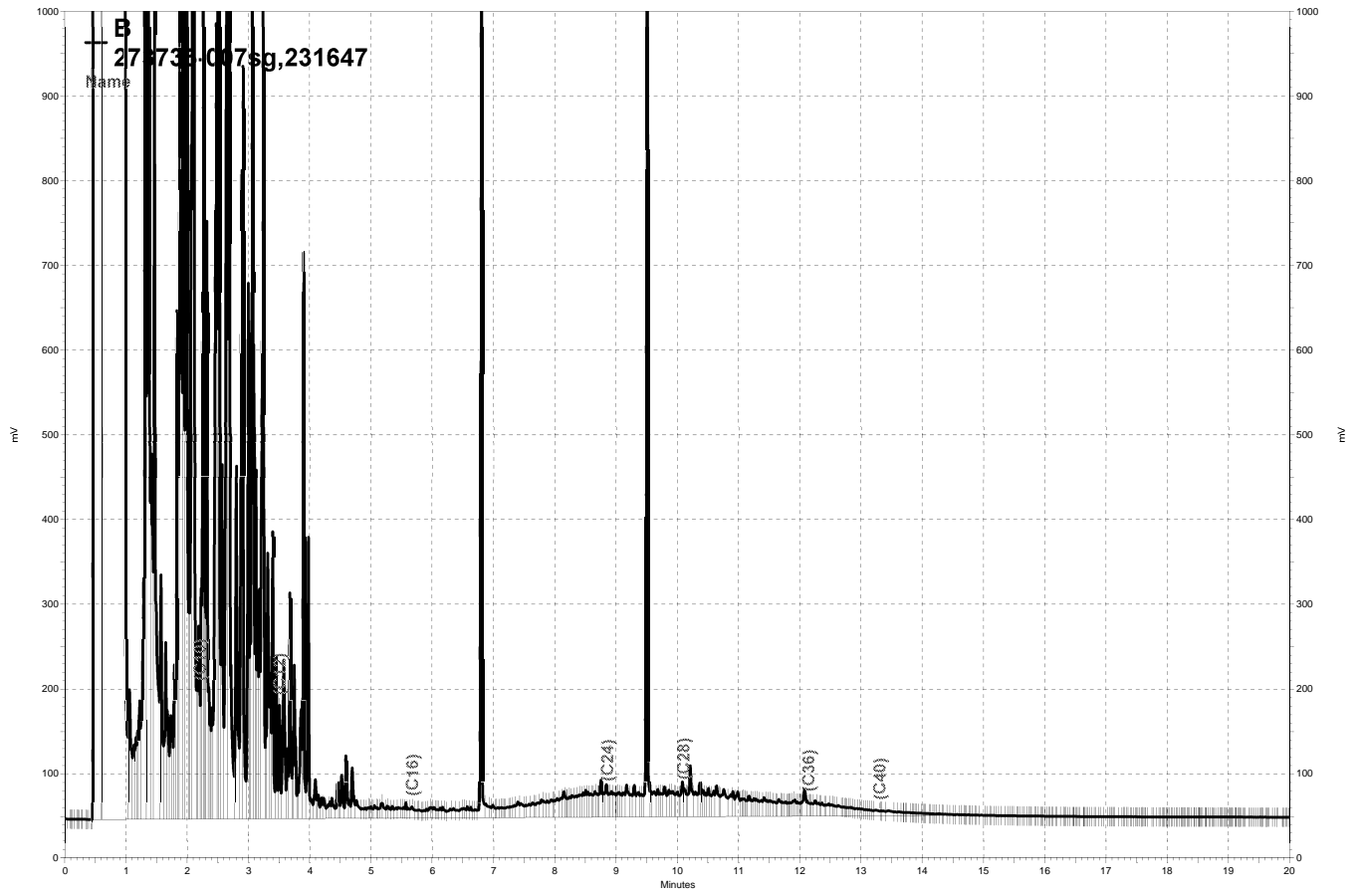
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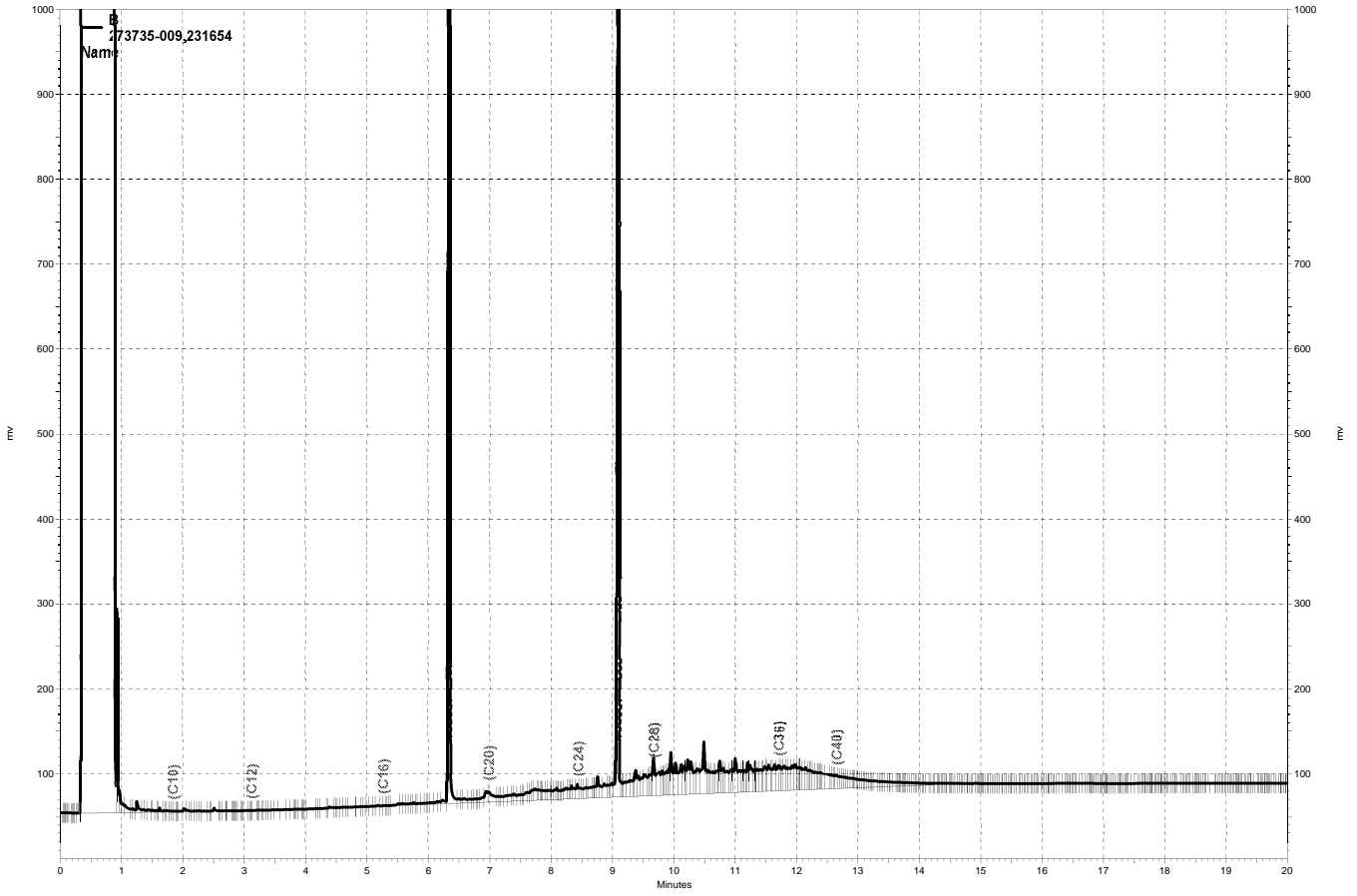
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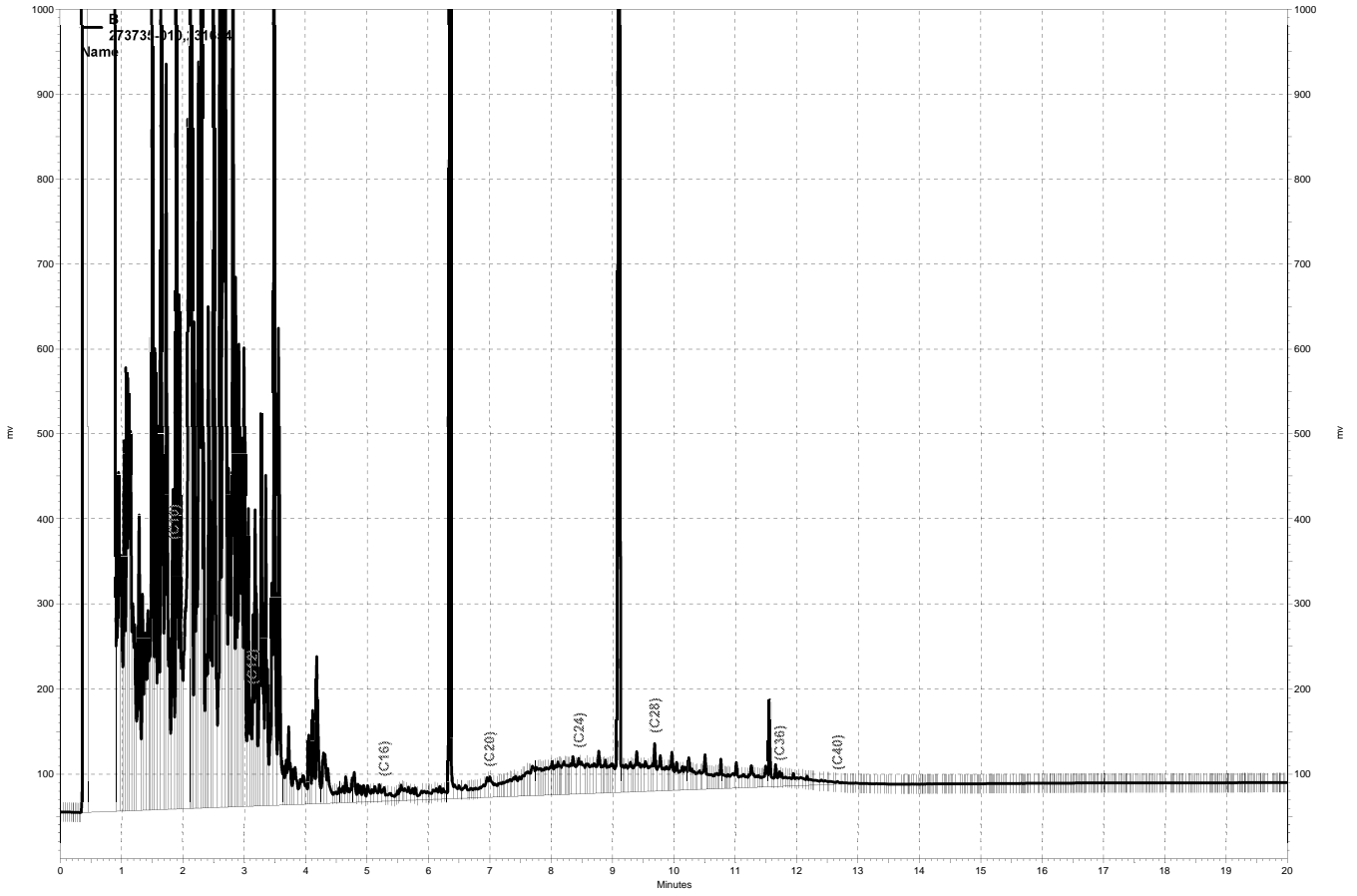
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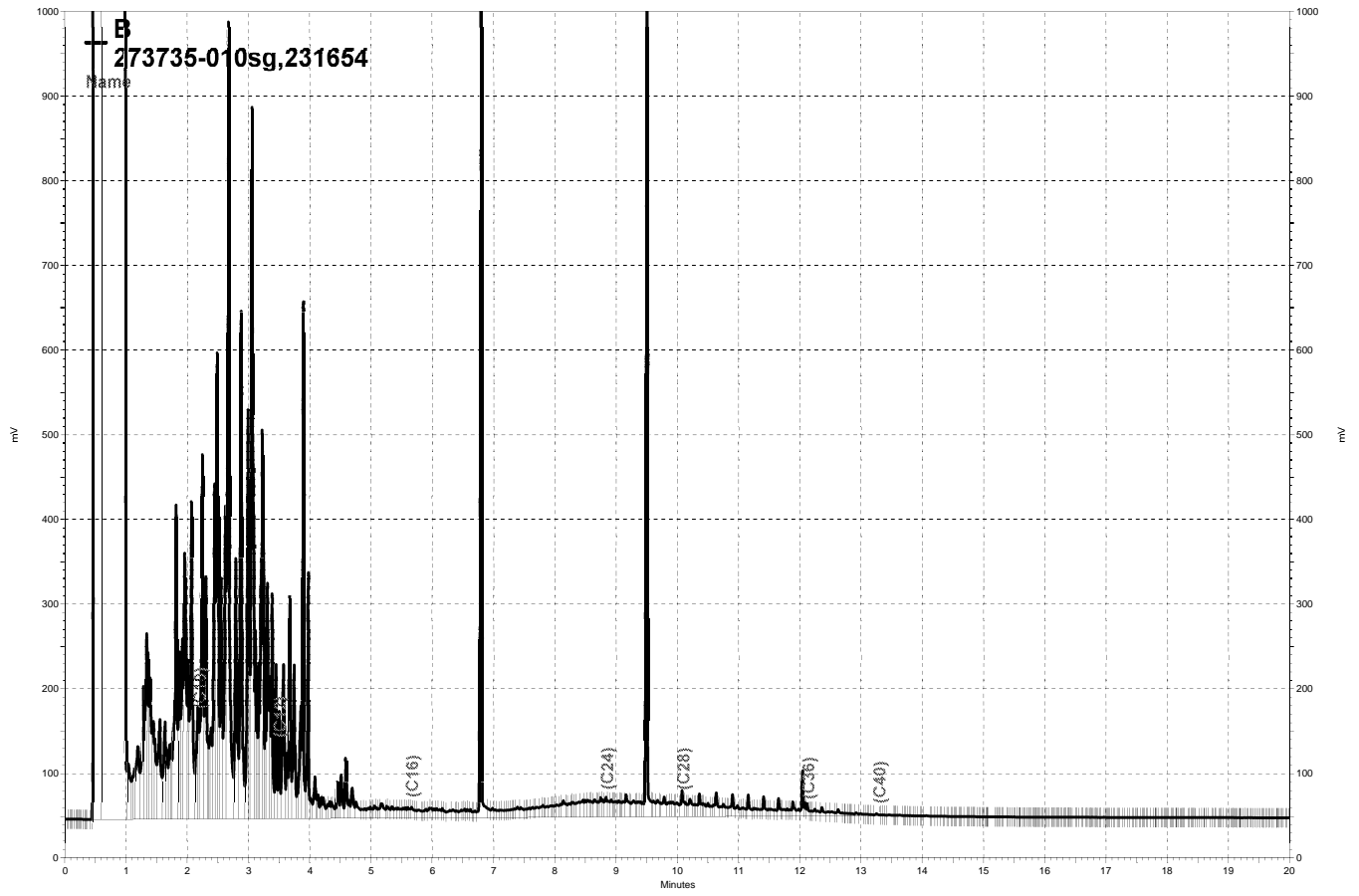
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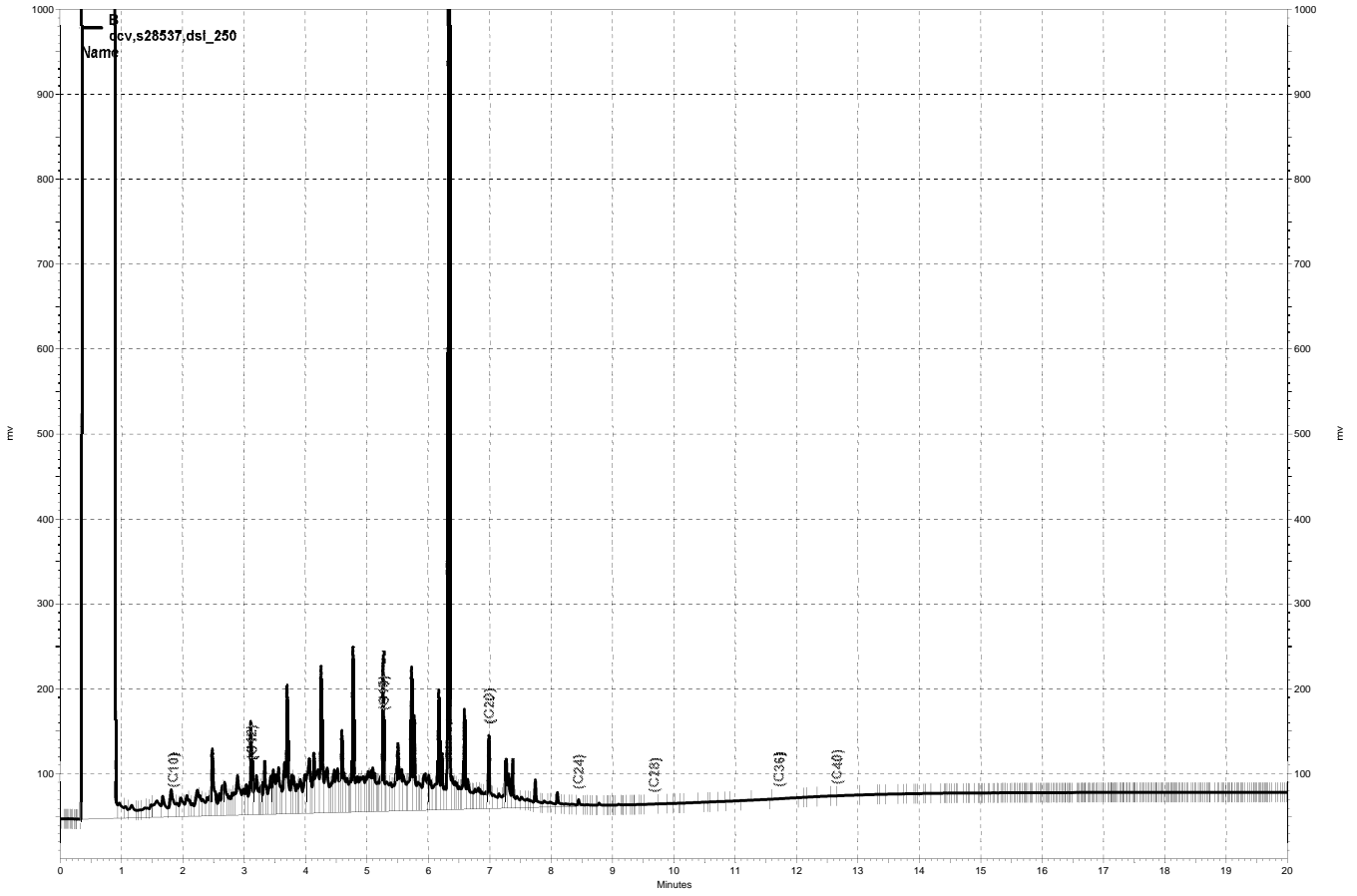
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Purgeable Aromatics by GC/MS

Lab #:	273735	Location:	Fire Station #2
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	14EMV03.2000	Analysis:	EPA 8260B
Field ID:	SB-18-4	Diln Fac:	100.0
Lab ID:	273735-001	Batch#:	231674
Matrix:	Soil	Sampled:	01/29/16
Units:	ug/Kg	Received:	01/29/16
Basis:	as received	Analyzed:	02/02/16

Analyte	Result	RL	MDL
MTBE	ND	500	100
Benzene	ND	500	27
Toluene	480 J	500	14
Ethylbenzene	1,700	500	23
m,p-Xylenes	8,600	500	41
o-Xylene	2,700	500	27
Naphthalene	2,800	500	50

Surrogate	%REC	Limits
Dibromofluoromethane	99	78-134
1,2-Dichloroethane-d4	85	80-138
Toluene-d8	106	80-120
Bromofluorobenzene	94	78-123
Trifluorotoluene (MeOH)	114	52-147

J= Estimated value
 ND= Not Detected
 RL= Reporting Limit
 MDL= Method Detection Limit

Purgeable Aromatics by GC/MS

Lab #:	273735	Location:	Fire Station #2
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	14EMV03.2000	Analysis:	EPA 8260B
Field ID:	SB-18-8	Diln Fac:	0.9709
Lab ID:	273735-002	Batch#:	231632
Matrix:	Soil	Sampled:	01/29/16
Units:	ug/Kg	Received:	01/29/16
Basis:	as received	Analyzed:	02/01/16

Analyte	Result	RL	MDL
MTBE	ND	4.9	0.37
Benzene	1.7 J	4.9	0.40
Toluene	ND	4.9	0.46
Ethylbenzene	ND	4.9	0.33
m,p-Xylenes	ND	4.9	0.65
o-Xylene	ND	4.9	0.45
Naphthalene	ND	4.9	0.97

Surrogate	%REC	Limits
Dibromofluoromethane	110	78-134
1,2-Dichloroethane-d4	101	80-138
Toluene-d8	98	80-120
Bromofluorobenzene	99	78-123

J= Estimated value
 ND= Not Detected
 RL= Reporting Limit
 MDL= Method Detection Limit

Purgeable Aromatics by GC/MS

Lab #:	273735	Location:	Fire Station #2
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	14EMV03.2000	Analysis:	EPA 8260B
Field ID:	SB-18-15	Diln Fac:	0.9747
Lab ID:	273735-003	Batch#:	231632
Matrix:	Soil	Sampled:	01/29/16
Units:	ug/Kg	Received:	01/29/16
Basis:	as received	Analyzed:	02/01/16

Analyte	Result	RL	MDL
MTBE	ND	4.9	0.37
Benzene	ND	4.9	0.40
Toluene	ND	4.9	0.46
Ethylbenzene	ND	4.9	0.33
m,p-Xylenes	ND	4.9	0.65
o-Xylene	ND	4.9	0.45
Naphthalene	ND	4.9	0.97

Surrogate	%REC	Limits
Dibromofluoromethane	113	78-134
1,2-Dichloroethane-d4	102	80-138
Toluene-d8	98	80-120
Bromofluorobenzene	98	78-123

ND= Not Detected
 RL= Reporting Limit
 MDL= Method Detection Limit

Purgeable Aromatics by GC/MS

Lab #:	273735	Location:	Fire Station #2
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	14EMV03.2000	Analysis:	EPA 8260B
Field ID:	SB-18-25	Diln Fac:	0.9709
Lab ID:	273735-004	Batch#:	231632
Matrix:	Soil	Sampled:	01/29/16
Units:	ug/Kg	Received:	01/29/16
Basis:	as received	Analyzed:	02/01/16

Analyte	Result	RL	MDL
MTBE	ND	4.9	0.37
Benzene	ND	4.9	0.40
Toluene	ND	4.9	0.46
Ethylbenzene	ND	4.9	0.33
m,p-Xylenes	ND	4.9	0.65
o-Xylene	ND	4.9	0.45
Naphthalene	ND	4.9	0.97

Surrogate	%REC	Limits
Dibromofluoromethane	112	78-134
1,2-Dichloroethane-d4	96	80-138
Toluene-d8	98	80-120
Bromofluorobenzene	95	78-123

ND= Not Detected
 RL= Reporting Limit
 MDL= Method Detection Limit

Purgeable Aromatics by GC/MS

Lab #:	273735	Location:	Fire Station #2
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	14EMV03.2000	Analysis:	EPA 8260B
Field ID:	SB-19-4	Diln Fac:	0.9766
Lab ID:	273735-005	Batch#:	231632
Matrix:	Soil	Sampled:	01/29/16
Units:	ug/Kg	Received:	01/29/16
Basis:	as received	Analyzed:	02/01/16

Analyte	Result	RL	MDL
MTBE	ND	4.9	0.37
Benzene	ND	4.9	0.40
Toluene	ND	4.9	0.46
Ethylbenzene	0.74 J	4.9	0.33
m,p-Xylenes	1.0 J	4.9	0.65
o-Xylene	ND	4.9	0.45
Naphthalene	5.5	4.9	0.98

Surrogate	%REC	Limits
Dibromofluoromethane	112	78-134
1,2-Dichloroethane-d4	93	80-138
Toluene-d8	98	80-120
Bromofluorobenzene	94	78-123

J= Estimated value
 ND= Not Detected
 RL= Reporting Limit
 MDL= Method Detection Limit

Purgeable Aromatics by GC/MS

Lab #:	273735	Location:	Fire Station #2
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	14EMV03.2000	Analysis:	EPA 8260B
Field ID:	SB-19-6	Diln Fac:	50.00
Lab ID:	273735-006	Batch#:	231674
Matrix:	Soil	Sampled:	01/29/16
Units:	ug/Kg	Received:	01/29/16
Basis:	as received	Analyzed:	02/02/16

Analyte	Result	RL	MDL
MTBE	ND	250	52
Benzene	ND	250	13
Toluene	ND	250	7.0
Ethylbenzene	720	250	12
m,p-Xylenes	260	250	21
o-Xylene	52 J	250	13
Naphthalene	1,800	250	25

Surrogate	%REC	Limits
Dibromofluoromethane	102	78-134
1,2-Dichloroethane-d4	90	80-138
Toluene-d8	107	80-120
Bromofluorobenzene	96	78-123
Trifluorotoluene (MeOH)	113	52-147

J= Estimated value
 ND= Not Detected
 RL= Reporting Limit
 MDL= Method Detection Limit

Purgeable Aromatics by GC/MS

Lab #:	273735	Location:	Fire Station #2
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	14EMV03.2000	Analysis:	EPA 8260B
Field ID:	SB-19-15	Diln Fac:	0.9579
Lab ID:	273735-007	Batch#:	231674
Matrix:	Soil	Sampled:	01/29/16
Units:	ug/Kg	Received:	01/29/16
Basis:	as received	Analyzed:	02/02/16

Analyte	Result	RL	MDL
MTBE	ND	4.8	0.96
Benzene	ND	4.8	0.86
Toluene	ND	4.8	0.68
Ethylbenzene	ND	4.8	0.65
m,p-Xylenes	ND	4.8	1.2
o-Xylene	ND	4.8	0.60
Naphthalene	ND	4.8	0.96

Surrogate	%REC	Limits
Dibromofluoromethane	114	78-134
1,2-Dichloroethane-d4	94	80-138
Toluene-d8	108	80-120
Bromofluorobenzene	106	78-123

ND= Not Detected
 RL= Reporting Limit
 MDL= Method Detection Limit

Purgeable Aromatics by GC/MS

Lab #:	273735	Location:	Fire Station #2
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	14EMV03.2000	Analysis:	EPA 8260B
Field ID:	SB-17-4	Diln Fac:	50.00
Lab ID:	273735-008	Batch#:	231674
Matrix:	Soil	Sampled:	01/29/16
Units:	ug/Kg	Received:	01/29/16
Basis:	as received	Analyzed:	02/02/16

Analyte	Result	RL	MDL
MTBE	ND	250	52
Benzene	16 J	250	13
Toluene	140 J	250	7.0
Ethylbenzene	2,700	250	12
m,p-Xylenes	10,000	250	21
o-Xylene	2,600	250	13
Naphthalene	2,100	250	25

Surrogate	%REC	Limits
Dibromofluoromethane	95	78-134
1,2-Dichloroethane-d4	85	80-138
Toluene-d8	106	80-120
Bromofluorobenzene	95	78-123
Trifluorotoluene (MeOH)	76	52-147

J= Estimated value
 ND= Not Detected
 RL= Reporting Limit
 MDL= Method Detection Limit

Purgeable Aromatics by GC/MS

Lab #:	273735	Location:	Fire Station #2
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	14EMV03.2000	Analysis:	EPA 8260B
Field ID:	SB-17-9	Diln Fac:	0.9709
Lab ID:	273735-009	Batch#:	231674
Matrix:	Soil	Sampled:	01/29/16
Units:	ug/Kg	Received:	01/29/16
Basis:	as received	Analyzed:	02/02/16

Analyte	Result	RL	MDL
MTBE	ND	4.9	0.97
Benzene	ND	4.9	0.88
Toluene	ND	4.9	0.69
Ethylbenzene	ND	4.9	0.66
m,p-Xylenes	1.5 J	4.9	1.2
o-Xylene	ND	4.9	0.61
Naphthalene	ND	4.9	0.97

Surrogate	%REC	Limits
Dibromofluoromethane	114	78-134
1,2-Dichloroethane-d4	94	80-138
Toluene-d8	108	80-120
Bromofluorobenzene	103	78-123

J= Estimated value
 ND= Not Detected
 RL= Reporting Limit
 MDL= Method Detection Limit

Purgeable Aromatics by GC/MS

Lab #:	273735	Location:	Fire Station #2
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	14EMV03.2000	Analysis:	EPA 8260B
Field ID:	SB-17-15	Diln Fac:	0.9381
Lab ID:	273735-010	Batch#:	231632
Matrix:	Soil	Sampled:	01/29/16
Units:	ug/Kg	Received:	01/29/16
Basis:	as received	Analyzed:	02/01/16

Analyte	Result	RL	MDL
MTBE	ND	4.7	0.36
Benzene	ND	4.7	0.39
Toluene	ND	4.7	0.44
Ethylbenzene	ND	4.7	0.31
m,p-Xylenes	ND	4.7	0.63
o-Xylene	ND	4.7	0.43
Naphthalene	ND	4.7	0.94

Surrogate	%REC	Limits
Dibromofluoromethane	112	78-134
1,2-Dichloroethane-d4	98	80-138
Toluene-d8	94	80-120
Bromofluorobenzene	103	78-123

ND= Not Detected
 RL= Reporting Limit
 MDL= Method Detection Limit

Batch QC Report

Purgeable Aromatics by GC/MS			
Lab #:	273735	Location:	Fire Station #2
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	14EMV03.2000	Analysis:	EPA 8260B
Matrix:	Soil	Batch#:	231632
Units:	ug/Kg	Analyzed:	02/01/16
Diln Fac:	1.000		

Type: BS Lab ID: QC821561

Analyte	Spiked	Result	%REC	Limits
MTBE	25.00	24.16	97	61-122
Benzene	25.00	23.24	93	80-123
Toluene	25.00	23.65	95	80-120
Ethylbenzene	25.00	24.74	99	80-122
m,p-Xylenes	50.00	51.03	102	80-127
o-Xylene	25.00	24.11	96	80-125

Surrogate	%REC	Limits
Dibromofluoromethane	108	78-134
1,2-Dichloroethane-d4	86	80-138
Toluene-d8	97	80-120
Bromofluorobenzene	97	78-123

Type: BSD Lab ID: QC821562

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	25.00	25.50	102	61-122	5	26
Benzene	25.00	24.86	99	80-123	7	21
Toluene	25.00	23.92	96	80-120	1	20
Ethylbenzene	25.00	24.98	100	80-122	1	20
m,p-Xylenes	50.00	50.76	102	80-127	1	20
o-Xylene	25.00	24.11	96	80-125	0	20

Surrogate	%REC	Limits
Dibromofluoromethane	109	78-134
1,2-Dichloroethane-d4	89	80-138
Toluene-d8	96	80-120
Bromofluorobenzene	95	78-123

RPD= Relative Percent Difference

Batch QC Report

Purgeable Aromatics by GC/MS			
Lab #:	273735	Location:	Fire Station #2
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	14EMV03.2000	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC821563	Batch#:	231632
Matrix:	Soil	Analyzed:	02/01/16
Units:	ug/Kg		

Analyte	Result	RL	MDL
MTBE	ND	5.0	0.38
Benzene	ND	5.0	0.41
Toluene	ND	5.0	0.47
Ethylbenzene	ND	5.0	0.34
m,p-Xylenes	ND	5.0	0.67
o-Xylene	ND	5.0	0.46
Naphthalene	ND	5.0	1.0

Surrogate	%REC	Limits
Dibromofluoromethane	109	78-134
1,2-Dichloroethane-d4	95	80-138
Toluene-d8	97	80-120
Bromofluorobenzene	98	78-123

ND= Not Detected
 RL= Reporting Limit
 MDL= Method Detection Limit

Batch QC Report

Purgeable Aromatics by GC/MS			
Lab #:	273735	Location:	Fire Station #2
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	14EMV03.2000	Analysis:	EPA 8260B
Field ID:	SB-17-15	Basis:	as received
MSS Lab ID:	273735-010	Batch#:	231632
Matrix:	Soil	Sampled:	01/29/16
Units:	ug/Kg	Received:	01/29/16

Type: MS Diln Fac: 0.9823
 Lab ID: QC821611 Analyzed: 02/01/16

Analyte	MSS Result	Spiked	Result	%REC	Limits
MTBE	<0.3595	49.12	42.10	86	49-120
Benzene	<0.3856	49.12	42.63	87	57-120
Toluene	<0.4442	49.12	40.84	83	51-120
Ethylbenzene	<0.3150	49.12	41.88	85	45-120
m,p-Xylenes	<0.6254	98.23	86.95	89	45-123
o-Xylene	<0.4342	49.12	41.54	85	44-122

Surrogate	%REC	Limits
Dibromofluoromethane	110	78-134
1,2-Dichloroethane-d4	92	80-138
Toluene-d8	94	80-120
Bromofluorobenzene	101	78-123

Type: MSD Diln Fac: 0.9766
 Lab ID: QC821612 Analyzed: 02/02/16

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	48.83	42.65	87	49-120	2	40
Benzene	48.83	42.37	87	57-120	0	44
Toluene	48.83	43.58	89	51-120	7	47
Ethylbenzene	48.83	41.83	86	45-120	0	55
m,p-Xylenes	97.66	88.57	91	45-123	2	53
o-Xylene	48.83	41.98	86	44-122	2	55

Surrogate	%REC	Limits
Dibromofluoromethane	112	78-134
1,2-Dichloroethane-d4	89	80-138
Toluene-d8	101	80-120
Bromofluorobenzene	90	78-123

RPD= Relative Percent Difference

Batch QC Report

Purgeable Aromatics by GC/MS			
Lab #:	273735	Location:	Fire Station #2
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	14EMV03.2000	Analysis:	EPA 8260B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC821733	Batch#:	231674
Matrix:	Soil	Analyzed:	02/02/16
Units:	ug/Kg		

Analyte	Spiked	Result	%REC	Limits
MTBE	25.00	22.20	89	61-122
Benzene	25.00	23.60	94	80-123
Toluene	25.00	24.10	96	80-120
Ethylbenzene	25.00	23.42	94	80-122
m,p-Xylenes	50.00	51.49	103	80-127
o-Xylene	25.00	24.54	98	80-125

Surrogate	%REC	Limits
Dibromofluoromethane	113	78-134
1,2-Dichloroethane-d4	93	80-138
Toluene-d8	104	80-120
Bromofluorobenzene	99	78-123

Batch QC Report

Purgeable Aromatics by GC/MS			
Lab #:	273735	Location:	Fire Station #2
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	14EMV03.2000	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC821735	Batch#:	231674
Matrix:	Soil	Analyzed:	02/02/16
Units:	ug/Kg		

Analyte	Result	RL	MDL
MTBE	ND	5.0	1.0
Benzene	ND	5.0	0.90
Toluene	ND	5.0	0.71
Ethylbenzene	ND	5.0	0.68
m,p-Xylenes	ND	5.0	1.3
o-Xylene	ND	5.0	0.63
Naphthalene	ND	5.0	1.0

Surrogate	%REC	Limits
Dibromofluoromethane	118	78-134
1,2-Dichloroethane-d4	97	80-138
Toluene-d8	105	80-120
Bromofluorobenzene	110	78-123

ND= Not Detected
 RL= Reporting Limit
 MDL= Method Detection Limit

Batch QC Report

Purgeable Aromatics by GC/MS			
Lab #:	273735	Location:	Fire Station #2
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	14EMV03.2000	Analysis:	EPA 8260B
Field ID:	SB-19-15	Diln Fac:	0.9506
MSS Lab ID:	273735-007	Batch#:	231674
Matrix:	Soil	Sampled:	01/29/16
Units:	ug/Kg	Received:	01/29/16
Basis:	as received	Analyzed:	02/02/16

Type: MS Lab ID: QC821830

Analyte	MSS Result	Spiked	Result	%REC	Limits
MTBE	<0.9582	47.53	48.73	103	49-120
Benzene	<0.8643	47.53	46.88	99	57-120
Toluene	<0.6813	47.53	54.62	115	51-120
Ethylbenzene	<0.6502	47.53	49.48	104	45-120
m,p-Xylenes	<1.198	95.06	105.3	111	45-123
o-Xylene	<0.5997	47.53	50.51	106	44-122

Surrogate	%REC	Limits
Dibromofluoromethane	111	78-134
1,2-Dichloroethane-d4	88	80-138
Toluene-d8	104	80-120
Bromofluorobenzene	94	78-123

Type: MSD Lab ID: QC821831

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	47.53	47.61	100	49-120	2	40
Benzene	47.53	48.73	103	57-120	4	44
Toluene	47.53	52.37	110	51-120	4	47
Ethylbenzene	47.53	47.38	100	45-120	4	55
m,p-Xylenes	95.06	101.9	107	45-123	3	53
o-Xylene	47.53	49.09	103	44-122	3	55

Surrogate	%REC	Limits
Dibromofluoromethane	106	78-134
1,2-Dichloroethane-d4	95	80-138
Toluene-d8	108	80-120
Bromofluorobenzene	94	78-123

RPD= Relative Percent Difference