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By Alameda County Environmental Health 9:27 am, Apr 25, 2016

22 April 2016  
Project 731674401

Mr. Karel Detterman, PG  
Hazardous Materials Specialist  
Alameda County Health Care Services Agency  
Environmental Health Department  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502

Subject: Soil and Groundwater Investigation Report  
730 – 750 A Street  
Hayward, California  
Alameda County SCP Case No. RO3178  
Langan Project: 731674401

Dear Ms. Detterman:

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document titled *Soil and Groundwater Investigation Report, 730 – 750 A Street, Hayward, CA*, Alameda County SCP Case No. RO3178, are true and correct to the best of my knowledge.

Sincerely yours,



Jeanne Burns

22 April 2016

Ms. Karel Detterman, PG  
Hazardous Materials Specialist  
Alameda County Environmental Health  
1131 Harbor Bay Parkway  
Alameda, CA 94502

**Subject: Soil and Groundwater Investigation Report  
730-750 A Street  
Hayward, California  
Project No. 731674401  
SCP: RO3178**

Dear Ms. Detterman:

This letter report presents the results of the soil and groundwater investigation performed by Langan Treadwell Rollo (Langan) for the property located at 730-750 A Street (Site) in Hayward, California. The soil and groundwater sampling was done in accordance with Langan's *Work Plan for Grab Groundwater Sampling and Analysis, 730-750 A Street, Hayward California* dated 23 November 2015 and approved by Alameda County Environmental Health Department (ACEHD) in an electronic correspondence dated 2 February 2016. The purpose of the soil and groundwater investigation was to satisfy the request of the ACEHD for the collection of additional soil and groundwater samples from the Site. Based on the results of the soil and groundwater sampling, Langan respectfully requests case closure for the Site on behalf of Ms. Jeanne Burns (owner).

## **BACKGROUND**

ERAS Environmental Inc., (ERAS) performed a Phase I Environmental Site Assessment (ESA) for the property and the results were presented in their report dated 18 May 2015. ERAS observed that 18 underground hydraulic lifts had been previously removed from the property and no environmental sampling appeared to have been conducted at the time of the hydraulic lift removals. ERAS recommended the collection of soil samples directly adjacent to the former hydraulic lifts to determine if the soils underlying the former hydraulic lifts had been impacted.

In June 2016, ERAS collected 18 soil samples from 18 boring locations where the former hydraulic lifts were located at depths ranging between 9.5 feet below ground surface (bgs) and 11.5 feet bgs. Soil samples were analyzed for total petroleum hydrocarbons (TPH) quantified as hydraulic oil (TPHho) by EPA Method 8015M and polychlorinated biphenyls (PCBs) by EPA Method 8081. TPHho was detected in five out of 18 samples analyzed. Concentrations ranged between 5.6 milligrams per kilogram (mg/kg) and 10,000 mg/kg. TPHho exceeded the San Francisco Bay Regional Water Quality Control Board's (Water Board) Environmental Screening Level (ESL) of 1,000 mg/kg at the following two locations:

- sample location B-15 TPHho was detected at 2,500 mg/kg at a depth 11.5 feet bgs;

- sample location B-6 TPHho was detected at 10,000 mg/kg a depth of 9.5 feet bgs.

PCBs were not detected at or above laboratory reporting limits in any of the samples analyzed. No groundwater samples were collected during ERAS's investigation.

To achieve Site closure, ACEHD has subsequently requested the owner collect one grab groundwater sample and additional soil samples from the former automotive repair facility.

## **SUBSURFACE INVESTIGATION**

On 25 February 2016, Langan drilled one exploratory boring (LB-01) with a limited access track-mounted direct push drill rig to collect soil and one grab groundwater sample for chemical analysis in the vicinity of borings B6 and B15 to characterize the groundwater beneath the area of the former hydraulic lifts. The location of the exploratory boring is presented on Figure 2.

The exploratory boring was drilled to a depth of 71 feet bgs. A temporary 2-inch diameter schedule 40 polyvinyl chloride (PVC) casing with a 10-foot screen was installed from 61 to 71 feet bgs. Groundwater was collected with a clean disposable bailer, decanted into laboratory supplied containers, and stored in an ice-chilled cooler.

Soil samples were collected at depths of approximately 5, 10, 20, 30, 40, 50, 57, and 71 feet bgs. Once collected, each sample tube was sealed with Teflon and plastic caps, labeled, and placed on ice in a cooler for delivery to the analytical laboratory under chain-of-custody procedures. Soil and groundwater samples from each boring were analyzed at McCampbell Analytical Laboratory; a State of California certified analytical laboratory located in Pittsburg, California (McCampbell).

## **SUBSURFACE CONDITIONS**

The Site is overlain with concrete about 6-inches thick and an aggregate base layer about 2-inches thick. Soils recovered from the boring indicated that the Site is underlain by medium to very stiff silt and sandy silt with varying amounts of clay and interbedded lenses of sand and clay. Groundwater was encountered at a depth of approximately 70 feet bgs.

The boring log from our environmental investigation is presented in Appendix A as Figures A-1a through A-1c. Soils were classified according to the soil classification system described on Figure A-2.

## **ANALYTICAL TESTING**

In an email dated 2 February 2016, ACEHD requested that soil and groundwater samples be analyzed for the following:

- Total petroleum hydrocarbons (TPH) as gasoline (TPHg), diesel (TPHd), motor oil (TPHmo), and hydraulic oil (TPHho) by EPA Method 8015;
- Volatile organic compounds (VOCs) by EPA Method 8260B; and
- Semi-volatile organic compounds (SVOCs) by EPA Method 8270 using selected ion monitoring (SIM).

A total of eight soil samples were submitted to McCampbell Analytical Laboratory (McCampbell) in Pittsburg, California. The chemical analyses requested were chosen based on correspondence with ACEHD.

## **ANALYTICAL RESULTS**

The analytical results are presented in Tables 1 and 2. The certified laboratory reports and chain-of-custody records are presented in Appendix B. Analytical results are discussed below based on non-metal soil and groundwater compounds.

### **Soil**

TPHmo and TPHho were detected above the laboratory reporting limit in one of the eight samples (Sample LB-01-05 at a depth of 5 feet bgs) analyzed at concentrations of 7.2 milligrams per kilogram (mg/kg). No TPHg, TPHd, VOCs, or SVOCs were detected at or above any laboratory reporting limits in any soil samples analyzed. Soil analytical results are summarized in Table 1.

### **Groundwater**

TPHmo and TPHho were at concentrations of 1,100 micrograms per liter ( $\mu\text{g/L}$ ). Low level VOCs, including acetone, t-butyl alcohol (TBA) and trichloroethene (TCE) were detected above laboratory reporting limits in the sample analyzed at concentrations ranging from 0.96  $\mu\text{g/L}$  to 31  $\mu\text{g/L}$ . No other VOCs, TPHg, TPHd, or SVOCs were detected above their respective laboratory reporting limits in any of the samples analyzed. The groundwater analytical results are presented on Table 2.

## **DISCUSSION**

The results of the soil and groundwater investigation indicate that the Site is underlain by medium to very stiff silt and sandy silt with varying amounts of clay and interbedded lenses of sand and clay. Groundwater was observed in the boring and measured at the temporary well point at approximately 70 feet bgs.

TPH-mo was found to exceed the Water Board's Tier I ESLs residential ESL of 100  $\mu\text{g/L}$ <sup>1</sup>, as well as the Tier II ESL for groundwater of 640  $\mu\text{g/L}$ . The Tier I (residential) ESL is based on odor and nuisance levels in tap water, therefore, this ESL was not considered appropriate for use as a screening level at this location. Alternatively, foreseeable impacts to potential downgradient receptors were evaluated on the basis of potential exposure pathways:

- Groundwater was encountered at a depth of approximately 70 feet bgs. This depth precludes direct contact with human receptors at this location.
- The concentration of TPH-mo at the Site was found to exceed the Tier II ESL of 640  $\mu\text{g/L}$ , however, this ESL is based on ecological toxicity to aquatic receptors. The bay is about 4 miles west and based on the boring log available for this location, the Site is underlain

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<sup>1</sup> According to the Tier 1 ESLs, TPH motor oil is not soluble and TPH motor oil detections in water most likely are petroleum degradates. Therefore, the TPH diesel criterion is used for comparison.

largely by clays. We therefore expect that the contamination would not impact ecological receptors in the bay from this distance.

- According the WaterBoard's GeoTracker Groundwater Ambient Monitoring and Assessment (GAMA) website, there are a number of supply wells in the vicinity. The nearest down-gradient supply well is located approximately 3,000 feet (1/2 mile) to the southwest of the Site. Assuming natural attenuation is on-going, we would expect concentrations of TPH to degrade significantly (likely below ESLs) by the time groundwater at this location was to reach the nearest down-gradient supply well. This supply well was sampled in 1999 and 2006 for constituents typically indicative of TPH impacts, including LUFT 5 metals (cadmium, chromium, lead, nickel and zinc) BTEX (benzene, ethylbenzene, toluene and xylenes), and MTBE (GAMA, accessed 18 April 2016). These constituents were not detected, indicating the well has not historically been impacted by TPH from up-gradient sources.
- The boring log indicates thick clay and silty clay beds (up to 19 thick) underlying the Site. This would preclude downward migration to the depth of the observed groundwater level.
- The depth of contamination implies that the source is not likely from the overlying former hydraulic lifts, as shown by intervening soil sample results (Table1).

Due to the above-stated reasons, we believe the data at this location do not indicate a need for further action with regards to the former presence of the hydraulic lifts at the Site. Based on these findings, Langan respectfully requests case closure for the Site on behalf of the owner.

## LIMITATIONS

Descriptions of specific field activities and historical events are based on our observations and on information provided by others. The opinions and information presented in this report apply to Site conditions and the information that was available at the time the work was performed and do not apply to changes of which we are not aware or have not had the opportunity to evaluate. Langan Treadwell Rollo makes no guarantees or warranties with respect to the accuracy or completeness of this information.

Sincerely yours,

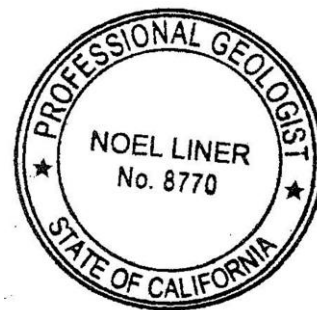
**Langan Treadwell Rollo**



Dustyne Sutherland  
Senior Project Manager



Noel Liner, PG  
Project Geologist



Attachments: Tables  
Figures  
Appendix A – Boring Log  
Appendix B – Certified Analytical Laboratory Reports

## **TABLES**

**Table 1**  
**Soil Analytical Results for Non-Metals**  
**730-750 A Street**  
**Hayward, California**

Sample ID	Depth (feet)	Date Sampled	TPHg	TPHd	TPHmo	TPHho	VOCs	PAHs/PNAs
LB-01-05	5.0	02/25/16	< 1.0	< 1.0	7.2	7.2	ND	ND
LB-01-10	10.0	02/25/16	< 1.0	< 1.0	< 5.0	< 5.0	ND	ND
LB-01-20	20.0	02/25/16	< 1.0	< 1.0	< 5.0	< 5.0	ND	ND
LB-01-30	30.0	02/25/16	< 1.0	< 1.0	< 5.0	< 5.0	ND	ND
LB-01-40	40.0	02/25/16	< 1.0	< 1.0	< 5.0	< 5.0	ND	ND
LB-01-50	50.0	02/25/16	< 1.0	< 1.0	< 5.0	< 5.0	ND	ND
LB-01-57	57.0	02/25/16	< 1.0	< 1.0	< 5.0	< 5.0	ND	ND
LB-01-71	71.0	02/25/16	< 1.0	< 1.0	< 5.0	< 5.0	ND	ND
Environmental Screening Levels			(mg/kg)					
ESLs			100	240	100	--	--	--

**Notes:**

mg/kg - milligrams per kilograms

TPHg - Total Petroleum Hydrocarbons as Gasoline, EPA Method 8015B

TPHd - Total Petroleum Hydrocarbons as Diesel Range, EPA Method 8015B

TPHmo - Total Petroleum Hydrocarbons as Motor Oil, EPA Method 8015B

TPHho - Total Petroleum Hydrocarbons as Hydraulic Oil, EPA Method 8015B

VOCs - Volatile Organic Compounds, EPA 8260B

PAHs/PNAs - Polynuclear Aromatic Hydrocarbons, EPA Method 8270C-SIM

< - Analyte was not detected at or above the laboratory reporting limit

ND - Not detected at or above the laboratory reporting limit

NE - Criteria not established

-- - ESLs varies by compound

ESLs - Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board, Tier 1 ESLs, February 2016

**Table 2**  
**Groundwater Analytical Results for Non-Metals**  
**730-750 A Street**  
**Hayward, California**

Langan Project: 731674401  
 April 2016

Sample ID	Date Sampled	TPHg	TPHd	TPHmo	TPHho	Acetone	TBA	TCE	All other VOCs	PAHs/PNAs
		(µg/L)								
LB-01-GW	02/25/16	< 50	< 50	<b>1,100</b>	1100	31	2.1	0.96	ND	ND
Environmental Screening Levels		(µg/L)								
ESLs		100	100	100 <sup>1</sup>	NE	1,500	12	5	--	--

Notes:

µg/L - micrograms per Liter

TPHg - Total Petroleum Hydrocarbons as Gasoline, EPA Method 8015B

TPHd - Total Petroleum Hydrocarbons as Diesel Range, EPA Method 8015B

TPHmo - Total Petroleum Hydrocarbons as Motor Oil, EPA Method 8015B

TPHho - Total Petroleum Hydrocarbons as Hydraulic Oil, EPA Method 8015B

VOCs - Volatile Organic Compounds, EPA 8260B

PAHs/PNAs - Polynuclear Aromatic Hydrocarbons, EPA Method 8270C-SIM

TBA - t-Butyl alcohol

TCE - Trichloroethene

< - Analyte was not detected at or above the laboratory reporting limit

ND - Not detected at or above the laboratory reporting limit

ESLs - Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board, Tier 1 ESLs, February 2016

**Bold** - sample concentration exceeds ESL

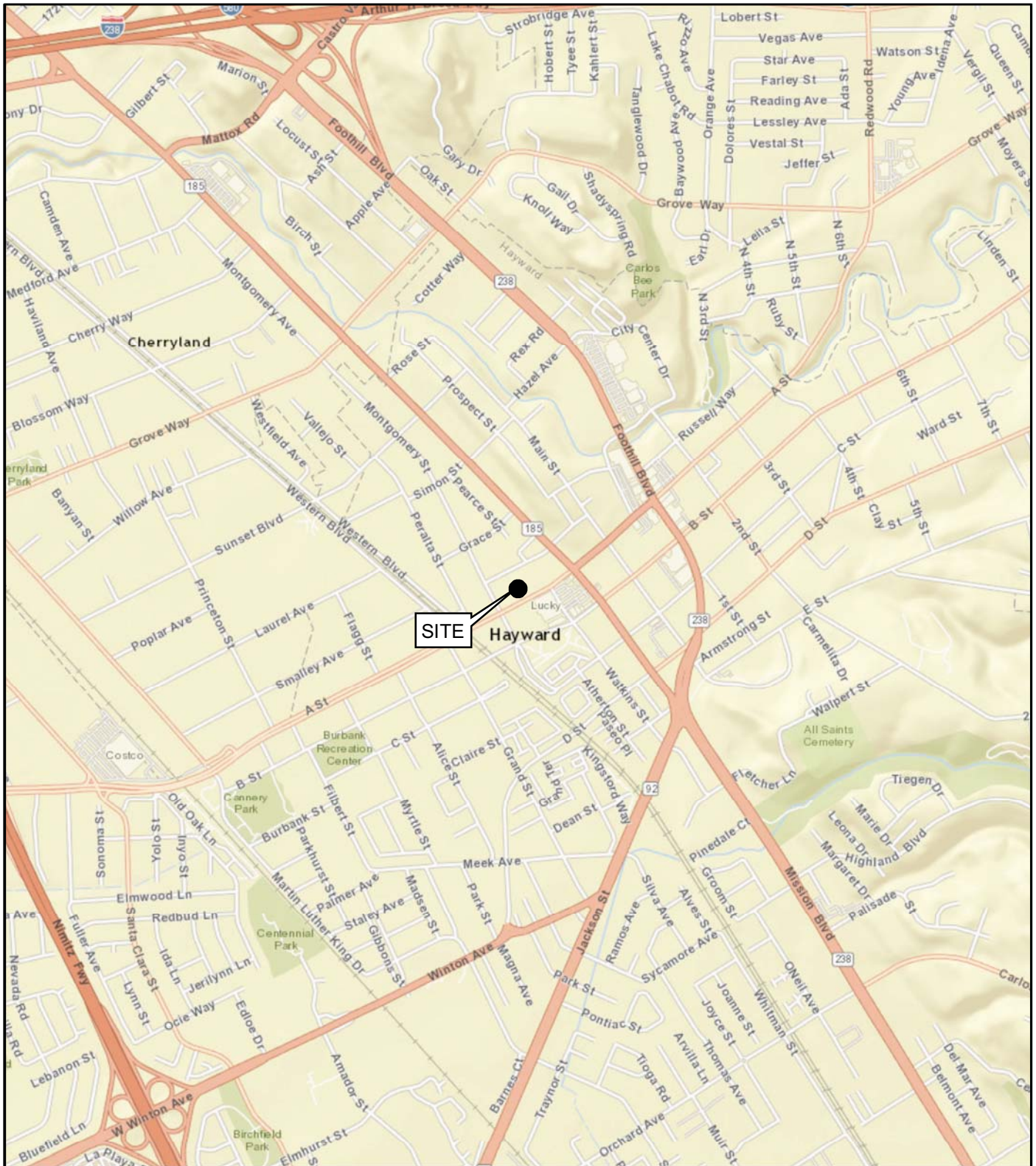
<sup>1</sup> - According to the February 2016 ESLs, TPH motor oil is not soluble and TPH motor oil detections in water most likely are petroleum degradates. Therefore, the TPH diesel criterion is used for comparison.

NE - Criteria not established

-- - ESLs varies by compound

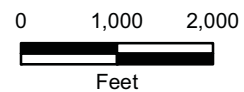


## FIGURES



**NOTES:**

World street basemap is provided through Langan's Esri ArcGIS software licensing and ArcGIS online.  
 Credits: Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN.



**730-750 A STREET**  
 Hayward, California

**SITE LOCATION MAP**

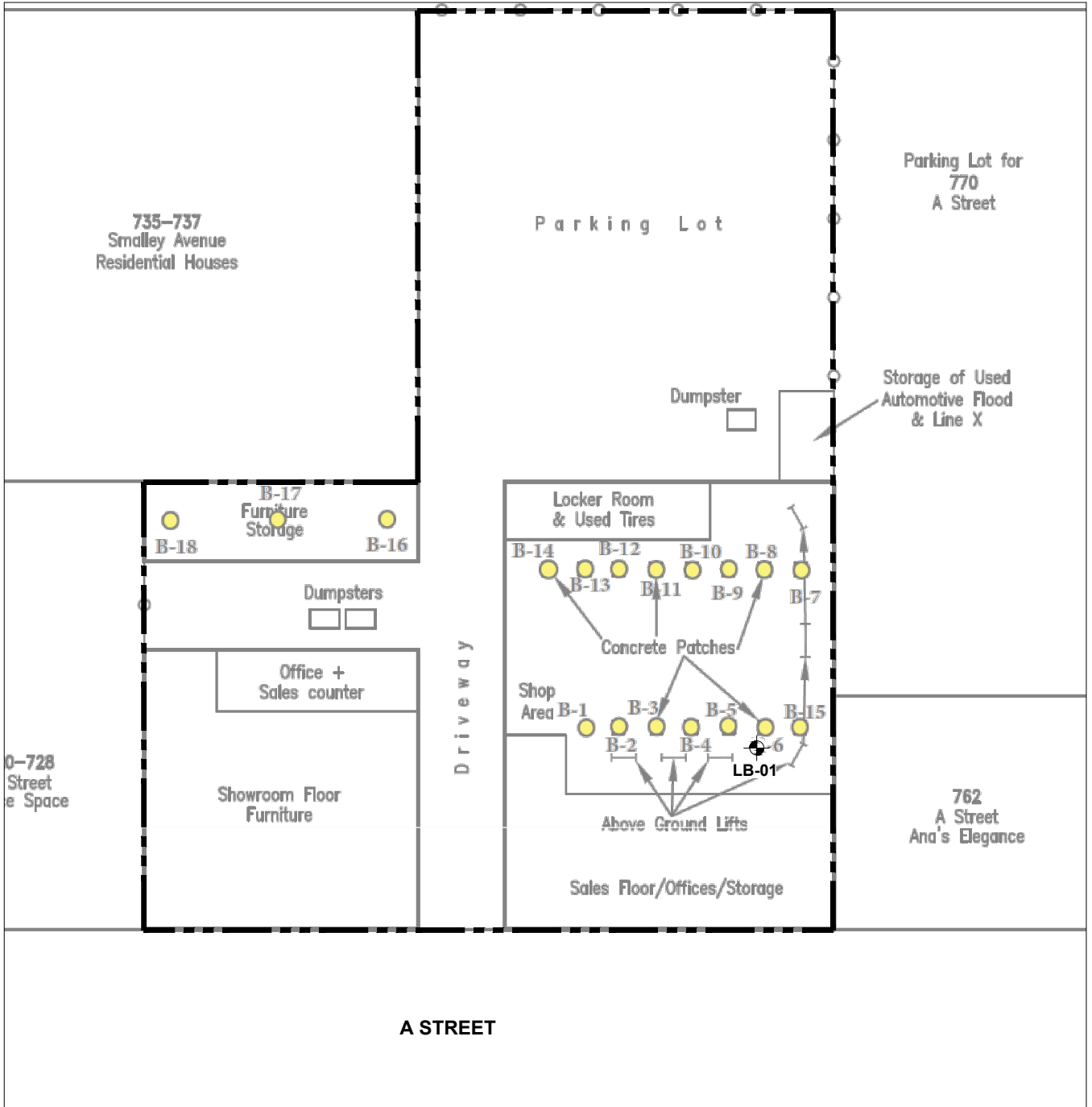
**LANGAN TREADWELL ROLLO**

Date 11/23/15

Project No. 731674401

Figure 1

C:\Users\cyoung\appdata\local\temp\AcPublish\_4884\731674401-N-SF0101.dwg 2/26/16



**A STREET**

731 A Street Angels Hospice	737 A Street Dog	741 A Street Cindy's	747 A Street Residential	A Street Lucky's
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**EXPLANATION**

<b>LB-01</b>	Approximate location of proposed environmental boring by Langan Treadwell Rollo		Site boundary
<b>B-18</b>	Approximate location of soil boring by Eras Environmental, 2015		

0 40 Feet  
Approximate scale

Reference: Base map from a drawing titled "Property Site Plan," by Eras Environmental, dated 2015.

<b>730-750 A STREET</b> Hayward, California	<b>SITE PLAN</b>
<b>LANGAN TREADWELL ROLLO</b>	Date 11/23/15   Project No. 731674401   Figure 2

**APPENDIX A**  
**BORING LOG**

PROJECT: **730-750 A STREET**  
Hayward, California

# Log of Boring LB-1

PAGE 1 OF 3

Boring location: See Site Plan, Figure 2

Logged by: A. Brown

Date started: 2/25/16

Date finished: 2/25/16

Drilling method: Direct Push

Hammer weight/drop: NA

Hammer type: NA

Sampler: Continuous

DEPTH (feet)	SAMPLES				PID (ppb)	LITHOLOGY	MATERIAL DESCRIPTION
	Sample Number	Sample	Blow Count	Recovery (inches)			
1							6 inches concrete
2					0		2 inches aggregate base (AB)
3							SILT with SAND (ML) dark brown, medium stiff, moist, semi-plastic, no odor
4						ML	
5	LB-1-5.0	•			0		stiff
6							
7				35/48			
8					0		
9							SILTY CLAY (CL) light brown, very stiff, moist, semi-plastic, no odor
10	LB-1-10.0	•			0		
11				48/48			
12					0		
13							
14							
15				48/48	0		
16							
17					0	CL	
18							
19				48/48			2 inch thick layer of sandy silt
20	LB-1-20.0	•			0		
21							
22							
23				48/48			
24					0		
25							
26							
27				24/48			
28							SANDY SILT (ML) brown, soft, moist, semi-plastic, no odor
29						ML	
30	LB-1-30.0	•		48/48	0		

TEST ENVIRONMENTAL INCHES 731674401.GPJ T&R.GDT 2/29/16

**LANGAN TREADWELL ROLLO**

Project No.: 731674401

Figure: A-1a

PROJECT:

730-750 A STREET  
Hayward, California

Log of Boring LB-1

PAGE 2 OF 3

DEPTH (feet)	SAMPLES				PID (ppb)	LITHOLOGY	MATERIAL DESCRIPTION
	Sample Number	Sample	Blow Count	Recovery (Inches)			
31						ML	SANDY SILT (ML) (continued)
32				48/48		SM	SILTY SAND (SM) brown, loose, moist, no odor
33							
34							
35				35/48	0		SAND with SILT and GRAVEL (SP-SM) brown, medium dense, moist, subangular gravel up to 1/2 inch in diameter, no odor
36							
37							
38							
39				48/48		SP-SM	
40	LB-1-40.0	•			0		
41							
42							very stiff
43				37/48			
44							CLAY (CL) brown, medium stiff, moist, plastic, no odor
45					0		
46							
47				24/48			very stiff
48						CL	
49							
50	LB-1-50.0	•			0		interbedded sands
51				48/48			
52							
53							
54							SILTY CLAY with SAND (CL) dark brown, very stiff, moist, semi-plastic, no odor
55				18/36	0		
56							
57	LB-1-57.0	•				CL	
58				18/36	0		
59							
60				0/48			

TEST ENVIRONMENTAL INCHES 731674401.GPJ T&R.GDT 2/29/16

PROJECT:

730-750 A STREET  
Hayward, California

**Log of Boring LB-1**

PAGE 3 OF 3

DEPTH (feet)	SAMPLES				PID (ppb)	LITHOLOGY	MATERIAL DESCRIPTION
	Sample Number	Sample	Blow Count	Recovery (Inches)			
61							SILTY CLAY with SAND (CL) (continued)
62				0/48		CL	
63							SAND (SP) tan, dense, moist, no odor
64				0		SP	
65				48/48			CLAY (CL) brown, stiff, moist, plastic, no odor
66							
67					0	CL	
68							(02/25/16) SAND with GRAVEL and CLAY (SP) brown, dense, wet, subangular gravel up to 1/2 inch in diameter, no odor
69				48/48			
70	LB-1-71.0	•				SP	
71					0		
72							
73							
74							
75							
76							
77							
78							
79							
80							
81							
82							
83							
84							
85							
86							
87							
88							
89							
90							

TEST ENVIRONMENTAL INCHES 731674401.GPJ T&R.GDT 2/29/16

Boring terminated at a depth of 71 feet below ground surface.  
Boring backfilled with cement grout.  
Groundwater encountered at 69.6 feet below ground surface during drilling.  
Boring hand augered to 5 feet below ground surface.

**LANGAN TREADWELL ROLLO**

Project No.:  
731674401

Figure:  
A-1c

## UNIFIED SOIL CLASSIFICATION SYSTEM

Major Divisions	Symbols	Typical Names
<b>Coarse-Grained Soils</b> (more than half of soil > no. 200 sieve size)	<b>Gravels</b> (More than half of coarse fraction > no. 4 sieve size)	<b>GW</b> Well-graded gravels or gravel-sand mixtures, little or no fines
		<b>GP</b> Poorly-graded gravels or gravel-sand mixtures, little or no fines
		<b>GM</b> Silty gravels, gravel-sand-silt mixtures
		<b>GC</b> Clayey gravels, gravel-sand-clay mixtures
	<b>Sands</b> (More than half of coarse fraction < no. 4 sieve size)	<b>SW</b> Well-graded sands or gravelly sands, little or no fines
		<b>SP</b> Poorly-graded sands or gravelly sands, little or no fines
		<b>SM</b> Silty sands, sand-silt mixtures
<b>Fine -Grained Soils</b> (more than half of soil < no. 200 sieve size)	<b>Silts and Clays</b> LL = < 50	<b>ML</b> Inorganic silts and clayey silts of low plasticity, sandy silts, gravelly silts
		<b>CL</b> Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, lean clays
		<b>OL</b> Organic silts and organic silt-clays of low plasticity
	<b>Silts and Clays</b> LL = > 50	<b>MH</b> Inorganic silts of high plasticity
		<b>CH</b> Inorganic clays of high plasticity, fat clays
		<b>OH</b> Organic silts and clays of high plasticity
<b>Highly Organic Soils</b>	<b>PT</b> Peat and other highly organic soils	

### SAMPLE DESIGNATIONS/SYMBOLS

GRAIN SIZE CHART		
Classification	Range of Grain Sizes	
	U.S. Standard Sieve Size	Grain Size in Millimeters
Boulders	Above 12"	Above 305
Cobbles	12" to 3"	305 to 76.2
Gravel coarse fine	3" to No. 4	76.2 to 4.76
	3" to 3/4" 3/4" to No. 4	76.2 to 19.1 19.1 to 4.76
Sand coarse medium fine	No. 4 to No. 200	4.76 to 0.075
	No. 4 to No. 10	4.76 to 2.00
	No. 10 to No. 40	2.00 to 0.420
	No. 40 to No. 200	0.420 to 0.075
Silt and Clay	Below No. 200	Below 0.075

- Sample taken with Sprague & Henwood split-barrel sampler with a 3.0-inch outside diameter and a 2.43-inch inside diameter. Darkened area indicates soil recovered
- Classification sample taken with Standard Penetration Test sampler
- Undisturbed sample taken with thin-walled tube
- Disturbed sample
- Sampling attempted with no recovery
- Core sample
- Analytical laboratory sample
- Sample taken with Direct Push or Drive sampler

- Unstabilized groundwater level
- Stabilized groundwater level

### SAMPLER TYPE

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li><b>C</b> Core barrel</li> <li><b>CA</b> California split-barrel sampler with 2.5-inch outside diameter and a 1.93-inch inside diameter</li> <li><b>D&amp;M</b> Dames &amp; Moore piston sampler using 2.5-inch outside diameter, thin-walled tube</li> <li><b>O</b> Osterberg piston sampler using 3.0-inch outside diameter, thin-walled Shelby tube</li> </ul> | <ul style="list-style-type: none"> <li><b>PT</b> Pitcher tube sampler using 3.0-inch outside diameter, thin-walled Shelby tube</li> <li><b>S&amp;H</b> Sprague &amp; Henwood split-barrel sampler with a 3.0-inch outside diameter and a 2.43-inch inside diameter</li> <li><b>SPT</b> Standard Penetration Test (SPT) split-barrel sampler with a 2.0-inch outside diameter and a 1.5-inch inside diameter</li> <li><b>ST</b> Shelby Tube (3.0-inch outside diameter, thin-walled tube) advanced with hydraulic pressure</li> </ul> |
|---|--|

**730-750 A STREET**  
Hayward, California

## CLASSIFICATION CHART

**LANGAN TREADWELL ROLLO**

Date 02/26/16	Project No. 731674401	Figure A-2
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**APPENDIX B**  
**CERTIFIED ANALYTICAL LABORATORY REPORTS**



# McC Campbell Analytical, Inc.

"When Quality Counts"

## Analytical Report

**WorkOrder:** 1602B06

**Report Created for:** Treadwell & Rollo

555 Montgomery St., Suite 1300  
San Francisco, CA 94111

**Project Contact:** Dustyne Sutherland

**Project P.O.:**

**Project Name:** 731674401; 730-750 A Street

**Project Received:** 02/26/2016

Analytical Report reviewed & approved for release on 03/09/2016 by:

Angela Rydelius,  
Laboratory Manager

*The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.*





## Glossary of Terms & Qualifier Definitions

**Client:** Treadwell & Rollo  
**Project:** 731674401; 730-750 A Street  
**WorkOrder:** 1602B06

### Glossary Abbreviation

95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test
DUP	Duplicate
EDL	Estimated Detection Limit
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

### Analytical Qualifiers

S	Surrogate spike recovery outside accepted recovery limits
c2	surrogate recovery outside of the control limits due to matrix interference.
e7	oil range compounds are significant



## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 2/26/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-5	1602B06-001A	Soil	02/25/2016 09:05	GC18	117261
Analytes	Result	RL	DF	Date Analyzed	
Acetone	ND	0.10	1	03/01/2016 23:38	
tert-Amyl methyl ether (TAME)	ND	0.0050	1	03/01/2016 23:38	
Benzene	ND	0.0050	1	03/01/2016 23:38	
Bromobenzene	ND	0.0050	1	03/01/2016 23:38	
Bromochloromethane	ND	0.0050	1	03/01/2016 23:38	
Bromodichloromethane	ND	0.0050	1	03/01/2016 23:38	
Bromoform	ND	0.0050	1	03/01/2016 23:38	
Bromomethane	ND	0.0050	1	03/01/2016 23:38	
2-Butanone (MEK)	ND	0.020	1	03/01/2016 23:38	
t-Butyl alcohol (TBA)	ND	0.050	1	03/01/2016 23:38	
n-Butyl benzene	ND	0.0050	1	03/01/2016 23:38	
sec-Butyl benzene	ND	0.0050	1	03/01/2016 23:38	
tert-Butyl benzene	ND	0.0050	1	03/01/2016 23:38	
Carbon Disulfide	ND	0.0050	1	03/01/2016 23:38	
Carbon Tetrachloride	ND	0.0050	1	03/01/2016 23:38	
Chlorobenzene	ND	0.0050	1	03/01/2016 23:38	
Chloroethane	ND	0.0050	1	03/01/2016 23:38	
Chloroform	ND	0.0050	1	03/01/2016 23:38	
Chloromethane	ND	0.0050	1	03/01/2016 23:38	
2-Chlorotoluene	ND	0.0050	1	03/01/2016 23:38	
4-Chlorotoluene	ND	0.0050	1	03/01/2016 23:38	
Dibromochloromethane	ND	0.0050	1	03/01/2016 23:38	
1,2-Dibromo-3-chloropropane	ND	0.0040	1	03/01/2016 23:38	
1,2-Dibromoethane (EDB)	ND	0.0040	1	03/01/2016 23:38	
Dibromomethane	ND	0.0050	1	03/01/2016 23:38	
1,2-Dichlorobenzene	ND	0.0050	1	03/01/2016 23:38	
1,3-Dichlorobenzene	ND	0.0050	1	03/01/2016 23:38	
1,4-Dichlorobenzene	ND	0.0050	1	03/01/2016 23:38	
Dichlorodifluoromethane	ND	0.0050	1	03/01/2016 23:38	
1,1-Dichloroethane	ND	0.0050	1	03/01/2016 23:38	
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	03/01/2016 23:38	
1,1-Dichloroethene	ND	0.0050	1	03/01/2016 23:38	
cis-1,2-Dichloroethene	ND	0.0050	1	03/01/2016 23:38	
trans-1,2-Dichloroethene	ND	0.0050	1	03/01/2016 23:38	
1,2-Dichloropropane	ND	0.0050	1	03/01/2016 23:38	
1,3-Dichloropropane	ND	0.0050	1	03/01/2016 23:38	
2,2-Dichloropropane	ND	0.0050	1	03/01/2016 23:38	

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## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 2/26/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-5	1602B06-001A	Soil	02/25/2016 09:05	GC18	117261
Analytes	Result	RL	DF	Date Analyzed	
1,1-Dichloropropene	ND	0.0050	1	03/01/2016 23:38	
cis-1,3-Dichloropropene	ND	0.0050	1	03/01/2016 23:38	
trans-1,3-Dichloropropene	ND	0.0050	1	03/01/2016 23:38	
Diisopropyl ether (DIPE)	ND	0.0050	1	03/01/2016 23:38	
Ethylbenzene	ND	0.0050	1	03/01/2016 23:38	
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	03/01/2016 23:38	
Freon 113	ND	0.0050	1	03/01/2016 23:38	
Hexachlorobutadiene	ND	0.0050	1	03/01/2016 23:38	
Hexachloroethane	ND	0.0050	1	03/01/2016 23:38	
2-Hexanone	ND	0.0050	1	03/01/2016 23:38	
Isopropylbenzene	ND	0.0050	1	03/01/2016 23:38	
4-Isopropyl toluene	ND	0.0050	1	03/01/2016 23:38	
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	03/01/2016 23:38	
Methylene chloride	ND	0.0050	1	03/01/2016 23:38	
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	03/01/2016 23:38	
Naphthalene	ND	0.0050	1	03/01/2016 23:38	
n-Propyl benzene	ND	0.0050	1	03/01/2016 23:38	
Styrene	ND	0.0050	1	03/01/2016 23:38	
1,1,1,2-Tetrachloroethane	ND	0.0050	1	03/01/2016 23:38	
1,1,2,2-Tetrachloroethane	ND	0.0050	1	03/01/2016 23:38	
Tetrachloroethene	ND	0.0050	1	03/01/2016 23:38	
Toluene	ND	0.0050	1	03/01/2016 23:38	
1,2,3-Trichlorobenzene	ND	0.0050	1	03/01/2016 23:38	
1,2,4-Trichlorobenzene	ND	0.0050	1	03/01/2016 23:38	
1,1,1-Trichloroethane	ND	0.0050	1	03/01/2016 23:38	
1,1,2-Trichloroethane	ND	0.0050	1	03/01/2016 23:38	
Trichloroethene	ND	0.0050	1	03/01/2016 23:38	
Trichlorofluoromethane	ND	0.0050	1	03/01/2016 23:38	
1,2,3-Trichloropropane	ND	0.0050	1	03/01/2016 23:38	
1,2,4-Trimethylbenzene	ND	0.0050	1	03/01/2016 23:38	
1,3,5-Trimethylbenzene	ND	0.0050	1	03/01/2016 23:38	
Vinyl Chloride	ND	0.0050	1	03/01/2016 23:38	
Xylenes, Total	ND	0.0050	1	03/01/2016 23:38	

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## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 2/26/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-5	1602B06-001A	Soil	02/25/2016 09:05	GC18	117261

Analytes	Result	Matrix	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
Dibromofluoromethane	122		70-130		03/01/2016 23:38
Toluene-d8	132	S	70-130		03/01/2016 23:38
4-BFB	81		70-130		03/01/2016 23:38
Benzene-d6	123		60-140		03/01/2016 23:38
Ethylbenzene-d10	120		60-140		03/01/2016 23:38
1,2-DCB-d4	107		60-140		03/01/2016 23:38

Analyst(s): KF

Analytical Comments: c2



## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 2/26/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-10	1602B06-002A	Soil	02/25/2016 09:10	GC18	117261
Analytes	Result	RL	DF	Date Analyzed	
Acetone	ND	0.10	1	03/02/2016 00:16	
tert-Amyl methyl ether (TAME)	ND	0.0050	1	03/02/2016 00:16	
Benzene	ND	0.0050	1	03/02/2016 00:16	
Bromobenzene	ND	0.0050	1	03/02/2016 00:16	
Bromochloromethane	ND	0.0050	1	03/02/2016 00:16	
Bromodichloromethane	ND	0.0050	1	03/02/2016 00:16	
Bromoform	ND	0.0050	1	03/02/2016 00:16	
Bromomethane	ND	0.0050	1	03/02/2016 00:16	
2-Butanone (MEK)	ND	0.020	1	03/02/2016 00:16	
t-Butyl alcohol (TBA)	ND	0.050	1	03/02/2016 00:16	
n-Butyl benzene	ND	0.0050	1	03/02/2016 00:16	
sec-Butyl benzene	ND	0.0050	1	03/02/2016 00:16	
tert-Butyl benzene	ND	0.0050	1	03/02/2016 00:16	
Carbon Disulfide	ND	0.0050	1	03/02/2016 00:16	
Carbon Tetrachloride	ND	0.0050	1	03/02/2016 00:16	
Chlorobenzene	ND	0.0050	1	03/02/2016 00:16	
Chloroethane	ND	0.0050	1	03/02/2016 00:16	
Chloroform	ND	0.0050	1	03/02/2016 00:16	
Chloromethane	ND	0.0050	1	03/02/2016 00:16	
2-Chlorotoluene	ND	0.0050	1	03/02/2016 00:16	
4-Chlorotoluene	ND	0.0050	1	03/02/2016 00:16	
Dibromochloromethane	ND	0.0050	1	03/02/2016 00:16	
1,2-Dibromo-3-chloropropane	ND	0.0040	1	03/02/2016 00:16	
1,2-Dibromoethane (EDB)	ND	0.0040	1	03/02/2016 00:16	
Dibromomethane	ND	0.0050	1	03/02/2016 00:16	
1,2-Dichlorobenzene	ND	0.0050	1	03/02/2016 00:16	
1,3-Dichlorobenzene	ND	0.0050	1	03/02/2016 00:16	
1,4-Dichlorobenzene	ND	0.0050	1	03/02/2016 00:16	
Dichlorodifluoromethane	ND	0.0050	1	03/02/2016 00:16	
1,1-Dichloroethane	ND	0.0050	1	03/02/2016 00:16	
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	03/02/2016 00:16	
1,1-Dichloroethene	ND	0.0050	1	03/02/2016 00:16	
cis-1,2-Dichloroethene	ND	0.0050	1	03/02/2016 00:16	
trans-1,2-Dichloroethene	ND	0.0050	1	03/02/2016 00:16	
1,2-Dichloropropane	ND	0.0050	1	03/02/2016 00:16	
1,3-Dichloropropane	ND	0.0050	1	03/02/2016 00:16	
2,2-Dichloropropane	ND	0.0050	1	03/02/2016 00:16	

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## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 2/26/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-10	1602B06-002A	Soil	02/25/2016 09:10	GC18	117261
Analytes	Result	RL	DF	Date Analyzed	
1,1-Dichloropropene	ND	0.0050	1	03/02/2016 00:16	
cis-1,3-Dichloropropene	ND	0.0050	1	03/02/2016 00:16	
trans-1,3-Dichloropropene	ND	0.0050	1	03/02/2016 00:16	
Diisopropyl ether (DIPE)	ND	0.0050	1	03/02/2016 00:16	
Ethylbenzene	ND	0.0050	1	03/02/2016 00:16	
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	03/02/2016 00:16	
Freon 113	ND	0.0050	1	03/02/2016 00:16	
Hexachlorobutadiene	ND	0.0050	1	03/02/2016 00:16	
Hexachloroethane	ND	0.0050	1	03/02/2016 00:16	
2-Hexanone	ND	0.0050	1	03/02/2016 00:16	
Isopropylbenzene	ND	0.0050	1	03/02/2016 00:16	
4-Isopropyl toluene	ND	0.0050	1	03/02/2016 00:16	
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	03/02/2016 00:16	
Methylene chloride	ND	0.0050	1	03/02/2016 00:16	
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	03/02/2016 00:16	
Naphthalene	ND	0.0050	1	03/02/2016 00:16	
n-Propyl benzene	ND	0.0050	1	03/02/2016 00:16	
Styrene	ND	0.0050	1	03/02/2016 00:16	
1,1,1,2-Tetrachloroethane	ND	0.0050	1	03/02/2016 00:16	
1,1,2,2-Tetrachloroethane	ND	0.0050	1	03/02/2016 00:16	
Tetrachloroethene	ND	0.0050	1	03/02/2016 00:16	
Toluene	ND	0.0050	1	03/02/2016 00:16	
1,2,3-Trichlorobenzene	ND	0.0050	1	03/02/2016 00:16	
1,2,4-Trichlorobenzene	ND	0.0050	1	03/02/2016 00:16	
1,1,1-Trichloroethane	ND	0.0050	1	03/02/2016 00:16	
1,1,2-Trichloroethane	ND	0.0050	1	03/02/2016 00:16	
Trichloroethene	ND	0.0050	1	03/02/2016 00:16	
Trichlorofluoromethane	ND	0.0050	1	03/02/2016 00:16	
1,2,3-Trichloropropane	ND	0.0050	1	03/02/2016 00:16	
1,2,4-Trimethylbenzene	ND	0.0050	1	03/02/2016 00:16	
1,3,5-Trimethylbenzene	ND	0.0050	1	03/02/2016 00:16	
Vinyl Chloride	ND	0.0050	1	03/02/2016 00:16	
Xylenes, Total	ND	0.0050	1	03/02/2016 00:16	

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# Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 2/26/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-10	1602B06-002A	Soil	02/25/2016 09:10	GC18	117261

Analytes	Result	Matrix	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
Dibromofluoromethane	121		70-130		03/02/2016 00:16
Toluene-d8	139	S	70-130		03/02/2016 00:16
4-BFB	78		70-130		03/02/2016 00:16
Benzene-d6	130		60-140		03/02/2016 00:16
Ethylbenzene-d10	127		60-140		03/02/2016 00:16
1,2-DCB-d4	112		60-140		03/02/2016 00:16

Analyst(s): KF

Analytical Comments: c2



## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 2/26/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-20	1602B06-003A	Soil	02/25/2016 09:20	GC18	117261
Analytes	Result	RL	DF	Date Analyzed	
Acetone	ND	0.10	1	03/02/2016 00:54	
tert-Amyl methyl ether (TAME)	ND	0.0050	1	03/02/2016 00:54	
Benzene	ND	0.0050	1	03/02/2016 00:54	
Bromobenzene	ND	0.0050	1	03/02/2016 00:54	
Bromochloromethane	ND	0.0050	1	03/02/2016 00:54	
Bromodichloromethane	ND	0.0050	1	03/02/2016 00:54	
Bromoform	ND	0.0050	1	03/02/2016 00:54	
Bromomethane	ND	0.0050	1	03/02/2016 00:54	
2-Butanone (MEK)	ND	0.020	1	03/02/2016 00:54	
t-Butyl alcohol (TBA)	ND	0.050	1	03/02/2016 00:54	
n-Butyl benzene	ND	0.0050	1	03/02/2016 00:54	
sec-Butyl benzene	ND	0.0050	1	03/02/2016 00:54	
tert-Butyl benzene	ND	0.0050	1	03/02/2016 00:54	
Carbon Disulfide	ND	0.0050	1	03/02/2016 00:54	
Carbon Tetrachloride	ND	0.0050	1	03/02/2016 00:54	
Chlorobenzene	ND	0.0050	1	03/02/2016 00:54	
Chloroethane	ND	0.0050	1	03/02/2016 00:54	
Chloroform	ND	0.0050	1	03/02/2016 00:54	
Chloromethane	ND	0.0050	1	03/02/2016 00:54	
2-Chlorotoluene	ND	0.0050	1	03/02/2016 00:54	
4-Chlorotoluene	ND	0.0050	1	03/02/2016 00:54	
Dibromochloromethane	ND	0.0050	1	03/02/2016 00:54	
1,2-Dibromo-3-chloropropane	ND	0.0040	1	03/02/2016 00:54	
1,2-Dibromoethane (EDB)	ND	0.0040	1	03/02/2016 00:54	
Dibromomethane	ND	0.0050	1	03/02/2016 00:54	
1,2-Dichlorobenzene	ND	0.0050	1	03/02/2016 00:54	
1,3-Dichlorobenzene	ND	0.0050	1	03/02/2016 00:54	
1,4-Dichlorobenzene	ND	0.0050	1	03/02/2016 00:54	
Dichlorodifluoromethane	ND	0.0050	1	03/02/2016 00:54	
1,1-Dichloroethane	ND	0.0050	1	03/02/2016 00:54	
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	03/02/2016 00:54	
1,1-Dichloroethene	ND	0.0050	1	03/02/2016 00:54	
cis-1,2-Dichloroethene	ND	0.0050	1	03/02/2016 00:54	
trans-1,2-Dichloroethene	ND	0.0050	1	03/02/2016 00:54	
1,2-Dichloropropane	ND	0.0050	1	03/02/2016 00:54	
1,3-Dichloropropane	ND	0.0050	1	03/02/2016 00:54	
2,2-Dichloropropane	ND	0.0050	1	03/02/2016 00:54	

(Cont.)



## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 2/26/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-20	1602B06-003A	Soil	02/25/2016 09:20	GC18	117261
Analytes	Result	RL	DF	Date Analyzed	
1,1-Dichloropropene	ND	0.0050	1	03/02/2016 00:54	
cis-1,3-Dichloropropene	ND	0.0050	1	03/02/2016 00:54	
trans-1,3-Dichloropropene	ND	0.0050	1	03/02/2016 00:54	
Diisopropyl ether (DIPE)	ND	0.0050	1	03/02/2016 00:54	
Ethylbenzene	ND	0.0050	1	03/02/2016 00:54	
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	03/02/2016 00:54	
Freon 113	ND	0.0050	1	03/02/2016 00:54	
Hexachlorobutadiene	ND	0.0050	1	03/02/2016 00:54	
Hexachloroethane	ND	0.0050	1	03/02/2016 00:54	
2-Hexanone	ND	0.0050	1	03/02/2016 00:54	
Isopropylbenzene	ND	0.0050	1	03/02/2016 00:54	
4-Isopropyl toluene	ND	0.0050	1	03/02/2016 00:54	
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	03/02/2016 00:54	
Methylene chloride	ND	0.0050	1	03/02/2016 00:54	
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	03/02/2016 00:54	
Naphthalene	ND	0.0050	1	03/02/2016 00:54	
n-Propyl benzene	ND	0.0050	1	03/02/2016 00:54	
Styrene	ND	0.0050	1	03/02/2016 00:54	
1,1,1,2-Tetrachloroethane	ND	0.0050	1	03/02/2016 00:54	
1,1,2,2-Tetrachloroethane	ND	0.0050	1	03/02/2016 00:54	
Tetrachloroethene	ND	0.0050	1	03/02/2016 00:54	
Toluene	ND	0.0050	1	03/02/2016 00:54	
1,2,3-Trichlorobenzene	ND	0.0050	1	03/02/2016 00:54	
1,2,4-Trichlorobenzene	ND	0.0050	1	03/02/2016 00:54	
1,1,1-Trichloroethane	ND	0.0050	1	03/02/2016 00:54	
1,1,2-Trichloroethane	ND	0.0050	1	03/02/2016 00:54	
Trichloroethene	ND	0.0050	1	03/02/2016 00:54	
Trichlorofluoromethane	ND	0.0050	1	03/02/2016 00:54	
1,2,3-Trichloropropane	ND	0.0050	1	03/02/2016 00:54	
1,2,4-Trimethylbenzene	ND	0.0050	1	03/02/2016 00:54	
1,3,5-Trimethylbenzene	ND	0.0050	1	03/02/2016 00:54	
Vinyl Chloride	ND	0.0050	1	03/02/2016 00:54	
Xylenes, Total	ND	0.0050	1	03/02/2016 00:54	

(Cont.)



# Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 2/26/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-20	1602B06-003A	Soil	02/25/2016 09:20	GC18	117261

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
Dibromofluoromethane	121		70-130		03/02/2016 00:54
Toluene-d8	136	S	70-130		03/02/2016 00:54
4-BFB	77		70-130		03/02/2016 00:54
Benzene-d6	124		60-140		03/02/2016 00:54
Ethylbenzene-d10	120		60-140		03/02/2016 00:54
1,2-DCB-d4	105		60-140		03/02/2016 00:54

Analyst(s): KF

Analytical Comments: c2



## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 2/26/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-30	1602B06-004A	Soil	02/25/2016 09:30	GC18	117261
Analytes	Result	RL	DF	Date Analyzed	
Acetone	ND	0.10	1	03/02/2016 01:33	
tert-Amyl methyl ether (TAME)	ND	0.0050	1	03/02/2016 01:33	
Benzene	ND	0.0050	1	03/02/2016 01:33	
Bromobenzene	ND	0.0050	1	03/02/2016 01:33	
Bromochloromethane	ND	0.0050	1	03/02/2016 01:33	
Bromodichloromethane	ND	0.0050	1	03/02/2016 01:33	
Bromoform	ND	0.0050	1	03/02/2016 01:33	
Bromomethane	ND	0.0050	1	03/02/2016 01:33	
2-Butanone (MEK)	ND	0.020	1	03/02/2016 01:33	
t-Butyl alcohol (TBA)	ND	0.050	1	03/02/2016 01:33	
n-Butyl benzene	ND	0.0050	1	03/02/2016 01:33	
sec-Butyl benzene	ND	0.0050	1	03/02/2016 01:33	
tert-Butyl benzene	ND	0.0050	1	03/02/2016 01:33	
Carbon Disulfide	ND	0.0050	1	03/02/2016 01:33	
Carbon Tetrachloride	ND	0.0050	1	03/02/2016 01:33	
Chlorobenzene	ND	0.0050	1	03/02/2016 01:33	
Chloroethane	ND	0.0050	1	03/02/2016 01:33	
Chloroform	ND	0.0050	1	03/02/2016 01:33	
Chloromethane	ND	0.0050	1	03/02/2016 01:33	
2-Chlorotoluene	ND	0.0050	1	03/02/2016 01:33	
4-Chlorotoluene	ND	0.0050	1	03/02/2016 01:33	
Dibromochloromethane	ND	0.0050	1	03/02/2016 01:33	
1,2-Dibromo-3-chloropropane	ND	0.0040	1	03/02/2016 01:33	
1,2-Dibromoethane (EDB)	ND	0.0040	1	03/02/2016 01:33	
Dibromomethane	ND	0.0050	1	03/02/2016 01:33	
1,2-Dichlorobenzene	ND	0.0050	1	03/02/2016 01:33	
1,3-Dichlorobenzene	ND	0.0050	1	03/02/2016 01:33	
1,4-Dichlorobenzene	ND	0.0050	1	03/02/2016 01:33	
Dichlorodifluoromethane	ND	0.0050	1	03/02/2016 01:33	
1,1-Dichloroethane	ND	0.0050	1	03/02/2016 01:33	
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	03/02/2016 01:33	
1,1-Dichloroethene	ND	0.0050	1	03/02/2016 01:33	
cis-1,2-Dichloroethene	ND	0.0050	1	03/02/2016 01:33	
trans-1,2-Dichloroethene	ND	0.0050	1	03/02/2016 01:33	
1,2-Dichloropropane	ND	0.0050	1	03/02/2016 01:33	
1,3-Dichloropropane	ND	0.0050	1	03/02/2016 01:33	
2,2-Dichloropropane	ND	0.0050	1	03/02/2016 01:33	

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## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 2/26/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-30	1602B06-004A	Soil	02/25/2016 09:30	GC18	117261
Analytes	Result	RL	DF	Date Analyzed	
1,1-Dichloropropene	ND	0.0050	1	03/02/2016 01:33	
cis-1,3-Dichloropropene	ND	0.0050	1	03/02/2016 01:33	
trans-1,3-Dichloropropene	ND	0.0050	1	03/02/2016 01:33	
Diisopropyl ether (DIPE)	ND	0.0050	1	03/02/2016 01:33	
Ethylbenzene	ND	0.0050	1	03/02/2016 01:33	
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	03/02/2016 01:33	
Freon 113	ND	0.0050	1	03/02/2016 01:33	
Hexachlorobutadiene	ND	0.0050	1	03/02/2016 01:33	
Hexachloroethane	ND	0.0050	1	03/02/2016 01:33	
2-Hexanone	ND	0.0050	1	03/02/2016 01:33	
Isopropylbenzene	ND	0.0050	1	03/02/2016 01:33	
4-Isopropyl toluene	ND	0.0050	1	03/02/2016 01:33	
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	03/02/2016 01:33	
Methylene chloride	ND	0.0050	1	03/02/2016 01:33	
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	03/02/2016 01:33	
Naphthalene	ND	0.0050	1	03/02/2016 01:33	
n-Propyl benzene	ND	0.0050	1	03/02/2016 01:33	
Styrene	ND	0.0050	1	03/02/2016 01:33	
1,1,1,2-Tetrachloroethane	ND	0.0050	1	03/02/2016 01:33	
1,1,2,2-Tetrachloroethane	ND	0.0050	1	03/02/2016 01:33	
Tetrachloroethene	ND	0.0050	1	03/02/2016 01:33	
Toluene	ND	0.0050	1	03/02/2016 01:33	
1,2,3-Trichlorobenzene	ND	0.0050	1	03/02/2016 01:33	
1,2,4-Trichlorobenzene	ND	0.0050	1	03/02/2016 01:33	
1,1,1-Trichloroethane	ND	0.0050	1	03/02/2016 01:33	
1,1,2-Trichloroethane	ND	0.0050	1	03/02/2016 01:33	
Trichloroethene	ND	0.0050	1	03/02/2016 01:33	
Trichlorofluoromethane	ND	0.0050	1	03/02/2016 01:33	
1,2,3-Trichloropropane	ND	0.0050	1	03/02/2016 01:33	
1,2,4-Trimethylbenzene	ND	0.0050	1	03/02/2016 01:33	
1,3,5-Trimethylbenzene	ND	0.0050	1	03/02/2016 01:33	
Vinyl Chloride	ND	0.0050	1	03/02/2016 01:33	
Xylenes, Total	ND	0.0050	1	03/02/2016 01:33	

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## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 2/26/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-30	1602B06-004A	Soil	02/25/2016 09:30	GC18	117261

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>	
Dibromofluoromethane	120		70-130	03/02/2016 01:33
Toluene-d8	138	S	70-130	03/02/2016 01:33
4-BFB	78		70-130	03/02/2016 01:33
Benzene-d6	124		60-140	03/02/2016 01:33
Ethylbenzene-d10	120		60-140	03/02/2016 01:33
1,2-DCB-d4	102		60-140	03/02/2016 01:33

Analyst(s): KF

Analytical Comments: c2



## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 2/26/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-40	1602B06-005A	Soil	02/25/2016 09:40	GC18	117261
Analytes	Result	RL	DF	Date Analyzed	
Acetone	ND	0.10	1	03/02/2016 02:12	
tert-Amyl methyl ether (TAME)	ND	0.0050	1	03/02/2016 02:12	
Benzene	ND	0.0050	1	03/02/2016 02:12	
Bromobenzene	ND	0.0050	1	03/02/2016 02:12	
Bromochloromethane	ND	0.0050	1	03/02/2016 02:12	
Bromodichloromethane	ND	0.0050	1	03/02/2016 02:12	
Bromoform	ND	0.0050	1	03/02/2016 02:12	
Bromomethane	ND	0.0050	1	03/02/2016 02:12	
2-Butanone (MEK)	ND	0.020	1	03/02/2016 02:12	
t-Butyl alcohol (TBA)	ND	0.050	1	03/02/2016 02:12	
n-Butyl benzene	ND	0.0050	1	03/02/2016 02:12	
sec-Butyl benzene	ND	0.0050	1	03/02/2016 02:12	
tert-Butyl benzene	ND	0.0050	1	03/02/2016 02:12	
Carbon Disulfide	ND	0.0050	1	03/02/2016 02:12	
Carbon Tetrachloride	ND	0.0050	1	03/02/2016 02:12	
Chlorobenzene	ND	0.0050	1	03/02/2016 02:12	
Chloroethane	ND	0.0050	1	03/02/2016 02:12	
Chloroform	ND	0.0050	1	03/02/2016 02:12	
Chloromethane	ND	0.0050	1	03/02/2016 02:12	
2-Chlorotoluene	ND	0.0050	1	03/02/2016 02:12	
4-Chlorotoluene	ND	0.0050	1	03/02/2016 02:12	
Dibromochloromethane	ND	0.0050	1	03/02/2016 02:12	
1,2-Dibromo-3-chloropropane	ND	0.0040	1	03/02/2016 02:12	
1,2-Dibromoethane (EDB)	ND	0.0040	1	03/02/2016 02:12	
Dibromomethane	ND	0.0050	1	03/02/2016 02:12	
1,2-Dichlorobenzene	ND	0.0050	1	03/02/2016 02:12	
1,3-Dichlorobenzene	ND	0.0050	1	03/02/2016 02:12	
1,4-Dichlorobenzene	ND	0.0050	1	03/02/2016 02:12	
Dichlorodifluoromethane	ND	0.0050	1	03/02/2016 02:12	
1,1-Dichloroethane	ND	0.0050	1	03/02/2016 02:12	
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	03/02/2016 02:12	
1,1-Dichloroethene	ND	0.0050	1	03/02/2016 02:12	
cis-1,2-Dichloroethene	ND	0.0050	1	03/02/2016 02:12	
trans-1,2-Dichloroethene	ND	0.0050	1	03/02/2016 02:12	
1,2-Dichloropropane	ND	0.0050	1	03/02/2016 02:12	
1,3-Dichloropropane	ND	0.0050	1	03/02/2016 02:12	
2,2-Dichloropropane	ND	0.0050	1	03/02/2016 02:12	

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## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 2/26/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-40	1602B06-005A	Soil	02/25/2016 09:40	GC18	117261
Analytes	Result	RL	DF	Date Analyzed	
1,1-Dichloropropene	ND	0.0050	1	03/02/2016 02:12	
cis-1,3-Dichloropropene	ND	0.0050	1	03/02/2016 02:12	
trans-1,3-Dichloropropene	ND	0.0050	1	03/02/2016 02:12	
Diisopropyl ether (DIPE)	ND	0.0050	1	03/02/2016 02:12	
Ethylbenzene	ND	0.0050	1	03/02/2016 02:12	
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	03/02/2016 02:12	
Freon 113	ND	0.0050	1	03/02/2016 02:12	
Hexachlorobutadiene	ND	0.0050	1	03/02/2016 02:12	
Hexachloroethane	ND	0.0050	1	03/02/2016 02:12	
2-Hexanone	ND	0.0050	1	03/02/2016 02:12	
Isopropylbenzene	ND	0.0050	1	03/02/2016 02:12	
4-Isopropyl toluene	ND	0.0050	1	03/02/2016 02:12	
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	03/02/2016 02:12	
Methylene chloride	ND	0.0050	1	03/02/2016 02:12	
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	03/02/2016 02:12	
Naphthalene	ND	0.0050	1	03/02/2016 02:12	
n-Propyl benzene	ND	0.0050	1	03/02/2016 02:12	
Styrene	ND	0.0050	1	03/02/2016 02:12	
1,1,1,2-Tetrachloroethane	ND	0.0050	1	03/02/2016 02:12	
1,1,2,2-Tetrachloroethane	ND	0.0050	1	03/02/2016 02:12	
Tetrachloroethene	ND	0.0050	1	03/02/2016 02:12	
Toluene	ND	0.0050	1	03/02/2016 02:12	
1,2,3-Trichlorobenzene	ND	0.0050	1	03/02/2016 02:12	
1,2,4-Trichlorobenzene	ND	0.0050	1	03/02/2016 02:12	
1,1,1-Trichloroethane	ND	0.0050	1	03/02/2016 02:12	
1,1,2-Trichloroethane	ND	0.0050	1	03/02/2016 02:12	
Trichloroethene	ND	0.0050	1	03/02/2016 02:12	
Trichlorofluoromethane	ND	0.0050	1	03/02/2016 02:12	
1,2,3-Trichloropropane	ND	0.0050	1	03/02/2016 02:12	
1,2,4-Trimethylbenzene	ND	0.0050	1	03/02/2016 02:12	
1,3,5-Trimethylbenzene	ND	0.0050	1	03/02/2016 02:12	
Vinyl Chloride	ND	0.0050	1	03/02/2016 02:12	
Xylenes, Total	ND	0.0050	1	03/02/2016 02:12	

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## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 2/26/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-40	1602B06-005A	Soil	02/25/2016 09:40	GC18	117261

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>	
Dibromofluoromethane	120		70-130	03/02/2016 02:12
Toluene-d8	137	S	70-130	03/02/2016 02:12
4-BFB	81		70-130	03/02/2016 02:12
Benzene-d6	122		60-140	03/02/2016 02:12
Ethylbenzene-d10	117		60-140	03/02/2016 02:12
1,2-DCB-d4	100		60-140	03/02/2016 02:12

Analyst(s): KF

Analytical Comments: c2



## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 2/26/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-50	1602B06-006A	Soil	02/25/2016 09:50	GC18	117261
Analytes	Result	RL	DF	Date Analyzed	
Acetone	ND	0.10	1	03/02/2016 02:50	
tert-Amyl methyl ether (TAME)	ND	0.0050	1	03/02/2016 02:50	
Benzene	ND	0.0050	1	03/02/2016 02:50	
Bromobenzene	ND	0.0050	1	03/02/2016 02:50	
Bromochloromethane	ND	0.0050	1	03/02/2016 02:50	
Bromodichloromethane	ND	0.0050	1	03/02/2016 02:50	
Bromoform	ND	0.0050	1	03/02/2016 02:50	
Bromomethane	ND	0.0050	1	03/02/2016 02:50	
2-Butanone (MEK)	ND	0.020	1	03/02/2016 02:50	
t-Butyl alcohol (TBA)	ND	0.050	1	03/02/2016 02:50	
n-Butyl benzene	ND	0.0050	1	03/02/2016 02:50	
sec-Butyl benzene	ND	0.0050	1	03/02/2016 02:50	
tert-Butyl benzene	ND	0.0050	1	03/02/2016 02:50	
Carbon Disulfide	ND	0.0050	1	03/02/2016 02:50	
Carbon Tetrachloride	ND	0.0050	1	03/02/2016 02:50	
Chlorobenzene	ND	0.0050	1	03/02/2016 02:50	
Chloroethane	ND	0.0050	1	03/02/2016 02:50	
Chloroform	ND	0.0050	1	03/02/2016 02:50	
Chloromethane	ND	0.0050	1	03/02/2016 02:50	
2-Chlorotoluene	ND	0.0050	1	03/02/2016 02:50	
4-Chlorotoluene	ND	0.0050	1	03/02/2016 02:50	
Dibromochloromethane	ND	0.0050	1	03/02/2016 02:50	
1,2-Dibromo-3-chloropropane	ND	0.0040	1	03/02/2016 02:50	
1,2-Dibromoethane (EDB)	ND	0.0040	1	03/02/2016 02:50	
Dibromomethane	ND	0.0050	1	03/02/2016 02:50	
1,2-Dichlorobenzene	ND	0.0050	1	03/02/2016 02:50	
1,3-Dichlorobenzene	ND	0.0050	1	03/02/2016 02:50	
1,4-Dichlorobenzene	ND	0.0050	1	03/02/2016 02:50	
Dichlorodifluoromethane	ND	0.0050	1	03/02/2016 02:50	
1,1-Dichloroethane	ND	0.0050	1	03/02/2016 02:50	
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	03/02/2016 02:50	
1,1-Dichloroethene	ND	0.0050	1	03/02/2016 02:50	
cis-1,2-Dichloroethene	ND	0.0050	1	03/02/2016 02:50	
trans-1,2-Dichloroethene	ND	0.0050	1	03/02/2016 02:50	
1,2-Dichloropropane	ND	0.0050	1	03/02/2016 02:50	
1,3-Dichloropropane	ND	0.0050	1	03/02/2016 02:50	
2,2-Dichloropropane	ND	0.0050	1	03/02/2016 02:50	

(Cont.)



## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 2/26/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-50	1602B06-006A	Soil	02/25/2016 09:50	GC18	117261
Analytes	Result	RL	DF	Date Analyzed	
1,1-Dichloropropene	ND	0.0050	1	03/02/2016 02:50	
cis-1,3-Dichloropropene	ND	0.0050	1	03/02/2016 02:50	
trans-1,3-Dichloropropene	ND	0.0050	1	03/02/2016 02:50	
Diisopropyl ether (DIPE)	ND	0.0050	1	03/02/2016 02:50	
Ethylbenzene	ND	0.0050	1	03/02/2016 02:50	
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	03/02/2016 02:50	
Freon 113	ND	0.0050	1	03/02/2016 02:50	
Hexachlorobutadiene	ND	0.0050	1	03/02/2016 02:50	
Hexachloroethane	ND	0.0050	1	03/02/2016 02:50	
2-Hexanone	ND	0.0050	1	03/02/2016 02:50	
Isopropylbenzene	ND	0.0050	1	03/02/2016 02:50	
4-Isopropyl toluene	ND	0.0050	1	03/02/2016 02:50	
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	03/02/2016 02:50	
Methylene chloride	ND	0.0050	1	03/02/2016 02:50	
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	03/02/2016 02:50	
Naphthalene	ND	0.0050	1	03/02/2016 02:50	
n-Propyl benzene	ND	0.0050	1	03/02/2016 02:50	
Styrene	ND	0.0050	1	03/02/2016 02:50	
1,1,1,2-Tetrachloroethane	ND	0.0050	1	03/02/2016 02:50	
1,1,2,2-Tetrachloroethane	ND	0.0050	1	03/02/2016 02:50	
Tetrachloroethene	ND	0.0050	1	03/02/2016 02:50	
Toluene	ND	0.0050	1	03/02/2016 02:50	
1,2,3-Trichlorobenzene	ND	0.0050	1	03/02/2016 02:50	
1,2,4-Trichlorobenzene	ND	0.0050	1	03/02/2016 02:50	
1,1,1-Trichloroethane	ND	0.0050	1	03/02/2016 02:50	
1,1,2-Trichloroethane	ND	0.0050	1	03/02/2016 02:50	
Trichloroethene	ND	0.0050	1	03/02/2016 02:50	
Trichlorofluoromethane	ND	0.0050	1	03/02/2016 02:50	
1,2,3-Trichloropropane	ND	0.0050	1	03/02/2016 02:50	
1,2,4-Trimethylbenzene	ND	0.0050	1	03/02/2016 02:50	
1,3,5-Trimethylbenzene	ND	0.0050	1	03/02/2016 02:50	
Vinyl Chloride	ND	0.0050	1	03/02/2016 02:50	
Xylenes, Total	ND	0.0050	1	03/02/2016 02:50	

(Cont.)



## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 2/26/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-50	1602B06-006A	Soil	02/25/2016 09:50	GC18	117261

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
Dibromofluoromethane	121		70-130		03/02/2016 02:50
Toluene-d8	138	S	70-130		03/02/2016 02:50
4-BFB	78		70-130		03/02/2016 02:50
Benzene-d6	107		60-140		03/02/2016 02:50
Ethylbenzene-d10	112		60-140		03/02/2016 02:50
1,2-DCB-d4	104		60-140		03/02/2016 02:50

Analyst(s): KF

Analytical Comments: c2



## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 2/26/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-57	1602B06-007A	Soil	02/25/2016 10:00	GC18	117261
Analytes	Result	RL	DF	Date Analyzed	
Acetone	0.33	0.10	1	03/02/2016 03:28	
tert-Amyl methyl ether (TAME)	ND	0.0050	1	03/02/2016 03:28	
Benzene	ND	0.0050	1	03/02/2016 03:28	
Bromobenzene	ND	0.0050	1	03/02/2016 03:28	
Bromochloromethane	ND	0.0050	1	03/02/2016 03:28	
Bromodichloromethane	ND	0.0050	1	03/02/2016 03:28	
Bromoform	ND	0.0050	1	03/02/2016 03:28	
Bromomethane	ND	0.0050	1	03/02/2016 03:28	
2-Butanone (MEK)	ND	0.020	1	03/02/2016 03:28	
t-Butyl alcohol (TBA)	ND	0.050	1	03/02/2016 03:28	
n-Butyl benzene	ND	0.0050	1	03/02/2016 03:28	
sec-Butyl benzene	ND	0.0050	1	03/02/2016 03:28	
tert-Butyl benzene	ND	0.0050	1	03/02/2016 03:28	
Carbon Disulfide	ND	0.0050	1	03/02/2016 03:28	
Carbon Tetrachloride	ND	0.0050	1	03/02/2016 03:28	
Chlorobenzene	ND	0.0050	1	03/02/2016 03:28	
Chloroethane	ND	0.0050	1	03/02/2016 03:28	
Chloroform	ND	0.0050	1	03/02/2016 03:28	
Chloromethane	ND	0.0050	1	03/02/2016 03:28	
2-Chlorotoluene	ND	0.0050	1	03/02/2016 03:28	
4-Chlorotoluene	ND	0.0050	1	03/02/2016 03:28	
Dibromochloromethane	ND	0.0050	1	03/02/2016 03:28	
1,2-Dibromo-3-chloropropane	ND	0.0040	1	03/02/2016 03:28	
1,2-Dibromoethane (EDB)	ND	0.0040	1	03/02/2016 03:28	
Dibromomethane	ND	0.0050	1	03/02/2016 03:28	
1,2-Dichlorobenzene	ND	0.0050	1	03/02/2016 03:28	
1,3-Dichlorobenzene	ND	0.0050	1	03/02/2016 03:28	
1,4-Dichlorobenzene	ND	0.0050	1	03/02/2016 03:28	
Dichlorodifluoromethane	ND	0.0050	1	03/02/2016 03:28	
1,1-Dichloroethane	ND	0.0050	1	03/02/2016 03:28	
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	03/02/2016 03:28	
1,1-Dichloroethene	ND	0.0050	1	03/02/2016 03:28	
cis-1,2-Dichloroethene	ND	0.0050	1	03/02/2016 03:28	
trans-1,2-Dichloroethene	ND	0.0050	1	03/02/2016 03:28	
1,2-Dichloropropane	ND	0.0050	1	03/02/2016 03:28	
1,3-Dichloropropane	ND	0.0050	1	03/02/2016 03:28	
2,2-Dichloropropane	ND	0.0050	1	03/02/2016 03:28	

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## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 2/26/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-57	1602B06-007A	Soil	02/25/2016 10:00	GC18	117261
Analytes	Result	RL	DF	Date Analyzed	
1,1-Dichloropropene	ND	0.0050	1	03/02/2016 03:28	
cis-1,3-Dichloropropene	ND	0.0050	1	03/02/2016 03:28	
trans-1,3-Dichloropropene	ND	0.0050	1	03/02/2016 03:28	
Diisopropyl ether (DIPE)	ND	0.0050	1	03/02/2016 03:28	
Ethylbenzene	ND	0.0050	1	03/02/2016 03:28	
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	03/02/2016 03:28	
Freon 113	ND	0.0050	1	03/02/2016 03:28	
Hexachlorobutadiene	ND	0.0050	1	03/02/2016 03:28	
Hexachloroethane	ND	0.0050	1	03/02/2016 03:28	
2-Hexanone	ND	0.0050	1	03/02/2016 03:28	
Isopropylbenzene	ND	0.0050	1	03/02/2016 03:28	
4-Isopropyl toluene	ND	0.0050	1	03/02/2016 03:28	
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	03/02/2016 03:28	
Methylene chloride	ND	0.0050	1	03/02/2016 03:28	
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	03/02/2016 03:28	
Naphthalene	ND	0.0050	1	03/02/2016 03:28	
n-Propyl benzene	ND	0.0050	1	03/02/2016 03:28	
Styrene	ND	0.0050	1	03/02/2016 03:28	
1,1,1,2-Tetrachloroethane	ND	0.0050	1	03/02/2016 03:28	
1,1,2,2-Tetrachloroethane	ND	0.0050	1	03/02/2016 03:28	
Tetrachloroethene	ND	0.0050	1	03/02/2016 03:28	
Toluene	ND	0.0050	1	03/02/2016 03:28	
1,2,3-Trichlorobenzene	ND	0.0050	1	03/02/2016 03:28	
1,2,4-Trichlorobenzene	ND	0.0050	1	03/02/2016 03:28	
1,1,1-Trichloroethane	ND	0.0050	1	03/02/2016 03:28	
1,1,2-Trichloroethane	ND	0.0050	1	03/02/2016 03:28	
Trichloroethene	ND	0.0050	1	03/02/2016 03:28	
Trichlorofluoromethane	ND	0.0050	1	03/02/2016 03:28	
1,2,3-Trichloropropane	ND	0.0050	1	03/02/2016 03:28	
1,2,4-Trimethylbenzene	ND	0.0050	1	03/02/2016 03:28	
1,3,5-Trimethylbenzene	ND	0.0050	1	03/02/2016 03:28	
Vinyl Chloride	ND	0.0050	1	03/02/2016 03:28	
Xylenes, Total	ND	0.0050	1	03/02/2016 03:28	

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## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 2/26/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-57	1602B06-007A	Soil	02/25/2016 10:00	GC18	117261

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>	
Dibromofluoromethane	120		70-130	03/02/2016 03:28
Toluene-d8	136	S	70-130	03/02/2016 03:28
4-BFB	78		70-130	03/02/2016 03:28
Benzene-d6	127		60-140	03/02/2016 03:28
Ethylbenzene-d10	123		60-140	03/02/2016 03:28
1,2-DCB-d4	106		60-140	03/02/2016 03:28

Analyst(s): KF

Analytical Comments: c2





## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 2/26/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-71	1602B06-008A	Soil	02/25/2016 10:10	GC18	117261
Analytes	Result	RL	DF	Date Analyzed	
Acetone	ND	0.10	1	03/02/2016 04:07	
tert-Amyl methyl ether (TAME)	ND	0.0050	1	03/02/2016 04:07	
Benzene	ND	0.0050	1	03/02/2016 04:07	
Bromobenzene	ND	0.0050	1	03/02/2016 04:07	
Bromochloromethane	ND	0.0050	1	03/02/2016 04:07	
Bromodichloromethane	ND	0.0050	1	03/02/2016 04:07	
Bromoform	ND	0.0050	1	03/02/2016 04:07	
Bromomethane	ND	0.0050	1	03/02/2016 04:07	
2-Butanone (MEK)	ND	0.020	1	03/02/2016 04:07	
t-Butyl alcohol (TBA)	ND	0.050	1	03/02/2016 04:07	
n-Butyl benzene	ND	0.0050	1	03/02/2016 04:07	
sec-Butyl benzene	ND	0.0050	1	03/02/2016 04:07	
tert-Butyl benzene	ND	0.0050	1	03/02/2016 04:07	
Carbon Disulfide	ND	0.0050	1	03/02/2016 04:07	
Carbon Tetrachloride	ND	0.0050	1	03/02/2016 04:07	
Chlorobenzene	ND	0.0050	1	03/02/2016 04:07	
Chloroethane	ND	0.0050	1	03/02/2016 04:07	
Chloroform	ND	0.0050	1	03/02/2016 04:07	
Chloromethane	ND	0.0050	1	03/02/2016 04:07	
2-Chlorotoluene	ND	0.0050	1	03/02/2016 04:07	
4-Chlorotoluene	ND	0.0050	1	03/02/2016 04:07	
Dibromochloromethane	ND	0.0050	1	03/02/2016 04:07	
1,2-Dibromo-3-chloropropane	ND	0.0040	1	03/02/2016 04:07	
1,2-Dibromoethane (EDB)	ND	0.0040	1	03/02/2016 04:07	
Dibromomethane	ND	0.0050	1	03/02/2016 04:07	
1,2-Dichlorobenzene	ND	0.0050	1	03/02/2016 04:07	
1,3-Dichlorobenzene	ND	0.0050	1	03/02/2016 04:07	
1,4-Dichlorobenzene	ND	0.0050	1	03/02/2016 04:07	
Dichlorodifluoromethane	ND	0.0050	1	03/02/2016 04:07	
1,1-Dichloroethane	ND	0.0050	1	03/02/2016 04:07	
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	03/02/2016 04:07	
1,1-Dichloroethene	ND	0.0050	1	03/02/2016 04:07	
cis-1,2-Dichloroethene	ND	0.0050	1	03/02/2016 04:07	
trans-1,2-Dichloroethene	ND	0.0050	1	03/02/2016 04:07	
1,2-Dichloropropane	ND	0.0050	1	03/02/2016 04:07	
1,3-Dichloropropane	ND	0.0050	1	03/02/2016 04:07	
2,2-Dichloropropane	ND	0.0050	1	03/02/2016 04:07	

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## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 2/26/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-71	1602B06-008A	Soil	02/25/2016 10:10	GC18	117261
Analytes	Result	RL	DF	Date Analyzed	
1,1-Dichloropropene	ND	0.0050	1	03/02/2016 04:07	
cis-1,3-Dichloropropene	ND	0.0050	1	03/02/2016 04:07	
trans-1,3-Dichloropropene	ND	0.0050	1	03/02/2016 04:07	
Diisopropyl ether (DIPE)	ND	0.0050	1	03/02/2016 04:07	
Ethylbenzene	ND	0.0050	1	03/02/2016 04:07	
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	03/02/2016 04:07	
Freon 113	ND	0.0050	1	03/02/2016 04:07	
Hexachlorobutadiene	ND	0.0050	1	03/02/2016 04:07	
Hexachloroethane	ND	0.0050	1	03/02/2016 04:07	
2-Hexanone	ND	0.0050	1	03/02/2016 04:07	
Isopropylbenzene	ND	0.0050	1	03/02/2016 04:07	
4-Isopropyl toluene	ND	0.0050	1	03/02/2016 04:07	
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	03/02/2016 04:07	
Methylene chloride	ND	0.0050	1	03/02/2016 04:07	
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	03/02/2016 04:07	
Naphthalene	ND	0.0050	1	03/02/2016 04:07	
n-Propyl benzene	ND	0.0050	1	03/02/2016 04:07	
Styrene	ND	0.0050	1	03/02/2016 04:07	
1,1,1,2-Tetrachloroethane	ND	0.0050	1	03/02/2016 04:07	
1,1,2,2-Tetrachloroethane	ND	0.0050	1	03/02/2016 04:07	
Tetrachloroethene	ND	0.0050	1	03/02/2016 04:07	
Toluene	ND	0.0050	1	03/02/2016 04:07	
1,2,3-Trichlorobenzene	ND	0.0050	1	03/02/2016 04:07	
1,2,4-Trichlorobenzene	ND	0.0050	1	03/02/2016 04:07	
1,1,1-Trichloroethane	ND	0.0050	1	03/02/2016 04:07	
1,1,2-Trichloroethane	ND	0.0050	1	03/02/2016 04:07	
Trichloroethene	ND	0.0050	1	03/02/2016 04:07	
Trichlorofluoromethane	ND	0.0050	1	03/02/2016 04:07	
1,2,3-Trichloropropane	ND	0.0050	1	03/02/2016 04:07	
1,2,4-Trimethylbenzene	ND	0.0050	1	03/02/2016 04:07	
1,3,5-Trimethylbenzene	ND	0.0050	1	03/02/2016 04:07	
Vinyl Chloride	ND	0.0050	1	03/02/2016 04:07	
Xylenes, Total	ND	0.0050	1	03/02/2016 04:07	

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# Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 2/26/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-71	1602B06-008A	Soil	02/25/2016 10:10	GC18	117261

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>	
Dibromofluoromethane	119		70-130	03/02/2016 04:07
Toluene-d8	139	S	70-130	03/02/2016 04:07
4-BFB	78		70-130	03/02/2016 04:07
Benzene-d6	130		60-140	03/02/2016 04:07
Ethylbenzene-d10	127		60-140	03/02/2016 04:07
1,2-DCB-d4	108		60-140	03/02/2016 04:07

Analyst(s): KF

Analytical Comments: c2



## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 3/1/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C-SIM  
**Unit:** mg/kg

### Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode by GC/MS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-5	1602B06-001A	Soil	02/25/2016 09:05	GC35	117419

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.010	1	03/05/2016 01:39
Acenaphthylene	ND	0.010	1	03/05/2016 01:39
Anthracene	ND	0.010	1	03/05/2016 01:39
Benzo (a) anthracene	ND	0.010	1	03/05/2016 01:39
Benzo (a) pyrene	ND	0.010	1	03/05/2016 01:39
Benzo (b) fluoranthene	ND	0.010	1	03/05/2016 01:39
Benzo (g,h,i) perylene	ND	0.010	1	03/05/2016 01:39
Benzo (k) fluoranthene	ND	0.010	1	03/05/2016 01:39
Chrysene	ND	0.010	1	03/05/2016 01:39
Dibenzo (a,h) anthracene	ND	0.010	1	03/05/2016 01:39
Fluoranthene	ND	0.010	1	03/05/2016 01:39
Fluorene	ND	0.010	1	03/05/2016 01:39
Indeno (1,2,3-cd) pyrene	ND	0.010	1	03/05/2016 01:39
1-Methylnaphthalene	ND	0.010	1	03/05/2016 01:39
2-Methylnaphthalene	ND	0.010	1	03/05/2016 01:39
Naphthalene	ND	0.010	1	03/05/2016 01:39
Phenanthrene	ND	0.010	1	03/05/2016 01:39
Pyrene	ND	0.010	1	03/05/2016 01:39
Surrogates	REC (%)	Limits		
1-Fluoronaphthalene	103	30-130		03/05/2016 01:39
2-Fluorobiphenyl	104	30-130		03/05/2016 01:39

**Analyst(s):** REB



## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 3/1/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C-SIM  
**Unit:** mg/kg

### Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode by GC/MS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-10	1602B06-002A	Soil	02/25/2016 09:10	GC35	117419

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.010	1	03/08/2016 11:26
Acenaphthylene	ND	0.010	1	03/08/2016 11:26
Anthracene	ND	0.010	1	03/08/2016 11:26
Benzo (a) anthracene	ND	0.010	1	03/08/2016 11:26
Benzo (a) pyrene	ND	0.010	1	03/08/2016 11:26
Benzo (b) fluoranthene	ND	0.010	1	03/08/2016 11:26
Benzo (g,h,i) perylene	ND	0.010	1	03/08/2016 11:26
Benzo (k) fluoranthene	ND	0.010	1	03/08/2016 11:26
Chrysene	ND	0.010	1	03/08/2016 11:26
Dibenzo (a,h) anthracene	ND	0.010	1	03/08/2016 11:26
Fluoranthene	ND	0.010	1	03/08/2016 11:26
Fluorene	ND	0.010	1	03/08/2016 11:26
Indeno (1,2,3-cd) pyrene	ND	0.010	1	03/08/2016 11:26
1-Methylnaphthalene	ND	0.010	1	03/08/2016 11:26
2-Methylnaphthalene	ND	0.010	1	03/08/2016 11:26
Naphthalene	ND	0.010	1	03/08/2016 11:26
Phenanthrene	ND	0.010	1	03/08/2016 11:26
Pyrene	ND	0.010	1	03/08/2016 11:26
Surrogates	REC (%)	Limits		
1-Fluoronaphthalene	106	30-130		03/08/2016 11:26
2-Fluorobiphenyl	110	30-130		03/08/2016 11:26

**Analyst(s):** REB



## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 3/1/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C-SIM  
**Unit:** mg/kg

### Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode by GC/MS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-20	1602B06-003A	Soil	02/25/2016 09:20	GC35	117419

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.010	1	03/08/2016 11:51
Acenaphthylene	ND	0.010	1	03/08/2016 11:51
Anthracene	ND	0.010	1	03/08/2016 11:51
Benzo (a) anthracene	ND	0.010	1	03/08/2016 11:51
Benzo (a) pyrene	ND	0.010	1	03/08/2016 11:51
Benzo (b) fluoranthene	ND	0.010	1	03/08/2016 11:51
Benzo (g,h,i) perylene	ND	0.010	1	03/08/2016 11:51
Benzo (k) fluoranthene	ND	0.010	1	03/08/2016 11:51
Chrysene	ND	0.010	1	03/08/2016 11:51
Dibenzo (a,h) anthracene	ND	0.010	1	03/08/2016 11:51
Fluoranthene	ND	0.010	1	03/08/2016 11:51
Fluorene	ND	0.010	1	03/08/2016 11:51
Indeno (1,2,3-cd) pyrene	ND	0.010	1	03/08/2016 11:51
1-Methylnaphthalene	ND	0.010	1	03/08/2016 11:51
2-Methylnaphthalene	ND	0.010	1	03/08/2016 11:51
Naphthalene	ND	0.010	1	03/08/2016 11:51
Phenanthrene	ND	0.010	1	03/08/2016 11:51
Pyrene	ND	0.010	1	03/08/2016 11:51
Surrogates	REC (%)	Limits		
1-Fluoronaphthalene	110	30-130		03/08/2016 11:51
2-Fluorobiphenyl	115	30-130		03/08/2016 11:51

**Analyst(s):** REB



## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 3/1/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C-SIM  
**Unit:** mg/kg

### Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode by GC/MS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-30	1602B06-004A	Soil	02/25/2016 09:30	GC35	117419

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.010	1	03/08/2016 12:16
Acenaphthylene	ND	0.010	1	03/08/2016 12:16
Anthracene	ND	0.010	1	03/08/2016 12:16
Benzo (a) anthracene	ND	0.010	1	03/08/2016 12:16
Benzo (a) pyrene	ND	0.010	1	03/08/2016 12:16
Benzo (b) fluoranthene	ND	0.010	1	03/08/2016 12:16
Benzo (g,h,i) perylene	ND	0.010	1	03/08/2016 12:16
Benzo (k) fluoranthene	ND	0.010	1	03/08/2016 12:16
Chrysene	ND	0.010	1	03/08/2016 12:16
Dibenzo (a,h) anthracene	ND	0.010	1	03/08/2016 12:16
Fluoranthene	ND	0.010	1	03/08/2016 12:16
Fluorene	ND	0.010	1	03/08/2016 12:16
Indeno (1,2,3-cd) pyrene	ND	0.010	1	03/08/2016 12:16
1-Methylnaphthalene	ND	0.010	1	03/08/2016 12:16
2-Methylnaphthalene	ND	0.010	1	03/08/2016 12:16
Naphthalene	ND	0.010	1	03/08/2016 12:16
Phenanthrene	ND	0.010	1	03/08/2016 12:16
Pyrene	ND	0.010	1	03/08/2016 12:16
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
1-Fluoronaphthalene	108	30-130		03/08/2016 12:16
2-Fluorobiphenyl	111	30-130		03/08/2016 12:16

**Analyst(s):** REB



## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 3/1/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C-SIM  
**Unit:** mg/kg

### Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode by GC/MS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-40	1602B06-005A	Soil	02/25/2016 09:40	GC35	117419

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.010	1	03/08/2016 16:52
Acenaphthylene	ND	0.010	1	03/08/2016 16:52
Anthracene	ND	0.010	1	03/08/2016 16:52
Benzo (a) anthracene	ND	0.010	1	03/08/2016 16:52
Benzo (a) pyrene	ND	0.010	1	03/08/2016 16:52
Benzo (b) fluoranthene	ND	0.010	1	03/08/2016 16:52
Benzo (g,h,i) perylene	ND	0.010	1	03/08/2016 16:52
Benzo (k) fluoranthene	ND	0.010	1	03/08/2016 16:52
Chrysene	ND	0.010	1	03/08/2016 16:52
Dibenzo (a,h) anthracene	ND	0.010	1	03/08/2016 16:52
Fluoranthene	ND	0.010	1	03/08/2016 16:52
Fluorene	ND	0.010	1	03/08/2016 16:52
Indeno (1,2,3-cd) pyrene	ND	0.010	1	03/08/2016 16:52
1-Methylnaphthalene	ND	0.010	1	03/08/2016 16:52
2-Methylnaphthalene	ND	0.010	1	03/08/2016 16:52
Naphthalene	ND	0.010	1	03/08/2016 16:52
Phenanthrene	ND	0.010	1	03/08/2016 16:52
Pyrene	ND	0.010	1	03/08/2016 16:52
Surrogates	REC (%)	Limits		
1-Fluoronaphthalene	109	30-130		03/08/2016 16:52
2-Fluorobiphenyl	115	30-130		03/08/2016 16:52

**Analyst(s):** REB





## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 3/1/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C-SIM  
**Unit:** mg/kg

### Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode by GC/MS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-50	1602B06-006A	Soil	02/25/2016 09:50	GC35	117419

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.010	1	03/08/2016 17:16
Acenaphthylene	ND	0.010	1	03/08/2016 17:16
Anthracene	ND	0.010	1	03/08/2016 17:16
Benzo (a) anthracene	ND	0.010	1	03/08/2016 17:16
Benzo (a) pyrene	ND	0.010	1	03/08/2016 17:16
Benzo (b) fluoranthene	ND	0.010	1	03/08/2016 17:16
Benzo (g,h,i) perylene	ND	0.010	1	03/08/2016 17:16
Benzo (k) fluoranthene	ND	0.010	1	03/08/2016 17:16
Chrysene	ND	0.010	1	03/08/2016 17:16
Dibenzo (a,h) anthracene	ND	0.010	1	03/08/2016 17:16
Fluoranthene	ND	0.010	1	03/08/2016 17:16
Fluorene	ND	0.010	1	03/08/2016 17:16
Indeno (1,2,3-cd) pyrene	ND	0.010	1	03/08/2016 17:16
1-Methylnaphthalene	ND	0.010	1	03/08/2016 17:16
2-Methylnaphthalene	ND	0.010	1	03/08/2016 17:16
Naphthalene	ND	0.010	1	03/08/2016 17:16
Phenanthrene	ND	0.010	1	03/08/2016 17:16
Pyrene	ND	0.010	1	03/08/2016 17:16
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
1-Fluoronaphthalene	102	30-130		03/08/2016 17:16
2-Fluorobiphenyl	108	30-130		03/08/2016 17:16

**Analyst(s):** REB



## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 3/1/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C-SIM  
**Unit:** mg/kg

### Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode by GC/MS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-57	1602B06-007A	Soil	02/25/2016 10:00	GC35	117419

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.010	1	03/08/2016 17:41
Acenaphthylene	ND	0.010	1	03/08/2016 17:41
Anthracene	ND	0.010	1	03/08/2016 17:41
Benzo (a) anthracene	ND	0.010	1	03/08/2016 17:41
Benzo (a) pyrene	ND	0.010	1	03/08/2016 17:41
Benzo (b) fluoranthene	ND	0.010	1	03/08/2016 17:41
Benzo (g,h,i) perylene	ND	0.010	1	03/08/2016 17:41
Benzo (k) fluoranthene	ND	0.010	1	03/08/2016 17:41
Chrysene	ND	0.010	1	03/08/2016 17:41
Dibenzo (a,h) anthracene	ND	0.010	1	03/08/2016 17:41
Fluoranthene	ND	0.010	1	03/08/2016 17:41
Fluorene	ND	0.010	1	03/08/2016 17:41
Indeno (1,2,3-cd) pyrene	ND	0.010	1	03/08/2016 17:41
1-Methylnaphthalene	ND	0.010	1	03/08/2016 17:41
2-Methylnaphthalene	ND	0.010	1	03/08/2016 17:41
Naphthalene	ND	0.010	1	03/08/2016 17:41
Phenanthrene	ND	0.010	1	03/08/2016 17:41
Pyrene	ND	0.010	1	03/08/2016 17:41
<b>Surrogates</b>	<b>REC (%)</b>	<b>Limits</b>		
1-Fluoronaphthalene	107	30-130		03/08/2016 17:41
2-Fluorobiphenyl	112	30-130		03/08/2016 17:41

**Analyst(s):** REB



## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 3/1/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C-SIM  
**Unit:** mg/kg

### Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode by GC/MS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-71	1602B06-008A	Soil	02/25/2016 10:10	GC35	117419

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.010	1	03/08/2016 13:55
Acenaphthylene	ND	0.010	1	03/08/2016 13:55
Anthracene	ND	0.010	1	03/08/2016 13:55
Benzo (a) anthracene	ND	0.010	1	03/08/2016 13:55
Benzo (a) pyrene	ND	0.010	1	03/08/2016 13:55
Benzo (b) fluoranthene	ND	0.010	1	03/08/2016 13:55
Benzo (g,h,i) perylene	ND	0.010	1	03/08/2016 13:55
Benzo (k) fluoranthene	ND	0.010	1	03/08/2016 13:55
Chrysene	ND	0.010	1	03/08/2016 13:55
Dibenzo (a,h) anthracene	ND	0.010	1	03/08/2016 13:55
Fluoranthene	ND	0.010	1	03/08/2016 13:55
Fluorene	ND	0.010	1	03/08/2016 13:55
Indeno (1,2,3-cd) pyrene	ND	0.010	1	03/08/2016 13:55
1-Methylnaphthalene	ND	0.010	1	03/08/2016 13:55
2-Methylnaphthalene	ND	0.010	1	03/08/2016 13:55
Naphthalene	ND	0.010	1	03/08/2016 13:55
Phenanthrene	ND	0.010	1	03/08/2016 13:55
Pyrene	ND	0.010	1	03/08/2016 13:55

Surrogates	REC (%)	Limits	Date Analyzed
1-Fluoronaphthalene	107	30-130	03/08/2016 13:55
2-Fluorobiphenyl	110	30-130	03/08/2016 13:55

**Analyst(s):** REB



## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 2/26/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-5	1602B06-001A	Soil	02/25/2016 09:05	GC7	117257

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	02/27/2016 01:23
MTBE	---	0.050	1	02/27/2016 01:23
Benzene	---	0.0050	1	02/27/2016 01:23
Toluene	---	0.0050	1	02/27/2016 01:23
Ethylbenzene	---	0.0050	1	02/27/2016 01:23
Xylenes	---	0.015	1	02/27/2016 01:23
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	104	70-130		02/27/2016 01:23

Analyst(s): IA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-10	1602B06-002A	Soil	02/25/2016 09:10	GC7	117257

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	02/27/2016 01:53
MTBE	---	0.050	1	02/27/2016 01:53
Benzene	---	0.0050	1	02/27/2016 01:53
Toluene	---	0.0050	1	02/27/2016 01:53
Ethylbenzene	---	0.0050	1	02/27/2016 01:53
Xylenes	---	0.015	1	02/27/2016 01:53
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	102	70-130		02/27/2016 01:53

Analyst(s): IA

(Cont.)



## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 2/26/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-20	1602B06-003A	Soil	02/25/2016 09:20	GC7	117257

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	02/27/2016 02:23
MTBE	---	0.050	1	02/27/2016 02:23
Benzene	---	0.0050	1	02/27/2016 02:23
Toluene	---	0.0050	1	02/27/2016 02:23
Ethylbenzene	---	0.0050	1	02/27/2016 02:23
Xylenes	---	0.015	1	02/27/2016 02:23
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	104	70-130		02/27/2016 02:23

Analyst(s): IA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-30	1602B06-004A	Soil	02/25/2016 09:30	GC3	117257

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	02/27/2016 16:35
MTBE	---	0.050	1	02/27/2016 16:35
Benzene	---	0.0050	1	02/27/2016 16:35
Toluene	---	0.0050	1	02/27/2016 16:35
Ethylbenzene	---	0.0050	1	02/27/2016 16:35
Xylenes	---	0.015	1	02/27/2016 16:35
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	91	70-130		02/27/2016 16:35

Analyst(s): IA

(Cont.)



## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 2/26/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-40	1602B06-005A	Soil	02/25/2016 09:40	GC3	117257

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	02/27/2016 17:06
MTBE	---	0.050	1	02/27/2016 17:06
Benzene	---	0.0050	1	02/27/2016 17:06
Toluene	---	0.0050	1	02/27/2016 17:06
Ethylbenzene	---	0.0050	1	02/27/2016 17:06
Xylenes	---	0.015	1	02/27/2016 17:06
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	98	70-130		02/27/2016 17:06

Analyst(s): IA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-50	1602B06-006A	Soil	02/25/2016 09:50	GC3	117257

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	02/27/2016 18:37
MTBE	---	0.050	1	02/27/2016 18:37
Benzene	---	0.0050	1	02/27/2016 18:37
Toluene	---	0.0050	1	02/27/2016 18:37
Ethylbenzene	---	0.0050	1	02/27/2016 18:37
Xylenes	---	0.015	1	02/27/2016 18:37
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	87	70-130		02/27/2016 18:37

Analyst(s): IA

(Cont.)



## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 2/26/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-57	1602B06-007A	Soil	02/25/2016 10:00	GC3	117257

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	02/27/2016 19:07
MTBE	---	0.050	1	02/27/2016 19:07
Benzene	---	0.0050	1	02/27/2016 19:07
Toluene	---	0.0050	1	02/27/2016 19:07
Ethylbenzene	---	0.0050	1	02/27/2016 19:07
Xylenes	---	0.015	1	02/27/2016 19:07
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	93	70-130		02/27/2016 19:07

Analyst(s): IA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-71	1602B06-008A	Soil	02/25/2016 10:10	GC3	117257

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	02/27/2016 20:07
MTBE	---	0.050	1	02/27/2016 20:07
Benzene	---	0.0050	1	02/27/2016 20:07
Toluene	---	0.0050	1	02/27/2016 20:07
Ethylbenzene	---	0.0050	1	02/27/2016 20:07
Xylenes	---	0.015	1	02/27/2016 20:07
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	90	70-130		02/27/2016 20:07

Analyst(s): IA



## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 2/26/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW3550B/3630C  
**Analytical Method:** SW8015B  
**Unit:** mg/Kg

### Total Extractable Petroleum Hydrocarbons w/ SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-5	1602B06-001A	Soil	02/25/2016 09:05	GC9a	117249
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	ND		1.0	1	02/29/2016 16:03
TPH-Motor Oil (C18-C36)	7.2		5.0	1	02/29/2016 16:03
TPH-Hydraulic Oil (C18-C36)	7.2		5.0	1	02/29/2016 16:03
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
C9	95		70-130		02/29/2016 16:03
<u>Analyst(s):</u> TK			<u>Analytical Comments:</u> e7		

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-10	1602B06-002A	Soil	02/25/2016 09:10	GC9a	117249
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	ND		1.0	1	02/29/2016 16:42
TPH-Motor Oil (C18-C36)	ND		5.0	1	02/29/2016 16:42
TPH-Hydraulic Oil (C18-C36)	ND		5.0	1	02/29/2016 16:42
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
C9	90		70-130		02/29/2016 16:42
<u>Analyst(s):</u> TK					

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-20	1602B06-003A	Soil	02/25/2016 09:20	GC9a	117249
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	ND		1.0	1	02/29/2016 17:21
TPH-Motor Oil (C18-C36)	ND		5.0	1	02/29/2016 17:21
TPH-Hydraulic Oil (C18-C36)	ND		5.0	1	02/29/2016 17:21
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
C9	89		70-130		02/29/2016 17:21
<u>Analyst(s):</u> TK					

(Cont.)





## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 2/26/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW3550B/3630C  
**Analytical Method:** SW8015B  
**Unit:** mg/Kg

### Total Extractable Petroleum Hydrocarbons w/ SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-30	1602B06-004A	Soil	02/25/2016 09:30	GC9a	117302

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/29/2016 18:00
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/29/2016 18:00
TPH-Hydraulic Oil (C18-C36)	ND	5.0	1	02/29/2016 18:00
Surrogates	REC (%)	Limits		Date Analyzed
C9	90	70-130		02/29/2016 18:00

Analyst(s): TK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-40	1602B06-005A	Soil	02/25/2016 09:40	GC9a	117302

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/29/2016 18:39
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/29/2016 18:39
TPH-Hydraulic Oil (C18-C36)	ND	5.0	1	02/29/2016 18:39
Surrogates	REC (%)	Limits		Date Analyzed
C9	89	70-130		02/29/2016 18:39

Analyst(s): TK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-50	1602B06-006A	Soil	02/25/2016 09:50	GC9a	117302

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	02/29/2016 19:17
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/29/2016 19:17
TPH-Hydraulic Oil (C18-C36)	ND	5.0	1	02/29/2016 19:17
Surrogates	REC (%)	Limits		Date Analyzed
C9	88	70-130		02/29/2016 19:17

Analyst(s): TK

(Cont.)



## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 16:46  
**Date Prepared:** 2/26/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**Extraction Method:** SW3550B/3630C  
**Analytical Method:** SW8015B  
**Unit:** mg/Kg

### Total Extractable Petroleum Hydrocarbons w/ SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-57	1602B06-007A	Soil	02/25/2016 10:00	GC9a	117302

<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	ND	1.0	1	02/29/2016 19:56
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/29/2016 19:56
TPH-Hydraulic Oil (C18-C36)	ND	5.0	1	02/29/2016 19:56
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
C9	88	70-130		02/29/2016 19:56

Analyst(s): TK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-71	1602B06-008A	Soil	02/25/2016 10:10	GC9a	117302

<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	ND	1.0	1	02/29/2016 13:10
TPH-Motor Oil (C18-C36)	ND	5.0	1	02/29/2016 13:10
TPH-Hydraulic Oil (C18-C36)	ND	5.0	1	02/29/2016 13:10
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
C9	88	70-130		02/29/2016 13:10

Analyst(s): TK



## Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 2/25/16  
**Date Analyzed:** 2/26/16  
**Instrument:** GC16  
**Matrix:** Soil  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**BatchID:** 117261  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg  
**Sample ID:** MB/LCS-117261  
 1602A76-001AMS/MSD

### QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	0.10	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	0.0376	0.0050	0.050	-	75	53-116
Benzene	ND	0.0432	0.0050	0.050	-	86	63-137
Bromobenzene	ND	-	0.0050	-	-	-	-
Bromochloromethane	ND	-	0.0050	-	-	-	-
Bromodichloromethane	ND	-	0.0050	-	-	-	-
Bromoform	ND	-	0.0050	-	-	-	-
Bromomethane	ND	-	0.0050	-	-	-	-
2-Butanone (MEK)	ND	-	0.020	-	-	-	-
t-Butyl alcohol (TBA)	ND	0.203	0.050	0.20	-	101	41-135
n-Butyl benzene	ND	-	0.0050	-	-	-	-
sec-Butyl benzene	ND	-	0.0050	-	-	-	-
tert-Butyl benzene	ND	-	0.0050	-	-	-	-
Carbon Disulfide	ND	-	0.0050	-	-	-	-
Carbon Tetrachloride	ND	-	0.0050	-	-	-	-
Chlorobenzene	ND	0.0437	0.0050	0.050	-	87	77-121
Chloroethane	ND	-	0.0050	-	-	-	-
Chloroform	ND	-	0.0050	-	-	-	-
Chloromethane	ND	-	0.0050	-	-	-	-
2-Chlorotoluene	ND	-	0.0050	-	-	-	-
4-Chlorotoluene	ND	-	0.0050	-	-	-	-
Dibromochloromethane	ND	-	0.0050	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.0040	-	-	-	-
1,2-Dibromoethane (EDB)	ND	0.0446	0.0040	0.050	-	89	67-119
Dibromomethane	ND	-	0.0050	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.0050	-	-	-	-
Dichlorodifluoromethane	ND	-	0.0050	-	-	-	-
1,1-Dichloroethane	ND	-	0.0050	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.0439	0.0040	0.050	-	88	58-135
1,1-Dichloroethene	ND	0.0404	0.0050	0.050	-	81	42-145
cis-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
1,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,3-Dichloropropane	ND	-	0.0050	-	-	-	-
2,2-Dichloropropane	ND	-	0.0050	-	-	-	-

(Cont.)



## Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 2/25/16  
**Date Analyzed:** 2/26/16  
**Instrument:** GC16  
**Matrix:** Soil  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**BatchID:** 117261  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg  
**Sample ID:** MB/LCS-117261  
 1602A76-001AMS/MSD

### QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
1,1-Dichloropropene	ND	-	0.0050	-	-	-	-
cis-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-
trans-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-
Diisopropyl ether (DIPE)	ND	0.0431	0.0050	0.050	-	86	52-129
Ethylbenzene	ND	-	0.0050	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	0.0414	0.0050	0.050	-	83	53-125
Freon 113	ND	-	0.0050	-	-	-	-
Hexachlorobutadiene	ND	-	0.0050	-	-	-	-
Hexachloroethane	ND	-	0.0050	-	-	-	-
2-Hexanone	ND	-	0.0050	-	-	-	-
Isopropylbenzene	ND	-	0.0050	-	-	-	-
4-Isopropyl toluene	ND	-	0.0050	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	0.0402	0.0050	0.050	-	80	58-122
Methylene chloride	ND	-	0.0050	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.0050	-	-	-	-
Naphthalene	ND	-	0.0050	-	-	-	-
n-Propyl benzene	ND	-	0.0050	-	-	-	-
Styrene	ND	-	0.0050	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
Tetrachloroethene	ND	-	0.0050	-	-	-	-
Toluene	ND	0.0441	0.0050	0.050	-	88	76-130
1,2,3-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.0050	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.0050	-	-	-	-
Trichloroethene	ND	0.0445	0.0050	0.050	-	89	72-132
Trichlorofluoromethane	ND	-	0.0050	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.0050	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.0050	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.0050	-	-	-	-
Vinyl Chloride	ND	-	0.0050	-	-	-	-
Xylenes, Total	ND	-	0.0050	-	-	-	-

(Cont.)



## Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 2/25/16  
**Date Analyzed:** 2/26/16  
**Instrument:** GC16  
**Matrix:** Soil  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**BatchID:** 117261  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg  
**Sample ID:** MB/LCS-117261  
 1602A76-001AMS/MSD

### QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
<b>Surrogate Recovery</b>							
Dibromofluoromethane	0.128	0.128		0.12	102	103	70-130
Toluene-d8	0.149	0.144		0.12	119	115	70-130
4-BFB	0.0125	0.0136		0.012	100	109	70-130
Benzene-d6	0.107	0.101		0.10	107	101	60-140
Ethylbenzene-d10	0.118	0.117		0.10	118	117	60-140
1,2-DCB-d4	0.0724	0.0751		0.10	72	75	60-140

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
tert-Amyl methyl ether (TAME)	0.0451	0.0452	0.050	ND	90	90	56-94	0	20
Benzene	0.0436	0.0435	0.050	ND	87	87	60-106	0	20
t-Butyl alcohol (TBA)	0.168	0.174	0.20	ND	84	87	56-140	3.29	20
Chlorobenzene	0.0437	0.0433	0.050	ND	87	87	61-108	0	20
1,2-Dibromoethane (EDB)	0.0416	0.0426	0.050	ND	83	85	54-119	2.25	20
1,2-Dichloroethane (1,2-DCA)	0.0436	0.0442	0.050	ND	87	88	48-115	1.42	20
1,1-Dichloroethene	0.0345	0.0350	0.050	ND	69	70	46-111	1.46	20
Diisopropyl ether (DIPE)	0.0428	0.0425	0.050	ND	86	85	53-111	0.783	20
Ethyl tert-butyl ether (ETBE)	0.0445	0.0445	0.050	ND	89	89	61-104	0	20
Methyl-t-butyl ether (MTBE)	0.0422	0.0426	0.050	ND	84	85	58-107	1.09	20
Toluene	0.0413	0.0412	0.050	ND	83	82	64-114	0.137	20
Trichloroethene	0.0424	0.0421	0.050	ND	85	84	60-116	0.758	20
<b>Surrogate Recovery</b>									
Dibromofluoromethane	0.154	0.154	0.12		123	123	70-130	0	20
Toluene-d8	0.145	0.145	0.12		116	116	70-130	0	20
4-BFB	0.0120	0.0124	0.012		96	99	88-121	2.75	20
Benzene-d6	0.105	0.103	0.10		105	103	60-140	1.97	20
Ethylbenzene-d10	0.109	0.107	0.10		109	107	60-140	2.16	20
1,2-DCB-d4	0.0945	0.0953	0.10		94	95	60-140	0.887	20



## Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 3/1/16  
**Date Analyzed:** 3/4/16 - 3/5/16  
**Instrument:** GC35  
**Matrix:** Soil  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**BatchID:** 117419  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C-SIM  
**Unit:** mg/kg  
**Sample ID:** MB/LCS-117419

### QC Summary Report for SW8270C

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acenaphthene	ND	-	0.010	-	-	-	-
Acenaphthylene	ND	-	0.010	-	-	-	-
Anthracene	ND	-	0.010	-	-	-	-
Benzo (a) anthracene	ND	-	0.010	-	-	-	-
Benzo (a) pyrene	ND	0.0739	0.010	0.20	-	37	30-130
Benzo (b) fluoranthene	ND	-	0.010	-	-	-	-
Benzo (g,h,i) perylene	ND	-	0.010	-	-	-	-
Benzo (k) fluoranthene	ND	-	0.010	-	-	-	-
Chrysene	ND	0.0762	0.010	0.20	-	38	30-130
Dibenzo (a,h) anthracene	ND	-	0.010	-	-	-	-
Fluoranthene	ND	-	0.010	-	-	-	-
Fluorene	ND	-	0.010	-	-	-	-
Indeno (1,2,3-cd) pyrene	ND	-	0.010	-	-	-	-
1-Methylnaphthalene	ND	0.142	0.010	0.20	-	71	30-130
2-Methylnaphthalene	ND	0.106	0.010	0.20	-	53	30-130
Naphthalene	ND	-	0.010	-	-	-	-
Phenanthrene	ND	0.100	0.010	0.20	-	50	30-130
Pyrene	ND	0.0866	0.010	0.20	-	43	30-130
<b>Surrogate Recovery</b>							
1-Fluoronaphthalene	0.494	0.435		0.50	99	87	30-130
2-Fluorobiphenyl	0.489	0.441		0.50	98	88	30-130



## Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 2/25/16  
**Date Analyzed:** 2/25/16  
**Instrument:** GC9b  
**Matrix:** Soil  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**BatchID:** 117249  
**Extraction Method:** SW3550B/3630C  
**Analytical Method:** SW8015B  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-117249  
 1602A52-013AMS/MSD

### QC Report for SW8015B w/ SG Clean-Up

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH-Diesel (C10-C23)	ND	45.5	1.0	40	-	114	70-130
TPH-Motor Oil (C18-C36)	ND	-	5.0	-	-	-	-
<b>Surrogate Recovery</b>							
C9	23.8	23.7		25	95	95	62-139

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	31.5	32.4	40	3.556	70	72	70-130	2.96	30
<b>Surrogate Recovery</b>									
C9	25.4	25.7	25		102	103	70-130	1.11	30

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## Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 2/25/16  
**Date Analyzed:** 2/26/16  
**Instrument:** GC19  
**Matrix:** Soil  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**BatchID:** 117257  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-117257  
 1602A62-001AMS/MSD

### QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	0.576	0.40	0.60	-	96	70-130
MTBE	ND	0.0793	0.050	0.10	-	79	70-130
Benzene	ND	0.102	0.0050	0.10	-	102	70-130
Toluene	ND	0.103	0.0050	0.10	-	103	70-130
Ethylbenzene	ND	0.104	0.0050	0.10	-	104	70-130
Xylenes	ND	0.336	0.015	0.30	-	112	70-130

**Surrogate Recovery**

2-Fluorotoluene	0.117	0.113		0.10	117	113	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	0.531	0.522	0.60	ND	88	87	70-130	1.76	20
MTBE	0.0734	0.0730	0.10	ND	73	73	70-130	0	20
Benzene	0.0972	0.0908	0.10	ND	97	91	70-130	6.80	20
Toluene	0.0999	0.0942	0.10	ND	100	94	70-130	5.82	20
Ethylbenzene	0.0991	0.0959	0.10	ND	97	94	70-130	3.27	20
Xylenes	0.315	0.309	0.30	ND	105	103	70-130	2.13	20

**Surrogate Recovery**

2-Fluorotoluene	0.110	0.103	0.10		110	103	70-130	6.38	20
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## Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 2/26/16  
**Date Analyzed:** 2/29/16  
**Instrument:** GC6B, GC9a  
**Matrix:** Soil  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B06  
**BatchID:** 117302  
**Extraction Method:** SW3550B/3630C  
**Analytical Method:** SW8015B  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-117302  
 1602B06-008AMS/MSD

### QC Report for SW8015B w/ SG Clean-Up

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH-Diesel (C10-C23)	ND	42.0	1.0	40	-	105	70-130
TPH-Motor Oil (C18-C36)	ND	-	5.0	-	-	-	-
<b>Surrogate Recovery</b>							
C9	22.1	26.6		25	88	106	62-139

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	46.4	47.0	40	ND	116	117	70-130	1.17	30
<b>Surrogate Recovery</b>									
C9	22.4	22.2	25		89	89	70-130	0	30

1534 Willow Pass Rd  
Pittsburg, CA 94565-1701  
(925) 252-9262



# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1602B06

ClientCode: TWRF

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  EQUIS   
 Email   
 HardCopy   
 ThirdParty   
 J-flag

**Report to:**  
 Dustyne Sutherland  
 Treadwell & Rollo  
 555 Montgomery St., Suite 1300  
 San Francisco, CA 94111  
 (415) 955-5244    FAX: (415) 955-9041

Email: dsutherland@langan.com  
 cc/3rd Party: abrown@langan.com;  
 PO:  
 ProjectNo: 731674401; 730-750 A Street

**Bill to:**  
 Accounts Payable  
 Treadwell & Rollo  
 555 Montgomery St., Suite 1300  
 San Francisco, CA 94111  
 Langan\_InvoiceCapture@concursoft.com

**Requested TAT: 5 days;**  
  
**Date Received: 02/26/2016**  
**Date Logged: 02/26/2016**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
1602B06-001	LB-01-5	Soil	2/25/2016 9:05	<input type="checkbox"/>	A	A	A	A									
1602B06-002	LB-01-10	Soil	2/25/2016 9:10	<input type="checkbox"/>	A	A	A	A									
1602B06-003	LB-01-20	Soil	2/25/2016 9:20	<input type="checkbox"/>	A	A	A	A									
1602B06-004	LB-01-30	Soil	2/25/2016 9:30	<input type="checkbox"/>	A	A	A	A									
1602B06-005	LB-01-40	Soil	2/25/2016 9:40	<input type="checkbox"/>	A	A	A	A									
1602B06-006	LB-01-50	Soil	2/25/2016 9:50	<input type="checkbox"/>	A	A	A	A									
1602B06-007	LB-01-57	Soil	2/25/2016 10:00	<input type="checkbox"/>	A	A	A	A									
1602B06-008	LB-01-71	Soil	2/25/2016 10:10	<input type="checkbox"/>	A	A	A	A									

**Test Legend:**

1	8260B_S	2	8270_PNA_S	3	G-MBTX_S	4	TPH-WSG_S
5		6		7		8	
9		10		11		12	

**Project Manager:**

The following SamplIDs: 001A, 002A, 003A, 004A, 005A, 006A, 007A, 008A contain testgroup.

**Prepared by: Agustina Venegas**

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days). Hazardous samples will be returned to client or disposed of at client expense.



## WORK ORDER SUMMARY

**Client Name:** TREADWELL & ROLLO  
**Project:** 731674401; 730-750 A Street  
**Comments:**

**QC Level:** LEVEL 2  
**Client Contact:** Dustyne Sutherland  
**Contact's Email:** dsutherland@langan.com

**Work Order:** 1602B06  
**Date Logged:** 2/26/2016

WaterTrax     WriteOn     EDF     Excel     Fax     Email     HardCopy     ThirdParty     J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1602B06-001A	LB-01-5	Soil	Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up	1	Stainless Steel tube 2"x6"	<input type="checkbox"/>	2/25/2016 9:05	5 days		<input type="checkbox"/>	
			SW8270C (PAHs/PNAs)			<input type="checkbox"/>		5 days			
			SW8260B (VOCs)			<input type="checkbox"/>		5 days			
1602B06-002A	LB-01-10	Soil	Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up	1	Stainless Steel tube 2"x6"	<input type="checkbox"/>	2/25/2016 9:10	5 days		<input type="checkbox"/>	
			SW8270C (PAHs/PNAs)			<input type="checkbox"/>		5 days			
			SW8260B (VOCs)			<input type="checkbox"/>		5 days			
1602B06-003A	LB-01-20	Soil	Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up	1	Stainless Steel tube 2"x6"	<input type="checkbox"/>	2/25/2016 9:20	5 days		<input type="checkbox"/>	
			SW8270C (PAHs/PNAs)			<input type="checkbox"/>		5 days			
			SW8260B (VOCs)			<input type="checkbox"/>		5 days			
1602B06-004A	LB-01-30	Soil	Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up	1	Stainless Steel tube 2"x6"	<input type="checkbox"/>	2/25/2016 9:30	5 days		<input type="checkbox"/>	
			SW8270C (PAHs/PNAs)			<input type="checkbox"/>		5 days			
			SW8260B (VOCs)			<input type="checkbox"/>		5 days			
1602B06-005A	LB-01-40	Soil	Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up	1	Stainless Steel tube 2"x6"	<input type="checkbox"/>	2/25/2016 9:40	5 days		<input type="checkbox"/>	
			SW8270C (PAHs/PNAs)			<input type="checkbox"/>		5 days			
			SW8260B (VOCs)			<input type="checkbox"/>		5 days			

**NOTES:** - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.



## WORK ORDER SUMMARY

**Client Name:** TREADWELL & ROLLO  
**Project:** 731674401; 730-750 A Street  
**Comments:**

**QC Level:** LEVEL 2  
**Client Contact:** Dustyne Sutherland  
**Contact's Email:** dsutherland@langan.com

**Work Order:** 1602B06  
**Date Logged:** 2/26/2016

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  Fax   
 Email   
 HardCopy   
 ThirdParty   
 J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De- chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1602B06-006A	LB-01-50	Soil	Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up	1	Stainless Steel tube 2"x6"	<input type="checkbox"/>	2/25/2016 9:50	5 days		<input type="checkbox"/>	
			SW8270C (PAHs/PNAs)	<input type="checkbox"/>		5 days		<input type="checkbox"/>			
			SW8260B (VOCs)	<input type="checkbox"/>		5 days		<input type="checkbox"/>			
1602B06-007A	LB-01-57	Soil	Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up	1	Stainless Steel tube 2"x6"	<input type="checkbox"/>	2/25/2016 10:00	5 days		<input type="checkbox"/>	
			SW8270C (PAHs/PNAs)	<input type="checkbox"/>		5 days		<input type="checkbox"/>			
			SW8260B (VOCs)	<input type="checkbox"/>		5 days		<input type="checkbox"/>			
1602B06-008A	LB-01-71	Soil	Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up	1	Stainless Steel tube 2"x6"	<input type="checkbox"/>	2/25/2016 10:10	5 days		<input type="checkbox"/>	
			SW8270C (PAHs/PNAs)	<input type="checkbox"/>		5 days		<input type="checkbox"/>			
			SW8260B (VOCs)	<input type="checkbox"/>		5 days		<input type="checkbox"/>			

**NOTES:** - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).  
 - MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.





### Sample Receipt Checklist

Client Name: **Treadwell & Rollo**  
 Project Name: **731674401; 730-750 A Street**  
 WorkOrder No: **1602B06** Matrix: Soil  
 Carrier: Bernie Cummins (MAI Courier)

Date and Time Received: **2/26/2016 16:00**  
 Date Logged: **2/26/2016**  
 Received by: **Agustina Venegas**  
 Logged by: **Agustina Venegas**

#### Chain of Custody (COC) Information

Chain of custody present? Yes  No   
 Chain of custody signed when relinquished and received? Yes  No   
 Chain of custody agrees with sample labels? Yes  No   
 Sample IDs noted by Client on COC? Yes  No   
 Date and Time of collection noted by Client on COC? Yes  No   
 Sampler's name noted on COC? Yes  No

#### Sample Receipt Information

Custody seals intact on shipping container/cooler? Yes  No  NA   
 Shipping container/cooler in good condition? Yes  No   
 Samples in proper containers/bottles? Yes  No   
 Sample containers intact? Yes  No   
 Sufficient sample volume for indicated test? Yes  No

#### Sample Preservation and Hold Time (HT) Information

All samples received within holding time? Yes  No   
 Sample/Temp Blank temperature Temp: 5.5°C NA   
 Water - VOA vials have zero headspace / no bubbles? Yes  No  NA   
 Sample labels checked for correct preservation? Yes  No   
 pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)? Yes  No  NA   
 Samples Received on Ice? Yes  No

(Ice Type: WET ICE )

#### UCMR3 Samples:

Total Chlorine tested and acceptable upon receipt for EPA 522? Yes  No  NA   
 Free Chlorine tested and acceptable upon receipt for EPA 218.7, 300.1, 537, 539? Yes  No  NA

\* NOTE: If the "No" box is checked, see comments below.

-----  
 Comments:



# McC Campbell Analytical, Inc.

"When Quality Counts"

## Analytical Report

**WorkOrder:** 1602B07

**Report Created for:** Treadwell & Rollo

555 Montgomery St., Suite 1300  
San Francisco, CA 94111

**Project Contact:** Dustyne Sutherland

**Project P.O.:**

**Project Name:** 731674401; 730-750 A Street

**Project Received:** 02/26/2016

Analytical Report reviewed & approved for release on 03/07/2016 by:

Angela Rydelius,  
Laboratory Manager

*The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.*





## Glossary of Terms & Qualifier Definitions

**Client:** Treadwell & Rollo  
**Project:** 731674401; 730-750 A Street  
**WorkOrder:** 1602B07

### Glossary Abbreviation

95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test
DUP	Duplicate
EDL	Estimated Detection Limit
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

### Analytical Qualifiers

b1	aqueous sample that contains greater than ~1 vol. % sediment
e7	oil range compounds are significant





## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 17:54  
**Date Prepared:** 2/29/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B07  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-GW	1602B07-001B	Water	02/25/2016 13:30	GC10	117399
Analytes	Result	RL	DF	Date Analyzed	
Acetone	31	10	1	02/29/2016 12:05	
tert-Amyl methyl ether (TAME)	ND	0.50	1	02/29/2016 12:05	
Benzene	ND	0.50	1	02/29/2016 12:05	
Bromobenzene	ND	0.50	1	02/29/2016 12:05	
Bromochloromethane	ND	0.50	1	02/29/2016 12:05	
Bromodichloromethane	ND	0.50	1	02/29/2016 12:05	
Bromoform	ND	0.50	1	02/29/2016 12:05	
Bromomethane	ND	0.50	1	02/29/2016 12:05	
2-Butanone (MEK)	ND	2.0	1	02/29/2016 12:05	
t-Butyl alcohol (TBA)	2.1	2.0	1	02/29/2016 12:05	
n-Butyl benzene	ND	0.50	1	02/29/2016 12:05	
sec-Butyl benzene	ND	0.50	1	02/29/2016 12:05	
tert-Butyl benzene	ND	0.50	1	02/29/2016 12:05	
Carbon Disulfide	ND	0.50	1	02/29/2016 12:05	
Carbon Tetrachloride	ND	0.50	1	02/29/2016 12:05	
Chlorobenzene	ND	0.50	1	02/29/2016 12:05	
Chloroethane	ND	0.50	1	02/29/2016 12:05	
Chloroform	ND	0.50	1	02/29/2016 12:05	
Chloromethane	ND	0.50	1	02/29/2016 12:05	
2-Chlorotoluene	ND	0.50	1	02/29/2016 12:05	
4-Chlorotoluene	ND	0.50	1	02/29/2016 12:05	
Dibromochloromethane	ND	0.50	1	02/29/2016 12:05	
1,2-Dibromo-3-chloropropane	ND	0.20	1	02/29/2016 12:05	
1,2-Dibromoethane (EDB)	ND	0.50	1	02/29/2016 12:05	
Dibromomethane	ND	0.50	1	02/29/2016 12:05	
1,2-Dichlorobenzene	ND	0.50	1	02/29/2016 12:05	
1,3-Dichlorobenzene	ND	0.50	1	02/29/2016 12:05	
1,4-Dichlorobenzene	ND	0.50	1	02/29/2016 12:05	
Dichlorodifluoromethane	ND	0.50	1	02/29/2016 12:05	
1,1-Dichloroethane	ND	0.50	1	02/29/2016 12:05	
1,2-Dichloroethane (1,2-DCA)	ND	0.50	1	02/29/2016 12:05	
1,1-Dichloroethene	ND	0.50	1	02/29/2016 12:05	
cis-1,2-Dichloroethene	ND	0.50	1	02/29/2016 12:05	
trans-1,2-Dichloroethene	ND	0.50	1	02/29/2016 12:05	
1,2-Dichloropropane	ND	0.50	1	02/29/2016 12:05	
1,3-Dichloropropane	ND	0.50	1	02/29/2016 12:05	
2,2-Dichloropropane	ND	0.50	1	02/29/2016 12:05	

(Cont.)



## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 17:54  
**Date Prepared:** 2/29/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B07  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-GW	1602B07-001B	Water	02/25/2016 13:30	GC10	117399
Analytes	Result	RL	DF	Date Analyzed	
1,1-Dichloropropene	ND	0.50	1	02/29/2016 12:05	
cis-1,3-Dichloropropene	ND	0.50	1	02/29/2016 12:05	
trans-1,3-Dichloropropene	ND	0.50	1	02/29/2016 12:05	
Diisopropyl ether (DIPE)	ND	0.50	1	02/29/2016 12:05	
Ethylbenzene	ND	0.50	1	02/29/2016 12:05	
Ethyl tert-butyl ether (ETBE)	ND	0.50	1	02/29/2016 12:05	
Freon 113	ND	0.50	1	02/29/2016 12:05	
Hexachlorobutadiene	ND	0.50	1	02/29/2016 12:05	
Hexachloroethane	ND	0.50	1	02/29/2016 12:05	
2-Hexanone	ND	0.50	1	02/29/2016 12:05	
Isopropylbenzene	ND	0.50	1	02/29/2016 12:05	
4-Isopropyl toluene	ND	0.50	1	02/29/2016 12:05	
Methyl-t-butyl ether (MTBE)	ND	0.50	1	02/29/2016 12:05	
Methylene chloride	ND	0.50	1	02/29/2016 12:05	
4-Methyl-2-pentanone (MIBK)	ND	0.50	1	02/29/2016 12:05	
Naphthalene	ND	0.50	1	02/29/2016 12:05	
n-Propyl benzene	ND	0.50	1	02/29/2016 12:05	
Styrene	ND	0.50	1	02/29/2016 12:05	
1,1,1,2-Tetrachloroethane	ND	0.50	1	02/29/2016 12:05	
1,1,2,2-Tetrachloroethane	ND	0.50	1	02/29/2016 12:05	
Tetrachloroethene	ND	0.50	1	02/29/2016 12:05	
Toluene	ND	0.50	1	02/29/2016 12:05	
1,2,3-Trichlorobenzene	ND	0.50	1	02/29/2016 12:05	
1,2,4-Trichlorobenzene	ND	0.50	1	02/29/2016 12:05	
1,1,1-Trichloroethane	ND	0.50	1	02/29/2016 12:05	
1,1,2-Trichloroethane	ND	0.50	1	02/29/2016 12:05	
Trichloroethene	<b>0.96</b>	0.50	1	02/29/2016 12:05	
Trichlorofluoromethane	ND	0.50	1	02/29/2016 12:05	
1,2,3-Trichloropropane	ND	0.50	1	02/29/2016 12:05	
1,2,4-Trimethylbenzene	ND	0.50	1	02/29/2016 12:05	
1,3,5-Trimethylbenzene	ND	0.50	1	02/29/2016 12:05	
Vinyl Chloride	ND	0.50	1	02/29/2016 12:05	
Xylenes, Total	ND	0.50	1	02/29/2016 12:05	

(Cont.)



# Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 17:54  
**Date Prepared:** 2/29/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B07  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

## Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-GW	1602B07-001B	Water	02/25/2016 13:30	GC10	117399

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
Dibromofluoromethane	103	70-130		02/29/2016 12:05
Toluene-d8	100	70-130		02/29/2016 12:05
4-BFB	81	70-130		02/29/2016 12:05

Analyst(s): KF

Analytical Comments: b1



## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 17:54  
**Date Prepared:** 3/1/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B07  
**Extraction Method:** SW3510C  
**Analytical Method:** SW8270C-SIM  
**Unit:** µg/L

### Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode by GC/MS

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-GW	1602B07-001C	Water	02/25/2016 13:30	GC35	117420

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.50	1	03/05/2016 00:49
Acenaphthylene	ND	0.50	1	03/05/2016 00:49
Anthracene	ND	0.50	1	03/05/2016 00:49
Benzo (a) anthracene	ND	0.50	1	03/05/2016 00:49
Benzo (a) pyrene	ND	0.50	1	03/05/2016 00:49
Benzo (b) fluoranthene	ND	0.50	1	03/05/2016 00:49
Benzo (g,h,i) perylene	ND	0.50	1	03/05/2016 00:49
Benzo (k) fluoranthene	ND	0.50	1	03/05/2016 00:49
Chrysene	ND	0.50	1	03/05/2016 00:49
Dibenzo (a,h) anthracene	ND	0.50	1	03/05/2016 00:49
Fluoranthene	ND	0.50	1	03/05/2016 00:49
Fluorene	ND	0.50	1	03/05/2016 00:49
Indeno (1,2,3-cd) pyrene	ND	0.50	1	03/05/2016 00:49
1-Methylnaphthalene	ND	0.50	1	03/05/2016 00:49
2-Methylnaphthalene	ND	0.50	1	03/05/2016 00:49
Naphthalene	ND	0.50	1	03/05/2016 00:49
Phenanthrene	ND	0.50	1	03/05/2016 00:49
Pyrene	ND	0.50	1	03/05/2016 00:49

Surrogates	REC (%)	Limits	Date Analyzed
1-Fluoronaphthalene	81	30-130	03/05/2016 00:49
2-Fluorobiphenyl	72	30-130	03/05/2016 00:49

**Analyst(s):** REB

**Analytical Comments:** b1



## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 17:54  
**Date Prepared:** 2/29/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B07  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** µg/L

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-GW	1602B07-001A	Water	02/25/2016 13:30	GC19	117401

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	50	1	02/29/2016 22:11
MTBE	ND	5.0	1	02/29/2016 22:11
Benzene	ND	0.50	1	02/29/2016 22:11
Toluene	ND	0.50	1	02/29/2016 22:11
Ethylbenzene	ND	0.50	1	02/29/2016 22:11
Xylenes	ND	1.5	1	02/29/2016 22:11

Surrogates	REC (%)	Limits	Date Analyzed
aaa-TFT	96	70-130	02/29/2016 22:11

**Analyst(s):** IA

**Analytical Comments:** b1



## Analytical Report

**Client:** Treadwell & Rollo  
**Date Received:** 2/26/16 17:54  
**Date Prepared:** 2/26/16  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B07  
**Extraction Method:** SW3510C/3630C  
**Analytical Method:** SW8015B  
**Unit:** µg/L

### Total Extractable Petroleum Hydrocarbons w/ SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
LB-01-GW	1602B07-001A	Water	02/25/2016 13:30	GC2B	117312

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	50	1	02/29/2016 13:59
TPH-Motor Oil (C18-C36)	<b>1100</b>	250	1	02/29/2016 13:59
TPH-Hydraulic Oil (C18-C36)	<b>1100</b>	250	1	02/29/2016 13:59
Surrogates	REC (%)	Limits		Date Analyzed
C9	79	70-130		02/29/2016 13:59

**Analyst(s):** TK

**Analytical Comments:** e7,b1



## Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 2/29/16  
**Date Analyzed:** 2/29/16  
**Instrument:** GC10  
**Matrix:** Water  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B07  
**BatchID:** 117399  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L  
**Sample ID:** MB/LCS-117399  
 1602B07-001BMS/MSD

### QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	10	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	10.5	0.50	10	-	105	54-140
Benzene	ND	10.0	0.50	10	-	100	47-158
Bromobenzene	ND	-	0.50	-	-	-	-
Bromochloromethane	ND	-	0.50	-	-	-	-
Bromodichloromethane	ND	-	0.50	-	-	-	-
Bromoform	ND	-	0.50	-	-	-	-
Bromomethane	ND	-	0.50	-	-	-	-
2-Butanone (MEK)	ND	-	2.0	-	-	-	-
t-Butyl alcohol (TBA)	ND	38.8	2.0	40	-	97	42-140
n-Butyl benzene	ND	-	0.50	-	-	-	-
sec-Butyl benzene	ND	-	0.50	-	-	-	-
tert-Butyl benzene	ND	-	0.50	-	-	-	-
Carbon Disulfide	ND	-	0.50	-	-	-	-
Carbon Tetrachloride	ND	-	0.50	-	-	-	-
Chlorobenzene	ND	10.1	0.50	10	-	101	43-157
Chloroethane	ND	-	0.50	-	-	-	-
Chloroform	ND	-	0.50	-	-	-	-
Chloromethane	ND	-	0.50	-	-	-	-
2-Chlorotoluene	ND	-	0.50	-	-	-	-
4-Chlorotoluene	ND	-	0.50	-	-	-	-
Dibromochloromethane	ND	-	0.50	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.20	-	-	-	-
1,2-Dibromoethane (EDB)	ND	9.88	0.50	10	-	99	44-155
Dibromomethane	ND	-	0.50	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.50	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.50	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.50	-	-	-	-
Dichlorodifluoromethane	ND	-	0.50	-	-	-	-
1,1-Dichloroethane	ND	-	0.50	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	9.20	0.50	10	-	92	66-125
1,1-Dichloroethene	ND	10.5	0.50	10	-	105	47-149
cis-1,2-Dichloroethene	ND	-	0.50	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.50	-	-	-	-
1,2-Dichloropropane	ND	-	0.50	-	-	-	-
1,3-Dichloropropane	ND	-	0.50	-	-	-	-
2,2-Dichloropropane	ND	-	0.50	-	-	-	-

(Cont.)



## Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 2/29/16  
**Date Analyzed:** 2/29/16  
**Instrument:** GC10  
**Matrix:** Water  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B07  
**BatchID:** 117399  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L  
**Sample ID:** MB/LCS-117399  
 1602B07-001BMS/MSD

### QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
1,1-Dichloropropene	ND	-	0.50	-	-	-	-
cis-1,3-Dichloropropene	ND	-	0.50	-	-	-	-
trans-1,3-Dichloropropene	ND	-	0.50	-	-	-	-
Diisopropyl ether (DIPE)	ND	9.76	0.50	10	-	98	57-136
Ethylbenzene	ND	-	0.50	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	10.2	0.50	10	-	102	55-137
Freon 113	ND	-	0.50	-	-	-	-
Hexachlorobutadiene	ND	-	0.50	-	-	-	-
Hexachloroethane	ND	-	0.50	-	-	-	-
2-Hexanone	ND	-	0.50	-	-	-	-
Isopropylbenzene	ND	-	0.50	-	-	-	-
4-Isopropyl toluene	ND	-	0.50	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	9.76	0.50	10	-	98	53-139
Methylene chloride	ND	-	0.50	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.50	-	-	-	-
Naphthalene	ND	-	0.50	-	-	-	-
n-Propyl benzene	ND	-	0.50	-	-	-	-
Styrene	ND	-	0.50	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.50	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.50	-	-	-	-
Tetrachloroethene	ND	-	0.50	-	-	-	-
Toluene	ND	10.3	0.50	10	-	103	52-137
1,2,3-Trichlorobenzene	ND	-	0.50	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.50	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.50	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.50	-	-	-	-
Trichloroethene	ND	10.5	0.50	10	-	105	43-157
Trichlorofluoromethane	ND	-	0.50	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.50	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.50	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.50	-	-	-	-
Vinyl Chloride	ND	-	0.50	-	-	-	-
Xylenes, Total	ND	-	0.50	-	-	-	-

(Cont.)





## Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 2/29/16  
**Date Analyzed:** 2/29/16  
**Instrument:** GC10  
**Matrix:** Water  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B07  
**BatchID:** 117399  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L  
**Sample ID:** MB/LCS-117399  
 1602B07-001BMS/MSD

### QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
<b>Surrogate Recovery</b>							
Dibromofluoromethane	26.0	26.3		25	104	105	70-130
Toluene-d8	25.5	25.4		25	102	101	70-130
4-BFB	2.13	2.19		2.5	85	87	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
tert-Amyl methyl ether (TAME)	10.6	10.5	10	ND	106	105	69-139	0.754	20
Benzene	10.3	9.87	10	ND	103	99	69-141	4.28	20
t-Butyl alcohol (TBA)	41.1	41.4	40	2.064	98	98	41-152	0	20
Chlorobenzene	10.1	10.0	10	ND	101	100	77-120	1.30	20
1,2-Dibromoethane (EDB)	10.5	10.4	10	ND	105	104	76-135	1.08	20
1,2-Dichloroethane (1,2-DCA)	9.29	9.10	10	ND	93	91	73-139	2.11	20
1,1-Dichloroethene	10.5	10.1	10	ND	105	101	59-140	3.68	20
Diisopropyl ether (DIPE)	10.0	9.72	10	ND	100	97	72-140	2.98	20
Ethyl tert-butyl ether (ETBE)	10.3	10.1	10	ND	103	101	71-140	1.53	20
Methyl-t-butyl ether (MTBE)	9.92	9.96	10	ND	99	100	73-139	0.354	20
Toluene	10.4	10.3	10	ND	102	101	71-128	1.08	20
Trichloroethene	11.4	11.2	10	0.9587	105	102	64-132	2.37	20
<b>Surrogate Recovery</b>									
Dibromofluoromethane	25.8	25.5	25		103	102	73-131	1.27	20
Toluene-d8	24.8	25.3	25		99	101	72-117	1.82	20
4-BFB	2.09	2.15	2.5		83	86	74-116	3.14	20



## Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 3/1/16  
**Date Analyzed:** 3/8/16  
**Instrument:** GC35  
**Matrix:** Water  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B07  
**BatchID:** 117420  
**Extraction Method:** SW3510C  
**Analytical Method:** SW8270C-SIM  
**Unit:** µg/L  
**Sample ID:** MB/LCS-117420

### QC Summary Report for SW8270C

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acenaphthene	ND	-	0.50	-	-	-	-
Acenaphthylene	ND	-	0.50	-	-	-	-
Anthracene	ND	-	0.50	-	-	-	-
Benzo (a) anthracene	ND	-	0.50	-	-	-	-
Benzo (a) pyrene	ND	6.87	0.50	10	-	69	30-130
Benzo (b) fluoranthene	ND	-	0.50	-	-	-	-
Benzo (g,h,i) perylene	ND	-	0.50	-	-	-	-
Benzo (k) fluoranthene	ND	-	0.50	-	-	-	-
Chrysene	ND	6.85	0.50	10	-	68	30-130
Dibenzo (a,h) anthracene	ND	-	0.50	-	-	-	-
Fluoranthene	ND	-	0.50	-	-	-	-
Fluorene	ND	-	0.50	-	-	-	-
Indeno (1,2,3-cd) pyrene	ND	-	0.50	-	-	-	-
1-Methylnaphthalene	ND	8.82	0.50	10	-	88	30-130
2-Methylnaphthalene	ND	7.85	0.50	10	-	79	30-130
Naphthalene	ND	-	0.50	-	-	-	-
Phenanthrene	ND	8.02	0.50	10	-	80	30-130
Pyrene	ND	7.29	0.50	10	-	73	30-130
<b>Surrogate Recovery</b>							
1-Fluoronaphthalene	20.8	23.0		25	83	92	30-130
2-Fluorobiphenyl	21.4	23.0		25	86	92	30-130



## Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 2/29/16 - 3/1/16  
**Date Analyzed:** 2/29/16 - 3/1/16  
**Instrument:** GC19, GC3  
**Matrix:** Water  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B07  
**BatchID:** 117401  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** µg/L  
**Sample ID:** MB/LCS-117401  
 1602B44-001AMS/MSD

### QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	55.6	40	60	-	93	70-130
MTBE	ND	8.18	5.0	10	-	82	70-130
Benzene	ND	9.91	0.50	10	-	99	70-130
Toluene	ND	10.2	0.50	10	-	102	70-130
Ethylbenzene	ND	10.7	0.50	10	-	107	70-130
Xylenes	ND	34.2	1.5	30	-	114	70-130

**Surrogate Recovery**

aaa-TFT	9.88	9.26		10	99	93	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	NR	NR		ND	NR	NR	-	NR	
MTBE	NR	NR		ND	NR	NR	-	NR	
Benzene	NR	NR		ND	NR	NR	-	NR	
Toluene	NR	NR		2.9	NR	NR	-	NR	
Ethylbenzene	NR	NR		ND	NR	NR	-	NR	
Xylenes	NR	NR		ND	NR	NR	-	NR	

**Surrogate Recovery**

aaa-TFT	NR	NR			NR	NR	-	NR	
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## Quality Control Report

**Client:** Treadwell & Rollo  
**Date Prepared:** 2/26/16  
**Date Analyzed:** 2/29/16 - 3/1/16  
**Instrument:** GC11A, GC39A  
**Matrix:** Water  
**Project:** 731674401; 730-750 A Street

**WorkOrder:** 1602B07  
**BatchID:** 117312  
**Extraction Method:** SW3510C/3630C  
**Analytical Method:** SW8015B  
**Unit:** µg/L  
**Sample ID:** MB/LCS-117312

### QC Report for SW8015B w/ SG Clean-Up

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH-Diesel (C10-C23)	ND	1130	50	1000	-	113	59-151
TPH-Motor Oil (C18-C36)	ND	-	250	-	-	-	-
<b>Surrogate Recovery</b>							
C9	620	656		625	99	105	65-122



1534 Willow Pass Rd  
Pittsburg, CA 94565-1701  
(925) 252-9262

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1602B07

ClientCode: TWRF

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  EQuIS   
 Email   
 HardCopy   
 ThirdParty   
 J-flag

**Report to:**

Dustyne Sutherland  
Treadwell & Rollo  
555 Montgomery St., Suite 1300  
San Francisco, CA 94111  
(415) 955-5244    FAX: (415) 955-9041

Email: dsutherland@langan.com  
cc/3rd Party: abrown@langan.com;  
PO:  
ProjectNo: 731674401; 730-750 A Street

**Bill to:**

Accounts Payable  
Treadwell & Rollo  
555 Montgomery St., Suite 1300  
San Francisco, CA 94111  
Langan\_InvoiceCapture@concursoft.com

**Requested TAT: 5 days;**

**Date Received: 02/26/2016**

**Date Logged: 02/26/2016**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
1602B07-001	LB-01-GW	Water	2/25/2016 13:30	<input type="checkbox"/>	B	C	A	A									

**Test Legend:**

1	8260B_W	2	8270_PNA_W	3	G-MBTX_W	4	TPH-WSG_W
5		6		7		8	
9		10		11		12	

**Project Manager:**

The following SampID: 001A contains testgroup.

**Prepared by: Agustina Venegas**

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



## WORK ORDER SUMMARY

**Client Name:** TREADWELL & ROLLO  
**Project:** 731674401; 730-750 A Street  
**Comments:**

**QC Level:** LEVEL 2  
**Client Contact:** Dustyne Sutherland  
**Contact's Email:** dsutherland@langan.com

**Work Order:** 1602B07  
**Date Logged:** 2/26/2016

WaterTrax     WriteOn     EDF     Excel     Fax     Email     HardCopy     ThirdParty     J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1602B07-001A	LB-01-GW	Water	Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up	6	VOA w/ HCl	<input type="checkbox"/>	2/25/2016 13:30	5 days	1%+	<input type="checkbox"/>	
1602B07-001B	LB-01-GW	Water	SW8260B (VOCs)	2	VOA w/ HCl	<input type="checkbox"/>	2/25/2016 13:30	5 days	1%+	<input type="checkbox"/>	
1602B07-001C	LB-01-GW	Water	SW8270C (PAHs/PNAs)	1	ILA	<input type="checkbox"/>	2/25/2016 13:30	5 days	1%+	<input type="checkbox"/>	

**NOTES:** - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).  
 - MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.





### Sample Receipt Checklist

Client Name: **Treadwell & Rollo**  
 Project Name: **731674401; 730-750 A Street**  
 WorkOrder No: **1602B07** Matrix: Water  
 Carrier: Bernie Cummins (MAI Courier)

Date and Time Received: **2/26/2016 16:00**  
 Date Logged: **2/26/2016**  
 Received by: **Agustina Venegas**  
 Logged by: **Agustina Venegas**

**Chain of Custody (COC) Information**

Chain of custody present? Yes  No   
 Chain of custody signed when relinquished and received? Yes  No   
 Chain of custody agrees with sample labels? Yes  No   
 Sample IDs noted by Client on COC? Yes  No   
 Date and Time of collection noted by Client on COC? Yes  No   
 Sampler's name noted on COC? Yes  No

**Sample Receipt Information**

Custody seals intact on shipping container/cooler? Yes  No  NA   
 Shipping container/cooler in good condition? Yes  No   
 Samples in proper containers/bottles? Yes  No   
 Sample containers intact? Yes  No   
 Sufficient sample volume for indicated test? Yes  No

**Sample Preservation and Hold Time (HT) Information**

All samples received within holding time? Yes  No   
 Sample/Temp Blank temperature Temp: 5.5°C NA   
 Water - VOA vials have zero headspace / no bubbles? Yes  No  NA   
 Sample labels checked for correct preservation? Yes  No   
 pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)? Yes  No  NA   
 Samples Received on Ice? Yes  No

(Ice Type: WET ICE )

**UCMR3 Samples:**

Total Chlorine tested and acceptable upon receipt for EPA 522? Yes  No  NA   
 Free Chlorine tested and acceptable upon receipt for EPA 218.7, 300.1, 537, 539? Yes  No  NA

\* NOTE: If the "No" box is checked, see comments below.

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 Comments: