

March 14, 2016

Alameda County Environmental Health Services Environmental Protection 1131 Harbor Bay Parkway, Suite 250 Alameda, California 94502-6577

Attention: Mr. Mark Detterman

# **RECEIVED**

By Alameda County Environmental Health 8:44 am, Mar 21, 2016

RE: First Quarter 2016 Semi-Annual Groundwater Monitoring Report Delong Oil, Inc.
1716 Webster Street, Alameda, California 94501
Fuel Leak Case No. RO0003140; (Global ID No. T10000005974)
(CCI Project No. 12214-2)

Dear Mr. Detterman:

Compliance & Closure, Inc. (CCI) is pleased to present the First Quarter 2016 Semi-Annual Groundwater Monitoring Report for the sampling of the four on-site groundwater monitoring wells at the Delong Oil, Inc. 76 Gas Station/Circle K, located at 1716 Webster Street, Alameda, California (Figures 1 and 2).

#### Background

In 1983, three single-walled, fiberglass gasoline fuel tanks (12,000-gallon, 10,000-gallon and 6,000-gallon) and one waste oil tank were installed underground (USTs) at the site. In 1987, Mobil Oil Corporation replaced the waste oil tank with a 1,000-gallon tank. The site was later sold to British Petroleum, which operated the site until 1994. In 1994, the site was sold to ConocoPhillips, which operated the site until 2009. Between 1990 and 2009, several environmental site investigations and monitoring activates were conducted by several environmental consulting firms including Kaprealian Engineering, Inc., Hydro-Environmental Technologies, Inc., Fugro West and TRC Alton Geoscience.

In 2009, ConocoPhillips sold the site to United Brothers Enterprises, Inc., also doing business as Delong Oil, Inc., the current owner of the property. In early November 2009, Delong Oil converted the 6,000-gallon gasoline tank to a diesel tank. In July 2011, free-phase product was discovered in well RW-1, located adjacent to the converted diesel tank. Fingerprint analysis later identified the liquid as diesel fuel. Since Delong Oil was the only operator to sell diesel fuel at the site, the ACHE named it as a responsible party for the unauthorized release of the fuel. On September 6, 2013, the 1,000-gallon waste oil tank was removed from the site. Two soil samples

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and one grab water sample were collected from the excavation. The laboratory reported the soil samples contained detectable total petroleum hydrocarbons as diesel (TPHd) at 30.9 milligrams per kilogram (mg/kg) and total petroleum hydrocarbons as motor oil (TPHmo) at 231 mg/kg. The groundwater sample was also reported to contain detectable TPHd at 18,200 micrograms per liter (ug/L) and TPHmo at 46,200 ug/L. Based on these results, Delong Oil was again named a responsible party for an unauthorized release of product in the vicinity of the former waste oil tank.

On June 10, 2014, ACEH issued a letter directing Delong Oil to prepare a scope of work to characterize the downgradient and lateral extent of the free-phase product and groundwater contamination associated with the waste oil tank. ACEH also directed Delong Oil to evaluate potential impacts from the waste oil release to adjacent downgradient residential buildings. CCI conducted a soil and groundwater investigation at the site in January 2016 and has submitted that report to the ACEH.

#### **Groundwater Sampling**

Groundwater samples were collected from the four site wells in accordance with CCI's Sampling Protocol, (Appendix A). The groundwater purged from the wells during sampling and equipment rinse water were placed in a properly labeled, Department of Transportation-approved drums and left at the site, adjacent to the trash enclosure on the southeast side of the site, pending laboratory results. A summary of the groundwater purge data is presented in Table 1.

#### **Laboratory Analysis**

SGS Accutest Laboratories (Accutest), located in San Jose, California, a state-certified laboratory, analyzed the water samples for the presence of total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, and total xylenes (BTEX), naphthalene and fuel oxygenates using EPA Test Method 8260B. Total petroleum hydrocarbons as diesel (TPHd, C10-C28 range) and TPHmo (C28-C40 range) were also analyzed using EPA Test Method 8015B. It should be noted that TPHd and TPHmo samples were analyzed with silica gel cleanup.

#### **Summary of Groundwater Laboratory Results**

The laboratory reported all four groundwater monitoring wells to have detectable TPHd. Monitoring well MW-1 was also reported to have detectable TPHg, BTEX compounds, fuel oxygenates and detectable naphthalene. Analytical results for the first quarter are summarized in Table 2. A Copy of the laboratory report and chain of custody document are attached in Appendix B. TPHd concentration map for the groundwater samples collected from the site wells during the first quarter are plotted on Figures 3.

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While sampling the wells during the first quarter, the groundwater surface measurements ranged between 9.30 and 9.62 feet above mean sea level (msl). Dissolved oxygen levels ranged from 1.41 milligram per liter (mg/L) at MW-1 to 2.91mg/L at MW-3A. Oxygen reducing potential was ranged from -178 at MW-1 to 90 at MW-3A. The general groundwater flow direction in the upper-aquifer wells is toward the north –northwest, at a gradient between 0.003 to 0.004 feet per foot (Figure 2). A copy of the field logs are attached.

#### **Additional Site Activity**

The next semi-annual sampling round is scheduled for September 2016. CCI is currently waiting on comments from the AECH on CCI's recent soil and groundwater investigation report. Additional site investigation to the east of the site may be necessary. In addition, missing monitoring wells MW-2 and MW-3 need to be located and destroyed.

A copy of this report was uploaded to the AECH ftp data base site and the State of California Geotracker data base for review by the AECH.

#### Limitations

The discussion presented in this report is based on the following:

- 1. The observations of the field personnel;
- 2. The results of the laboratory analyses performed by a state-certified laboratory;
- 3. Our understanding of the regulations of the State of California and Alameda County.

It is possible that variations in the soil or groundwater conditions could exist beyond the points explored in this investigation. Also, changes in groundwater conditions could occur at some time in the future due to variations in rainfall, temperature, regional water usage, or other factors. The services performed by CCI have been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the Alameda area. No other warranty, express or implied, is made. Please note that contamination of soil and groundwater must be reported to the appropriate agencies in a timely manner.

CCI includes in this report chemical analytical data from a state-certified laboratory. CCI has been informed that the analyses are performed according to procedures suggested by the U.S. EPA and State of California. CCI is not responsible for laboratory errors in procedure or result reporting.

First Quarter 2016 Semi-Annual Groundwater Monitoring Report Delong Oil, Inc.

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If you have any questions or require additional information, please call me at (925) 648-2008.

Sincerely,

Compliance & Closure, Inc

Hay R. mulhy

Gary R. Mulkey, P.G. 5842

I declare, that to the best of my knowledge at the present time, that the information and/or recommendations contained in the attached report are true and correct.

Submitted by;

Delong Liu President

TABLE 1 **Summary of Monitoring Well Groundwater Purge Data** 1716 Webster Street, Alameda, CA

Well Number	Date Sampled	Depth to Water (ft)	Well Depth (ft)	LPH (Feet)	Well Elevation (M.S.L.)	Groundwater Elevation (M.S.L.)	Well Screen Interval (Feet)	Purge Volume (gallons)	Temp. (F)	Cond. (umhos/cm)	рН	Dissolved Oxygen (mg/L)	O.R.P.
MW1	2/22/2016	5.25	15.17	0.00	14.70	9.45	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	2/25/2016	5.40	15.15	Sheen		9.30		9	59.28	386	6.96	1.41	-170
MW2A	2/22/2016	5.49	16.95	0.00	15.16	9.67	7 to 17	12	61.17	420	6.88	2.10	95
	2/25/2016	5.54	16.85	0.00		9.62		9	61.76	426	6.85	2.00	21
MW3A	2/22/2016	5.85	16.91	0.00	15.63	9.78	7 to 17	12	59.02	413	7.15	2.61	101
	2/25/2016	6.03	16.83	0.00	10.00	9.60	7 10 17	9	58.96	398	7.30	2.91	90
RW-1	2/22/2016	5.28	22.50	0.00	14.84	9.56	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	2/25/2016	5.31	22.50	0.00		9.53	,,, (	9	59.18	348	6.77	2.41	-78

Feet below top of PVC casing ft N/A Not Available Milligrams per liter gal Gallons mg/L Conductivity Temp. Temperature Cond.

Degrees Fahrenheit Micromhos per centimeter umhos/cm

LPH Liquid phase hydrocarbon M.S.L. Mean sea level

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Well Elevations

The old datum was NGVD29 which is 2.6 feet lower than the modern NAVD88 which is now required for the submittal to the GeoTracker.

TABLE 2 Summary of Groundwater Sample Analysis Delong Petroleum- 1716 Webster Street, Alameda, CA

Sample Number	Date Sampled	TPHg (ug/L)	TPHd <sup>(6)</sup> (mg/L) (C10-C28)	Benzene (ug/L)	Toulene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)	Napthalene (ug/L)	PAHs <sup>(7)</sup>	TPHmo <sup>(8)</sup> (mg/L) (C28-C40)	TPHho (mg/L) (C14-C40)
SB-1-W	1/25/2016	<50	0.0404(2,3)	<1	<1	<1	<2	<1	<5	ND	0.222(1)	<0.20
SB-2-W	1/25/2016	<50	0.0522(2,3)	<1	<1	<1	<2	<1	<5	ND	0.323 <sup>(1)</sup>	<0.19
SB-3-W	1/25/2016	<50	0.0390(2,3)	<1	<1	<1	<2	<1	<5	ND	<0.19	<0.19
SB-4-W	1/25/2016	<50	0.0299(2,3)	<1	<1	<1	<2	<1	<5	ND	<0.20	<0.20
SB-5-W <sup>(9)</sup>	1/25/2016	<50	0.0324 <sup>(2,3)</sup>	<1	0.23 <sup>(3)</sup>	<1	<2	<1	<5	ND	0.221 <sup>(1)</sup>	<0.20
SB-6-W <sup>(9)</sup>	1/25/2016	27.7 <sup>(3)</sup>	0.0366 <sup>(4)</sup>	<1	0.24 <sup>(3)</sup>	<1	<2	<1	<5	ND	0.493 <sup>(4)</sup>	0.183 <sup>(3,4)</sup>
MW-1	2/25/2016	351	1.03	49.5	2.6	48.5	62.5	51.3 <sup>(5)</sup>	56.1	NA	0.513	NA
MW-2A	2/25/2016	<50	0.0410 <sup>(3)</sup>	<1	<1	<1	<2	<1	<5	ND	<0.19	NA
MW-3A	2/25/2016	<50	0.0354 <sup>(3)</sup>	<1	<1	<1	<2	<1	<5	NA	<0.19	NA
RW-1	2/25/2016	<50	1.06	0.27 <sup>(3)</sup>	<1	<1	<2	0.61 <sup>(3)</sup>	<5	NA	0.232	NA

#### Foot Note:

- 1 Motor Oil pattern not present. Pattern resembles Hydraulic Oil, which varies by manufacturer, but typically extends from C14-C40 (overlaps both Diesel and Motor Oil ranges)
- 2 No identifiable fuel pattern present; value primarily due to multiple discrete peaks in the Diesel range.
- 3 Indicates an estimated value below the laboratory reporting limit
- 4 Hydraulic Oil pattern present. Hydraulic Oils very by manufacturer; most show an unresolved area at C14-C40 with the apex between C20-C24 (overlaps both Diesel and Motor Oil ranges).
- 5 Tert-Amyl Methyl Ether and Tert-Butyl Alcohol were also detected. See laboratory report.
- 6 Samples were run with silica gel cleanup
- 7 No compound detected in any of the samples
- 8 Samples were run without silica gel cleanup and without silica gel cleanup
- 9 Sample vial contained more than 0.5cm of sediment.

Delong Petroleum CCI Project No. 12214-1

3/14/2016

# TABLE 2 (Cont.) Summary of Groundwater Sample Analysis Delong Petroleum- 1716 Webster Street, Alameda, CA

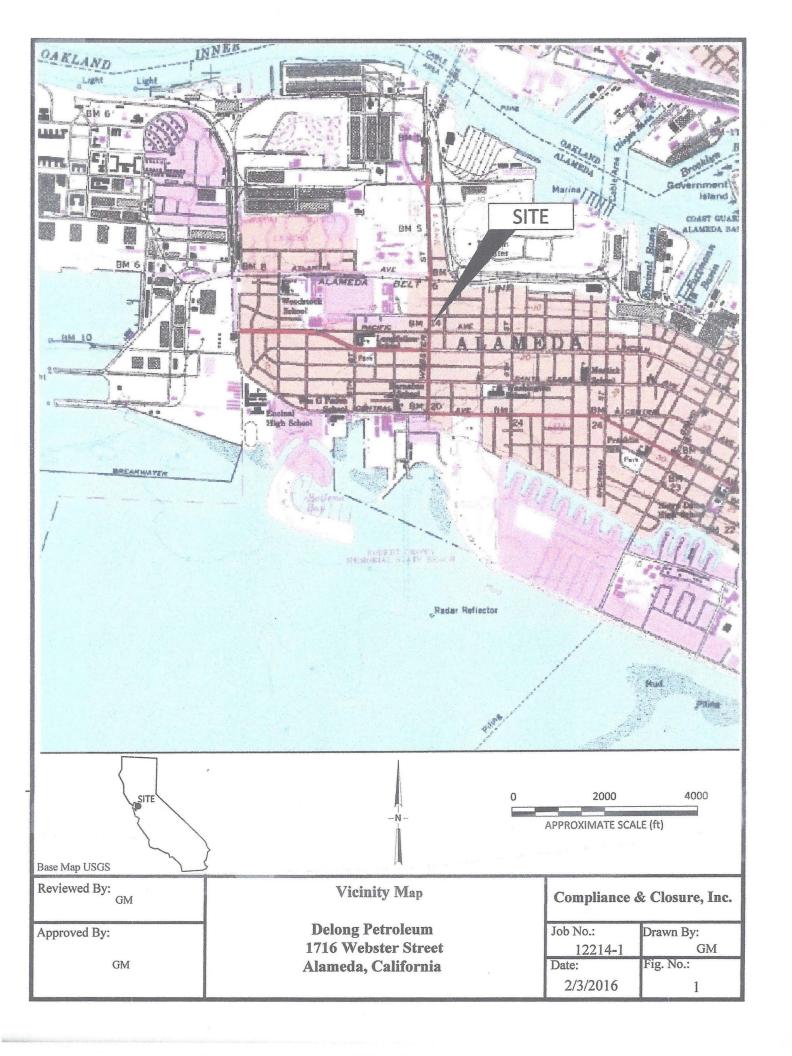
TPHg Total petroleum hydrocarbons as gasoline
TPHd Total petroleum hydrocarbons as diesel
TPHmo Total petroleum hydrocarbons as motor oil
TPHho Total petroleum hydrocarbons as hydraulic oil

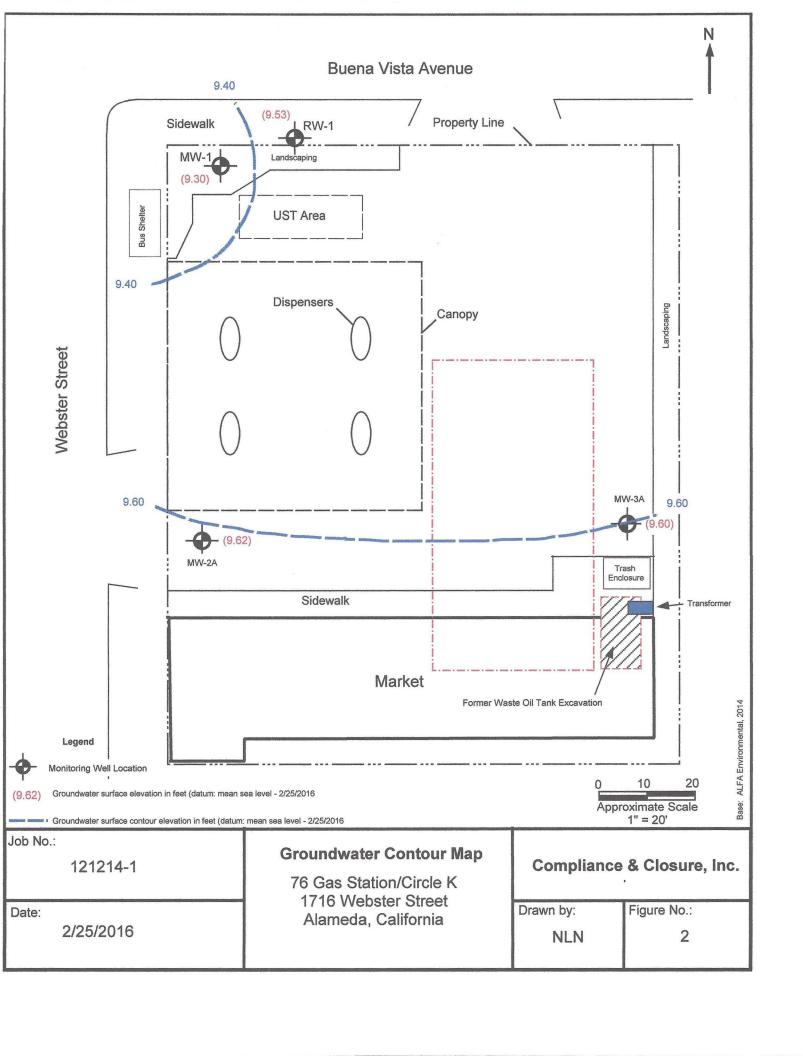
PAHs Poly Aeromatic Hydrocarbons

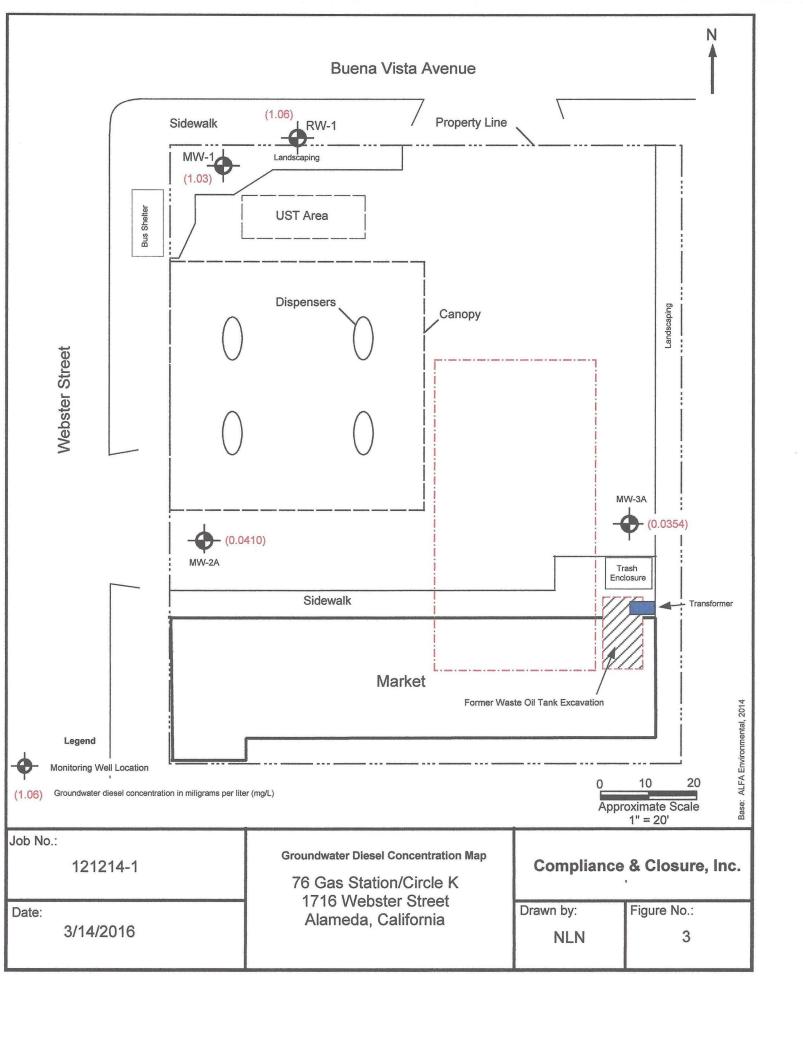
mg/L Milligrams per Liter
ug/L Micrograms per Liter
MTBE Methyl-tert-butyl ether
ND Not Detected

ND Not Detected NA Not analyized

ESLs State of California Environmental Screening Levels for diesel and motor oil in groundwater, where groundwater is a current or potential drinking water resource = 100 ug/L.







# **APPENDIX A**

**CCI Groundwater Sampling Protocol** 

# COMPLIANCE & CLOSURE, INC.

Latest Revision: January 2016

#### GROUNDWATER SAMPLING PROTOCOL

Sampling of groundwater is performed by Compliance & Closure, Inc. sampling technicians. Summarized field sampling procedures are as follows:

- 1. Measure depth to water in all wells prior to sampling (+- 0.01')
  Calibrate field equipment. Proceed to first well with clean and decontaminated equipment.
- 2. Measurements of liquid surface(s) in the well, and total depth of monitoring well. Note presence of silt accumulation.
- 3. Field check for presence of floating product; measure apparent thickness.
- 4. Purge well with disposable bailer prior to collecting samples; purge volume (Minimum of 3 casing volumes) calculated prior to removal.
- 5. Monitor groundwater for temperature, pH, and specific conductance, note turbidity during purging. Allow temperature, pH and specific conductance to stabilize. Allow well to recover.
- 6. Collect samples using Environmental Protection Agency (EPA) approved sample collection devices, i.e., disposable bailers. Test parameters will include EPA 8015M for TPHg, EPA 8260B for BTEX compounds and fuel oxygenates.
- 7. Transfer samples into laboratory-supplied EPA-approved containers. Minimize aeration and avoid headspace in VOAs.
- 8. Label samples and log onto chain-of-custody form.
- 9. Store samples in a chilled ice chest for shipment to a state- certified analytical laboratory. Chain-of-custody to remain with samples.
- 10. Decontaminate equipment (water level sounder) prior to sampling next well. Disposable bailers to be used and discarded after each use.
- 11. Drum purge water collected from the site wells will be labeled and stored on site.

### Compliance & Closure, Inc. Groundwater Sampling Protocol Latest Revision: January 2016

#### **Equipment Cleaning and Decontamination**

All water samples are placed in precleaned laboratory-supplied bottles. Sample bottles and caps remain sealed until actual usage at the site. All equipment which comes in contact with the well or groundwater is thoroughly cleaned with hexane wipes then trisodium phosphate (TSP) solution and rinsed with deionized or distilled water before each use at the site. This cleaning procedure is followed between each well sampled. Wells are sampled in approximate order of increasing contamination. If a Teflon cord is used, the cord is cleaned. If a nylon or cotton cord is used, a new cord is used in each well. If equipment blanks are collected, they will be collected between monitoring wells to test decontamination procedures. The blanks are analyzed periodically to ensure proper cleaning procedures are used.

#### Water Level Measurements

Depth to groundwater is measured in each well using a sealed sampling tape or scaled electric sounder prior to purging or sampling. If the well is known or suspected of containing free-phase petroleum hydrocarbons, an optical interface probe is used to measure the hydrocarbon thickness and groundwater level. Measurements are collected and recorded to the nearest 0.01 foot. Each monitoring well's total depth will be measured; this will allow a relative judgment of well siltation to be made and need for redevelopment.

#### **Bailer Sheen Check**

If no measurable free-phase petroleum hydrocarbons are detected, a clear acrylic bailer is used to determine the presence of a sheen. Any observed film, as well as odor and color of the water is recorded.

#### **Groundwater Sampling**

Prior to groundwater sampling, each well is purged of "standing" groundwater. A disposable bailer is used to purge the well. The amount of purging is dependent on the well yield. In a high yield formation, samples will be collected when normal field measurement, including temperature, pH, and specific conductance stabilize, provided a minimum of three well-casing volumes of water have been removed. Field measurements will be taken after purging each well volume. Physical parameter measurements (temperature, pH, and specific

conductance) are closely monitored throughout the well purging process and are used as indicators for assessing sufficient purging. The purging parameters are measured to observe stabilization to a range of values typical for that aquifer and well. Stable field parameters are recognized as indicative of groundwater aquifer chemistry entering the well. Specific conductance (conductivity) meters are read to the nearest  $\pm 10$  umhos/cm and are checked daily. Temperature is read to the nearest 0.1 F. Calibration of physical parameter meters will follow manufacturer's specifications. pH will be calibrated daily using two fresh buffer solutions. Collected field data during purging activities will be entered on the Well Sampling Field Data Sheet.

### Compliance & Closure, Inc. Groundwater Sampling Protocol Latest Revision: January 2016

In low yield formations, the well is purged such that the "standing" water is removed and the well is allowed to recharge. (Normal field measurements will be periodically recorded during the purging process). In situations where recovery to 80% of static water level is estimated, or observed to exceed a two hour duration, a sample will be collected when sufficient volume is available for a sample for each parameter. Attempts will be made so the well is not purged dry such that the recharge rate causes the formation water to cascade into the well.

In wells where free-phase hydrocarbons are detected, the free-phase portion will be bailed from the well and the estimated volume removed and recorded. A groundwater sample will be collected if bailing reduces the amount of free-phase hydrocarbons to the point where they are not present in the well. Well sampling will be conducted using one of the aforementioned methods depending on the formation yield. However, if free-phase hydrocarbons persist throughout bailing, then a groundwater sample will not be collected.

Volatile organic groundwater samples are collected so that air passage through the sample does not occur or is minimal (to prevent volatiles from being stripped from the samples). Sample bottles are filled by slowly running the sample down the side of the bottle until there is a positive convex meniscus over the neck of the bottle; the Teflon side of the septum (in cap) is positioned against the meniscus, and the cap screwed on tightly; the sample is inverted and the bottle lightly tapped. The absence of an air bubble indicates a successful seal; if a bubble is evident, the cap is removed, more sample is added, and the bottle is resealed. If this occurs more than once in a given sample, a new sample will be collected.

#### Chain-of-Custody

Groundwater sample containers are labeled with a unique sample number, location, and date of collection. All samples are logged into a chain-of custody form and placed in a chilled ice chest for shipment to a laboratory certified by the State of California Department of Health Services.

#### Sample Storage

Groundwater samples collected in the field are stored in an ice chest cooled to 4 C while in transit to the office or analytical laboratory. Samples are stored in a refrigerator overnight and during weekends and holidays. The refrigerator is set to 4 C and is locked with access controlled by a designated sample custodi

# Quality Assurance/Quality Control Objectives

The sampling and analysis procedures employed by Compliance & Closure, Inc. for groundwater sampling and monitoring follow quality assurance/quality control (QA/QC) guidelines. Quality assurance objectives have been established to develop and implement procedures for obtaining and evaluating water quality and field data in an accurate, precise, and complete manner. In this way, sampling procedures and field measurements provide information that is comparable and representative of actual field conditions. Quality control (QC) is maintained

# Compliance & Closure, Inc. Groundwater Sampling Protocol Latest Revision: January 2016

by site-specific field protocols and requiring the analytical laboratory to perform internal and external QC checks. The goal is to provide data that are accurate, precise, complete, comparable, and representative. The definitions as developed by overseeing federal, state, and local agency guidance documents for accuracy, precision, completeness, comparability, and representativeness are:

- Accuracy the degree of agreement of a measurement with an accepted reference or true value.
- Precision a measure of agreement among individual measurements under similar conditions. Usually expressed in terms of the standard deviation.
- o Completeness the amount of valid data obtained from a measurement system compared to the amount that was expected to meet the project data goals.
- o Comparability express the confidence with which one data set can be compared to another.
- Representativeness a sample or group of samples that reflect the characteristics of the media at the sampling point. It also includes how well the sampling point represents the actual parameter variations which are under study.

Laboratory and field handling procedures of samples are monitored by including QC samples for analysis with every submitted sample lot from a project site. QC samples may include any combination of the following:

- Trip Blanks: Periodic Trip Blank will be prepared and analyzed for purgeable organic compounds only; QC samples are collected in 40 milliliter (ml) sample vials filled in the analytical laboratory with organic-free water. Trip blanks are sent to the project site, and travel with project site samples. Trip blanks are not opened, and are returned from a project site with the project site samples for analysis.
- **Duplicates:** Duplicated samples are collected "second samples" from a selected well at the project site. They are collected as either split samples or second-run samples collected from the same well. The duplicate sample will be analyzed using EPA Test Method 8260B.
- **Equipment Blank:** Periodic QC samples collected from field equipment rinseate to verify decontamination procedures (if applicable). Equipment rinsate blanks will be collected between sampling of wells.

The number and types of QC samples are determined and analyzed on a project-specific basis.

# **APPENDIX B**

**Laboratory Report** 



# **ACCUTEST**

03/10/16

SGS ACCUTEST IS PART OF SGS, THE WORLD'S LEADING INSPECTION, VERIFICATION, TESTING AND CERTIFICATION COMPANY.



e-Hardcopy 2.0 **Automated Report** 

#### **Technical Report for**

Compliance & Closure, Inc.

T10000005974-De Long Petroleum - 1716 Webster Street, Alameda, CA

12214-1

SGS Accutest Job Number: C44253

**Sampling Date: 02/25/16** 

#### Report to:

Compliance & Closure, Inc. 4115 Blackhawk Plaza Circle Suite 100 Danville, CA 94506 gary@cci-envr.com

ATTN: Gary Mulkey

Total number of pages in report: 34



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Jumy. Mush

James J. Rhudy Lab Director

Client Service contact: Elvin Kumar 408-588-0200

Certifications: CA (ELAP 2910) AK (UST-092) AZ (AZ0762) NV (CA00150) OR (CA300006) WA (C925) DoD ELAP (L-A-B L2242)

This report shall not be reproduced, except in its entirety, without the written approval of SGS Accutest. Test results relate only to samples analyzed.

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# **Sample Summary**

Compliance & Closure, Inc.

Job No: C44253

T10000005974-De Long Petroleum - 1716 Webster Street, Alameda, CA Project No: 12214-1

Sample Number	Collected Date	Time By	Received	Matr Code	<del></del> -	Client Sample ID
C44253-1	02/25/16	07:55 GM	02/25/16	AQ	Ground Water	MW-3A
C44253-2	02/25/16	08:30 GM	02/25/16	AQ	Ground Water	MW-1
C44253-3	02/25/16	09:30 GM	02/25/16	AQ	Ground Water	RW-1
C44253-4	02/25/16	10:05 GM	02/25/16	AQ	Ground Water	MW-2A

# **Summary of Hits**

Job Number: C44253

Account: Compliance & Closure, Inc.

**Project:** T10000005974-De Long Petroleum - 1716 Webster Street, Alameda, CA

**Collected:** 02/25/16

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
C44253-1	MW-3A					
TPH (C10-C28)		0.0354 J	0.094	0.024	mg/l	SW846 8015B M
C44253-2	MW-1					
Benzene <sup>a</sup> Toluene <sup>a</sup> Ethylbenzene <sup>a</sup> Xylene (total) <sup>a</sup> Methyl Tert Buty Naphthalene <sup>a</sup> Tert-Amyl Methy Tert-Butyl Alcoho TPH-GRO (C6-C TPH (C10-C28) TPH (> C28-C40	vl Ether <sup>a</sup> ol <sup>a</sup> (10) <sup>b</sup>	49.5 2.6 48.5 62.5 51.3 56.1 15.5 34.5 351 1.03 0.513	1.0 1.0 1.0 2.0 1.0 5.0 2.0 10 100 0.094 0.19	0.20 0.20 0.20 0.46 0.20 0.50 0.40 2.4 50 0.024 0.047	ug/l ug/l ug/l ug/l ug/l ug/l ug/l ug/l	SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8260B SW846 8015B M SW846 8015B M
C44253-3	RW-1					
Benzene <sup>a</sup> Methyl Tert Buty TPH (C10-C28) TPH (> C28-C40		0.27 J 0.61 J 1.06 0.232	1.0 1.0 0.094 0.19	0.20 0.20 0.024 0.047	ug/l ug/l mg/l mg/l	SW846 8260B SW846 8260B SW846 8015B M SW846 8015B M
C44253-4	MW-2A					
TPH (C10-C28)		0.0410 J	0.094	0.024	mg/l	SW846 8015B M

<sup>(</sup>a) Sample vial contained more than 0.5cm of sediment.

<sup>(</sup>b) Sample vial(s) contained significant headspace; reported results are considered minimum values.

Section 3 &

Report of Anal	lvsis	
<b>r</b>		

Page 1 of 1

# Report of Analysis

Client Sample ID: MW-3A

 Lab Sample ID:
 C44253-1
 Date Sampled:
 02/25/16

 Matrix:
 AQ - Ground Water
 Date Received:
 02/25/16

 Method:
 SW846 8260B
 Percent Solids:
 n/a

Project: T10000005974-De Long Petroleum - 1716 Webster Street, Alameda, CA

File ID DF Analyzed By Prep Date Prep Batch Analytical Batch
Run #1 U33068.D 1 02/26/16 JC n/a n/a VU1355

Run #2

**Purge Volume** 

Run #1 10.0 ml

Run #2

#### BTEX, Oxygenates

CAS No.	Compound	Result	RL	MDL	Units	Q	
71-43-2	Benzene	ND	1.0	0.20	ug/l		
108-88-3	Toluene	ND	1.0	0.20	ug/l		
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l		
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l		
108-20-3	Di-Isopropyl ether	ND	2.0	0.22	ug/l		
637-92-3	Ethyl Tert Butyl Ether	ND	2.0	0.22	ug/l		
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.20	ug/l		
91-20-3	Naphthalene	ND	5.0	0.50	ug/l		
994-05-8	Tert-Amyl Methyl Ether	ND	2.0	0.40	ug/l		
75-65-0	Tert-Butyl Alcohol	ND	10	2.4	ug/l		
	TPH-GRO (C6-C10)	ND	50	25	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its		
1868-53-7	Dibromofluoromethane	110%		80-123%			
2037-26-5	Toluene-D8	100%		88-1	12%		
460-00-4	4-Bromofluorobenzene	91%		79-1	14%		

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value





# **Report of Analysis**

Page 1 of 1

Client Sample ID: MW-3A

Lab Sample ID: C44253-1 **Date Sampled:** 02/25/16 Matrix: AQ - Ground Water **Date Received:** 02/25/16 Method: SW846 8015B M SW846 3510C Percent Solids: n/a

**Project:** T10000005974-De Long Petroleum - 1716 Webster Street, Alameda, CA

File ID DF **Prep Batch Analytical Batch** Analyzed By **Prep Date** Run #1 HH329997.D 1 02/26/16 YN 02/26/16 OP13942 GHH1749

Run #2

**Initial Volume Final Volume** 

Run #1 1060 ml 1.0 ml

Run #2

#### TPH Extractable w/ Silica Gel Cleanup

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28) TPH (> C28-C40)	0.0354 ND	0.094 0.19	0.024 0.047	mg/l mg/l	J
CAS No.	<b>Surrogate Recoveries</b>	Run# 1	Run# 2	Lim	its	
630-01-3	Hexacosane	54%		40-1	34%	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Page 1 of 1

# **Report of Analysis**

Client Sample ID: MW-1

Lab Sample ID: C44253-2 **Date Sampled:** 02/25/16 Matrix: AQ - Ground Water **Date Received:** 02/25/16 Method: Percent Solids: n/a SW846 8260B

**Project:** T10000005974-De Long Petroleum - 1716 Webster Street, Alameda, CA

	File ID	DF	Analyzed	Ву	Prep Date	Prep Batch	Analytical Batch
Run #1 a	W60414.D	1	03/01/16	CV	n/a	n/a	VW2278
Run #2 b	W60560.D	2	03/08/16	CV	n/a	n/a	VW2284

Purge Volume
10.0 ml
10.0 ml

#### BTEX, Oxygenates

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	49.5	1.0	0.20	ug/l	
108-88-3	Toluene	2.6	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	48.5	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	62.5	2.0	0.46	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	0.22	ug/l	
637-92-3	Ethyl Tert Butyl Ether	ND	2.0	0.22	ug/l	
1634-04-4	Methyl Tert Butyl Ether	51.3	1.0	0.20	ug/l	
91-20-3	Naphthalene	56.1	5.0	0.50	ug/l	
994-05-8	Tert-Amyl Methyl Ether	15.5	2.0	0.40	ug/l	
75-65-0	Tert-Butyl Alcohol	34.5	10	2.4	ug/l	
	TPH-GRO (C6-C10)	351 <sup>c</sup>	100	50	ug/l	
G L G M		D // 4	D // A			
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	its	
1868-53-7	Dibromofluoromethane	108%	112%	80-1	23%	
2037-26-5	Toluene-D8	106%	105%		88-112%	
460-00-4	4-Bromofluorobenzene	101%	98%	79-1		

- (a) Sample vial contained more than 0.5cm of sediment.
- (b) Sample vial(s) contained significant headspace; reported results are considered minimum values.
- (c) Result is from Run# 2

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Page 1 of 1

# Report of Analysis

Client Sample ID: MW-1

 Lab Sample ID:
 C44253-2
 Date Sampled:
 02/25/16

 Matrix:
 AQ - Ground Water
 Date Received:
 02/25/16

 Method:
 SW846 8015B M SW846 3510C
 Percent Solids:
 n/a

**Project:** T10000005974-De Long Petroleum - 1716 Webster Street, Alameda, CA

File ID DF **Analytical Batch** Analyzed By **Prep Date Prep Batch** Run #1 HH330148.D 1 03/01/16 FL 02/26/16 OP13942 GHH1751 Run #2

Initial Volume Final Volume Run #1 1060 ml 1.0 ml

Run #2

#### TPH Extractable w/ Silica Gel Cleanup

CAS No.	Compound	Result	RL	MDL	MDL Units	
	TPH (C10-C28) TPH (> C28-C40)	1.03 0.513	0.094 0.19	0.024 0.047	mg/l mg/l	
CAS No.	<b>Surrogate Recoveries</b>	Run# 1	Run# 2	Lim	its	
630-01-3	Hexacosane	70%		40-1	34%	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



### **Report of Analysis**

Page 1 of 1

Client Sample ID: RW-1

 Lab Sample ID:
 C44253-3
 Date Sampled:
 02/25/16

 Matrix:
 AQ - Ground Water
 Date Received:
 02/25/16

 Method:
 SW846 8260B
 Percent Solids:
 n/a

Project: T10000005974-De Long Petroleum - 1716 Webster Street, Alameda, CA

DF **Analytical Batch** File ID Analyzed By **Prep Date Prep Batch** Run #1 a W60559.D 1 03/08/16 CVVW2284 n/a n/aRun #2

Purge Volume

Run #1 10.0 ml

Run #2

#### BTEX, Oxygenates

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.27	1.0	0.20	ng/l	J
	Benzene				ug/l	J
108-88-3	Toluene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	0.22	ug/l	
637-92-3	Ethyl Tert Butyl Ether	ND	2.0	0.22	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.61	1.0	0.20	ug/l	J
91-20-3	Naphthalene	ND	5.0	0.50	ug/l	
994-05-8	Tert-Amyl Methyl Ether	ND	2.0	0.40	ug/l	
75-65-0	Tert-Butyl Alcohol b	ND	10	2.4	ug/l	
	TPH-GRO (C6-C10)	ND	50	25	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
1868-53-7	Dibromofluoromethane	111%		80-1	23%	
2037-26-5	Toluene-D8	105%		88-1	12%	
460-00-4	4-Bromofluorobenzene	91%		79-1	14%	

<sup>(</sup>a) Sample vial contained more than 0.5cm of sediment.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank N = Indicates presumptive evidence of a compound



C

<sup>(</sup>b) CCV outside of control limits (biased high); not detected in sample.

Page 1 of 1

# **Report of Analysis**

Client Sample ID: RW-1

Lab Sample ID: C44253-3 **Date Sampled:** 02/25/16 Matrix: AQ - Ground Water **Date Received:** 02/25/16 Method: SW846 8015B M SW846 3510C Percent Solids: n/a

**Project:** T10000005974-De Long Petroleum - 1716 Webster Street, Alameda, CA

File ID DF **Prep Batch Analytical Batch** Analyzed By **Prep Date** Run #1 HH330000.D 1 02/26/16 YN 02/26/16 OP13942 GHH1749

Run #2

**Final Volume Initial Volume** 

Run #1 1060 ml 1.0 ml

Run #2

#### TPH Extractable w/ Silica Gel Cleanup

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28) TPH (> C28-C40)	1.06 0.232	0.094 0.19	0.024 0.047	mg/l mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
630-01-3	Hexacosane	58%		40-1	34%	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value



Page 1 of 1

# **Report of Analysis**

Client Sample ID: MW-2A

Lab Sample ID: C44253-4 **Date Sampled:** 02/25/16 Matrix: AQ - Ground Water **Date Received:** 02/25/16 Method: Percent Solids: n/a SW846 8260B

T10000005974-De Long Petroleum - 1716 Webster Street, Alameda, CA **Project:** 

DF **Analytical Batch** File ID Analyzed By **Prep Date Prep Batch** Run #1 a W60416.D 1 03/01/16 CVVW2278 n/a n/aRun #2

**Purge Volume** 

Run #1 10.0 ml

Run #2

#### BTEX, Oxygenates

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	0.22	ug/l	
637-92-3	Ethyl Tert Butyl Ether	ND	2.0	0.22	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.20	ug/l	
91-20-3	Naphthalene	ND	5.0	0.50	ug/l	
994-05-8	Tert-Amyl Methyl Ether	ND	2.0	0.40	ug/l	
75-65-0	Tert-Butyl Alcohol	ND	10	2.4	ug/l	
	TPH-GRO (C6-C10)	ND	50	25	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	ite	
C/15 110.	Surrogate Recoveries	Kullii I	Kuliii 2		163	
1868-53-7	Dibromofluoromethane	111%		80-1	23%	
2037-26-5	Toluene-D8	105%		88-1	12%	
460-00-4	4-Bromofluorobenzene	94%		79-1	14%	

<sup>(</sup>a) Sample vial contained more than 0.5cm of sediment.

ND = Not detected

MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank N = Indicates presumptive evidence of a compound



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# **Report of Analysis**

Page 1 of 1

Client Sample ID: MW-2A

 Lab Sample ID:
 C44253-4
 Date Sampled:
 02/25/16

 Matrix:
 AQ - Ground Water
 Date Received:
 02/25/16

 Method:
 SW846 8015B M SW846 3510C
 Percent Solids:
 n/a

Project: T10000005974-De Long Petroleum - 1716 Webster Street, Alameda, CA

File ID DF Analyzed By Prep Date Prep Batch Analytical Batch
Run #1 HH330001.D 1 02/26/16 YN 02/26/16 OP13942 GHH1749

Run #2

Initial Volume Final Volume

Run #1 1060 ml 1.0 ml

Run #2

#### TPH Extractable w/ Silica Gel Cleanup

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28) TPH (> C28-C40)	0.0410 ND	0.094 0.19	0.024 0.047	mg/l mg/l	J
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
630-01-3	Hexacosane	66%		40-1	34%	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank N = Indicates presumptive evidence of a compound



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# Section 4

Custody Doc	cuments and Other Forms

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C44253: Chain of Custody Page 1 of 2



#### **Accutest Laboratories Sample Receipt Summary**

Accutest Job Number: C	44253		Client:	COMPLIA	NCE & C	CLOSUF	RE	Project: DELONG OIL			
Date / Time Received: 2/	25/2016 ·	11:20:00 /	AM	Delivery	Method:		Client	Airbill #'s:			
Cooler Temps (Initial/Adjus	sted): #	1: (3.7/3.9	9);								
Cooler Security	Y or N	<u>L</u>			Y or	<u>N</u>	Sample Integrity	y - Documentation	<u>Y</u>	or N	
oddiody oddio i roddini.		_	COC Pr		✓		1. Sample labels p	present on bottles:	<b>✓</b>		
2. Custody Seals Intact:		4. Sm	npl Date	s/Time OK	✓		2. Container label	ing complete:	✓		
Cooler Temperature	<u>Y</u>	or N					3. Sample contain	er label / COC agree:	✓		
1. Temp criteria achieved:	$\checkmark$						Sample Integrit	y - Condition	<u>Y</u>	or N	
2. Therm ID:		IR1;					Sample recvd v	<u>-</u>	<b>✓</b>		
3. Cooler media:		ce (Bag)					2. All containers a		<b>✓</b>		
4. No. Coolers:		1					3. Condition of sai	mple:		ntact	
Quality Control Preservati	on Y	or N	N/A				Sample Integrit	y - Instructions	Y	or N	N/A
1. Trip Blank present / cooler:	_		$\checkmark$				Analysis reque	ested is clear:	<b>~</b>		
2. Trip Blank listed on COC:			<b>✓</b>				2. Bottles receive	ed for unspecified tests		$\checkmark$	
3. Samples preserved properly	y: 🔽						3. Sufficient volur	me recvd for analysis:	<b>✓</b>		
4. VOCs headspace free:	$\checkmark$						4. Compositing in	nstructions clear:			<b>✓</b>
							5. Filtering instruc	ctions clear:			$\checkmark$
Comments							•				
Accutest Laboratories V:408.588.0200							undy Avenue 8.588.0201				San Jose, CA 95131 www/accutest.com

C44253: Chain of Custody Page 2 of 2

# **Section 5**

# GC/MS Volatiles

QC Data Summaries

# Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries



**Method:** SW846 8260B

# **Method Blank Summary**

Job Number: C44253

**Account:** CCCAD Compliance & Closure, Inc.

**Project:** T10000005974-De Long Petroleum - 1716 Webster Street, Alameda, CA

Sample VU1355-MB	<b>File ID</b> U33049.D	<b>DF</b> 1	<b>Analyzed</b> 02/26/16	By JC	<b>Prep Date</b> n/a	Prep Batch n/a	Analytical Batch VU1355

The QC reported here applies to the following samples:

C44253-1

CAS No.	Compound	Result	RL	MDL	Units Q
71-43-2	Benzene	ND	1.0	0.20	ug/l
108-20-3	Di-Isopropyl ether	ND	2.0	0.22	ug/l
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l
637-92-3	Ethyl Tert Butyl Ether	ND	2.0	0.22	ug/l
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.20	ug/l
91-20-3	Naphthalene	ND	5.0	0.50	ug/l
994-05-8	Tert-Amyl Methyl Ether	ND	2.0	0.40	ug/l
75-65-0	Tert-Butyl Alcohol	ND	10	2.4	ug/l
108-88-3	Toluene	ND	1.0	0.20	ug/l
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l
	TPH-GRO (C6-C10)	ND	50	25	ug/l

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	97%	80-123%
2037-26-5	Toluene-D8	104%	88-112%
460-00-4	4-Bromofluorobenzene	95%	79-114%

**Method:** SW846 8260B

# N

# **Method Blank Summary**

Job Number: C44253

**Account:** CCCAD Compliance & Closure, Inc.

**Project:** T10000005974-De Long Petroleum - 1716 Webster Street, Alameda, CA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VW2278-MB	W60407.D	1	03/01/16	CV	n/a	n/a	VW2278

The QC reported here applies to the following samples:

C44253-2, C44253-4

CAS No.	Compound	Result	RL	MDL	Units Q
71-43-2	Benzene	ND	1.0	0.20	ug/l
108-20-3	Di-Isopropyl ether	ND	2.0	0.20	ug/l ug/l
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l
637-92-3	Ethyl Tert Butyl Ether	ND	2.0	0.22	ug/l
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.20	ug/l
91-20-3	Naphthalene	ND	5.0	0.50	ug/l
994-05-8	Tert-Amyl Methyl Ether	ND	2.0	0.40	ug/l
75-65-0	Tert-Butyl Alcohol	ND	10	2.4	ug/l
108-88-3	Toluene	ND	1.0	0.20	ug/l
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l
	TPH-GRO (C6-C10)	ND	50	25	ug/l

CAS No.	Surrogate Recoveries		Limits
	Dibromofluoromethane	107%	80-123%
	Toluene-D8	106%	88-112%
460-00-4	4-Bromofluorobenzene	95%	79-114%



**Method:** SW846 8260B

# **Method Blank Summary**

Job Number: C44253

**Account:** CCCAD Compliance & Closure, Inc.

**Project:** T10000005974-De Long Petroleum - 1716 Webster Street, Alameda, CA

Sample VW2284-MB	<b>File ID</b> W60553.D	<b>DF</b> 1	<b>Analyzed</b> 03/08/16	By CV	<b>Prep Date</b> n/a	Prep Batch n/a	Analytical Batch VW2284

The QC reported here applies to the following samples:

C44253-2, C44253-3

CAS No.	Compound	Result	RL	MDL	Units Q
71-43-2	Benzene	ND	1.0	0.20	ug/l
108-20-3	Di-Isopropyl ether	ND	2.0	0.22	ug/l
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l
637-92-3	Ethyl Tert Butyl Ether	ND	2.0	0.22	ug/l
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.20	ug/l
91-20-3	Naphthalene	ND	5.0	0.50	ug/l
994-05-8	Tert-Amyl Methyl Ether	ND	2.0	0.40	ug/l
75-65-0	Tert-Butyl Alcohol	ND	10	2.4	ug/l
108-88-3	Toluene	ND	1.0	0.20	ug/l
1330-20-7	Xylene (total)	ND	2.0	0.46	ug/l
	TPH-GRO (C6-C10)	ND	50	25	ug/l

CAS No.	Surrogate Recoveries		Limits
	Dibromofluoromethane	105%	80-123%
2037-26-5	Toluene-D8	104%	88-112%
460-00-4	4-Bromofluorobenzene	95%	79-114%

**Method:** SW846 8260B

## Blank Spike/Blank Spike Duplicate Summary

Job Number: C44253

Account: CCCAD Compliance & Closure, Inc.

**Project:** T10000005974-De Long Petroleum - 1716 Webster Street, Alameda, CA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VU1355-BS	U33046.D	1	02/26/16	JC	n/a	n/a	VU1355
VU1355-BSD	U33047.D	1	02/26/16	JC	n/a	n/a	VU1355

The QC reported here applies to the following samples:

C44253-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	20	19.2	96	19.7	99	3	76-120/10
108-20-3	Di-Isopropyl ether	20	18.7	94	19.2	96	3	69-126/10
100-41-4	Ethylbenzene	20	19.2	96	19.3	97	1	78-123/10
637-92-3	Ethyl Tert Butyl Ether	20	18.6	93	19.0	95	2	75-126/11
1634-04-4	Methyl Tert Butyl Ether	20	17.4	87	17.8	89	2	73-120/10
91-20-3	Naphthalene	20	17.9	90	18.9	95	5	66-120/12
994-05-8	Tert-Amyl Methyl Ether	20	18.8	94	19.2	96	2	77-126/10
75-65-0	Tert-Butyl Alcohol	100	98.4	98	96.2	96	2	52-148/18
108-88-3	Toluene	20	18.6	93	19.0	95	2	78-121/10
1330-20-7	Xylene (total)	60	56.8	95	57.7	96	2	78-122/10

CAS No.	<b>Surrogate Recoveries</b>	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	105%	104%	80-123%
2037-26-5	Toluene-D8	102%	101%	88-112%
460-00-4	4-Bromofluorobenzene	102%	101%	79-114%

<sup>\* =</sup> Outside of Control Limits.

**Method:** SW846 8260B

## Blank Spike/Blank Spike Duplicate Summary

Job Number: C44253

**Account:** CCCAD Compliance & Closure, Inc.

**Project:** T10000005974-De Long Petroleum - 1716 Webster Street, Alameda, CA

VW2278-BS W60404.D			$\alpha$	/ -	/ -	1/11/2070
VW2278-BSD W60405.D	1	03/01/16 03/01/16	CV CV	n/a n/a	n/a n/a	VW2278 VW2278

The QC reported here applies to the following samples:

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	20	20.0	100	19.4	97	3	76-120/10
108-20-3	Di-Isopropyl ether	20	21.1	106	19.8	99	6	69-126/10
100-41-4	Ethylbenzene	20	20.6	103	20.5	103	0	78-123/10
637-92-3	Ethyl Tert Butyl Ether	20	20.8	104	19.7	99	5	75-126/11
1634-04-4	Methyl Tert Butyl Ether	20	19.6	98	18.8	94	4	73-120/10
91-20-3	Naphthalene	20	19.8	99	21.4	107	8	66-120/12
994-05-8	Tert-Amyl Methyl Ether	20	21.3	107	20.3	102	5	77-126/10
75-65-0	Tert-Butyl Alcohol	100	115	115	120	120	4	52-148/18
108-88-3	Toluene	20	19.8	99	19.4	97	2	78-121/10
1330-20-7	Xylene (total)	60	61.9	103	61.4	102	1	78-122/10

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
	Dibromofluoromethane	109%	107%	80-123%
2037-26-5	Toluene-D8	105%	105%	88-112%
460-00-4	4-Bromofluorobenzene	102%	103%	79-114%

<sup>\* =</sup> Outside of Control Limits.

**Method:** SW846 8260B

## Blank Spike/Blank Spike Duplicate Summary

Job Number: C44253

Account: CCCAD Compliance & Closure, Inc.

**Project:** T10000005974-De Long Petroleum - 1716 Webster Street, Alameda, CA

Sample VW2284-BS	File ID W60550.D	<b>DF</b>	<b>Analyzed</b> 03/08/16	By CV	Prep Date	Prep Batch	Analytical Batch VW2284
VW2284-BSD	W60551.D	1	03/08/16	CV	n/a	n/a	VW2284

The QC reported here applies to the following samples:

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	20	19.4	97	19.2	96	1	76-120/10
108-20-3	Di-Isopropyl ether	20	19.9	100	19.7	99	1	69-126/10
100-41-4	Ethylbenzene	20	20.2	101	20.1	101	0	78-123/10
637-92-3	Ethyl Tert Butyl Ether	20	19.9	100	19.6	98	2	75-126/11
1634-04-4	Methyl Tert Butyl Ether	20	18.9	95	18.9	95	0	73-120/10
91-20-3	Naphthalene	20	19.4	97	20.2	101	4	66-120/12
994-05-8	Tert-Amyl Methyl Ether	20	20.6	103	20.5	103	0	77-126/10
75-65-0	Tert-Butyl Alcohol	100	119	119	113	113	5	52-148/18
108-88-3	Toluene	20	19.3	97	19.2	96	1	78-121/10
1330-20-7	Xylene (total)	60	59.9	100	60.1	100	0	78-122/10

CAS No.	<b>Surrogate Recoveries</b>	BSP	BSD	Limits
	Dibromofluoromethane Toluene-D8	108% 105%	106% 104%	80-123% 88-112%
460-00-4	4-Bromofluorobenzene	103%	104%	79-114%

<sup>\* =</sup> Outside of Control Limits.

**Method:** SW846 8260B

# **Laboratory Control Sample Summary Job Number:** C44253

Account: CCCAD Compliance & Closure, Inc.

T10000005974-De Long Petroleum - 1716 Webster Street, Alameda, CA **Project:** 

Sample	File ID	DF	Analyzed	Ву	Prep Date	Prep Batch	<b>Analytical Batch</b>
VU1355-LCS	U33048.D	1	02/26/16	JC	n/a	n/a	VU1355

79-114%

The QC reported here applies to the following samples:

4-Bromofluorobenzene

C44253-1

460-00-4

CAS No.	Compound	Spike ug/l	LCS ug/l	LCS % Limi	
	TPH-GRO (C6-C10)	125	117	94	70-130
CAS No.	Surrogate Recoveries	BSP	Lin	nits	
1868-53-7 2037-26-5	Dibromofluoromethane Toluene-D8	101% 102%		123% 112%	

95%

<sup>\* =</sup> Outside of Control Limits.

**Method:** SW846 8260B

# **Laboratory Control Sample Summary Job Number:** C44253

Account: CCCAD Compliance & Closure, Inc.

Project: T10000005974-De Long Petroleum - 1716 Webster Street, Alameda, CA

Sample VW2278-LCS	<b>File ID</b> W60406.D	<b>DF</b> 1	<b>Analyzed</b> 03/01/16	By CV	<b>Prep Date</b> n/a	Prep Batch n/a	Analytical Batch VW2278

The QC reported here applies to the following samples:

CAS No.	Compound	Spike ug/l	LCS ug/l	LCS %	Limits
	TPH-GRO (C6-C10)	125	111	89	70-130
CAS No.	Surrogate Recoveries	BSP	Liı	nits	

Dibromofluoromethane 102% 80-123% 1868-53-7 2037-26-5 Toluene-D8 107% 88-112% 460-00-4 4-Bromofluorobenzene 97% 79-114%

<sup>\* =</sup> Outside of Control Limits.

# 5.3.3

Page 1 of 1

**Method:** SW846 8260B

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### **Laboratory Control Sample Summary Job Number:** C44253

Account: CCCAD Compliance & Closure, Inc.

**Project:** T10000005974-De Long Petroleum - 1716 Webster Street, Alameda, CA

Sample VW2284-LCS	<b>File ID</b> W60552.D	<b>DF</b> 1	<b>Analyzed</b> 03/08/16	By CV	<b>Prep Date</b> n/a	Prep Batch n/a	Analytical Batch VW2284

The QC reported here applies to the following samples:

CAS No.	Compound	Spike ug/l	LCS ug/l	LCS %	Limits
	TPH-GRO (C6-C10)	125	104	83	70-130
CAS No.	Surrogate Recoveries	BSP	Lin	nits	

1868-53-7	Dibromofluoromethane	100%	80-123%
2037-26-5	Toluene-D8	106%	88-112%
460-00-4	4-Bromofluorobenzene	96%	79-114%

<sup>\* =</sup> Outside of Control Limits.

# 5.4.1

Page 1 of 1

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C44253

**Account:** CCCAD Compliance & Closure, Inc.

**Project:** T10000005974-De Long Petroleum - 1716 Webster Street, Alameda, CA

Sample	File ID	DF	Analyzed	Ву	Prep Date	Prep Batch	<b>Analytical Batch</b>
C44179-3MS	U33069.D	1	02/26/16	JC	n/a	n/a	VU1355
C44179-3MSD	U33070.D	1	02/26/16	JC	n/a	n/a	VU1355
C44179-3	U33052.D	1	02/26/16	JC	n/a	n/a	VU1355

The QC reported here applies to the following samples:

Method: SW846 8260B

C44253-1

CAS No.	Compound	C44179-3 ug/l Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND	20	20.2	101	20	20.4	102	1	76-120/10
108-20-3	Di-Isopropyl ether	ND	20	18.8	94	20	19.3	97	3	69-126/10
100-41-4	Ethylbenzene	ND	20	20.4	102	20	20.4	102	0	78-123/10
637-92-3	Ethyl Tert Butyl Ether	ND	20	18.4	92	20	18.9	95	3	75-126/11
1634-04-4	Methyl Tert Butyl Ether	ND	20	17.0	85	20	17.5	88	3	73-120/10
91-20-3	Naphthalene	ND	20	17.7	89	20	19.4	97	9	66-120/12
994-05-8	Tert-Amyl Methyl Ether	ND	20	18.6	93	20	19.0	95	2	77-126/10
75-65-0	Tert-Butyl Alcohol	ND	100	78.7	79	100	83.4	83	6	52-148/18
108-88-3	Toluene	ND	20	19.3	97	20	19.5	98	1	78-121/10
1330-20-7	Xylene (total)	ND	60	58.3	97	60	58.1	97	0	78-122/10
CAS No.	Surrogate Recoveries	MS	MSD	<b>C</b> 4	14179-3	Limits				
1868-53-7	Dibromofluoromethane	105%	105%	10	2%	80-1239	%			
2037-26-5	Toluene-D8	103%	102%	10	3%	88-1129	%			
460-00-4	4-Bromofluorobenzene	103%	101%	94	%	79-1149	%			

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<sup>\* =</sup> Outside of Control Limits.

**Method:** SW846 8260B

## Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C44253

Account: CCCAD Compliance & Closure, Inc.

**Project:** T10000005974-De Long Petroleum - 1716 Webster Street, Alameda, CA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C44303-5MS	W60425.D	10	03/01/16	CV	n/a	n/a	VW2278
C44303-5MSD	W60426.D	10	03/01/16	CV	n/a	n/a	VW2278
C44303-5	W60421.D	10	03/01/16	CV	n/a	n/a	VW2278

The QC reported here applies to the following samples:

CAS No.	Compound	C44303-5 ug/l	5 Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		200	194	97	200	188	94	3	76-120/10
108-20-3	Di-Isopropyl ether	ND		200	194	97	200	191	96	2	69-126/10
100-41-4	Ethylbenzene	22.0		200	227	103	200	217	98	5	78-123/10
637-92-3	Ethyl Tert Butyl Ether	ND		200	195	98	200	193	97	1	75-126/11
1634-04-4	Methyl Tert Butyl Ether	ND		200	185	93	200	185	93	0	73-120/10
91-20-3	Naphthalene	15.9	J	200	210	97	200	221	103	5	66-120/12
994-05-8	Tert-Amyl Methyl Ether	ND		200	200	100	200	199	100	1	77-126/10
75-65-0	Tert-Butyl Alcohol	ND		1000	963	96	1000	1040	104	8	52-148/18
108-88-3	Toluene	ND		200	196	98	200	189	95	4	78-121/10
1330-20-7	Xylene (total)	25.9		600	641	103	600	616	98	4	78-122/10
CAS No	Surragata Dagayarias	MS		MSD	C	1/303_5	I imite				

CAS No.	<b>Surrogate Recoveries</b>	MS	MSD	C44303-5	Limits
	Dibromofluoromethane	104%	106%	105%	80-123%
2037-26-5	Toluene-D8	104%	103%	106%	88-112%
460-00-4	4-Bromofluorobenzene	103%	101%	97%	79-114%

<sup>\* =</sup> Outside of Control Limits.

**Method:** SW846 8260B

## Matrix Spike/Matrix Spike Duplicate Summary

Job Number: C44253

Account: CCCAD Compliance & Closure, Inc.

T10000005974-De Long Petroleum - 1716 Webster Street, Alameda, CA **Project:** 

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
C44470-1MS	W60570.D	1	03/08/16	CV	n/a	n/a	VW2284
C44470-1MSD	W60571.D	1	03/08/16	CV	n/a	n/a	VW2284
C44470-1	W60561.D	1	03/08/16	CV	n/a	n/a	VW2284

The QC reported here applies to the following samples:

CAS No.	Compound	C44470-1 ug/l Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2 108-20-3 100-41-4 637-92-3 1634-04-4 91-20-3 994-05-8 75-65-0	Benzene Di-Isopropyl ether Ethylbenzene Ethyl Tert Butyl Ether Methyl Tert Butyl Ether Naphthalene Tert-Amyl Methyl Ether Tert-Butyl Alcohol	ND ND ND ND 4.1 1.0 J ND ND	20 20 20 20 20 20 20 20 20 20	21.8 23.2 22.0 22.0 24.6 19.2 22.5 105	109 116 110 110 103 91 113 105	20 20 20 20 20 20 20 20 20 100	22.2 23.4 22.3 22.4 25.1 20.4 22.9 107	111 117 112 112 105 97 115 107	2 1 1 2 2 6 2 2	76-120/10 69-126/10 78-123/10 75-126/11 73-120/10 66-120/12 77-126/10 52-148/18
108-88-3 1330-20-7	Toluene Xylene (total)	ND ND	20 60	20.9 64.8	105 108	20 60	21.2 65.8	106 110	1 2	78-121/10 78-122/10

CAS No.	<b>Surrogate Recoveries</b>	MS	MSD	C44470-1	Limits
	Dibromofluoromethane Toluene-D8	115% 104%	113% 103%	115% 104%	80-123% 88-112%
460-00-4	4-Bromofluorobenzene	101%	100%	92%	79-114%

<sup>\* =</sup> Outside of Control Limits.



Section 6

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GC	Sem	11-VO	latı	les

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

**Method:** SW846 8015B M

### **Method Blank Summary**

Job Number: C44253

Account: CCCAD Compliance & Closure, Inc.

Project: T10000005974-De Long Petroleum - 1716 Webster Street, Alameda, CA

Sample OP13942-MB	File ID HH329989.D	<b>DF</b> 1	<b>Analyzed</b> 02/26/16	By YN	<b>Prep Date</b> 02/26/16	Prep Batch OP13942	Analytical Batch GHH1749

The QC reported here applies to the following samples:

C44253-1, C44253-2, C44253-3, C44253-4

CAS No.	Compound	Result	RL	MDL	Units Q
	TPH (C10-C28)	ND	0.10	0.025	mg/l
	TPH (> C28-C40)	ND	0.20	0.050	mg/l

CAS No. Surrogate Recoveries Limits
630-01-3 Hexacosane 79% 40-134%

# 6.2.

Page 1 of 1

**Method:** SW846 8015B M

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## Blank Spike/Blank Spike Duplicate Summary

Job Number: C44253

**Account:** CCCAD Compliance & Closure, Inc.

**Project:** T10000005974-De Long Petroleum - 1716 Webster Street, Alameda, CA

Sample	File ID	DF	Analyzed	Ву	Prep Date	Prep Batch	Analytical Batch
OP13942-BS	HH329990.D	1	02/26/16	YN	02/26/16	OP13942	GHH1749
OP13942-BSD	HH329991.D	1	02/26/16	YN	02/26/16	OP13942	GHH1749

The QC reported here applies to the following samples:

C44253-1, C44253-2, C44253-3, C44253-4

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	BSD mg/l	BSD %	RPD	Limits Rec/RPD
	TPH (C10-C28)	1	0.697	70	0.695	70	0	50-108/18
	TPH (> C28-C40)	1	0.842	84	0.921	92	9	56-120/16

CAS No.	<b>Surrogate Recoveries</b>	BSP	BSD	Limits
630-01-3	Hexacosane	77%	79%	40-134%

<sup>\* =</sup> Outside of Control Limits.

# 6.3.

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**Method:** SW846 8015B M

### **Matrix Spike Summary**

Job Number: C44253

**Account:** CCCAD Compliance & Closure, Inc.

**Project:** T10000005974-De Long Petroleum - 1716 Webster Street, Alameda, CA

Sample	File ID	DF	Analyzed	Ву	Prep Date	Prep Batch	Analytical Batch
OP13942-MS	HH329992.D	1	02/26/16	YN	02/26/16	OP13942	GHH1749
C44253-3	HH330000.D	1	02/26/16	YN	02/26/16	OP13942	GHH1749

### The QC reported here applies to the following samples:

C44253-1, C44253-2, C44253-3, C44253-4

CAS No.	Compound	C44253-3 mg/l Q	Spike mg/l	MS mg/l	MS %	Limits
	TPH (C10-C28) TPH (> C28-C40)	1.06 0.232	0.943 0.943	1.15 0.581	10* <sup>a</sup> 37* <sup>a</sup>	50-108 56-120
CAS No.	Surrogate Recoveries	MS	C44253-	3 Lim	its	
630-01-3	Hexacosane	53%	58%	40-1	34%	

<sup>(</sup>a) Outside control limits due to matrix interference. Emulsion formed during extraction process.

<sup>\* =</sup> Outside of Control Limits.

**Method:** SW846 8015B M

### **Duplicate Summary**

Job Number: C44253

Account: CCCAD Compliance & Closure, Inc.

**Project:** T10000005974-De Long Petroleum - 1716 Webster Street, Alameda, CA

Sample OP13942-DUP	File ID HH330149.D	<b>DF</b> 1	<b>Analyzed</b> 03/01/16	By FL	Prep Date 02/26/16	Prep Batch OP13942	Analytical Batch GHH1751
C44253-2	HH330148.D	1	03/01/16	FL	02/26/16	OP13942	GHH1751

The QC reported here applies to the following samples:

C44253-1, C44253-2, C44253-3, C44253-4

CAS No.	Compound	C44253-2 mg/l Q	DUP mg/l Q	RPD Limits
	TPH (C10-C28) TPH (> C28-C40)	1.03 0.513	0.826 0.515	22* a 18 0 16
CAS No.	Surrogate Recoveries	DUP	C44253-2	Limits
630-01-3	Hexacosane	83%	70%	40-134%

<sup>(</sup>a) Outside laboratory control limits.

<sup>\* =</sup> Outside of Control Limits.

	C	COMPLIANCE	& CLOSURE, INC.	9 ×	Ţ9	\$ # 2214-2
Well ID. :	MW-1		Date :	2/25/	ė <del> </del>	4417-6
Pump Type : Dedicated/Portable	e (circle one)	<del></del>	Chain of Custod	y Doc. # :	·	
Depth of casing:	15:15		Casing Diameter	r:	2 11	
Depth of water : Time of level:	5,40	····	Volume Factor :	<u> </u>	0.163 gay	141
Water in Casing (1	t): <u>9.7</u>	5	Gallons / Casing	Vol.:	158g	CAS / LUCK
Time Pump on :			Initial Flow Rate Q =	= gpm :	X 3 = 4,7	
Time Pump Off:			Meas. by grad.@	The state of the s	ket	
Time Q	Gal. Removed	рН	Temp <b>₡</b> ₣ <sup>つ</sup>	sc	<b>06</b> D.0	OA P DIW
8:15	3	6.98	57,88	358	1.31 m/e	-168
8-20	3	7.3 2	58.75	377	2.00 m/le	- 159
8-21	3	6.96	54,28	766	istingle	-170
To	in is 9					
5 h	en en sort		cloudy grey		4	
	de Product	oden s	to well for	MCBLEN VO <sup>V</sup> NAPL		
			H <sub>2</sub> O Le	vel at time o	f sampling :	
	Rep. 1 Rep.	2 Re	ep. 3			
Final pH					Calib	
Final T C					Calib	Tes / NO
Final S C			H <sub>2</sub> O lev	. Ser. #		ε
Sample I.D.: _	MW-1	т	ime Collected :	8:30		
Requested Analyses: _			ample Container Size/Preserv.)			
		•				
Comments: -		•	Signature:			

		COMPLIANCE	& CLOSURE, INC.		Jo	21112.3
Well ID.:	Mw-2A		Date :	2/25/20	the same of the sa	214-2
Pump Type : Dedicated/Port	able (circle one)		Chain of Custody	y Doc. # :		
Depth of casing		<u> </u>	Casing Diameter	i:	2 "	-
Depth of water Time of leve			Volume Factor:		0:123 gal /47	
Water in Casing		. 31	Gallons / Casing		1.84 pal 3 x 5-5 gales	
Time Pump on	•		Initial Flow Rate Q =	gpm :		
Time Pump Off	f:		Meas. by grad. g		et	
Time Q	Gal. Removed	рН	Temp <b>ℰ</b> ዶ	sc		erp DTW
9:40	3	6:76	60.63	418	2.62 20/8	25
9:50	3	6.92	61.23	425	2:69 mg/e	iĖ
9:55	3	6.55	61,76	426	2.00 00/8	21
7. 7.						
			H <sub>2</sub> O Le	vel at time o	f sampling :	
a.	Rep. 1 Re	p. 2 Ro	ер. 3			9 ml n
Final pH			pH met		Calib.:	
Final T C			1		Calib.:	tes / No
Final S C			H <sub>2</sub> O lev	/. Ser. #		
Sample I.D. :			Fime Collected :		·	
Requested Analyses:			Sample Container (Size/Preserv.)			
		· ·				
Comments:		<del></del> ,	Signature:	<u></u>		

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	COMPLIANCE 8	& CLOSURE, INC.	,		<b>*</b> 0
Well ID.:	A.	Date :	2/	25/2016	221402
Pump Type :	e)	Chain of Custody	y Doc. # :		
Depth of casing:	Casing Diameter	r:	2 W		
Depth of water:	Volume Factor:		0.163 gal /4+		
Water in Casing (ft):	10,80	Gallons / Casing		1.76	of gorners
Time Pump on :		Initial Flow Rate Q =	= gpm :		
Time Pump Off:		Meas. by grad.cylinder-bucket flow meter-other:			a .
Time O Gal. Remov	ved pH	Temp & r	sc	og ise	OR P DIW
7)	7.53	57.74	415	401 11/2	9.3
	7.37		398	278 mile	91
7:45 3	7.30	58.94	398	2.91 mjl =	90
70 mc = 9	cia la si	ightly cloudy	٧,		
	No petro				
New Neaf	Sharp				
(1 auch 1		H <sub>2</sub> O Le	evel at time	of sampling :	v
Rep. 1	Rep. 2 Re	ер. 3		0 5	. Van / Na
Final pH				Calib Calil	
Final T C					J 100 / 110
Final S C		<sup>n</sup> 2 <sup>O lev</sup>	v. 5er. # _		
Sample I.D. :	-3,4	Time Collected :		7:55	
Requested Analyses:	(	Sample Container (Size/Preserv.)		ven	
Comments:		Signature:	<u></u>		

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		COMPLIA	ANCE & CLOSU	RE, INC.	•		501 #		
Well ID. :	Rw-1	;	Date :		Z	.25.2016	12214-2		
Pump Type : Dedicated/Por	table (circle o	ne)	Chain c	of Custod	y Doc. #:				
Depth of casing: 22,50				Casing Diameter:					
Depth of water:			Volume	Volume Factor: 1.47 gm / ft					
Water in Casing (ft):			Gallons	Gallons / Casing Vol.: 25.2 yai					
Time Pump on : Initial Flow Rate  Q = gpm :									
Time Pump Off:  Meas. by grad.cylinder-bucket flow meter-other:									
Time Q	Gal. Remo	ved pH	Temp	& E	SC	<b>⊕</b> € ఏ.०	ORIP DIW		
8140		6.8	i 59	°, 00	353	2-62	-21		
8:50	-	6.8	C 54	7,25	349	2-54	-78		
9:10	70	6,7		9.16	352	2.45	- 79		
920		6.7	77	59.18	348	2.41	~ 77		
		Clea	n to v	ico - 3	ilskHz C	1000			
			e deto o			å.			
				H <sub>2</sub> O Le	vel at time o	of sampling	:		
	Rep. 1	Rep. 2	Rep. 3	ī	ASS ASSESS				
Final pH				1 '		C			
Final T C						C	alib Tes / No		
Final S C			· · · · · · · · · · · · · · · · · · ·	20 lev	. Ser. # _				
Sample I.D. :			Time Colle	cted:	<u></u>				
Requested Analyses :		Market and the Control of Control	Sample Container (Size/Preserv.)						
							_		
Comments:			Si	gnature:	<u></u>				