

ExxonMobil
Environmental Services Company
4096 Piedmont Avenue #194
Oakland, California 94611
510 547 8196 Telephone
510 547 8706 Facsimile

Jennifer C. Sedlachek
Project Manager

RECEIVED

By Alameda County Environmental Health at 4:26 pm, Jun 10, 2014

ExxonMobil

June 9, 2014

Mr. Keith Nowell
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject: Soil and Water Investigation and Focused SCM Report
Former Exxon RAS #70234
3450 35th Avenue, Oakland, California
ACHCSA File No. RO0002515

Dear Mr. Nowell:

Attached for your review and comment is a copy of the *Soil and Water Investigation and Focused SCM Report* for the above-referenced site. The document, prepared by ETIC Engineering, Inc. of Pleasant Hill, California, details the results of a subsurface investigation conducted at the site.

Upon information and belief, I declare, under penalty of perjury, that the information contained in the attached document is true and correct.

If you have any questions or comments, please contact me at 510.547.8196.

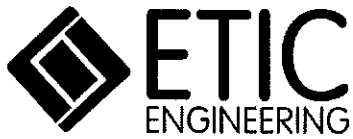
Sincerely,



Jennifer C. Sedlachek
Project Manager

Attachment: ETIC Soil and Water Investigation and Focused SCM Report

- c: w/ attachment:
Mr. Zack Spencer, FWS Highland LLC, 99 South Hill Drive, Brisbane, CA 94005
Mr. Shay Wideman, The Valero Companies, Environ. Liability Mgt., P.O. Box 696000, San Antonio, TX 78269
- c: w/o attachment:
Mr. Thomas E. Neely, ETIC Engineering, Inc.



Soil and Water Investigation and Focused SCM Report

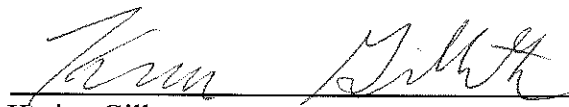
**Former Exxon Service Station 70234
3450 35th Avenue
Oakland, California**

Prepared for


ExxonMobil Oil Corporation

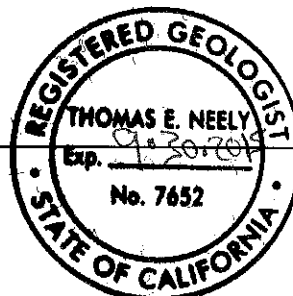
Prepared by

ETIC Engineering, Inc.
898 North Fair Oaks Avenue, Suite A
Pasadena, California 91103
(626) 432-5999


Karina Gillette
Staff Geologist

June 5, 2014
Date


Thomas E. Neely, PG, CHG, QSD
Senior Hydrogeologist



June 5, 2014
Date

June 2014

CONTENTS

LIST OF FIGURES AND TABLES.....	iii
SITE CONTACTS	iv
1.0 INTRODUCTION	1
2.0 SITE BACKGROUND	3
2.1 SITE LOCATION AND LAND USE	3
2.2 UNDERGROUND STORAGE TANKS AND HYDRAULIC LIFTS	3
2.3 SUMMARY OF PREVIOUS INVESTIGATIONS	3
2.4 SUMMARY OF PREVIOUS REMEDIAL MEASURES	5
3.0 GEOLOGY AND HYDROGEOLOGY	6
3.1 REGIONAL GEOLOGY AND HYDROGEOLOGY.....	6
3.2 LOCAL GEOLOGY AND HYDROGEOLOGY	7
4.0 SUBSURFACE INVESTIGATION	8
4.1 FIELD PREPARATION.....	8
4.2 SOIL VAPOR ASSESSMENT.....	8
4.2.1 Drilling and Soil Sampling	8
4.2.2 Soil Vapor Monitoring Well Installation	9
4.2.3 Soil Vapor Sampling.....	9
4.2.4 Laboratory Analysis.....	10
4.3 SOIL AND GROUNDWATER ASSESSMENT	11
4.3.1 Drilling and Sampling.....	11
4.3.2 Laboratory Analysis.....	13
4.4 WASTE CONTAINMENT AND DISPOSAL.....	13
5.0 RESULTS	14
5.1 FIELD OBSERVATIONS.....	14
5.2 GEOLOGY AND HYDROGEOLOGY	14
5.3 ANALYTICAL DATA FOR SOIL SAMPLES	14
5.4 ANALYTICAL DATA FOR GRAB GROUNDWATER SAMPLES	15
5.5 ANALYTICAL DATA FOR SOIL VAPOR SAMPLES	15
6.0 SITE CONCEPTUAL MODEL	17
6.1 SOURCES OF CHEMICAL IMPACTS	17
6.2 CHEMICALS OF CONCERN AND AFFECTED MEDIA	17
6.3 EXTENT OF RESIDUAL PETROLEUM HYDROCARBONS AND MTBE	17
6.3.1 Lateral Extent of Petroleum Hydrocarbons and MTBE in Soil.....	17
6.3.2 Vertical Extent of Petroleum Hydrocarbons and MTBE in Soil	18
6.3.3 Lateral Extent of Petroleum Hydrocarbons and MTBE in Groundwater	18

6.3.4	Vertical Extent of Petroleum Hydrocarbons and MTBE in Groundwater.....	19
6.4	TRANSPORT MECHANISMS	19
6.5	POTENTIAL EXPOSURE PATHWAYS AND RECEPTORS	19
7.0	SUMMARY AND CONCLUSIONS	23
8.0	RECOMMENDATIONS	25
9.0	REFERENCES	26

FIGURES

TABLES

APPENDIX A:	Regulatory Correspondence
APPENDIX B:	Drilling and Well Installation Permits
APPENDIX C:	Boring Logs, Well Construction Diagrams, and DWR 188 Well Completion Reports
APPENDIX D:	Field Documents for Soil Vapor Sampling
APPENDIX E:	Field Procedures and CPT Logs
APPENDIX F:	Laboratory Analytical Reports and Chain-of-Custody Documentation
APPENDIX G:	Waste Disposal Documentation

LIST OF FIGURES AND TABLES

Former Exxon Service Station 70234

<u>Number</u>	<u>Description</u>
---------------	--------------------

Figures

- | | |
|---|---|
| 1 | Site location and topographic map. |
| 2 | Site map showing sampling locations. |
| 3 | Lateral extent of TPH-g and BTEX in soil. |
| 4 | Lateral extent of MTBE in soil. |
| 5 | Conceptual site model schematic diagram. |
| 6 | Exposure pathway flow chart. |

Tables

- | | |
|---|--|
| 1 | Well construction details. |
| 2 | Cumulative soil analytical results. |
| 3 | Additional cumulative soil analytical results. |
| 4 | Analytical results for soil samples – physical properties. |
| 5 | Groundwater monitoring data. |
| 6 | Additional groundwater monitoring data. |
| 7 | Grab groundwater analytical results. |
| 8 | Additional grab groundwater analytical results. |
| 9 | Soil vapor sample analytical results. |

SITE CONTACTS

Site Name: Former Exxon Service Station 70234

Site Address: 3450 35th Avenue
Oakland, California

ExxonMobil Project Manager: Jennifer C. Sedlachek
ExxonMobil Environmental Services Company
4096 Piedmont Avenue #194
Oakland, California 94611
(510) 547-8196

Consultant to ExxonMobil: ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, California 94523
(925) 602-4710

ETIC Project Manager: Sean Bowen

Regulatory Oversight: Keith Nowell
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577
(510) 567-6764

1.0 INTRODUCTION

At the request of ExxonMobil Environmental Services Company on behalf of ExxonMobil Oil Corporation (ExxonMobil), ETIC Engineering, Inc. (ETIC) has prepared this Soil and Water Investigation and Focused Site Conceptual Model (SCM) Report for Former Exxon Service Station 70234, located at 3450 35th Avenue in Oakland, California (Figures 1 and 2).

The investigation was conducted in general accordance with the Work Plan for Subsurface Investigation dated May 2013 (ETIC 2013) (Work Plan). The Work Plan outlined the proposed scope of work for the collection of soil vapor, soil, and groundwater samples to assess the risk to potential receptors via vapor intrusion and inhalation and to further assess the vertical extent of petroleum hydrocarbons and methyl tertiary butyl ether (MTBE) in the area of the former UST system excavations (ETIC 2013). In a letter dated 6 September 2013, the Alameda County Health Care Services Agency (ACHCSA) approved the proposed work with modifications outlined in the letter. Due to site access constraints, implementation of the field work could not be performed until April 2014, and approval of an extension request for submittal of the investigation report was granted by ACHCSA by email dated 23 January 2014. Copies of the correspondence from the ACHCSA are included in Appendix A.

This report documents the drilling of soil borings, installation of soil vapor monitoring wells, collection and laboratory analysis of soil vapor, soil, and groundwater samples, evaluation of the field and analytical data, and updating the SCM where appropriate.

Scope of Work

The work consisted of the following activities:

- The proposed drilling and sampling locations were marked in the field and Underground Service Alert (USA) was subsequently notified. A private utility locating contractor checked the proposed work areas for the presence of underground utilities.
- Five soil borings (V1 through V5) were hand augered and completed as soil vapor monitoring wells. Soil samples collected from the borings were submitted for laboratory analysis. Due to the presence of utilities during hand augering, V6 located near the former used oil tank was not installed.
- Three cone penetrometer testing (CPT) borings (H1-CPT, H2-CPT and H3-CPT) were advanced to access soil types and potential water-bearing zones. Two Hydropunch borings were advanced near each of the three CPT borings for the collection of grab groundwater samples at two depths (H1-70, H1-95, H2-62, H2-80, H3-65 and H3-90). A fourth soil boring was advanced near two of the CPT borings for the collection of a soil sample (H1-S and H3-S). Soil and groundwater samples collected were submitted for laboratory analysis.

- Soil vapor samples were collected from the five soil vapor monitoring wells and submitted for laboratory analysis.
- The drums of investigation-derived waste were loaded and transported offsite for proper disposal.

2.0 SITE BACKGROUND

2.1 SITE LOCATION AND LAND USE

Former Exxon Service Station 70234 is located at 3450 35th Avenue in Oakland, California. The site is situated on the eastern corner of the intersection of 35th Avenue and Quigley Street (Figures 1 and 2). Residential properties are northwest of the site across 35th Avenue and adjacent to the site on the northeastern and southeastern sides. An active ConocoPhillips 76 service station is located southwest of the site across Quigley Street.

An Exxon-branded service station was operated at the site and then sold to Valero Energy Corporation (Valero) in 2000. The underground fueling systems were removed in 2002; however, the station building and canopy remained at the site. The site is current unoccupied and the perimeter is surrounded by a fence. The former UST excavation was reportedly filled with gravel and resurfaced (Cardno ERI 2012a).

The site topography slopes generally to the southwest toward San Francisco Bay. The site is located approximately 2 miles northeast of the Oakland Estuary, which connects to San Francisco Bay. The nearest surface water is Peralta Creek, which flows to the southwest (toward San Francisco Bay) and passes within approximately 600 feet northwest and cross-gradient of the site (Figure 1).

2.2 UNDERGROUND STORAGE TANKS AND HYDRAULIC LIFTS

In August 1991, three 8,000-gallon gasoline underground storage tanks (USTs) were excavated and removed from the site and were replaced with three 12,000-gallon gasoline USTs (Alton Geoscience 1992). In June 1997, one 500-gallon used-oil UST and two hydraulic hoists were removed from the site (ACHCSA 2000). In 2002, the three 12,000-gallon gasoline USTs and associated product piping were excavated and removed from the site (TRC 2002). The former UST excavation and product piping trenches were reportedly filled with gravel (Cardno ERI 2012a).

2.3 SUMMARY OF PREVIOUS INVESTIGATIONS

Various investigations were performed from 1986 to 2000 as part of the initial environmental case for the site. Well construction details are presented in Table 1. Data for soil samples and groundwater samples are presented in Tables 2 through 8. Soil borings B1 through B10, EB1, EB2, SB1, and SB2 were drilled and groundwater monitoring wells MW1 through MW3 were installed (Alton Geoscience 1991) (IT 1992) (Cardno ERI 2012a). Well construction details are presented in Table 1. Total Petroleum Hydrocarbons quantified as gasoline (TPH-g) and benzene were detected in soil samples from the borings at concentrations up to 440 milligrams per kilogram (mg/kg) and 0.7 mg/kg, respectively (boring B3 at 15.5 feet below ground surface [bgs]). TPH-g, benzene, and methyl tertiary butyl ether (MTBE) were detected in groundwater

samples at concentrations up to 75.0 micrograms per liter ($\mu\text{g/L}$), 6.6 $\mu\text{g/L}$, and 1.87 $\mu\text{g/L}$, respectively (Cardno ERI 2012a). The ACHCSA closed the environmental case for the site, and the groundwater monitoring wells were subsequently destroyed in 2000 (ERI 2000).

In March 2007, the ACHCSA opened an environmental case for the site based upon the discovery of MTBE in groundwater samples collected from the UST excavation during removal of the tanks in 2002 (Cardno ERI 2012a).

In September and November 2007, Environmental Resolutions, Inc. (ERI) observed the drilling of borings B11 through B18 (ERI 2007). In March 2009, ERI observed the drilling of borings B19 through B21 and the installation of groundwater monitoring wells MW4 through MW9 (ERI 2009). TPH-g, benzene, toluene, ethylbenzene, xylenes, MTBE, tertiary butyl alcohol (TBA), and 1,2-dichloroethane (1,2-DCA) were detected in soil samples collected from the borings at concentrations up to 300 mg/kg (B15 at 20 feet bgs), 6.1 mg/kg (B15 at 20 feet bgs), 36 mg/kg (B15 at 20 feet bgs), 14 mg/kg (B15 at 20 feet bgs), 72 mg/kg (B15 at 20 feet bgs), 1.7 mg/kg (B17 at 35.5 feet bgs), 0.70 mg/kg (B18 at 35 feet bgs), and 0.011 mg/kg (B15 at 15.5 feet bgs), respectively. TPH-g, benzene, toluene, ethylbenzene, xylenes, MTBE, and TBA were detected at concentrations up to 18,000 $\mu\text{g/L}$, 3,400 $\mu\text{g/L}$, 2,500 $\mu\text{g/L}$, 330 $\mu\text{g/L}$, 2,000 $\mu\text{g/L}$, 12,000 $\mu\text{g/L}$, and 1,900 $\mu\text{g/L}$, respectively, in the grab groundwater sample collected at 38 feet bgs from boring B15 situated near the southeastern edge of the former UST excavation (Cardno ERI 2012a).

In December 2011, Cardno ERI observed the installation of recovery well RW1 at the site. The purpose of installing well RW1 was to conduct feasibility testing, including a step-drawdown and a constant-rate groundwater pumping test to evaluate whether groundwater extraction and treatment would be a viable remediation strategy. TPH-g was detected at 440 mg/kg in the soil sample collected at 40 feet bgs from the boring for well RW1 (Cardno ERI 2012a).

Quarterly groundwater monitoring was performed at the site from 1992 to 1995. Groundwater monitoring was also performed once in 1999. Non-aqueous-phase liquid (NAPL) was not detected. TPH-g, benzene, toluene, ethylbenzene, and xylenes (BTEX), and MTBE were detected in groundwater samples collected from monitoring wells MW1 (located west of the UST area) and MW3 (located upgradient of the fueling system). Groundwater monitoring wells MW1 through MW3 were destroyed in 2000 when the ACHCSA closed the initial environmental case for the site (Cardno ERI 2012a).

Groundwater monitoring wells MW4 through MW9 have been monitored since March 2009. The highest concentrations of TPH-g, BTEX, and MTBE have been detected in samples collected from wells MW5 (located southeast of the former UST excavation), MW6 (located southwest of the former UST excavation), and RW1 (located inside the former UST excavation).

In February 2012, Cardno ERI performed a step-drawdown pumping test and attempted subsequent constant-rate pumping tests in well RW1. The tests indicated a sustainable pumping

rate of no more than 0.2 gallons per minute. The data also yielded a corresponding transmissivity of 197.1 gallons per day per foot (gpd/ft), a storativity (specific yield) of 0.016, and a hydraulic conductivity of 5.8×10^{-4} centimeters per second (cm/sec). Based upon the data, the anticipated downgradient extent of the capture zone was approximately 14.5 feet and the anticipated cross-gradient extent of the capture zone was approximately 45 feet. Based upon the findings of the feasibility test, Cardno ERI indicated that groundwater extraction and treatment would not be an effective remedial alternative for the site (Cardno ERI 2012b).

2.4 SUMMARY OF PREVIOUS REMEDIAL MEASURES

In 1991, approximately 1,200 cubic yards of fill material and soil were excavated when the gasoline USTs, dispensers, and product piping were removed and the excavation was enlarged to accommodate the larger replacement USTs. TPH-g and benzene were detected at concentrations up to 5 mg/kg and 0.36 mg/kg, respectively, in soil samples collected from the limits of the enlarged excavation (Cardno ERI 2012a).

In June 1997, one 500-gallon used-oil UST and two hydraulic hoists were removed from the site (ACHCSA 2000). Hydraulic oil was detected in the soil samples collected from the hydraulic lift excavations at concentrations up to 2,100 mg/kg. Total Petroleum Hydrocarbons quantified as motor oil (TPH-mo), diesel (TPH-d), TPH-g, toluene, ethylbenzene, and xylenes were detected in the soil sample collected from the used-oil UST excavation at 680 mg/kg, 200 mg/kg, 8.6 mg/kg, 0.038 mg/kg, 0.016 mg/kg, and 0.046 mg/kg, respectively.

In 2002, approximately 170 cubic yards of pea gravel and soil were excavated during removal of the 12,000-gallon USTs (Cardno ERI 2012a). Four soil samples were collected from the sidewalls of the UST excavation. TPH-g, BTEX, and MTBE were not detected in the samples. Four soil samples were collected beneath the product piping. TPH-g, BTEX, and MTBE were not detected in three of the four samples. TPH-g (24 mg/kg), benzene (0.057 mg/kg), toluene (0.11 mg/kg), ethylbenzene (0.12 mg/kg), total xylenes (1.2 mg/kg), and MTBE (0.020 mg/kg) were detected in soil sample B collected at approximately 4.9 feet bgs beneath the northeastern dispenser island (Cardno ERI 2012a).

3.0 GEOLOGY AND HYDROGEOLOGY

3.1 REGIONAL GEOLOGY AND HYDROGEOLOGY

The site is located in the East Bay Plain Subbasin of the Santa Clara Valley Groundwater Basin. The East Bay Plain Subbasin is a northwest trending alluvial plain bounded on the north by San Pablo Bay, on the east by the contact with Franciscan Basement rock, and on the south by the Niles Cone Groundwater Basin. The East Bay Plain Basin extends beneath San Francisco Bay to the west. Numerous creeks including San Pablo Creek, Wildcat Creek, San Leandro Creek, and San Lorenzo Creek flow from the western slope of the Coast Ranges westward across the plain and into San Francisco Bay. The East Bay Plain Subbasin aquifer system consists of unconsolidated deposits of Quaternary age. Deposits include the early Pleistocene Santa Clara Formation, the late Pleistocene Alameda Formation, the early Holocene Temescal Formation, and Artificial Fill. The cumulative thickness of the unconsolidated deposits is about 1,000 feet (DWR 2003).

Early Pleistocene Santa Clara Formation

The Santa Clara Formation consists of alluvial fan deposits inter-fingered with lake, swamp, river channel, and flood plain deposits. The formation ranges from 300 to 600 feet thick (DWR 2003).

Late Pleistocene Alameda Formation

The Alameda Formation includes a sequence of alluvial fan deposits. The formation was deposited primarily in an estuarine environment and ranges from 26 to 245 feet thick (DWR 2003).

Early Holocene Temescal Formation

The Temescal Formation is an alluvial deposit consisting primarily of silt and clay with some gravel layers. The formation ranges from 1 to 50 feet thick (DWR 2003).

Artificial Fill

Artificial fill is found mostly along the bay front and wetlands areas and is derived primarily from dredging as well as quarrying, construction, demolition debris, and municipal waste. The fill ranges in thickness from 1 to 50 feet with the thickest deposits found closer to San Francisco Bay (DWR 2003).

3.2 LOCAL GEOLOGY AND HYDROGEOLOGY

The geologic and hydrogeologic characteristics of the site have been evaluated using data from boring logs from previous site investigations. Soil beneath the site generally consists of clayey sand and sandy clay with varying amounts of silt and gravel to approximately 45 feet bgs (Cardno ERI 2012a). Groundwater was first encountered in the soil borings at depths ranging from approximately 29 to 38 feet bgs.

The depth to groundwater measured in wells at the site during the May 2012 monitoring event was approximately 26.5 to 30.5 feet bgs. However, historical data indicate that groundwater levels have fluctuated approximately 5 to 7 feet in some wells over time. Historical data also indicate that the predominant direction of groundwater flow beneath the site is to the southwest at a horizontal hydraulic gradient of approximately 0.013 to 0.016 foot/foot (Cardno ERI 2012a).

4.0 SUBSURFACE INVESTIGATION

A Conceptual Site Model (CSM) was prepared and submitted to the ACHCSA in May 2013. Two of the data gaps identified in the CSM include: 1) assessment of the vapor intrusion and inhalation exposure pathway and 2) delineation of the vertical extent of impacts at the site. The objective of the investigation was to assess the risk to potential receptors via vapor intrusion and inhalation and to further assess the vertical extent of petroleum hydrocarbons and MTBE in the area of the former UST system excavations. Additional soil and groundwater sampling was performed at the request of ACHCSA and to further address criteria in the Low-Threat Underground Storage Tank Case Closure Policy (LTCP) (SWRCB 2012). Soil vapor monitoring wells were installed and borings were drilled and sampled at the locations shown on Figure 2. Details regarding these tasks are presented below.

4.1 FIELD PREPARATION

Drilling and well installation permits were obtained from the Alameda County Public Works Agency (ACPWA) before performing this work. Copies of the permits are included in Appendix B. Each proposed boring location was marked, and Underground Service Alert member companies were notified to check for the presence of underground utilities. A private contractor was hired to check each proposed drilling location for underground utilities. A site-specific health and safety plan was prepared and implemented during field activities.

4.2 SOIL VAPOR ASSESSMENT

The following work was performed to assess the risk to potential receptors via vapor intrusion and inhalation. Five soil vapor monitoring wells (V1, V2, V3, V4, and V5) were installed at the locations shown on Figure 2. Soil and soil vapor samples were collected for laboratory analysis.

4.2.1 Drilling and Soil Sampling

On 14 and 15 April 2014, five soil borings (V1 through V5) were advanced by Gregg Drilling and Testing, Inc. of Martinez, California (Gregg Drilling) using hand tools. The soil vapor monitoring well locations were selected based on the historical petroleum hydrocarbon concentrations beneath the site, the groundwater flow direction, and the location of structures. Well V1 was installed in the former gasoline UST excavation. V2 was installed near the former dispenser islands in the vicinity of previously identified soil impacts. V3 was installed to evaluate shallow soil impacts near the former dispenser islands. V4 and V5 were installed outside the UST area toward the onsite building and the adjacent residents. Soil borings V1, V2, V3, and V5 were advanced to approximately 7 feet bgs, and soil boring V4 was advanced to approximately 7.25 feet bgs. A soil vapor monitoring well (V6) was planned for the vicinity of the former used-oil UST near the onsite building. However, a clay pipe was encountered while hand augering the boring for V6, and the borehole was abandoned. Gregg Drilling attempted a second location for V6 within the area that had been cleared by the private utility locator. However, a concrete slab painted red was encountered beneath the concrete pavement and the second attempted borehole was abandoned. No further attempts were made to install soil vapor

monitoring well V6.

Drilling equipment and tools were decontaminated prior to beginning the field activities and between uses. An ETIC geologist supervised the drilling and sampling activities. Soil samples were examined for lithologic identification in accordance with the Unified Soil Classification System and the Standard Practice for Description and Identification of Soils (Visual-Manual Procedure), American Society for Testing and Materials (ASTM) Designation D2488 (ASTM 2000) and evidence of chemical impacts. The observations were recorded on a field log. A photoionization detector was used to monitor for organic vapors and to measure headspace vapors from soil samples. Technical guidance for the activities was provided by a California-licensed Professional Geologist. Copies of the boring logs and well construction diagrams are included in Appendix C.

A soil sample was collected from approximately 2.5 to 3 feet bgs in borings V2 and V3 to assess soil quality near the dispenser islands and previously identified impacts. A soil sample was collected from boring V1 at approximately 5 to 6.5 feet bgs and borings V2 through V5 at approximately 5 to 6 feet bgs for physical parameter analysis. The samples for physical parameter analysis were collected using short Shelby tubes to obtain relatively undisturbed samples. A soil sample was collected from boring V1 at approximately 6.5 to 7 feet bgs and borings V2 through V5 at approximately 6 to 6.5 feet bgs for chemical analysis. Soil samples were collected in clean liners. The liners were sealed, labeled, placed with ice in a thermally-insulated cooler, and transported under chain-of-custody protocol to Calscience Environmental Laboratories, Inc. (Calscience), a state-certified analytical laboratory.

4.2.2 Soil Vapor Monitoring Well Installation

Gregg Drilling completed the five borings as soil vapor monitoring wells (V1, V2, V3, V4, and V5) for the collection of soil vapor samples. A 6-inch-long, 1/4-inch-diameter implant, consisting of tubular, stainless steel screen with a 0.0057-inch pore size, was attached to stainless steel tubing. The implant and tubing assembly was inserted through the borehole to a depth of approximately 6.75 feet bgs. A filter pack, consisting of Lonestar #3 sand, was placed in the annular space of the borehole around the implant. The filter pack extended beneath the implant to the total depth of the boring to a point approximately 3 inches above the implant. A 12-inch thick layer of dry bentonite was placed above the filter pack (from approximately 5 to 6 feet bgs). A 4.5-foot thick layer (from approximately 0.5 to 5 feet bgs) of hydrated bentonite slurry was placed in the annular space of the borehole. Concrete was placed in the annular space of the borehole above the hydrated bentonite to just below ground surface. A Swagelok® valve and end-cap were installed at the surface end of the stainless steel tubing, and a flush-mounted, traffic-rated vault box was installed in the concrete. The well construction details are provided in Table 1 and are shown on the boring logs in Appendix C.

4.2.3 Soil Vapor Sampling

Prior to sampling, the grout seal for each soil vapor monitoring well was allowed to set following installation. Soil vapor sampling was performed on 22 and 23 April 2014.

On 22 April 2014, a purge volume test was performed on soil vapor monitoring well V3. Well V3 was selected for the purge volume test based upon its proximity to the former dispenser islands and former excavation. The purge volume was estimated based upon the internal volume of the tubing used, the volume of the screened implant, and an estimate of the air-filled void space in the filter pack within the annular space around the implant. A calibrated photoionization detector was used to measure the level of organic vapors in soil vapor after 1, 3, and 10 volumes were purged from well V3. The vapor levels were 3.4 parts per million by volume (ppmv), 2.1 ppmv, and 2.1 ppmv for the 1, 3, and 10 purge volume tests, respectively. Since 1 purge volume yielded the highest field measurement for well V1, the same amount was used to purge wells V1, V2, V4, and V5 prior to sampling.

For sampling, a manifold, consisting of tubing, Swagelok® fittings, and valves, was attached to the sampling valve at the well head. The valves were closed to form a vapor-tight seal. A 1-liter SUMMA sample canister was connected to the manifold. A gauge was present on each SUMMA canister to measure vacuum levels in the canisters. A regulator was installed in the manifold to restrict vapor flow to a rate of no more than 200 milliliters (ml) per minute. At the completion of sampling, the valve to the canister was closed and the time was recorded.

During purging and sampling, a shroud was placed over the SUMMA canister and sampling manifold. Helium was injected under the shroud to check each above-grade joint or connection in the sampling tubing and equipment for leaks. The concentration of helium was measured under the shroud, and the concentration of helium in the extracted soil vapor was measured during purging. Field measurements of helium concentrations were made using a calibrated direct-reading instrument. Helium was not detected in the purged soil vapor.

One sample was collected from each soil vapor monitoring well using a 1-liter SUMMA canister. The sampling completion time and remaining vacuum were recorded, the sample canister was removed from the manifold, and the sampling port was capped. Each sample canister was labeled and kept out of direct sunlight. A duplicate sample was collected from well V5 for quality assurance purposes. Additionally, soil vapor was collected from well V2 in an appropriate sorbent tube for naphthalene analysis. The sample canisters were delivered under chain-of-custody protocol to Calscience. Upon completion of sampling, the soil vapor monitoring wells were secured. The field documents are included in Appendix D.

4.2.4 Laboratory Analysis

The soil samples collected at approximately 5 to 6 feet bgs (5 to 6.5 feet bgs in V1) were analyzed for the following:

- Moisture content by API RP 40/ASTM D2216-92.
- Porosity (including dry bulk density) by API RP 40.
- Total Organic Carbon (TOC) by Walkley-Black.

- Air-Filled Void Space by API RP 40.

The soil samples collected at approximately 2.5 to 3 and 6 to 6.5 feet bgs (6.5 to 7 feet bgs in V1) were analyzed for the following:

- TPH-g by EPA Method 8015B (M).
- BTEX, MTBE, TBA, DIPE, ETBE, TAME, and naphthalene by EPA Method 8260B.

The soil vapor samples were analyzed for the following:

- TPH-g by EPA Method TO-3M.
- BTEX by EPA Method TO-15.
- MTBE, TBA, DIPE, ETBE, TAME, and naphthalene by EPA Method TO-15.
- As requested by the ACHCSA, a confirmation sample (V2) was also analyzed for naphthalene by EPA Method TO-17.
- Argon plus oxygen, carbon dioxide, methane, and helium by ASTM D1946.

4.3 SOIL AND GROUNDWATER ASSESSMENT

The objective of this portion of the investigation was to further assess the vertical extent of impacts in the area of the former gasoline UST excavation. Three CPT borings were drilled at locations upgradient (boring H2) and downgradient (borings H1 and H3) of the former UST system excavation. Groundwater and soil samples were collected for laboratory analysis.

4.3.1 Drilling and Sampling

Soil borings were cleared by Gregg Drilling using hand tools to depths of approximately 5 feet bgs at location H2 and to 8 feet bgs at locations H1 and H3 prior to drilling to ensure the path of the borings were clear of utilities.

The ACHCSA requested that an onsite boring be drilled northwest of groundwater monitoring well MW7. However, the onsite area northwest of MW 7 was inaccessible for drilling due to the presence of underground utilities and dense vegetation. Consequently the CPT, Hydropunch, and soil borings in the H3 area were advanced onsite as near as was feasible to the area northwest of MW7 per the ACHCSA directive.

CPT Drilling

Drilling was performed by Gregg Drilling using a 30-ton CPT rig. Drilling equipment and tools and reusable sampling equipment were decontaminated prior to beginning the field activities and between uses. An ETIC geologist supervised the drilling and sampling activities. Each CPT boring (H1-CPT, H2-CPT, and H3-CPT) was drilled to a depth of approximately 100 feet bgs. CPT logging was performed at each location to assess soil types and potential water-bearing zones. The CPT procedure, interpretation information, and logs of H1, H2, and H3 are provided in Appendix E.

Hydropunch Grab Groundwater Sampling

Two Hydropunch borings were drilled near each CPT location for the collection of grab groundwater samples. The planned groundwater sampling depths were determined based upon data obtained from the CPT borings. The Hydropunch tooling was advanced to the desired groundwater sampling depth and the rods were subsequently withdrawn, exposing the screen. Groundwater samples were collected by lowering a bailer through the Hydropunch rods screened at the desired sampling depth. Each groundwater sample was collected from a separate Hydropunch boring. Sampling procedures are provided in Appendix E.

A Hydropunch boring was advanced to approximately 95 feet bgs near CPT boring H1. The rods were withdrawn to expose the screen from approximately 90 to 95 feet bgs. Insufficient water had entered the screened interval after 30 minutes, and an additional 5 feet of screen was exposed. Sufficient water had passed through the screen after two hours and the groundwater sample was collected from approximately 85 to 95 feet bgs. A second Hydropunch boring was advanced near H1 to a depth of approximately 70 feet bgs. The screen was initially exposed from approximately 65 to 70 feet bgs, then was exposed from approximately 60 to 70 feet bgs due to insufficient groundwater present after 30 minutes. Minimal water had entered the screen and Hydropunch rods after 3 hours. The rods were withdrawn to expose the screen from approximately 56.5 to 70 feet bgs, and the groundwater sample was collected one hour following the exposure of the additional screen.

A Hydropunch boring was advanced to approximately 62 feet bgs near CPT boring H2. The rods were withdrawn to expose the screen from approximately 58 to 62 feet bgs. The groundwater sample was collected after approximately 45 minutes. A second Hydropunch boring was advanced near H2 to a depth of approximately 80 feet bgs. The screen was exposed from approximately 75 to 80 feet bgs. Sufficient groundwater had accumulated in the boring after approximately six hours and the groundwater sample was collected.

A Hydropunch boring was advanced to approximately 90 feet bgs near CPT boring H3. The rods were withdrawn to expose the screen from approximately 85 to 90 feet bgs. The groundwater sample was collected after approximately one hour. A second Hydropunch boring was advanced near H3 to a depth of approximately 65 feet bgs. Insufficient water had entered the screened interval after 30 minutes, and an additional 5 feet of screen was exposed. Sufficient water had accumulated after one hour, and the groundwater sample was collected from approximately 55 to 65 feet bgs.

Soil Sampling

One soil sample was collected from a fourth boring drilled near each of the two downgradient CPT borings H1 and H3. The soil sampling methodology is described in Appendix E. Soil samples were examined for lithologic identification in accordance with the Unified Soil Classification System and the Standard Practice for Description and Identification of Soils (Visual-Manual Procedure), American Society for Testing and Materials (ASTM) Designation

D2488 (ASTM 2000) and evidence of chemical impacts. The observations were recorded on a field log. A photoionization detector was used to monitor for organic vapors and to measure headspace vapors from soil samples. Technical guidance for the activities was provided by a California-licensed Professional Geologist. Copies of the logs are included in Appendix C.

Upon completing sampling, each CPT, Hydropunch, and soil boring was filled and sealed with a grout mixture consisting of neat cement, in accordance with ACPWA and California Department of Water Resources requirements.

4.3.2 Laboratory Analysis

Soil samples were collected in clean liners and groundwater samples were collected in pre-cleaned laboratory supplied containers. The containers and liners were sealed, labeled, placed with ice in a cooler, and transported under chain-of-custody protocol to Calscience. Groundwater and soil samples were analyzed for TPH-g by EPA Method 8015B, BTEX and five fuel oxygenates (MTBE, TBA, DIPE, ETBE, and TAME) by EPA Method 8260B, and naphthalene by EPA Method 8260B.

Samples collected from the groundwater monitoring wells were also analyzed for naphthalene during the May 2014 groundwater monitoring event, and the monitoring data will be presented separately.

4.4 WASTE CONTAINMENT AND DISPOSAL

Soil, groundwater, and decontamination water derived from investigation activities were contained in Department of Transportation (DOT)-approved drums and stored temporarily at the site. A soil sample was collected from the drums and submitted to Calscience. The sample was analyzed for TPH-g by EPA Method 8015M, TPH-d and TPH-mo by EPA Method 8015M with a silica gel cleanup, BTEX and MTBE by EPA Method 8260B, and lead by EPA Method 6010B in order to characterize the soil for proper disposal. The laboratory analytical report and chain-of-custody documentation are included in Appendix F. The drums were removed from the site on 19 May 2014 by Dillard Environmental Services. The soil was transported for disposal at U.S Ecology in Beatty, Nevada, and the water was transported to Instrat in Rio Vista, California. Waste disposal documentation is included in Appendix G.

5.0 RESULTS

5.1 FIELD OBSERVATIONS

Previously undocumented features were observed in the field during this investigation. The features are shown on Figure 2. The surface cover for a cathodic protection well was observed in close proximity to groundwater monitoring well MW7. An anode was observed near the onsite building in the vicinity of the newly installed soil vapor monitoring well V5. A vent line riser was observed in the planter area near newly installed soil vapor monitoring well V4, and the private utility locating contractor indicated the potential presence of the corresponding underground portion of the vent line extending onsite northwest of the riser. Two apparent vent line risers also were observed near the eastern corner of the onsite building.

5.2 GEOLOGY AND HYDROGEOLOGY

Varying amounts of clay, silt, sand, and occasional gravel were encountered in the borings to approximately 8 feet bgs. Silty clay was encountered in the soil sample collected at approximately 54 feet bgs in H1. Silty sand was encountered in the soil sample collected at approximately 54 feet bgs in H3. The CPT logs also provide data for relative soil types. The CPT logs indicate several intervals of very dense/stiff soil to the total depth investigated (approximately 100 feet bgs) and several intervals were noted as sandy silt and clayey silt.

As noted from previous investigations, groundwater has been first encountered at depths ranging from approximately 29 to 38 feet bgs, and the total depths of the existing monitoring wells range from approximately 39 to 45 feet bgs. As noted in Section 4.3.1, other potential water-bearing zones were identified on the CPT logs between approximately 55 and 100 feet bgs. However, groundwater in the targeted zones was generally slow in accumulating in the Hydropunch borings. Groundwater samples were collected from the three shallower Hydropunch borings at H1, H2, and H3 between approximately 55 and 70 feet bgs. Groundwater samples were collected from the three deeper Hydropunch borings at H1, H2, and H3 between approximately 75 and 95 feet bgs. However, the depth intervals were different among the borings. Detailed soil descriptions are presented in the boring logs in Appendix C. The CPT logs are included in Appendix E.

5.3 ANALYTICAL DATA FOR SOIL SAMPLES

Nine soil samples were analyzed for petroleum hydrocarbon constituents. Five soil samples were analyzed for physical parameters. Analytical data for the 14 soil samples collected during this investigation are summarized in Tables 2 through 4. The laboratory analytical reports and chain-of-custody documentation are included in Appendix F.

- TPH-g, BTEX, MTBE, TBA, DIPE, ETBE, TAME, and naphthalene were not detected in the nine soil samples analyzed.
- The moisture content of the five samples ranged from 7.9 to 24.8 percent by weight.
- The total porosity of the five samples ranged from 24.3 to 43.3 percent of bulk volume.
- The air-filled porosity of the five samples ranged from 4.3 to 9.7 percent of bulk volume.

- The water-filled porosity of the five samples ranged from 16.2 to 37.8 percent of bulk volume.
- The dry bulk density of the five samples ranged from 1.50 to 2.05 grams per cubic centimeter.
- The total organic carbon content of the five samples ranged from 620 to 1,850 milligrams per kilogram.

5.4 ANALYTICAL DATA FOR GRAB GROUNDWATER SAMPLES

Analytical data for the 6 grab groundwater samples collected during this investigation are summarized in Tables 7 and 8. The laboratory analytical reports and chain-of-custody documentation are included in Appendix F.

- TBA was detected in the grab groundwater samples collected from Hydropunch borings H1-70 and H1-95 at concentrations of 18 and 11 $\mu\text{g/L}$, respectively. The concentration of TBA detected in the H1-70 sample was higher than the groundwater Environmental Screening Level (ESL) where groundwater is a current or potential drinking water resource adopted by the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB 2013). The concentration of TBA in the deeper sample collected at location H1 (H1-95) was less than the ESL.
- TPH-g, BTEX, MTBE, DIPE, ETBE, TAME, and naphthalene were not detected in the grab groundwater samples.

5.5 ANALYTICAL DATA FOR SOIL VAPOR SAMPLES

Analytical and field data for the soil vapor samples collected from wells V1 through V5 are presented in Table 9. The laboratory analytical report and chain-of-custody documentation are included in Appendix F.

- TPH-g was detected in the samples at concentrations up to 36,000 $\mu\text{g/m}^3$ (V2). However, the concentrations were less than the residential ESL of 50,000 $\mu\text{g/m}^3$ established for soil vapor.
- Benzene was detected in the samples collected from well V5 at concentrations up to 3.4 micrograms per cubic meter ($\mu\text{g/m}^3$). The concentrations were less than the ESL of 42 $\mu\text{g/m}^3$. Benzene was not detected in the other samples.
- Toluene was detected at concentrations up to 110 $\mu\text{g/m}^3$ (V2 and V3). The concentrations were less than the ESL of 160,000 $\mu\text{g/m}^3$.
- Ethylbenzene was detected at concentrations up to 3.8 $\mu\text{g/m}^3$ (V3). The concentrations were less than the ESL of 490 $\mu\text{g/m}^3$.
- Total xylenes were detected at concentrations up to 2.7 $\mu\text{g/m}^3$ (V3). The concentrations were less than the ESL of 52,000 $\mu\text{g/m}^3$.

- MTBE, TBA, DIPE, ETBE, TAME, and naphthalene were not detected in the soil vapor samples.
- Methane was not detected in the samples.
- Carbon dioxide was detected at concentrations up to 7.09 percent by volume (V2).
- Oxygen and argon were detected at concentrations up to 18.7 percent by volume (V4).
- Helium was not detected in the field when purging soil vapor from wells. Helium was detected at concentrations up to 38.8 percent by volume under the shroud using a helium detector.
- Helium was detected in the laboratory analysis of soil vapor samples at concentrations up to 0.0969% by volume (V3).
- No other analytes were detected at or above reporting limits.

As shown in Table 9, none of the analytes were detected at concentrations greater than or equal to the corresponding lowest residential ESLs for soil gas.

Concentrations of helium measured from wells during purging did not exceed 1 percent of the minimum concentration of helium measured under the shroud, indicating that vapor monitoring well seals and fittings were intact.

6.0 SITE CONCEPTUAL MODEL

A SCM has been developed based on field and analytical data obtained from the site to date. The SCM documents potential sources, chemicals of concern, affected media, the extent of impacts, transport mechanisms, and potential exposure pathways and receptors at and in the vicinity of the site. Figure 5 is a schematic diagram that illustrates the various components of the SCM.

6.1 SOURCES OF CHEMICAL IMPACTS

Analytical data indicate the former gasoline UST systems located in the southwestern portion of the site were primary sources of petroleum hydrocarbons detected in the subsurface at the site. A source was identified beneath and around the former location of the gasoline USTs. Petroleum hydrocarbons were also detected near a former pump island in the eastern portion of the dispenser area, near the former hydraulic hoists, and near a former used-oil tank near the southeastern site boundary.

6.2 CHEMICALS OF CONCERN AND AFFECTED MEDIA

Analytical data from soil, groundwater, and soil vapor samples indicate that the subsurface beneath the site has been impacted by the presence of petroleum hydrocarbons, primarily TPH-g, BTEX, and MTBE. TPH-mo and TPH-d were detected in soil samples collected from the used-oil UST excavation. Hydraulic oil was detected in soil samples collected from the hydraulic lift excavations. TBA was detected in some soil and groundwater samples, and 1,2-DCA was detected in one soil sample and one groundwater sample. Tertiary amyl methyl ether (TAME) and diisopropyl ether (DIPE) were each detected at relatively low concentrations in one groundwater sample.

6.3 EXTENT OF RESIDUAL PETROLEUM HYDROCARBONS AND MTBE

6.3.1 Lateral Extent of Petroleum Hydrocarbons and MTBE in Soil

Historical petroleum hydrocarbon data for soil samples collected at the site are listed in Tables 2 and 3. Elevated concentrations of TPH-g and BTEX were detected in soil samples collected from the former gasoline UST excavation and borings subsequently drilled in the vicinity. Elevated concentrations (up to 290 mg/kg TPH-g) were detected in excavation soil samples collected in August 1991 upon removing the USTs. TPH-g and benzene were detected at concentrations up to 5 mg/kg and 0.36 mg/kg, respectively, in soil samples collected from the limits of the enlarged excavation in August 1991. The lateral extent of TPH-g and BTEX in soil is generally defined by the analytical data for samples collected from borings MW6, MW7, B19, B20, and B21 to the southwest; B13 to the northwest; MW4 to the northeast; and MW8 and MW9 to the southeast, as shown in Figure 3. The lateral extent of TPH-g and BTEX is defined.

The lateral extent of MTBE in soil is generally defined by the analytical data for samples collected from borings MW7, B20, and B21 to the southwest; B13 to the northwest; MW4 to the northeast; and MW8 and MW9 to the southeast, as shown in Figure 4. MTBE was detected at concentrations up to 0.51 mg/kg in soil at approximately 35.5 feet bgs at boring B19 (southwest of the former USTs), indicating that the extent of MTBE in soil may not be fully defined in the downgradient direction. However, the presence of MTBE in soil at boring B19 may be attributable to the presence of MTBE in groundwater in that area.

Relatively low concentrations of TPH-g and BTEX (TPH-g up to 24 mg/kg and benzene up to 0.057 mg/kg) were detected in shallow soil samples collected near the former pump island and product piping (sample B at approximately 4.9 feet bgs). These former sampling locations are illustrated on Figure 2 and the data are included in Tables 2 and 3. Additionally, TPH-mo (680 mg/kg) and TPH-d (200 mg/kg) were detected in a soil sample collected from the former used-oil tank excavation. The extent of polycyclic aromatic hydrocarbons (PAHs) and volatile organic compounds (VOCs) concentrations in shallow soil the vicinity of the former used-oil tank has not been evaluated. Hydraulic oil (up to 2,100 mg/kg) was detected in the samples collected from the hydraulic lift excavations.

6.3.2 Vertical Extent of Petroleum Hydrocarbons and MTBE in Soil

At most locations, petroleum hydrocarbons were detected beneath and in the immediate vicinity of the former gasoline USTs at depths ranging from approximately 11 to 40 feet bgs. With the exception of well RW1, the highest concentrations of TPH-g and BTEX generally were detected between approximately 15 and 30.5 feet bgs. TPH-g was detected at 440 mg/kg in the soil sample collected at 40 feet bgs in the boring for well RW1. MTBE was detected beneath and in the immediate vicinity of the former gasoline USTs at depths ranging from approximately 11 to 39.5 feet bgs.

The vertical extent of TPH-g, BTEX, and MTBE in soil is generally defined by the analytical data for soil samples collected from borings H1-S and H3-S during this investigation at approximately 54 feet bgs. The vertical extent of TPH-g, BTEX, naphthalene, and the five fuel oxygenates in soil is defined.

6.3.3 Lateral Extent of Petroleum Hydrocarbons and MTBE in Groundwater

Historical data presented in Tables 5 and 6 provide information regarding the lateral extent of TPH-g, BTEX, and MTBE in groundwater at the site. Historically, the highest concentrations of petroleum hydrocarbons and MTBE have been detected in the groundwater samples collected in the vicinity of the former gasoline UST excavation. The concentrations of benzene in onsite downgradient well MW6 have occasionally been slightly higher than the Maximum Contaminant Level of 1 µg/L since March 2009. The lateral extent of benzene in groundwater has been generally delineated by offsite Unocal 76 wells MW1 and MW2 to the southwest, MW7 to the west, MW4 to the northwest, and MW8 and MW9 to the southeast. The extent of benzene in groundwater extends less than approximately 100 feet downgradient of the former gasoline

USTs. Additional monitoring data will be evaluated to further assess the lateral extent of petroleum hydrocarbons and MTBE in groundwater.

The lateral extent of TPH-g and MTBE in groundwater has been generally defined in certain directions by samples collected from well MW4 (northeast of the former gasoline USTs) and MW8 and MW9 (southeast of the former gasoline USTs). TPH-g and MTBE have been detected in samples from well MW6 (southwest and downgradient of the former gasoline USTs) and in the three offsite monitoring wells (MW1, MW2, and MW3) at the Unocal 76 station site. Consequently, the complete lateral extent of TPH-g and MTBE in groundwater has not been defined.

6.3.4 Vertical Extent of Petroleum Hydrocarbons and MTBE in Groundwater

The vertical extent of TPH-g, BTEX, and MTBE in groundwater is generally defined by the analytical data for samples collected during this investigation from upgradient Hydropunch boring H2-62 screened from 58 to 62 feet bgs and downgradient borings H1-70 and H3-65 screened from 56.5 to 70 and 55 to 65 feet bgs, respectively. The vertical extent of TPH-g, BTEX, and MTBE in groundwater is defined.

TBA was detected in the groundwater samples collected from borings H1-70 and H1-95 at concentrations of 18 and 11 µg/L, respectively. The concentration of TBA in H1-95 was lower than the corresponding residential ESL. The vertical extent of TBA in groundwater is defined to a concentration less than the residential ESL (approximately 85 to 95 feet bgs).

6.4 TRANSPORT MECHANISMS

The residual petroleum hydrocarbon and MTBE impacts have been primarily detected in soil and groundwater in the vicinity of the former UST excavation. Impacts to soil extend through the vadose zone and to the water-bearing zone.

The primary mechanisms for the residual impacts to mobilize or be retained by the soil matrix in the aquifer are advection, adsorption, desorption, and volatilization. Residual concentrations in the vicinity of the former UST excavation can migrate downgradient and offsite primarily through advection. The soil and groundwater data indicate that both media are affected and consequently adsorption and desorption between the two phases may be occurring. Petroleum hydrocarbons (particularly TPH-g and BTEX) may volatilize from soil and/or groundwater into soil vapor. Volatilization of petroleum hydrocarbons or MTBE from soil and groundwater into the vapor pore space may result in the subsequent migration to the ground surface in certain situations.

6.5 POTENTIAL EXPOSURE PATHWAYS AND RECEPTORS

Potential exposure pathways and receptors at the site were evaluated based on current and

possible future reconfiguration of the land use and conditions at and in the vicinity of the site. The site is unoccupied and the station building and canopy remain. The surrounding land is used for commercial purposes and residential housing. Figure 5 illustrates a schematic diagram of the SCM.

Based on the above conditions, various exposure pathways and receptors have been evaluated for the site, recognizing that a complete exposure pathway consists of the following elements:

- a source and mechanism of chemical release
- one or more retention or transport media (e.g., soil, groundwater, or air)
- a point of potential contact with the impacted medium (referred to as the exposure point)
- an exposure route at the point of contact (e.g., inhalation, ingestion, or dermal contact)

Site-specific exposure pathways and receptors are depicted on the exposure pathway flow chart (Figure 6), and are summarized below:

- inhalation of volatiles from soil to outdoor air (onsite receptor)
- inhalation of volatiles from soil to indoor air (onsite receptor)
- inhalation of volatiles from groundwater to outdoor air (onsite receptor)
- inhalation of volatiles from groundwater to indoor air (onsite receptor)
- ingestion, dermal contact, and inhalation of volatiles and particulates from near surface soil (onsite receptor or construction worker)
- ingestion, dermal contact, and inhalation of volatiles and particulates from subsurface soil (future onsite construction worker)
- ingestion or dermal contact with impacted groundwater (onsite and offsite receptors and construction workers)
- inhalation of volatiles from groundwater to outdoor/indoor air (offsite receptors)

The receptors evaluated for the site include the following:

- Site Occupants
- Future Construction/Maintenance Workers
- Offsite Receptors

An evaluation of the exposure pathways is presented below:

Inhalation of Volatiles

Inhalation of vapors from the subsurface is a potentially complete exposure pathway. TPH-g and BTEX were detected (e.g., TPH-g up to 36,000 $\mu\text{g}/\text{m}^3$, benzene up to 3.4 $\mu\text{g}/\text{m}^3$, and ethylbenzene up to 3.8 $\mu\text{g}/\text{m}^3$) at concentrations below their respective residential ESLs in soil vapor samples collected in the vicinity of the former fueling area. Additionally, the concentrations of benzene, ethylbenzene, and naphthalene were significantly less than criteria presented in the LTCP.

To date, an assessment of soil vapor concentrations and potential risks due to vapor intrusion and inhalation in the vicinity of the former used-oil tank has not been completed. A soil vapor investigation (performed in accordance with the most recent regulatory guidance) may be necessary to further evaluate potential human health risk due to vapor intrusion along the northeastern side of the former station building near the former used-oil tank.

Dermal Contact or Ingestion of Impacted Soil

Residual soil impacts are generally at least 11 feet bgs in the vicinity of the former gasoline USTs. Potential direct exposure to impacted soil at these depths would likely only occur by a construction worker. TPH-mo and TPH-d were detected in soil beneath the former used-oil tank, and hydraulic oil was detected in soil in the hydraulic lift excavations. A construction worker could be potentially exposed to impacted soil should excavation occur in these areas. This exposure pathway may be completed by construction workers excavating soil to at least 11 feet bgs. However, a site-specific health and safety plan could be prepared and implemented to address the dermal exposure pathway for potential future construction workers.

Relatively low concentrations of TPH-g and BTEX (e.g., TPH-g up to 24 mg/kg and benzene up to 0.057 mg/kg) were also detected at approximately 4.9 feet bgs in a soil sample collected near the former pump island. Due to the relatively shallow depth, potential direct exposure to the impacted soil is possible by an onsite occupant or construction worker. This exposure pathway may be completed by onsite occupants or construction workers excavating soil to at least 4.9 feet bgs. However, results of the current investigation indicate that petroleum hydrocarbon constituents were not detected in samples collected in the upper 5 feet (in the vicinity of the former dispensing islands) nor in the interval from approximately 5 to 10 feet bgs. Consequently, the analytical data for soil from this investigation meets the residential ESLs and concentration criteria under the LTCP in the vicinity of the former fueling systems.

Assessment of soil quality in the vicinity of the former used-oil tank was not been completed during this investigation. A soil investigation may be necessary to further evaluate concentrations near the former used-oil tank with respect to criteria in the LTCP.

Dermal Contact or Ingestion of Impacted Groundwater

Dermal contact or ingestion of impacted groundwater is a potentially complete exposure pathway for onsite and offsite occupants and construction workers. There is a potential irrigation well identified by Cardno ERI approximately 800 feet west-southwest, downgradient and cross-gradient of the site. An updated well survey should be performed to confirm the location and status of this well and to identify other potential wells in the area. Results from the well survey will determine whether a complete exposure pathway is present. Due to the depth to groundwater (approximately 25 feet bgs or more), exposure through excavation or construction

dewatering activities is unlikely, and this exposure pathway may be incomplete for construction workers.

7.0 SUMMARY AND CONCLUSIONS

At ExxonMobil's request, ETIC conducted a subsurface investigation at Former Exxon Service Station 70234 in April 2014. The purpose of the investigation was to assess the risk to potential receptors via vapor intrusion and inhalation and to further assess the vertical extent of petroleum hydrocarbons and MTBE in the area of the former UST system excavations.

In April 2014, ETIC observed the installation of five soil vapor monitoring wells (V1 through V5) and the advancement of three CPT borings at Former Exxon Service Station 70234 in general accordance with the May 2013 work plan (ETIC 2013). Monitoring well and boring locations were modified slightly in the field due to site constraints. Modifications to the work plan were discussed with the ACHCSA.

Soil vapor samples were collected from vapor monitoring wells V1 through V5. None of the analytes were detected at concentrations greater than or equal to the corresponding lowest residential ESLs for soil gas. Additionally, none of the analytes were detected at concentrations exceeding criteria presented in the LTCP. Given the relatively low hydrocarbon concentrations detected in soil vapor samples at these locations, additional vapor monitoring of the existing soil vapor monitoring wells does not appear to be necessary. The concentrations of petroleum hydrocarbons in soil vapor near the former fueling systems do not appear to represent unacceptable risk for site occupants through the vapor intrusion and inhalation pathway.

Analytical data obtained from soil samples collected during the installation of soil vapor monitoring wells V1 through V5 indicate that petroleum hydrocarbon constituents were not detected in samples collected in the upper 5 feet (in the vicinity of the former dispensing islands) nor in the interval from approximately 5 to 10 feet bgs at any of the five locations. Consequently, the analytical data for soil from this investigation in the vicinity of the former fueling systems meets the residential ESLs and concentration criteria under the LTCP, and the concentrations do not appear to represent an unacceptable risk for site occupants through the dermal contact pathway for soil.

None of the analytes were detected in the soil samples collected at 54 feet bgs from locations H1 and H3, indicating that the vertical extent of impacts in soil is defined.

Grab groundwater samples collected during this investigation indicate that the vertical extent of petroleum hydrocarbon impacts in groundwater is defined. TBA was detected in the grab groundwater sample collected at location H1 at 56.5 to 70 feet bgs at a concentration slightly higher than the corresponding residential ESL. However, the concentration of TBA in the grab groundwater sample collected from H1 at 85 to 95 feet bgs was less than the residential ESL. No other analytes were detected at concentrations greater than or equal to the corresponding ESLs. The vertical extent of impacts in groundwater has been adequately defined.

Proposed soil vapor monitoring well V6 could not be installed due to the presence of subsurface

utilities and obstructions. Therefore, the risk to potential receptors via vapor intrusion and inhalation in the vicinity of the former used oil tank near the onsite building and the adjacent resident has not been fully assessed. Additionally, assessment of soil quality in the vicinity of the former used-oil tank has not been completed. A soil investigation may be necessary to further evaluate concentrations near the former used-oil tank with respect to criteria in the LTCP.

Previously undocumented features at the site including a cathodic protection well, an anode, and vent line risers were identified during this investigation. Follow-up concerning the disposition of these features is warranted.

The SCM has been updated based on field and analytical data obtained during this investigation. The SCM documents potential sources, chemicals of concern, affected media, the extent of impacts, transport mechanisms, and potential exposure pathways and receptors at and in the vicinity of the site. Upon completing the investigation near the former used oil tank, the SCM will be updated as warranted.

Dermal contact with or ingestion of groundwater are potentially complete exposure pathways. An updated well survey is needed to evaluate the presence of water wells in the vicinity and whether the groundwater exposure pathway is complete.

The lateral extent of TPH-g and MTBE impacts in soil and groundwater is not completely defined. Additional data may be necessary to further assess the lateral extent of petroleum hydrocarbons and MTBE in groundwater and to evaluate the potential risk to receptors in the area.

8.0 RECOMMENDATIONS

Based upon the data obtained during this investigation, ETIC, on behalf of ExxonMobil, recommends that the activities listed below be performed for the site.

- Conduct a preferential pathway survey (including an updated well survey).
- Install the proposed soil vapor monitoring well V6 to assess the risk to potential receptors via vapor intrusion and inhalation in the vicinity of the former used oil tank.
- Collect and analyze soil samples from the boring for well V6 to assess soil quality near the former used oil tank and evaluate concentrations with respect to LTCP criteria.
- Research and properly decommission the cathodic protection well, anode, and vent lines, as appropriate.
- Following the completion of subsurface investigation activities proposed by others at the downgradient 76 service station, evaluate whether an offsite investigation is warranted to further evaluate the downgradient extent of TPH-g and MTBE in groundwater.
- Update the SCM as warranted.

9.0 REFERENCES

ACHCSA (Alameda County Health Care Services Agency). 2000. Fuel Leak Site Case Closure – Former Exxon Service Station (STID 519), 3450 35th Avenue, Oakland, California. 14 July.

ACHCSA (Alameda County Health Care Services Agency). 2013. Fuel Leak Case No. RO0002515 and Geotracker Global ID #T06019757161, Exxon #7-0234 3450 35th Avenue, Oakland, CA 94619. 6 September.

Alton Geoscience. 1991. Preliminary Soil Assessment Report, Exxon Company U.S.A., Exxon Service Station No. 7-0234, 3450 35th Avenue, Oakland, California. 8 May.

Alton Geoscience. 1992. Tank Closure and Excavation Assessment Report, Exxon RAS #7-0234, 3450 35th Avenue, Oakland, California. 31 March.

Cardno ERI. 2012a. Well Installation Report, Former Exxon Service Station 70234, 3450 35th Avenue, Oakland, California 94601. 15 March.

Cardno ERI. 2012b. Feasibility Test Report, Former Exxon Service Station 70234, 3450 35th Avenue, Oakland, California 94601. 20 June.

CRA (Conestoga-Rovers & Associates). 2012. Conceptual Site Model and Well Installation Work Plan, Unocal #6129, Union Oil Company of California Facility ID 351639, 3420 35th Avenue, Oakland, California. 3 May.

DTSC/LARWQCB/SFBRWQCB (Department of Toxic Substances Control and California Regional Water Quality Control Board – Los Angeles and San Francisco Bay Regions). 2012. Advisory – Active Soil Gas Investigations. April.

DWR (Department of Water Resources). 2003. California's Groundwater, Bulletin 118, Update 2003, San Francisco Bay Hydrologic Region, Santa Clara Valley Groundwater Basin, East Bay Plain Subbasin. DWR, Sacramento, California.

ERI (Environmental Resolutions, Inc.). 2000. Groundwater Monitoring Well Destruction at Former Exxon Service Station 7-0234, 3450 35th Avenue, Oakland, California. 30 October.

ERI (Environmental Resolutions, Inc.). 2007. Soil and Groundwater Investigation Report, Former Exxon Service Station 70234, 3450 35th Avenue, Oakland, California. 14 December.

ERI (Environmental Resolutions, Inc.). 2009. Site Assessment Report, Former ExxonMobil Station 70234, 3450 35th Avenue, Oakland, California 94601. 28 April.

ETIC (ETIC Engineering, Inc.). 2013. Work Plan for Subsurface Investigation, Former Exxon

Service Station 70234, 3450 35th Avenue, Oakland, California. 24 May.

IT (International Technology Corporation). 1992. Site Assessment Report, Exxon RAS No. 7-0234, 3450 35th Avenue, Oakland, California. August.

RWQCB (California Regional Water Quality Control Board). 2013. Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater - Interim Final. RWQCB, Oakland, California. December.

SWRCB (State Water Resources Control Board). 2012. Low-Threat Underground Storage Tank Case Closure Policy. 17 August.

TRC. 2002. Report on Underground Storage Tank and Product Piping Removal, Valero Facility No. 3832, 3450 35th Avenue, Oakland, California. 24 September.

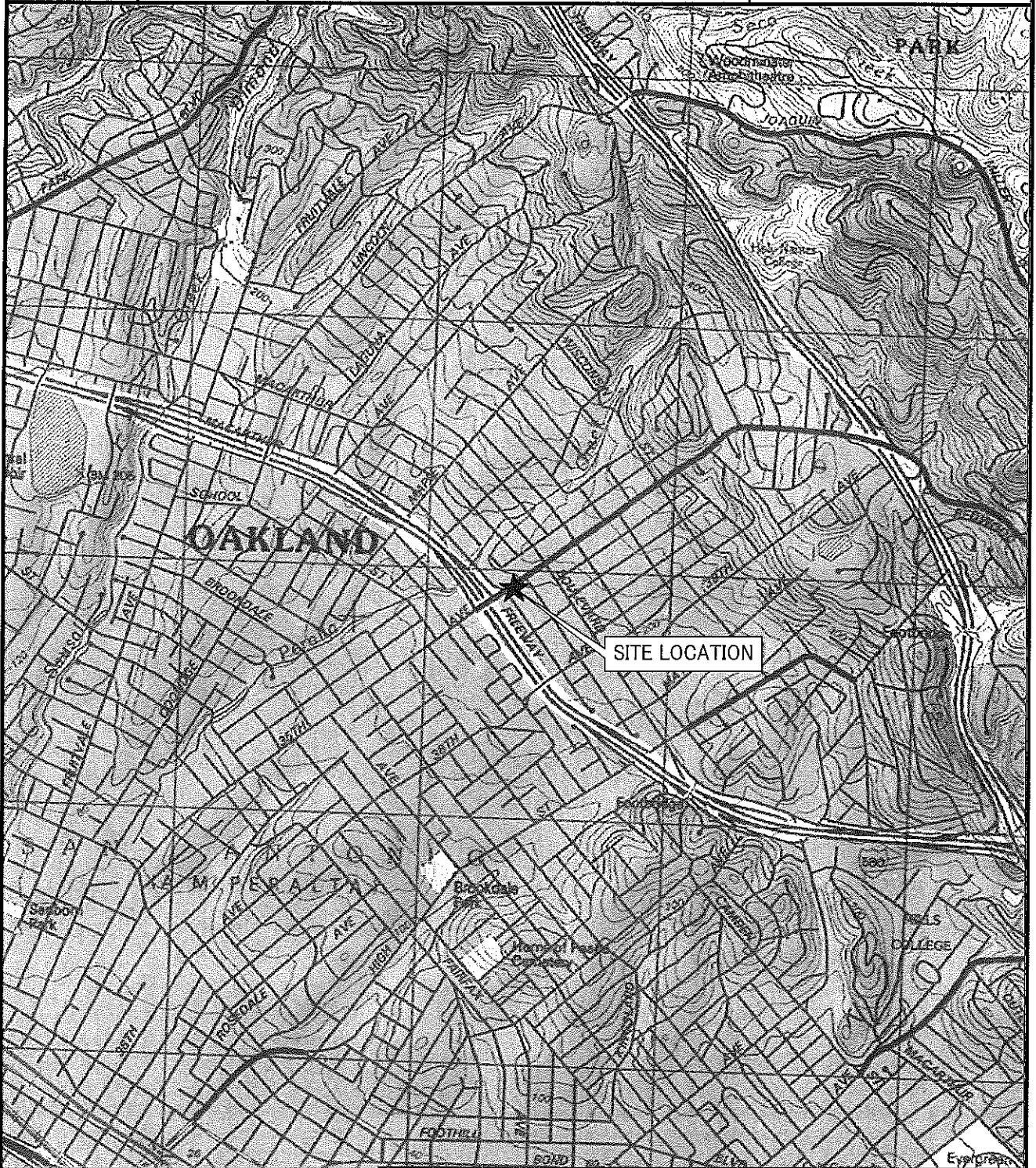
Figures



COORDINATE SYSTEM: NAD 1983 HARN CALIFORNIA TEALE ALBERS
PROJECTION: ALBERS
DATUM: NORTH AMERICAN 1983 HARN
FALSE EASTING: 0.0000
FALSE NORTHING: -4,000,000.0000
CENTRAL MERIDIAN: -120.0000
STANDARD PARALLEL 1: 34.0000
STANDARD PARALLEL 2: 40.5000
LATITUDE OF ORIGIN: 0.0000
UNITS: METER

0 1000 2000
Feet

1 inch = 2,000 feet



05/19/2014 10:50: G:\Graphics\24\070234\070234.dwg, Tab: P1



2285 MORELLO AVENUE
PLEASANT HILL, CA 94523
(925) 602-4710
eticeng.com

14-070234-UP

OR: TEN
DR: AJW
CK:
FR:

EXXONMOBIL OIL CORPORATION

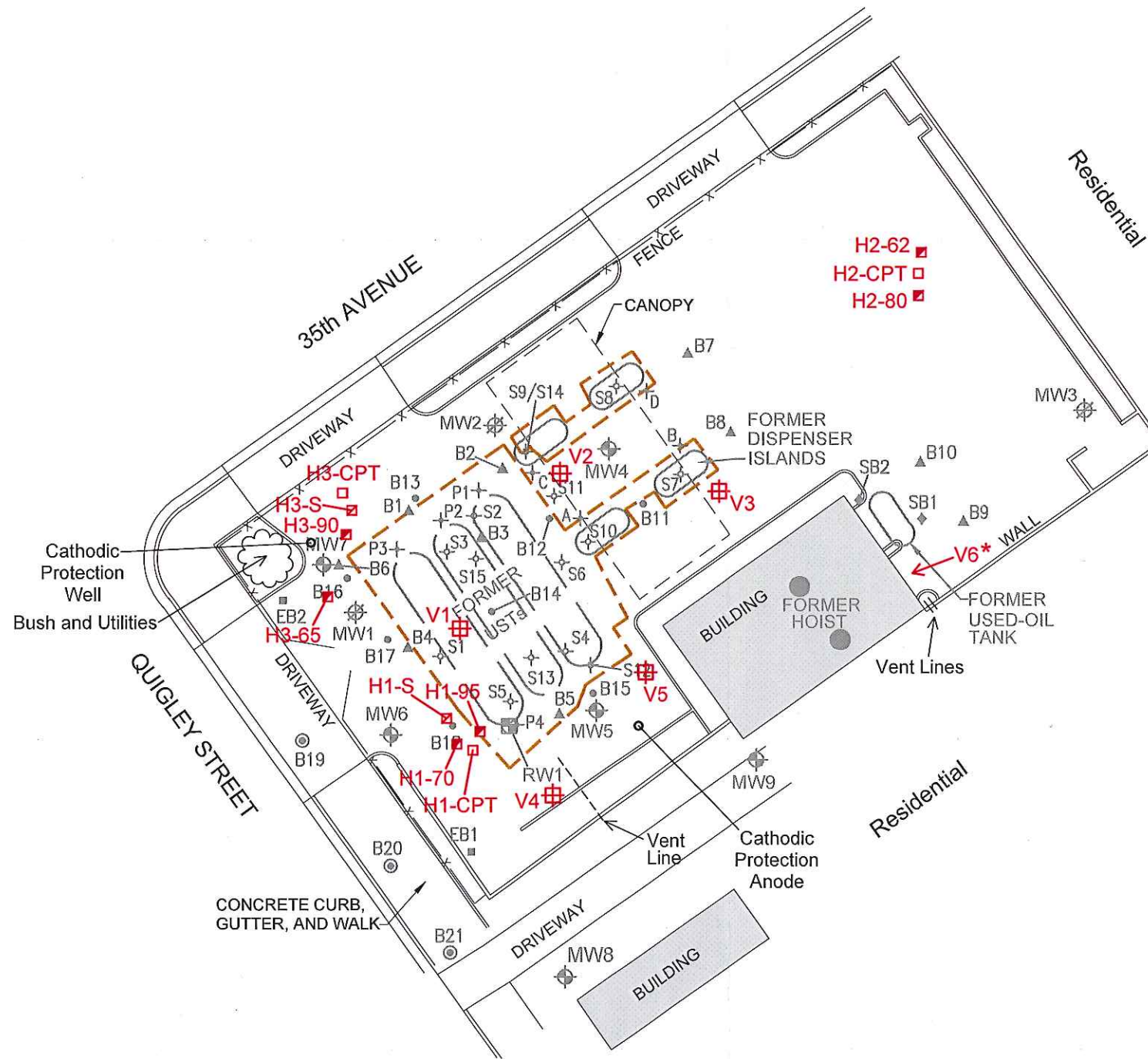
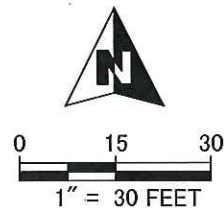
SITE LOCATION AND TOPOGRAPHIC MAP
FORMER EXXON SERVICE STATION 70234
3450 35th AVENUE

OAKLAND, CALIFORNIA

FIGURE:

1

G:\03\2014_10\37_G:\Graphics\14\070234\SITE0514.dwg, Tab: F2-Samples



LEGEND:

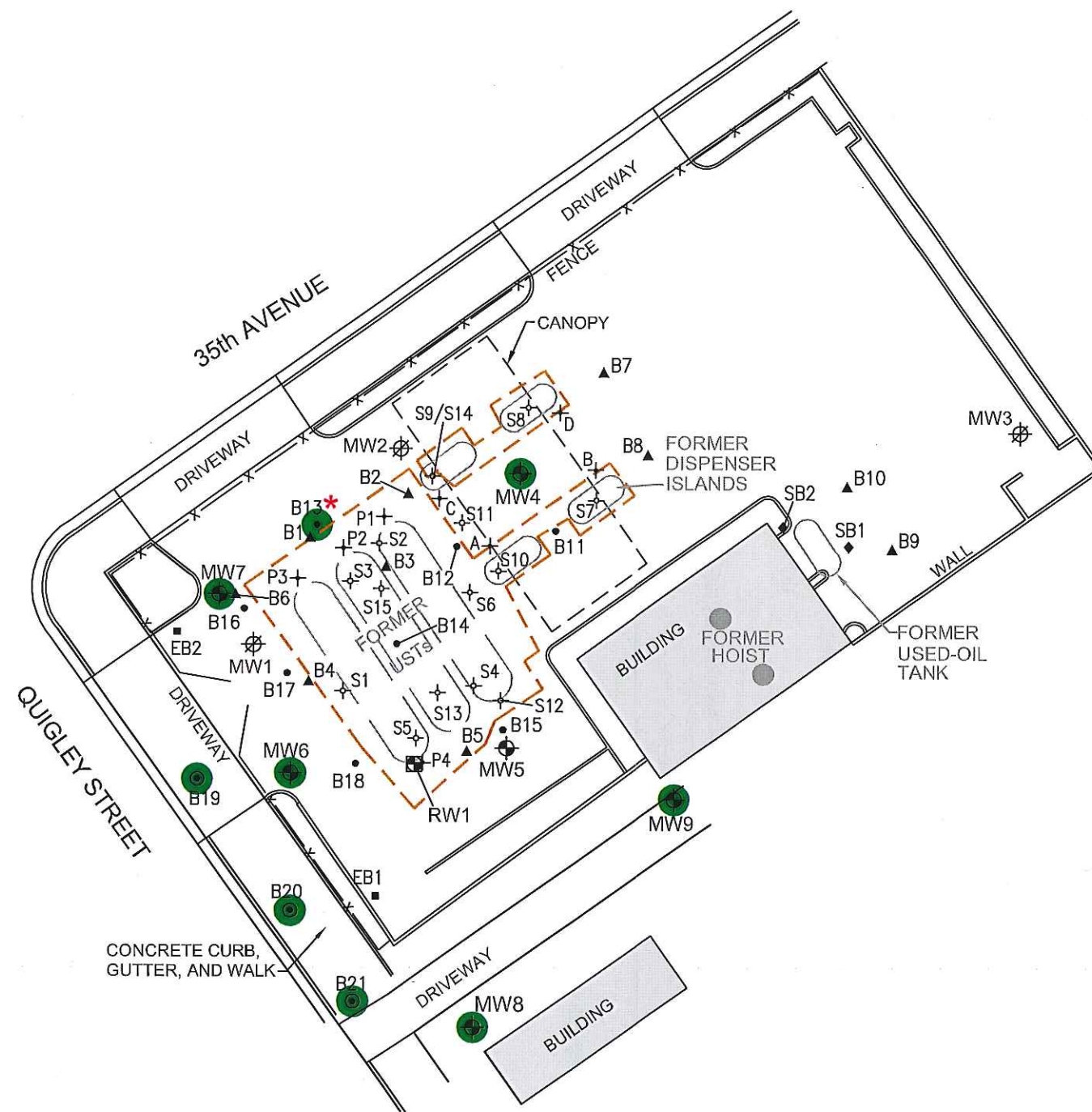
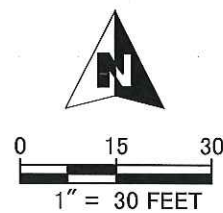
- EXCAVATED AREA
- GROUNDWATER MONITORING WELL
- GROUNDWATER MONITORING WELL (by others)
- DESTROYED GROUNDWATER MONITORING WELL
- GROUNDWATER RECOVERY WELL
- SOIL BORING (GTI, 1986)
- SOIL BORING (HLA, 1988)
- SOIL BORING (Alton, 1991)
- SOIL SAMPLE (Alton, 1991)
- SOIL SAMPLE (TRC, 2002)
- SOIL BORING (ERI, 2007)
- SOIL BORING (ERI, 2009)
- SOIL VAPOR MONITORING WELL
- CONE PENETROMETER TESTING BORING
- HYDROPUNCH GROUNDWATER SAMPLING LOCATION (WITH DEPTH BELOW GROUND SURFACE NOTED)
- SOIL BORING
- * DUE TO THE PRESENCE OF SUBSURFACE UTILITIES AND OBSTRUCTIONS, SOIL VAPOR MONITORING WELL V6 COULD NOT BE INSTALLED IN THE AREA INDICATED.



2285 MORELLO AVENUE
PLEASANT HILL, CA 94523
(925) 602-4710
eticeng.com

14-070234-UP	EXXONMOBIL OIL CORPORATION		FIGURE: 2
OR: TEN	SITE MAP SHOWING SAMPLING LOCATIONS		
DR: AJW	FORMER EXXON SERVICE STATION 70234		
CK:	3450 35th AVENUE		
FR:	OAKLAND, CALIFORNIA		

05/07/2013, 09:42, G:\Graphics\13\070234\SITE0513.dwg, Tab: F3



LEGEND:

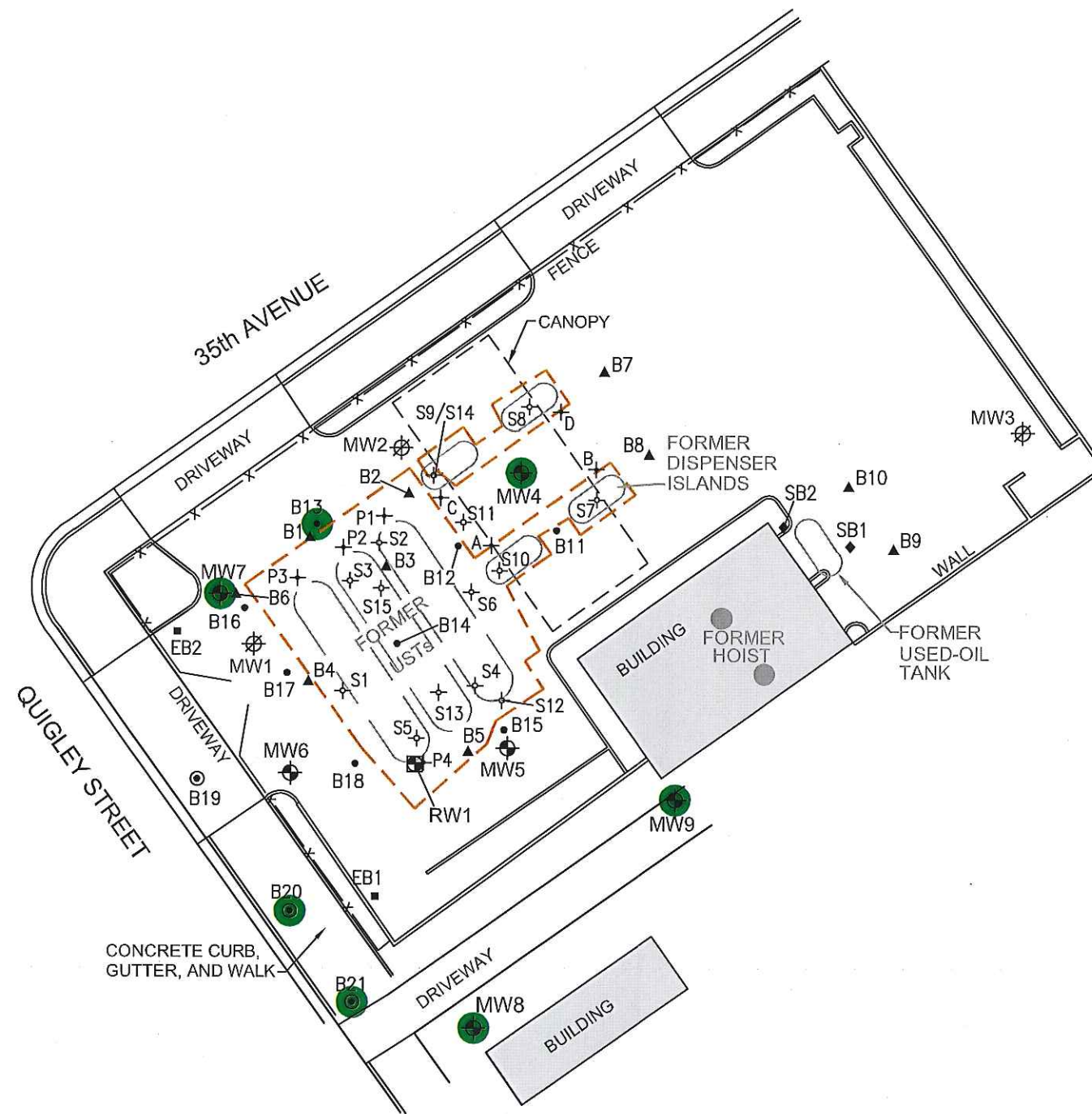
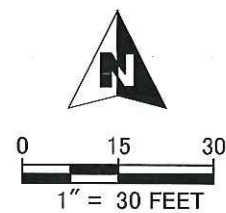
- EXCAVATED AREA
- GROUNDWATER MONITORING WELL
- GROUNDWATER MONITORING WELL (by others)
- DESTROYED GROUNDWATER MONITORING WELL
- GROUNDWATER RECOVERY WELL
- SOIL BORING (GTI, 1986)
- SOIL BORING (HLA, 1988)
- SOIL BORING (Alton, 1991)
- SOIL SAMPLE (Alton, 1991)
- SOIL SAMPLE (TRC, 2002)
- SOIL BORING (ERI, 2007)
- SOIL BORING (ERI, 2009)
- HIGHLIGHTING INDICATES THAT TPHg AND BTEX WERE NOT DETECTED IN SOIL SAMPLES COLLECTED AT THIS LOCATION
- TPHg TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
- BTEX BENZENE, TOLUENE, ETHYLBENZENE, XYLENES
- * TPHg WAS DETECTED AT 20 FEET BGS AT 4.3 mg/kg
- BGS BELOW GROUND SURFACE
- mg/kg MILLIGRAMS PER KILOGRAM



2285 MORELLO AVENUE
PLEASANT HILL, CA 94523
(925) 602-4710
eticeng.com

13-070234-UP	EXXONMOBIL OIL CORPORATION		FIGURE: 3
OR: TEN	LATERAL EXTENT OF TPHg AND BTEX IN SOIL FORMER EXXON SERVICE STATION 70234 3450 35th AVENUE		
DR: AJW			
CK:			
FR:	OAKLAND, CALIFORNIA		

05/07/2013, 09:47, G:\Graphics\13\070234\SITE0513.dwg, Tab: F4



LEGEND:

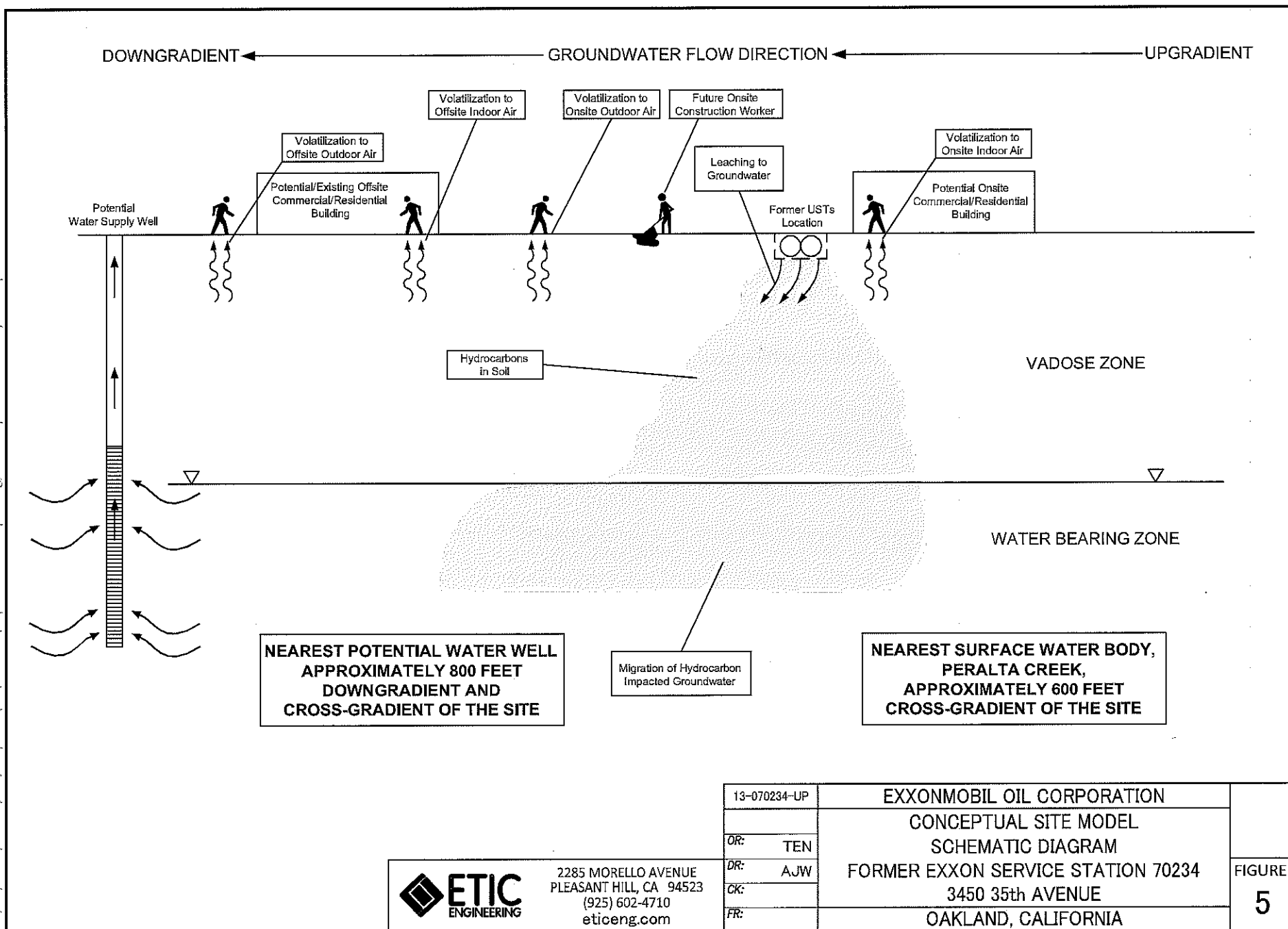
- EXCAVATED AREA
 - GROUNDWATER MONITORING WELL
 - GROUNDWATER MONITORING WELL (by others)
 - DESTROYED GROUNDWATER MONITORING WELL
 - GROUNDWATER RECOVERY WELL
 - SOIL BORING (GTI, 1986)
 - SOIL BORING (HLA, 1988)
 - SOIL BORING (Alton, 1991)
 - SOIL SAMPLE (Alton, 1991)
 - SOIL SAMPLE (TRC, 2002)
 - SOIL BORING (ERI, 2007)
 - SOIL BORING (ERI, 2009)
 - HIGHLIGHTING INDICATES THAT MTBE WAS NOT DETECTED IN SOIL SAMPLES COLLECTED AT THIS LOCATION
- MTBE METHYL TERTIARY BUTYL ETHER

13-070234-UP	EXXONMOBIL OIL CORPORATION		FIGURE: 4
OR: TEN	LATERAL EXTENT OF MTBE IN SOIL FORMER EXXON SERVICE STATION 70234 3450 35th AVENUE		
DR: AJW			
CK:			
FR:	OAKLAND, CALIFORNIA		



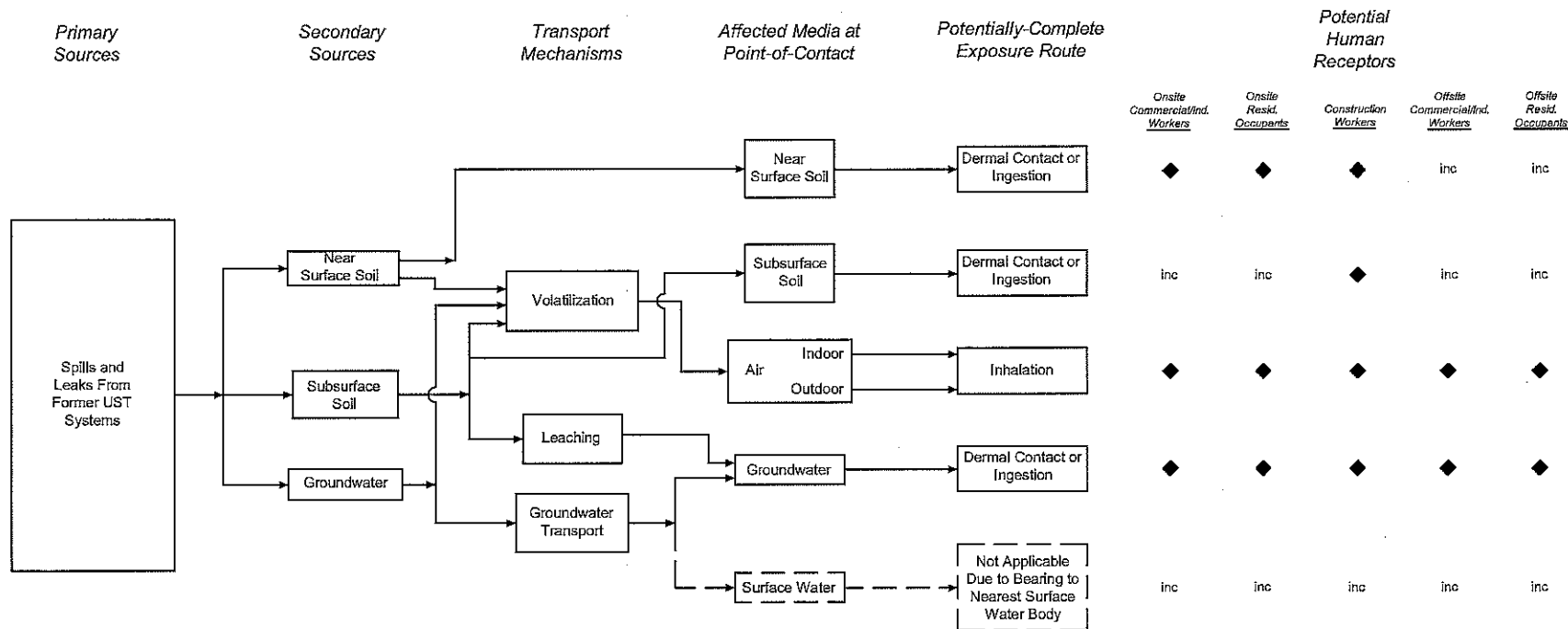
2285 MORELLO AVENUE
PLEASANT HILL, CA 94523
(925) 602-4710
eticeng.com

05/07/2013, 09:35, G:\Graphics\13\070234\ExposureConcept.dwg, Tab: ExposurePathwayConcept



2285 MORELLO AVENUE
PLEASANT HILL, CA 94523
(925) 602-4710
eticeng.com

13-070234-UP	EXXONMOBIL OIL CORPORATION		FIGURE 5
OR: TEN	CONCEPTUAL SITE MODEL		
DR: AJW	SCHEMATIC DIAGRAM		
CK:	FORMER EXXON SERVICE STATION 70234		
FR:	3450 35th AVENUE		
	OAKLAND, CALIFORNIA		



LEGEND
 ◆ Potentially-Complete Exposure Pathway
 inc Incomplete Exposure Pathway



2285 MORELLO AVENUE
 PLEASANT HILL, CA 94523
 (925) 602-4710
 eticeng.com

13-070234-UP	EXXONMOBIL OIL CORPORATION		FIGURE 6
OR: TEN	EXPOSURE PATHWAY FLOW CHART FORMER EXXON SERVICE STATION 70234 3450 35th AVENUE		
DR: AJW			
CK:			
FR:	OAKLAND, CALIFORNIA		

Tables

TABLE 1 WELL CONSTRUCTION DETAILS, FORMER EXXON SERVICE STATION 70234, 3450 35TH AVENUE, OAKLAND, CALIFORNIA

Well Number	Date Installed	Date Destroyed	Elevation TOC (feet)	Borehole Diameter (inches)	Total Depth of Boring (feet bgs)	Well Depth (feet bgs)	Casing Diameter (inches)	Casing Material	Screened Interval (feet bgs)	Slot Size (inches)	Filter Pack Interval (feet bgs)	Filter Pack Material
MW1	07/15/92	Jun-00	192.00	11	45	45	4	Schedule 40 PVC	25-45	0.010	23-45	2/12 Lonestar Sand
MW2	07/15/92	Jun-00	194.85	11	45	45	4	Schedule 40 PVC	25-45	0.010	23-45	2/12 Lonestar Sand
MW3	07/15/92	Jun-00	196.90	11	45	45	4	Schedule 40 PVC	25-45	0.010	23-45	2/12 Lonestar Sand
MW4	03/02/09	---	197.62	8	45	45	2	Schedule 40 PVC	35-45	0.020	33-45	#3 Sand
MW5	03/06/09	---	196.35	8	40	40	2	Schedule 40 PVC	30-40	0.020	28-40	#3 Sand
MW6	03/09/09	---	192.41	8	40	39	2	Schedule 40 PVC	29-39	0.020	27-39	#3 Sand
MW7	03/09/09	---	194.34	8	40	40	2	Schedule 40 PVC	30-40	0.020	28-40	#3 Sand
MW8	03/04/09	---	192.96	8	40	40	2	Schedule 40 PVC	30-40	0.020	28-40	#3 Sand
MW9	03/05/09	---	195.16	8	40	40	2	Schedule 40 PVC	30-40	0.020	28-40	#3 Sand
RW1	12/22/11	---	195.15	10	40	40	4	Stainless Steel	25-39.5	0.020	23-40	#2/12 Sand
V1	04/14/14	---	---	5	7	6.75	0.25	Stainless Steel	6.25-6.75	0.0057	6-7	#3 Sand
V2	04/15/14	---	---	5	7	6.75	0.25	Stainless Steel	6.25-6.75	0.0057	6-7	#3 Sand
V3	04/15/14	---	---	5	7	6.75	0.25	Stainless Steel	6.25-6.75	0.0057	6-7	#3 Sand
V4	04/15/14	---	---	5	7.25	6.75	0.25	Stainless Steel	6.25-6.75	0.0057	6-7.25	#3 Sand
V5	04/15/14	---	---	5	7	6.75	0.25	Stainless Steel	6.25-6.75	0.0057	6-7	#3 Sand

Notes: Data prior to 2013 provided by Cardno ERI.

TOC Top of well casing elevation; datum is mean sea level.

PVC Polyvinyl chloride.

feet bgs Feet below ground surface.

--- Not applicable.

TABLE 2 CUMULATIVE SOIL ANALYTICAL RESULTS, FORMER EXXON SERVICE STATION 70234, 3450 35TH AVENUE, OAKLAND, CALIFORNIA

Sample ID	Sampling Date	Depth (feet bgs)	TPH-g (mg/kg)	Kerosene (mg/kg)	TPH-d (mg/kg)	TPH-mo (mg/kg)	EHC-HO (mg/kg)	TOG (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	MTBE (mg/kg)	Lead (mg/kg)
Used-Oil UST Confirmation Soil Sample														
T1-12	06/18/97	---	8.6a	---	200b	680c	---	---	ND	0.038	0.016	0.046	---	8.8
Hydraulic Hoist Confirmation Samples														
H1-8	06/18/97	---	---	---	---	---	99d	---	---	---	---	---	---	---
H2-8	06/18/97	---	---	---	---	---	2,100d	---	---	---	---	---	---	---
Samples from the UST Cavity Sidewall														
Pit1@12'	06/14/02	12	<1.0	---	---	---	---	---	<0.005	<0.005	<0.005	<0.005	<0.005	---
Pit2@11.5'	06/14/02	11.5	<1.0	---	---	---	---	---	<0.005	<0.005	<0.005	<0.005	<0.005	---
Pit3@11'	06/14/02	11	<1.0	---	---	---	---	---	<0.005	<0.005	<0.005	<0.005	<0.005	---
Pit4@10'	06/14/02	10	<1.0	---	---	---	---	---	<0.005	<0.005	<0.005	<0.005	<0.005	---
Samples from Beneath Product Piping														
A-6.4	06/25/02	6.4	<1.0	---	---	---	---	---	<0.005	<0.005	<0.005	<0.005	<0.005	---
B-4.9	06/25/02	4.9	24	---	---	---	---	---	0.057	0.11	0.12	1.2	0.020	---
C-6.5	06/25/02	6.5	<1.0	---	---	---	---	---	<0.005	<0.005	<0.005	<0.005	<0.005	---
D-5.2	06/25/02	5.2	<1.0	---	---	---	---	---	<0.005	<0.005	<0.005	<0.005	<0.005	---
Soil Samples from 1991 UST Excavation														
S-1	08/28/91	10	<1.0	---	---	---	---	---	<0.005	<0.005	<0.005	<0.005	---	<5
S-2	08/28/91	10	<1.0	---	---	---	---	---	<0.005	<0.005	<0.005	<0.005	---	<5
S-3	08/28/91	10	<1.0	---	---	---	---	---	<0.005	<0.005	<0.005	<0.005	---	<5
S-4	08/28/91	10	290	---	---	---	---	---	2.8	6.5	5.2	27	---	<5
S-5	08/28/91	10	3.5	---	---	---	---	---	0.27	0.096	0.064	0.32	---	<5
S-6	08/28/91	11	4.1	---	---	---	---	---	0.19	0.13	0.056	0.23	---	<5
S-7	08/28/91	3	4.0	---	---	---	---	---	0.66	0.040	0.11	0.13	---	<5
S-8	08/28/91	3	<1.0	---	---	---	---	---	<0.005	<0.005	<0.005	<0.005	---	<5
S-9	08/28/91	3	210	---	---	---	---	---	1.4	7.2	3.0	18	---	<5
S-10	08/28/91	3	<1.0	---	---	---	---	---	<0.005	0.031	0.029	0.067	---	<5
S-11	08/28/91	1.5	<1.0	---	---	---	---	---	<0.005	<0.005	<0.005	<0.005	---	<5
S-12	08/28/91	15	3.1	---	---	---	---	---	0.36	0.048	0.052	0.16	---	---
S-13	08/28/91	15	1.8	---	---	---	---	---	0.26	0.008	0.009	0.041	---	---
S-14	08/28/91	4	5.0	---	---	---	---	---	0.047	0.063	0.009	0.041	---	---
S-15	08/28/91	15	<1.0	---	---	---	---	---	<0.005	<0.005	<0.005	<0.005	---	---
Soil Borings														
B-1	3/20/91	15.5	<1.0	---	---	---	---	---	0.011	0.007	0.011	0.04	---	---
B-1	3/20/91	20.5	<1.0	---	---	---	---	---	0.012	0.007	0.01	0.04	---	---
B-2	3/20/91	15.5	<1.0	---	---	---	---	---	0.036	0.026	0.012	0.055	---	---
B-2	3/20/91	20.5	<1.0	---	---	---	---	---	0.0073	0.0063	0.0098	0.038	---	---

TABLE 2 CUMULATIVE SOIL ANALYTICAL RESULTS, FORMER EXXON SERVICE STATION 70234, 3450 35TH AVENUE, OAKLAND, CALIFORNIA

Sample ID	Sampling Date	Depth (feet bgs)	TPH-g (mg/kg)	Kerosene (mg/kg)	TPH-d (mg/kg)	TPH-mo (mg/kg)	EHC-HO (mg/kg)	TOG (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	MTBE (mg/kg)	Lead (mg/kg)
B-3	3/20/91	10.5	1	---	---	---	---	---	0.006	0.006	0.008	0.036	---	---
B-3	3/20/91	15.5	440	---	---	---	---	---	0.7	5.4	4.7	24	---	---
B-4	3/20/91	10.5	5	---	---	---	---	---	0.013	0.019	0.014	0.082	---	<5
B-4	3/20/91	15.5	6.6	---	---	---	---	---	0.039	0.043	0.027	0.12	---	---
B-4	3/20/91	20.5	<1.0	---	---	---	---	---	0.0076	0.0073	0.011	0.054	---	---
B-5	3/20/91	10.5	26	---	---	---	---	---	0.055	0.061	0.17	0.67	---	---
B-6	3/20/91	10.5	240	---	---	---	---	---	0.28	2.2	2.8	13	---	---
B-6	3/20/91	15.5	1.4	---	---	---	---	---	0.0055	0.0054	0.009	0.034	---	---
B-7	3/20/91	10.5	<1.0	---	---	---	---	---	0.006	0.006	0.008	0.033	---	---
B-8	3/20/91	10.5	<1.0	---	---	---	---	---	0.006	0.005	0.008	0.035	---	---
B-9	3/20/91	10.5	---	---	---	---	---	<50	---	---	---	---	---	---
B-10	3/20/91	10.5	---	---	---	---	---	<50	---	---	---	---	---	---
S-5-B11	09/05/07	5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-10-B11	09/10/07	10	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-13.5-B11	09/10/07	13.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-18-B11	09/11/07	18	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-20-B11	09/11/07	20	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-25.5-B11	11/14/07	25.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-29.5-B11	11/14/07	29.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-34.5-B11	11/14/07	34.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-5-B12	09/04/07	5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-15.5-B12	11/13/07	15.5	43	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-20.5-B12	11/13/07	20.5	3.2	---	---	---	---	---	0.076	<0.0050	0.0053	<0.0050	0.15	---
S-5-B13	09/05/07	5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-10-B13	09/10/07	10	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-14.5-B13	09/10/07	14.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-20-B13	09/10/07	20	4.3	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-25-B13	11/12/07	25	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-30-B13	11/12/07	30	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-35-B13	11/12/07	35	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-5.0-B14	09/06/07	5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---

TABLE 2 CUMULATIVE SOIL ANALYTICAL RESULTS, FORMER EXXON SERVICE STATION 70234, 3450 35TH AVENUE, OAKLAND, CALIFORNIA

Sample ID	Sampling Date	Depth (feet bgs)	TPH-g (mg/kg)	Kerosene (mg/kg)	TPH-d (mg/kg)	TPH-mo (mg/kg)	EHC-HO (mg/kg)	TOG (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	MTBE (mg/kg)	Lead (mg/kg)
S-16-B14	11/13/07	16	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-20.5-B14	11/13/07	20.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	0.031	---
S-5-B15	09/04/07	5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-10.5-B15	11/15/07	10.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-15.5-B15	11/15/07	15.5	1.1	---	---	---	---	---	0.32	0.019	0.017	0.074	0.12	---
S-20-B15	11/15/07	20	300	---	---	---	---	---	6.1	36	14	72	<0.25	---
S-25.5-B15	11/15/07	25.5	220	---	---	---	---	---	3.1	18	6.8	36	<0.12	---
S-30.5-B15	11/15/07	30.5	59	---	---	---	---	---	2.9	5.6	1.5	20	<0.25	---
S-35.5-B15	11/15/07	35.5	3.3	---	---	---	---	---	0.28	0.21	0.26	0.79	0.26	---
S-5-B16	09/04/07	5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-11-B16	11/14/07	11	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-15.5-B16	11/14/07	15.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-21-B16	11/14/07	21	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-26-B16	11/14/07	26	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-30.5-B16	11/14/07	30.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-34.5-B16	11/14/07	34.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	0.021	---
S-38.5-B16	11/14/07	38.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-5-B17	09/05/07	5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-11-B17	11/13/07	11	90	---	---	---	---	---	0.052	<0.0050	0.086	0.020	0.036	---
S-16-B17	11/13/07	16	<0.50	---	---	---	---	---	0.0052	<0.0050	<0.0050	<0.0050	0.099	---
S-21-B17	11/13/07	21	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	0.011	---
S-24.5-B17	11/13/07	24.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	0.59	---
S-31-B17	11/13/07	31	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-35.5-B17	11/13/07	35.5	0.85	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	1.7	---
S-5-B18	09/04/07	5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-10-B18	11/12/07	10	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-15-B18	11/12/07	15	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	0.0051	---
S-20-B18	11/12/07	20	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	0.019	---
S-25-B18	11/12/07	25	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	0.18	---
S-30-B18	11/12/07	30	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	0.54	---
S-35-B18	11/12/07	35	24	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	0.53	---
S-5-B19	02/25/09	5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-10-B19	03/02/09	10	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-15.5-B19	03/03/09	15.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-20.5-B19	03/03/09	20.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-25.5-B19	03/03/09	25.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---

TABLE 2 CUMULATIVE SOIL ANALYTICAL RESULTS, FORMER EXXON SERVICE STATION 70234, 3450 35TH AVENUE, OAKLAND, CALIFORNIA

Sample ID	Sampling Date	Depth (feet bgs)	TPH-g (mg/kg)	Kerosene (mg/kg)	TPH-d (mg/kg)	TPH-mo (mg/kg)	EHC-HO (mg/kg)	TOG (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	MTBE (mg/kg)	Lead (mg/kg)
S-30.5-B19	03/03/09	30.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-35.5-B19	03/03/09	35.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	0.51	---
S-39.5-B19	03/03/09	39.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	0.048	---
S-5-B20	02/25/09	5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-10.5-B20	03/03/09	10.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-15.0-B20	03/03/09	15.0	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-20.5-B20	03/03/09	20.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-25.5-B20	03/03/09	25.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-30.5-B20	03/03/09	30.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-35.5-B20	03/03/09	35.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-39.5-B20	03/03/09	39.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-5-B21	02/25/09	5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-10.5-B21	03/04/09	10.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-15-B21	03/04/09	15	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-20.5-B21	03/04/09	20.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-25.5-B21	03/04/09	25.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-30.5-B21	03/04/09	30.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-35.5-B21	03/04/09	35.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-39.5-B21	03/04/09	39.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
Monitoring and Recovery Wells														
MW1	07/14/92	8	<1.0	---	---	---	---	---	<0.0050	<0.0050	<0.0050	0.0064	---	<10
MW1	07/14/92	29.5	<1.0	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	---	<10
MW2	07/14/92	28	<1.0	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	---	<10
MW3	07/14/92	29.5	<1.0	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	---	<10
S-5-MW4	02/25/09	5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-10.5-MW4	03/02/09	10.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-15.5-MW4	03/02/09	15.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-20.5-MW4	03/02/09	20.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-25.5-MW4	03/02/09	25.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-30.5-MW4	03/02/09	30.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-35.5-MW4	03/02/09	35.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-40-MW4	03/02/09	40	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-44.5-MW4	03/02/09	44.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-5-MW5	02/27/09	5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-10-MW5	03/05/09	10	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-15-MW5	03/05/09	15	0.70	---	---	---	---	---	0.22	0.022	0.071	0.31	0.036	---

TABLE 2 CUMULATIVE SOIL ANALYTICAL RESULTS, FORMER EXXON SERVICE STATION 70234, 3450 35TH AVENUE, OAKLAND, CALIFORNIA

Sample ID	Sampling Date	Depth (feet bgs)	TPH-g (mg/kg)	Kerosene (mg/kg)	TPH-d (mg/kg)	TPH-mo (mg/kg)	EHC-HO (mg/kg)	TOG (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	MTBE (mg/kg)	Lead (mg/kg)
S-20-MW5	03/05/09	20	260	---	---	---	---	---	5.4	19	11	63	<5.0	---
S-25-MW5	03/06/09	25	41	---	---	---	---	---	<0.0050	0.069	0.15	0.75	<0.50	---
S-30-MW5	03/06/09	30	0.91	---	---	---	---	---	0.14	0.0061	0.011	0.036	<0.50	---
S-35-MW5	03/06/09	35	5.4	---	---	---	---	---	<0.050	3.9	1.5	15	<0.50	---
S-39.5-MW5	03/06/09	39.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-5-MW6	02/27/09	5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-10-MW6	03/09/09	10	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-15.5-MW6	03/09/09	15.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	0.011	---
S-20.5-MW6	03/09/09	20.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	0.015	---
S-25.5-MW6	03/09/09	25.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-30.5-MW6	03/09/09	30.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	0.063	---
S-35.5-MW6	03/09/09	35.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-39.5-MW6	03/09/09	39.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-5-MW7	02/27/09	5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-10.5-MW7	03/09/09	10.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-15.5-MW7	03/09/09	15.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-20.5-MW7	03/09/09	20.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-25.5-MW7	03/09/09	25.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-30.5-MW7	03/09/09	30	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-35.5-MW7	03/09/09	35.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-39.5-MW7	03/09/09	39.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-5-MW8	02/25/09	5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-10.5-MW8	03/04/09	10.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-15.5-MW8	03/04/09	15.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-20.5-MW8	03/04/09	20.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-25.5-MW8	03/04/09	25.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-30.5-MW8	03/04/09	30.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-35.5-MW8	03/04/09	35.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-39.5-MW8	03/04/09	39.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-5-MW9	02/25/09	5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-10-MW9	03/05/09	10	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-15-MW9	03/05/09	15	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-20-MW9	03/05/09	20	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-25-MW9	03/05/09	25	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-30-MW9	03/05/09	30	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-35-MW9	03/05/09	35	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---
S-40-MW9	03/05/09	40	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	---

TABLE 2 CUMULATIVE SOIL ANALYTICAL RESULTS, FORMER EXXON SERVICE STATION 70234, 3450 35TH AVENUE, OAKLAND, CALIFORNIA

Sample ID	Sampling Date	Depth (feet bgs)	TPH-g (mg/kg)	Kerosene (mg/kg)	TPH-d (mg/kg)	TPH-mo (mg/kg)	EHC-HO (mg/kg)	TOG (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	MTBE (mg/kg)	Lead (mg/kg)
S-5.0-RW1	12/22/11	5.0	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-15.0-RW1	12/22/11	15.0	1.3e	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	0.0053	---
S-25.0-RW1	12/22/11	25.0	6.5e	---	---	---	---	---	<0.0050	<0.0050	<0.0050	0.029	0.0066g	---
S-28.0-RW1	12/22/11	28.0	27e	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
S-31.0-RW1	12/22/11	31.0	1.7	---	---	---	---	---	<0.0050	0.0072	<0.0050	0.096	0.50	---
S-32.5-RW1	12/22/11	32.5	0.95	---	---	---	---	---	<0.0050	<0.0050	<0.0050	0.0087	0.72	---
S-34.0-RW1	12/22/11	34.0	2.3e	---	---	---	---	---	<0.0050	<0.0050	<0.0050	0.0053	0.94	---
S-37.0-RW1	12/22/11	37.0	420	---	---	---	---	---	<0.50	<0.50	0.88	10	<0.50	---
S-38.5-RW1	12/22/11	38.5	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	0.0071	---
S-40.0-RW1	12/22/11	40.0	440	---	---	---	---	---	<1.0	<1.0	2.1	29	<1.0	---
Soil Stockpile Samples														
SP-1(S-SP1-S-SP4)	09/12/07	---	<0.10	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	7.2
SP(1-4)	06/18/97	---	ND	---	47b	150c	---	---	ND	ND	ND	ND	---	8.7
SP-2	03/09/09	---	<0.50	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	5.83
S-SP1 (1,2,3,4)	12/22/11	---	40	8.0	<5.0	<25	---	---	0.0068	0.012	0.048	0.46	<0.50	4.50
Soil Vapor Monitoring Wells														
V1-7	04/14/14	7	<0.51	---	---	---	---	---	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	---
V2-3	04/15/14	3	<0.52	---	---	---	---	---	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	---
V2-6.5	04/15/14	6.5	<0.49	---	---	---	---	---	<0.0052	<0.0052	<0.0052	<0.0052	<0.0052	---
V3-3	04/15/14	3	<0.49	---	---	---	---	---	<0.0053	<0.0053	<0.0053	<0.0053	<0.0053	---
V3-6.5	04/15/14	6.5	<0.48	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
V4-6.5	04/15/14	6.5	<0.48	---	---	---	---	---	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	---
V5-6.5	04/15/14	6.5	<0.49	---	---	---	---	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---
Soil Borings 2014														
H1-54	04/15/14	54	<0.50	---	---	---	---	---	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	---
H3-54	04/14/14	54	<0.52	---	---	---	---	---	<0.0052	<0.0052	<0.0052	<0.0052	<0.0052	---
Table A-1 ESL		--	100	NE	100	100	NE	100*	0.044	2.9	3.3	2.3	0.023	80
Table C-1 ESL		--	500	NE	110	500	NE	500*	0.044	2.9	3.3	2.3	0.023	80

Notes:
 TPH-g = Total Petroleum Hydrocarbons as gasoline analyzed using EPA Method 8015M.
 Kerosene = Kerosene analyzed using EPA Method 8015B.
 TPH-d = Total Petroleum Hydrocarbons as diesel.
 TPH-mo = Total Petroleum Hydrocarbons as motor oil.

TABLE 2 CUMULATIVE SOIL ANALYTICAL RESULTS, FORMER EXXON SERVICE STATION 70234, 3450 35TH AVENUE, OAKLAND, CALIFORNIA

Sample ID	Sampling Date	Depth (feet bgs)	TPH-g (mg/kg)	Kerosene (mg/kg)	TPH-d (mg/kg)	TPH-mo (mg/kg)	EHC-HO (mg/kg)	TOG (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	MTBE (mg/kg)	Lead (mg/kg)
EHC-HO	=	Extractable hydrocarbons as hydraulic oil.												
TOG	=	Total oil and grease.												
BTEX	=	Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8021B/8260B.												
MTBE	=	Methyl tertiary butyl ether analyzed using EPA Method 8021B/8260B												
Lead	=	Lead analyzed using EPA Method 6010B.												
feet bgs	=	Feet below ground surface.												
mg/kg	=	Milligrams per kilogram.												
ND	=	Not detected at or above the laboratory reporting limit.												
NE	=	Not established.												
<	=	Less than the stated laboratory reporting limit.												
---	=	Not analyzed/not applicable.												
a	=	Unidentified C8-C12.												
b	=	Unidentified C9-C24.												
c	=	Unidentified C16-C36.												
d	=	Unidentified C16-C40.												
e	=	Hydrocarbon pattern does not match that of the specified standard.												
Table A-1 ESL		Residential Environmental Screening Level, Shallow Soil (≤ 3 m bgs), Groundwater is a Current or Potential Source of Drinking Water, San Francisco Bay Regional Water Quality Control Board, December 2013.												
	=													
Table C-1 ESL		Residential Environmental Screening Level, Deep Soil (> 3 m bgs), Groundwater is a Current or Potential Source of Drinking Water, San Francisco Bay Regional Water Quality Control Board, December 2013.												
	=													
*	=	The ESL is for total petroleum hydrocarbons quantified as motor oil (TPH-motor oil).												

TABLE 3 ADDITIONAL CUMULATIVE SOIL ANALYTICAL RESULTS
FORMER EXXON SERVICE STATION 70234, 3450 35TH AVENUE, OAKLAND, CALIFORNIA

Sample	Sampling	Depth	1,2-DCA	EDB	DIPE	ETBE	TAME	TBA	Ethanol	VOCs	SVOCs	HVOCs	Cadmium	Chromium	Nickel	Zinc	Naphthalene
ID	Date	(feet bgs)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Used-Oil UST Confirmation Soil Sample																	
T1-12	06/18/97	---	---	---	---	---	---	---	---	---	ND	ND	ND	47	56	84	---
Hydraulic Hoist Confirmation Sample																	
Not analyzed for these analytes																	
Samples from the UST Cavity Sidewall																	
Not analyzed for these analytes																	
Samples from Beneath Product Piping																	
Not analyzed for these analytes																	
Soil Samples from 1991 UST Excavation																	
Not analyzed for these analytes																	
Soil Borings																	
Soil borings sampled prior to 2007 not analyzed for these analytes:																	
S-5-B11	09/05/07	5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-10-B11	09/10/07	10	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-13.5-B11	09/10/07	13.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-18-B11	09/11/07	18	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-20-B11	09/11/07	20	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-25.5-B11	11/14/07	25.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-29.5-B11	11/14/07	29.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-34.5-B11	11/14/07	34.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-5-B12	09/04/07	5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-15.5-B12	11/13/07	15.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-20.5-B12	11/13/07	20.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-5-B13	09/05/07	5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-10-B13	09/10/07	10	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-14.5-B13	09/10/07	14.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-20-B13	09/10/07	20	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-25-B13	11/12/07	25	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-30-B13	11/12/07	30	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-35-B13	11/12/07	35	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-5.0-B14	09/06/07	5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-16-B14	11/13/07	16	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-20.5-B14	11/13/07	20.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-5-B15	09/04/07	5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-10.5-B15	11/15/07	10.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---

TABLE 3
 ADDITIONAL CUMULATIVE SOIL ANALYTICAL RESULTS
 FORMER EXXON SERVICE STATION 70234, 3450 35TH AVENUE, OAKLAND, CALIFORNIA

Sample ID	Sampling Date	Depth (feet bgs)	1,2-DCA (mg/kg)	EDB (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	TBA (mg/kg)	Ethanol (mg/kg)	VOCs (mg/kg)	SVOCs (mg/kg)	HVOCs (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)	Naphthalene (mg/kg)
S-15.5-B15	11/15/07	15.5	0.011	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-20-B15	11/15/07	20	<0.25	<0.25	<0.50	<0.50	<0.50	<2.5	<12	---	---	---	---	---	---	---	---
S-25.5-B15	11/15/07	25.5	<0.12	<0.12	<0.25	<0.25	<0.25	<1.2	<6.2	---	---	---	---	---	---	---	---
S-30.5-B15	11/15/07	30.5	<0.25	<0.25	<0.50	<0.50	<0.50	<2.5	<12	---	---	---	---	---	---	---	---
S-35.5-B15	11/15/07	35.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	0.25	<0.25	---	---	---	---	---	---	---	---
S-5-B16	09/04/07	5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-11-B16	11/14/07	11	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-15.5-B16	11/14/07	15.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-21-B16	11/14/07	21	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-26-B16	11/14/07	26	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-30.5-B16	11/14/07	30.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-34.5-B16	11/14/07	34.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-38.5-B16	11/14/07	38.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-5-B17	09/05/07	5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-11-B17	11/13/07	11	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-16-B17	11/13/07	16	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-21-B17	11/13/07	21	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-24.5-B17	11/13/07	24.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	0.20	---	---	---	---	---	---	---	---	---
S-31-B17	11/13/07	31	<0.0050	<0.0050	<0.010	<0.010	<0.010	0.15	---	---	---	---	---	---	---	---	---
S-35.5-B17	11/13/07	35.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-5-B18	09/04/07	5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-10-B18	11/12/07	10	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-15-B18	11/12/07	15	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-20-B18	11/12/07	20	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-25-B18	11/12/07	25	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-30-B18	11/12/07	30	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-35-B18	11/12/07	35	<0.0050	<0.0050	<0.010	<0.010	<0.010	0.70	---	---	---	---	---	---	---	---	---
S-5-B19	02/25/09	5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-10-B19	03/02/09	10	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-15.5-B19	03/03/09	15.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-20.5-B19	03/03/09	20.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-25.5-B19	03/03/09	25.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-30.5-B19	03/03/09	30.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-35.5-B19	03/03/09	35.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-39.5-B19	03/03/09	39.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-5-B20	02/25/09	5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-10.5-B20	03/03/09	10.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-15.0-B20	03/03/09	15.0	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---

TABLE 3
 ADDITIONAL CUMULATIVE SOIL ANALYTICAL RESULTS
 FORMER EXXON SERVICE STATION 70234, 3450 35TH AVENUE, OAKLAND, CALIFORNIA

Sample	Sampling	Depth	1,2-DCA	EDB	DIPE	ETBE	TAME	TBA	Ethanol	VOCs	SVOCs	HVOCs	Cadmium	Chromium	Nickel	Zinc	Naphthalene
ID	Date	(feet bgs)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
S-20.5-B20	03/03/09	20.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-25.5-B20	03/03/09	25.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-30.5-B20	03/03/09	30.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-35.5-B20	03/03/09	35.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-39.5-B20	03/03/09	39.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-5-B21	02/25/09	5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-10.5-B21	03/04/09	10.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-15-B21	03/04/09	15	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-20.5-B21	03/04/09	20.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-25.5-B21	03/04/09	25.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-30.5-B21	03/04/09	30.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-35.5-B21	03/04/09	35.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-39.5-B21	03/04/09	39.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
Monitoring and Recovery Wells																	
MW1	07/14/92	8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW2	07/14/92	29.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW3	07/14/92	28	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW4	07/14/92	29.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-5-MW4	02/25/09	5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-10.5-MW4	03/02/09	10.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-15.5-MW4	03/02/09	15.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-20.5-MW4	03/02/09	20.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-25.5-MW4	03/02/09	25.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-30.5-MW4	03/02/09	30.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-35.5-MW4	03/02/09	35.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-40-MW4	03/02/09	40	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-44.5-MW4	03/02/09	44.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-5-MW5	02/27/09	5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-10-MW5	03/05/09	10	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-15-MW5	03/05/09	15	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-20-MW5	03/05/09	20	<5.0	<5.0	<1.0	<1.0	<1.0	<5.0	<250	---	---	---	---	---	---	---	---
S-25-MW5	03/06/09	25	<0.50	<0.50	<1.0	<1.0	<1.0	<5.0	<25	---	---	---	---	---	---	---	---
S-30-MW5	03/06/09	30	<0.50	<0.50	<1.0	<1.0	<1.0	<5.0	<25	---	---	---	---	---	---	---	---
S-35-MW5	03/06/09	35	<0.50	<0.50	<1.0	<1.0	<1.0	<5.0	<25	---	---	---	---	---	---	---	---
S-39.5-MW5	03/06/09	39.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-5-MW6	02/27/09	5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-10-MW6	03/09/09	10	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-15.5-MW6	03/09/09	15.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---

TABLE 3
 ADDITIONAL CUMULATIVE SOIL ANALYTICAL RESULTS
 FORMER EXXON SERVICE STATION 70234, 3450 35TH AVENUE, OAKLAND, CALIFORNIA

Sample	Sampling	Depth	1,2-DCA	EDB	DIPE	ETBE	TAME	TBA	Ethanol	VOCs	SVOCs	HVOCs	Cadmium	Chromium	Nickel	Zinc	Naphthalene
ID	Date	(feet bgs)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
S-20.5-MW6	03/09/09	20.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-25.5-MW6	03/09/09	25.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-30.5-MW6	03/09/09	30.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-35.5-MW6	03/09/09	35.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	0.054	<0.25	---	---	---	---	---	---	---	---
S-39.5-MW6	03/09/09	39.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-5-MW7	02/27/09	5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-10.5-MW7	03/09/09	10.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-15.5-MW7	03/09/09	15.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-20.5-MW7	03/09/09	20.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-25.5-MW7	03/09/09	25.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-30.5-MW7	03/09/09	30	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-35.5-MW7	03/09/09	35.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-39.5-MW7	03/09/09	39.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-5-MW8	02/25/09	5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-10.5-MW8	03/04/09	10.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-15.5-MW8	03/04/09	15.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-20.5-MW8	03/04/09	20.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-25.5-MW8	03/04/09	25.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-30.5-MW8	03/04/09	30.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-35.5-MW8	03/04/09	35.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-39.5-MW8	03/04/09	39.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-5-MW9	02/25/09	5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-10-MW9	03/05/09	10	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-15-MW9	03/05/09	15	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-20-MW9	03/05/09	20	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-25-MW9	03/05/09	25	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-30-MW9	03/05/09	30	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-35-MW9	03/05/09	35	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-40-MW9	03/05/09	40	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	---	---	---	---	---	---
S-5.0-RW1	12/22/11	5.0	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-15.0-RW1	12/22/11	15.0	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-25.0-RW1	12/22/11	25.0	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-28.0-RW1	12/22/11	28.0	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-31.0-RW1	12/22/11	31.0	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-32.5-RW1	12/22/11	32.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	0.17	---	---	---	---	---	---	---	---	---
S-34.0-RW1	12/22/11	34.0	<0.0050	<0.0050	<0.010	<0.010	<0.010	0.42	---	---	---	---	---	---	---	---	---
S-37.0-RW1	12/22/11	37.0	<0.50	<0.50	<1.0	<1.0	<1.0	<5.0	---	---	---	---	---	---	---	---	---
S-38.5-RW1	12/22/11	38.5	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	---
S-40.0-RW1	12/22/11	40.0	<1.0	<1.0	<2.0	<2.0	<2.0	<10	---	---	---	---	---	---	---	---	---

TABLE 3
 ADDITIONAL CUMULATIVE SOIL ANALYTICAL RESULTS
 FORMER EXXON SERVICE STATION 70234, 3450 35TH AVENUE, OAKLAND, CALIFORNIA

Sample ID	Sampling Date	Depth (feet bgs)	1,2-DCA (mg/kg)	EDB (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	TBA (mg/kg)	Ethanol (mg/kg)	VOCs (mg/kg)	SVOCs (mg/kg)	HVOCs (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)	Naphthalene (mg/kg)
Soil Stockpile Samples																	
SP-1(S-SP1-S-SP4)	09/12/07	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.020	---	---	---	---	---	---	---	---	---
SP(1-4)	06/18/97	---	---	---	---	---	---	---	---	ND	ND	---	ND	55	53	43	---
SP-2	03/09/09	---	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.25	---	---	ND	---	---	---	---	---
S-SP1 (1,2,3,4)	12/22/11	---	<0.0050	<0.0050	<0.010	<0.010	<0.010	0.076	---	a	---	---	---	---	---	---	---
Soil Vapor Monitoring Wells																	
V1-7	04/14/14	7	---	---	<0.010	<0.010	<0.010	<0.051	---	---	---	---	---	---	---	---	<0.051
V2-3	04/15/14	3	---	---	<0.0096	<0.0096	<0.0096	<0.048	---	---	---	---	---	---	---	---	<0.048
V2-6.5	04/15/14	6.5	---	---	<0.010	<0.010	<0.010	<0.052	---	---	---	---	---	---	---	---	<0.052
V3-3	04/15/14	3	---	---	<0.011	<0.011	<0.011	<0.053	---	---	---	---	---	---	---	---	<0.053
V3-6.5	04/15/14	6.5	---	---	<0.0099	<0.0099	<0.0099	<0.050	---	---	---	---	---	---	---	---	<0.050
V4-6.5	04/15/14	6.5	---	---	<0.010	<0.010	<0.010	<0.051	---	---	---	---	---	---	---	---	<0.051
V5-6.5	04/15/14	6.5	---	---	<0.010	<0.010	<0.010	<0.050	---	---	---	---	---	---	---	---	<0.050
Soil Borings 2014																	
H1-54	04/15/14	54	---	---	<0.010	<0.010	<0.010	<0.051	---	---	---	---	---	---	---	---	<0.051
H3-54	04/14/14	54	---	---	<0.010	<0.010	<0.010	<0.052	---	---	---	---	---	---	---	---	<0.052
Table A ESL			0.0045	0.00033	NE	NE	NE	0.075	NE	#	#	#	12	1,000	150	600	1.2
Table C ESL			0.0045	0.00033	NE	NE	NE	0.075	NE	#	#	#	78	2,500	1,500	2,500	1.2

Notes:	Analytical data prior to 2013 provided by Cardno ERI.
1,2-DCA	= 1,2-dichloroethane analyzed using EPA Method 8260B.
EDB	= Ethylene dibromide (1,2-dibromoethane) analyzed using EPA Method 8260B.
DIPE	= Di-isopropyl ether analyzed using EPA Method 8260B.
ETBE	= Ethyl tertiary butyl ether analyzed using EPA Method 8260B.
TAME	= Tertiary amyl methyl ether analyzed using EPA Method 8260B.
TBA	= Tertiary butyl alcohol analyzed using EPA Method 8260B.
Ethanol	= Ethanol analyzed using EPA Method 8260B.
VOCs	= Volatile organic compounds.
SVOCs	= Semi-volatile organic compounds.
HVOCs	= Halogenated volatile organic compounds analyzed using EPA Method 8260B.
feet bgs	= Feet below ground surface.
mg/kg	= Milligrams per kilogram.
ND	= Not detected at or above the laboratory reporting limit.
NE	= Not established.
<	= Less than the stated laboratory reporting limit.
---	= Not analyzed/not applicable.

TABLE 3 ADDITIONAL CUMULATIVE SOIL ANALYTICAL RESULTS
FORMER EXXON SERVICE STATION 70234, 3450 35TH AVENUE, OAKLAND, CALIFORNIA

Sample	Sampling	Depth	1,2-DCA	EDB	DIPE	ETBE	TAME	TBA	Ethanol	VOCs	SVOCs	HVOCs	Cadmium	Chromium	Nickel	Zinc	Naphthalene
ID	Date	(feet bgs)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
a	=	1.1 mg/kg 1,2,4-trimethylbenzene; 0.16 mg/kg 1,3,5-trimethylbenzene; 0.022 mg/kg isopropyltoluene; 0.078 mg/kg naphthalene; 0.059 mg/kg n-butylbenzene; 0.091 mg/kg n-propylbenzene; 0.0070 p-isopropyltoluene; 0.012 sec-butylbenzene.															
Table A ESL	=	Residential Environmental Screening Level, Shallow Soil (< 3m bgs), Groundwater is a Current or Potential Source of Drinking Water, San Francisco Bay Regional Water Quality Control Board, December 2013.															
Table C ESL	=	Residential Environmental Screening Level, Deep Soil (> 3m bgs), Groundwater is a Current or Potential Source of Drinking Water, San Francisco Bay Regional Water Quality Control Board, December 2013.															
#	=	The ESLs vary from compound to compound.															

TABLE 4 ANALYTICAL RESULTS FOR SOIL SAMPLES, PHYSICAL PROPERTIES
FORMER EXXON SERVICE STATION 70234, 3450 35TH AVENUE, OAKLAND, CALIFORNIA

Boring ID	Sample Date	Sample Depth (feet bgs)	Moisture Content (% by weight)	Total Porosity (% of bulk volume)	Air-filled Porosity (% of bulk volume)	Water-filled Porosity (% of bulk volume)	Dry Bulk Density (g/cc)	Total Organic Carbon (mg/kg)
V1	04/14/14	5-6.5	7.9	24.3	8.0	16.2	2.05	1,850
V2	04/15/14	5-6	22.2	39.8	4.3	35.4	1.59	1,150
V3	04/15/14	5-6	22.3	43.3	9.7	33.6	1.50	1,250
V4	04/15/14	5-6	24.8	42.6	4.8	37.8	1.52	1,600
V5	04/15/14	5-6	15.2	34.2	7.6	26.6	1.75	620

feet bgs Feet below ground surface.
g/cc Grams per cubic centimeter.
% Percent.
mg/kg Milligrams per kilogram

TABLE 5 GROUNDWATER MONITORING DATA, FORMER EXXON SERVICE STATION 70234, 3450 35TH AVENUE, OAKLAND, CALIFORNIA

Well Number	Date	Depth (feet)	TOC Elev. (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	NAPL (feet)	Concentration (µg/L)						Total Pb (µg/L)	Organic Pb (mg/L)
							TPH-g	MTBE 8260B	B	T	E	X		
Monitoring Well Samples														
MW1	07/15/92	---	---	Well installed.										
MW1	07/17/92	---	192.00	33.02	158.98	No	67	---	6.6	6.9	2.0	4.5	17	---
MW1	10/22/92	---	192.00	34.07	157.93	No	<50	---	2.9	<0.5	<0.5	<0.5	16	---
MW1	02/04/93	---	192.00	29.43	162.57	No	<50	---	0.8	<0.5	<0.5	<0.5	4	---
MW1	05/03/93	---	192.00	29.72	162.28	No	71	---	2.8	7.2	2.2	22	40	---
MW1	07/30/93	---	192.00	32.95	159.05	No	<50	---	<0.5	<0.5	<0.5	<0.5	5	---
MW1	10/19/93	---	192.00	34.34	157.66	No	<50	---	<0.5	<0.5	<0.5	<0.5	12	---
MW1	02/23/94	---	192.00	31.72	160.28	No	<50	---	<0.5	<0.5	<0.5	<0.5	4	---
MW1	06/06/94	---	192.00	31.77	160.23	No	<50	---	<0.5	<0.5	<0.5	<0.5	<3	---
MW1	08/18/94	---	192.00	33.76	158.24	No	<50	---	<0.5	<0.5	<0.5	<0.5	130	---
MW1	11/15/94	---	192.00	34.08	157.92	No	<50	---	<0.5	<0.5	<0.5	<0.5	<3.0	<100
MW1	02/06/95	---	192.00	28.50	163.50	No	<50	---	<0.5	<0.5	<0.5	<0.5	---	---
MW1	05/10/95	---	192.00	29.30	162.70	No	<50	---	<0.5	<0.5	<0.5	<0.5	---	---
MW1	09/20/99	---	192.00	33.30	158.70	No	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<75	<50
MW1		---	Well destroyed in June 2000.											
MW2	07/15/92	---	---	Well installed.										
MW2	07/17/92	---	194.85	34.65	160.20	No	<50	---	<0.5	<0.5	<0.5	<0.5	<3	---
MW2	10/22/92	---	194.85	35.64	159.21	No	<50	---	<0.5	<0.5	<0.5	<0.5	--	---
MW2	02/04/93	---	194.85	31.13	163.72	No	<50	---	<0.5	<0.5	<0.5	<0.5	<3	---
MW2	05/03/93	---	194.85	31.08	163.77	No	<50	---	<0.5	<0.5	<0.5	<0.5	3	---
MW2	07/30/93	---	194.85	34.34	160.51	No	<50	---	<0.5	<0.5	<0.5	<0.5	14	---
MW2	10/19/93	---	194.85	36.00	158.85	No	<50	---	<0.5	<0.5	<0.5	<0.5	<3	---
MW2	02/23/94	---	194.85	33.92	160.93	No	<50	---	<0.5	<0.5	<0.5	<0.5	<3	---
MW2	06/06/94	---	194.85	33.50	161.35	No	<50	---	<0.5	<0.5	<0.5	<0.5	<3	---
MW2	08/18/94	---	194.85	35.38	159.47	No	<50	---	<0.5	<0.5	<0.5	<0.5	<3.0	---
MW2	11/15/94	---	194.85	35.93	158.92	No	<50	---	<0.5	<0.5	<0.5	<0.5	<3.0	<100
MW2	02/06/95	---	194.85	30.38	164.47	No	<50	---	<0.5	<0.5	<0.5	<0.5	---	---
MW2	05/10/95	---	194.85	30.77	164.08	No	<50	---	<0.5	<0.5	<0.5	<0.5	---	---
MW2	09/20/99	---	194.85	35.15	159.70	No	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<75	<0.5
MW2		---	Well destroyed in June 2000.											

TABLE 5 GROUNDWATER MONITORING DATA, FORMER EXXON SERVICE STATION 70234, 3450 35TH AVENUE, OAKLAND, CALIFORNIA

Well Number	Date	Depth (feet)	TOC Elev. (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	NAPL (feet)	Concentration (µg/L)						Total Pb (µg/L)	Organic Pb (mg/L)
							TPH-g	MTBE 8260B	B	T	E	X		
MW3	07/15/92	---	---	Well installed.										
MW3	07/17/92	---	196.90	37.24	159.66	No	<50	---	<0.5	<0.5	<0.5	<0.5	50	---
MW3	10/22/92	---	196.90	35.95	160.95	No	<50	---	<0.5	<0.5	<0.5	<0.5	9	---
MW3	02/04/93	---	196.90	29.85	167.05	No	<50	---	<0.5	<0.5	<0.5	<0.5	<3	---
MW3	05/03/93	---	196.90	29.87	167.03	No	<50	---	<0.5	<0.5	<0.5	<0.5	3	---
MW3	07/30/93	---	196.90	33.85	163.05	No	<50	---	<0.5	<0.5	<0.5	<0.5	22	---
MW3	10/19/93	---	196.90	35.89	161.01	No	<50	---	<0.5	<0.5	<0.5	<0.5	12	---
MW3	02/23/94	---	196.90	32.88	164.02	No	<50	---	<0.5	<0.5	<0.5	<0.5	25	---
MW3	06/06/94	---	196.90	32.40	164.50	No	<50	---	<0.5	<0.5	<0.5	<0.5	<3	---
MW3	08/18/94	---	196.90	35.07	161.83	No	<50	---	<0.5	<0.5	<0.5	<0.5	<3.0	---
MW3	11/15/94	---	196.90	35.97	160.93	No	<50	---	<0.5	<0.5	<0.5	<0.5	<3.0	<100
MW3	02/06/95	---	196.90	28.39	168.51	No	<50	---	<0.5	<0.5	<0.5	<0.5	---	---
MW3	05/10/95	---	196.90	28.90	168.00	No	<50	---	<0.5	<0.5	<0.5	<0.5	---	---
MW3	09/20/99	---	196.90	34.68	162.22	No	75.0	1.87	<0.5	11.5	1.8	18.0	<75	<0.5
MW3		---	Well destroyed in June 2000.											
MW4	03/02/09	---	---	Well installed.										
MW4	03/30/09	---	197.62	30.94	166.68	No	<50	<0.50	<0.50	<0.50	<0.50	<0.50	---	---
MW4	04/02/09	---	197.62	Well surveyed.										
MW4	05/28/09	---	197.62	32.00	165.62	No	<50	<0.50	<0.50	<0.50	<0.50	<0.50	---	---
MW4	08/31/09	---	197.62	35.43	162.19	No	<50	<0.50	<0.50	<0.50	<0.50	<0.50	---	---
MW4	12/11/09	---	197.62	35.01	162.61	No	<50	<0.50	<0.50	0.83	<0.50	1.1	---	---
MW4	05/07/10	---	197.62	29.11	168.51	No	<50	<0.50	<0.50	<0.50	<0.50	<1.0	---	---
MW4	11/01/10	---	197.62	34.95	162.67	No	<50	<0.50	<0.50	<0.50	<0.50	<1.0	---	---
MW4	05/27/11 d	---	197.62	30.65	166.97	No	---	---	---	---	---	---	---	---
MW4	11/23/11	---	197.62	33.49	164.13	No	<50	<0.50	<0.50	<0.50	<0.50	<1.0	---	---
MW4	05/24/12	---	197.62	30.02	167.60	No	58	<0.50	0.84	4.4	0.64c	3.5	---	---
MW4	10/31/12	---	197.62	35.14	162.48	No	110	<0.50	5.3	45	4.2	21	---	---
MW4	05/02/13 e	---	197.62	32.03	165.59	No	<50	<0.50	<0.50	<0.50	<0.50	<0.50	---	---
MW4	11/09/13	---	197.62	36.53	161.09	No	<50	<0.50	<0.50	<0.50	<0.50	<0.50	---	---
MW5	03/06/09	---	---	Well installed.										
MW5	03/30/09	---	196.35	30.05	166.30	No	4,200	1,900	540	140	<12	310	---	---
MW5	04/02/09	---	196.35	Well surveyed.										

TABLE 5 GROUNDWATER MONITORING DATA, FORMER EXXON SERVICE STATION 70234, 3450 35TH AVENUE, OAKLAND, CALIFORNIA

Well Number	Date	Depth (feet)	TOC Elev. (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	NAPL (feet)	Concentration (µg/L)						Total Pb (µg/L)	Organic Pb (mg/L)
							TPH-g	MTBE 8260B	B	T	E	X		
MW5	05/28/09	---	196.35	31.45	164.90	No	5,300	3,600	890	150	<25	140	---	---
MW5	08/31/09	---	196.35	34.70	161.65	No	5,800	3,500	550	<100	<100	<100	---	---
MW5	12/11/09	---	196.35	34.52	161.83	No	4,000b	3,800	230	<100	<100	<100	---	---
MW5	05/07/10	---	196.35	30.84	165.51	No	2,700b	1,700	73	5.3	3.6	6.5	---	---
MW5	11/01/10	---	196.35	33.93	162.42	No	2,400b	3,400	320	71	21	40	---	---
MW5	05/27/11 d	---	196.35	31.65	164.70	No	---	---	---	---	---	---	---	---
MW5	11/23/11	---	196.35	32.58	163.77	No	1,900b	3,200	72	2.7	3.1	8.1	---	---
MW5	05/24/12	---	196.35	30.26	166.09	No	2,900b	1,700	54	31	5.2	17	---	---
MW5	10/31/12	---	196.35	33.94	162.41	No	2,200b	2,700	220	72	8.7	47	---	---
MW5	05/02/13 e	---	196.35	31.33	165.02	No	2,200b	1,300	61	<0.50	3.8	7.9	---	---
MW5	11/09/13	---	196.35	35.69	160.66	No	1,300b	370	120	<5.0	<5.0	8.8	---	---
MW6	03/09/09	---	---	Well installed.										
MW6	03/30/09	---	192.41	26.94	165.47	No	2,800	4,800	0.91	<0.50	<0.50	<0.50	---	---
MW6	04/02/09	---	192.41	Well surveyed.										
MW6	05/28/09	---	192.41	28.04	164.37	No	2,800	6,000	<100	<100	<100	<100	---	---
MW6	08/31/09	---	192.41	30.57	161.84	No	4,900	6,600	<100	<100	<100	<100	---	---
MW6	12/11/09	---	192.41	30.78	161.63	No	4,900b	6,200	<100	<100	<100	<100	---	---
MW6	05/07/10	---	192.41	25.42	166.99	No	2,900b	3,700	2.7	<0.50	0.74c	<1.0	---	---
MW6	11/01/10	---	192.41	30.68	161.73	No	850b	6,100	2.1	<0.50	<0.50	<1.0	---	---
MW6	05/27/11 d	---	192.41	27.07	165.34	No	---	---	---	---	---	---	---	---
MW6	11/23/11	---	192.41	29.25	163.16	No	1,600b	6,400	<0.50	<0.50	<0.50	<1.0	---	---
MW6	05/24/12	---	192.41	26.36	166.05	No	2,000b	3,400	1.3c	9.7	0.97c	5.5	---	---
MW6	10/31/12	---	192.41	30.74	161.67	No	1,400b	5,400	3.8	28	2.2	11	---	---
MW6	05/02/13	---	192.41	27.91	164.50	No	1,900b	2,600	<0.50	<0.50	<0.50	<0.50	---	---
MW6	11/09/13	---	192.41	32.15	160.26	No	3,600b	4,800	<40	<40	<40	<40	---	---
MW7	03/09/09	---	---	Well installed.										
MW7	03/30/09	---	194.34	29.15	165.19	No	55	66	<0.50	<0.50	<0.50	<0.50	---	---
MW7	04/02/09	---	194.34	Well surveyed.										
MW7	05/28/09	---	194.34	30.16	164.18	No	50	67	<1.0	<1.0	<1.0	<1.0	---	---
MW7	08/31/09	---	194.34	33.31	161.03	No	<50	12	<0.50	0.60	<0.50	<0.50	---	---
MW7	12/11/09	---	194.34	32.71	161.63	No	<50	31	0.78	1.7	0.62	2.4	---	---
MW7	05/07/10	---	194.34	27.54	166.80	No	510b	700	<0.50	<0.50	<0.50	<1.0	---	---

TABLE 5 GROUNDWATER MONITORING DATA, FORMER EXXON SERVICE STATION 70234, 3450 35TH AVENUE, OAKLAND, CALIFORNIA

Well Number	Date	Depth (feet)	TOC Elev. (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	NAPL (feet)	Concentration (µg/L)						Total Pb (µg/L)	Organic Pb (mg/L)
							TPH-g	MTBE 8260B	B	T	E	X		
MW7	11/01/10	---	194.34	32.82	161.52	No	68b	140	<0.50	<0.50	<0.50	<1.0	---	---
MW7	05/27/11	d	194.34	28.85	165.49	No	---	---	---	---	---	---	---	---
MW7	11/23/11	---	194.34	31.39	162.95	No	190b	300	<0.50	<0.50	<0.50	<1.0	---	---
MW7	05/24/12	d	194.34	28.31	166.03	No	---	---	---	---	---	---	---	---
MW7	10/31/12	---	194.34	32.86	161.48	No	230b	290	2.9	21	1.8	9.2	---	---
MW7	05/02/13	---	194.34	29.93	164.41	No	570b	790	<0.50	<0.50	<0.50	<0.50	---	---
MW7	11/09/13	---	194.34	34.23	160.11	No	370b	460	<10	<10	<10	<10	---	---
MW8	03/04/09	---	---	Well installed.										
MW8	03/30/09	---	192.96	27.35	165.61	No	<50	<0.50	<0.50	<0.50	<0.50	<0.50	---	---
MW8	04/02/09	---	192.96	Well surveyed.										
MW8	05/28/09	---	192.96	28.72	164.24	No	<50	<0.50	<0.50	<0.50	<0.50	<0.50	---	---
MW8	08/31/09	---	192.96	31.93	161.03	No	<50	<0.50	<0.50	<0.50	<0.50	<0.50	---	---
MW8	12/11/09	---	192.96	31.24	161.72	No	<50	<0.50	0.74	1.6	0.59	2.3	---	---
MW8	05/07/10	---	192.96	25.68	167.28	No	<50	<0.50	<0.50	<0.50	<0.50	<1.0	---	---
MW8	11/01/10	---	192.96	31.18	161.78	No	<50	<0.50	<0.50	<0.50	<0.50	<1.0	---	---
MW8	05/27/11	---	192.96	27.55	165.41	No	<50	<0.50	<0.50	<0.50	<0.50	<1.0	---	---
MW8	11/23/11	---	192.96	29.74	163.22	No	<50	<0.50	<0.50	<0.50	<0.50	<1.0	---	---
MW8	05/24/12	---	192.96	26.93	166.03	No	<50	<0.50	<0.50	<0.50	<0.50	<1.0	---	---
MW8	10/31/12	---	192.96	31.35	161.61	No	75	<0.50	2.5	19	1.7	8.7	---	---
MW8	05/02/13	---	192.96	28.44	164.52	No	<50	<0.50	<0.50	<0.50	<0.50	<0.50	---	---
MW8	11/09/13	---	192.96	32.89	160.07	No	<50	<0.50	<0.50	<0.50	<0.50	<0.50	---	---
MW9	03/05/09	---	---	Well installed.										
MW9	03/30/09	---	195.16	28.31	166.85	No	<50	<0.50	<0.50	<0.50	<0.50	<0.50	---	---
MW9	04/02/09	---	195.16	Well surveyed.										
MW9	05/28/09	---	195.16	29.69	165.47	No	<50	<0.50	<0.50	<0.50	<0.50	<0.50	---	---
MW9	08/31/09	---	195.16	33.20	161.96	No	<50	<0.50	<0.50	<0.50	<0.50	<0.50	---	---
MW9	12/11/09	---	195.16	32.62	162.54	No	<50	<0.50	0.73	1.7	0.54	2.2	---	---
MW9	05/07/10	---	195.16	26.59	168.57	No	<50	<0.50	<0.50	<0.50	<0.50	<1.0	---	---
MW9	11/01/10	---	195.16	32.45	162.71	No	<50	<0.50	<0.50	<0.50	<0.50	<1.0	---	---
MW9	05/27/11	---	195.16	29.62	165.54	No	<50	<0.50	<0.50	<0.50	<0.50	<1.0	---	---
MW9	11/23/11	---	195.16	30.56	164.60	No	<50	<0.50	<0.50	<0.50	<0.50	<1.0	---	---
MW9	05/24/12	---	195.16	27.94	167.22	No	<50	<0.50	<0.50	<0.50	<0.50	<1.0	---	---

TABLE 5 GROUNDWATER MONITORING DATA, FORMER EXXON SERVICE STATION 70234, 3450 35TH AVENUE, OAKLAND, CALIFORNIA

Well Number	Date	Depth (feet)	TOC Elev. (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	NAPL (feet)	Concentration (µg/L)							Total Pb (µg/L)	Organic Pb (mg/L)
							TPH-g	MTBE 8260B	B	T	E	X			
MW9	10/31/12	---	195.16	32.66	162.50	No	140	<0.50	6.9	38	2.7	13	---	---	
MW9	05/02/13	---	195.16	29.58	165.58	No	<50	<0.50	<0.50	<0.50	<0.50	<0.50	---	---	
MW9	11/09/13	---	195.16	Well inaccessible.											
RW1	12/22/11	---	---	Well installed.											
RW1	12/30/11	---	195.15	Well surveyed.											
RW1	05/24/12	---	195.15	28.55	166.60	No	5,500b	2,500	920	5.9c	51	14	---	---	
RW1	10/31/12 d	---	195.15	---	---	---	---	---	---	---	---	---	---	---	
RW1	05/02/13 e	---	195.15	30.27	164.88	No	4,300b	2,300	1,200	<2.5	41	14	---	---	
RW1	11/09/13	---	195.15	34.64	160.51	No	810b	520	210	<10	<10	<10	---	---	

Grab Groundwater Samples

Pit Water	06/14/02	11.5a	---	---	---	---	5,600	12,000	140	840	100	530	---	---
UST Pit	06/19/02	13.5a	---	---	---	---	680	640	2.7	36	18	130	---	---
W-38-B11	11/14/07	38	---	---	---	---	<50	<0.50	<0.50	<0.50	<0.50	<0.50	---	---
W-15-B12	11/13/07	15	---	---	---	---	8,400	78	67	<5.0	140	150	---	---
W-40-B13	11/12/07	40	---	---	---	---	<50	0.53	<0.50	<0.50	<0.50	<0.50	---	---
W-15-B14	11/13/07	15	---	---	---	---	2,500	16	1.7	3.0	26	13	---	---
W-38-B15	11/15/07	38	---	---	---	---	18,000	12,000	3,400	2,500	330	2,000	---	---
W-40-B16	11/15/07	40	---	---	---	---	<50	7.7	<0.50	<0.50	<0.50	<0.50	---	---
W-37-B17	11/13/07	37	---	---	---	---	630	2,200	1.8	<0.50	4.1	1.4	---	---
W-38-B18	11/12/07	38	---	---	---	---	4,300	1,400	52	<12	56	96	---	---
W-35-B19	03/03/09	35	---	---	---	---	4,400	7,100	<0.50	<0.50	<0.50	<1.0	---	---
W-35-B20	03/03/09	35	---	---	---	---	640	440	<0.50	<0.50	<0.50	<1.0	---	---
W-35-B21	03/03/09	35	---	---	---	---	<50	1.4	<0.50	<0.50	<0.50	<1.0	---	---

Notes: Data prior to 1999 provided by EA Engineering, Science, and Technology. Data prior to 2013 provided by Cardno ERI.

TOC Elev. Top of well casing elevation; datum is NAVD88.

DTW Depth to water.

GW Elev. Groundwater elevation; datum is NAVD88.

NAPL Non-aqueous phase liquid.

TABLE 5 GROUNDWATER MONITORING DATA, FORMER EXXON SERVICE STATION 70234, 3450 35TH AVENUE, OAKLAND, CALIFORNIA

Well Number	Date	Depth (feet)	TOC Elev. (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	NAPL (feet)	Concentration (µg/L)						Total Pb (µg/L)	Organic Pb (mg/L)
							TPH-g	MTBE 8260B	B	T	E	X		
TPH-g	Total Petroleum Hydrocarbons as gasoline analyzed using EPA Method 8015B.													
MTBE	Methyl tertiary butyl ether analyzed using EPA Method 8260B.													
BTEX	Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8021B; from April 2009 to October 2010, analyzed using EPA Method 8260B.													
Total Pb	Total lead analyzed using EPA Method 6010.													
Organic Pb	Organic lead analyzed using CA DHS LUFT method.													
EDB	Ethylene dibromide or 1,2-Dibromoethane analyzed using EPA Method 8260B.													
1,2-DCA	1,2-Dichloroethane analyzed using EPA Method 8260B.													
TBA	Tertiary butyl alcohol analyzed using EPA Method 8260B.													
TAME	Tertiary amyl methyl ether analyzed using EPA Method 8260B.													
ETBE	Ethyl tertiary butyl ether analyzed using EPA Method 8260B.													
DIPE	Di-isopropyl ether analyzed using EPA Method 8260B.													
Ethanol	Ethanol analyzed using EPA Method 8260B.													
µg/L	Micrograms per liter.													
mg/L	Milligrams per liter.													
<	Less than the stated laboratory reporting limit.													
---	Not sampled/Not analyzed/Not measured/Not applicable.													
a	Approximate depth to groundwater surface at time of sampling.													
b	Hydrocarbon pattern does not match that of the specified standard.													
c	Analyte presence was not confirmed by second column or GC/MS analysis.													
d	Well inaccessible.													
e	Well sampled the following day.													

TABLE 6 ADDITIONAL GROUNDWATER MONITORING DATA,
FORMER EXXON SERVICE STATION 70234, 3450 35TH AVENUE, OAKLAND, CALIFORNIA

Well Number	Date	Depth (feet)	Concentration (µg/L)						
			EDB	1,2-DCA	TAME	TBA	ETBE	DIPE	Ethanol
MW1	07/17/92 - 09/20/99		Not analyzed for these analytes.						
MW1	Well destroyed in June 2000.								
MW2	07/17/92 - 09/20/99		Not analyzed for these analytes.						
MW2	Well destroyed in June 2000.								
MW3	07/17/92 - 09/20/99		Not analyzed for these analytes.						
MW3	Well destroyed in June 2000.								
MW4	03/30/09	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW4	05/28/09	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW4	08/31/09	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW4	12/11/09	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW4	05/07/10	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW4	11/01/10	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW4	05/27/11 d	---	---	---	---	---	---	---	---
MW4	11/23/11	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW4	05/24/12	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW4	10/31/12	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW4	05/03/13	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW4	11/09/13	---	<0.50	<0.50	<0.50	<10	<0.50	<0.50	---
MW5	03/30/09	---	<12	17	<12	450	<12	<12	---
MW5	05/28/09	---	<25	<25	<25	530	<25	<25	---
MW5	08/31/09	---	<100	<100	<100	<1,000	<100	<100	---
MW5	12/11/09	---	<100	<100	<100	2,000	<100	<100	---
MW5	05/07/10	---	<25	<25	<25	400	<25	<25	---
MW5	11/01/10	---	<50	<50	<50	1,500	<50	<50	---
MW5	05/27/11 d	---	---	---	---	---	---	---	---
MW5	11/23/11	---	<50	<50	<50	<500	<50	<50	---
MW5	05/24/12	---	<50	<50	<50	1,400	<50	<50	---
MW5	10/31/12	---	<50	<50	<50	730	<50	<50	---
MW5	05/03/13	---	<20	<20	<20	590	<20	<20	---
MW5	11/09/13	---	<5.0	<5.0	<5.0	1,100	<5.0	<5.0	---
MW6	03/30/09	---	<0.50	<0.50	1.3	410	<0.50	0.82	---
MW6	05/28/09	---	<100	<100	<100	<1,000	<100	<100	---
MW6	08/31/09	---	<100	<100	<100	1,100	<100	<100	---
MW6	12/11/09	---	<100	<100	<100	2,600	<100	<100	---
MW6	05/07/10	---	<100	<100	<100	<1,000	<100	<100	---
MW6	11/01/10	---	<50	<50	<50	2,400	<50	<50	---
MW6	05/27/11 d	---	---	---	---	---	---	---	---
MW6	11/23/11	---	<100	<100	<100	<1,000	<100	<100	---
MW6	05/24/12	---	<100	<100	<100	2,700	<100	<100	---
MW6	10/31/12	---	<100	<100	<100	<1,000	<100	<100	---

TABLE 6 ADDITIONAL GROUNDWATER MONITORING DATA,
FORMER EXXON SERVICE STATION 70234, 3450 35TH AVENUE, OAKLAND, CALIFORNIA

Well Number	Date	Depth (feet)	Concentration (µg/L)						
			EDB	1,2-DCA	TAME	TBA	ETBE	DIPE	Ethanol
MW6	05/02/13	---	<40	<40	<40	570	<40	<40	---
MW6	11/09/13	---	<40	<40	<40	2,100	<40	<40	---
MW7	03/30/09	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW7	05/28/09	---	<1.0	<1.0	<1.0	<10	<1.0	<1.0	---
MW7	08/31/09	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW7	12/11/09	---	<0.50	<0.50	<0.50	12	<0.50	<0.50	---
MW7	05/07/10	---	<0.50	<0.50	<0.50	130	<0.50	<0.50	---
MW7	11/01/10	---	<2.5	<2.5	<2.5	27	<2.5	<2.5	---
MW7	05/27/11 d	---	---	---	---	---	---	---	---
MW7	11/23/11	---	<5.0	<5.0	<5.0	<50	<5.0	<5.0	---
MW7	05/24/12 d	---	---	---	---	---	---	---	---
MW7	10/31/12	---	<5.0	<5.0	<5.0	<50	<5.0	<5.0	---
MW7	05/02/13	---	<5.0	<5.0	<5.0	57	<5.0	<5.0	---
MW7	11/09/13	---	<10	<10	<10	<200	<10	<10	---
MW8	03/30/09	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW8	05/28/09	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW8	08/31/09	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW8	12/11/09	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW8	05/07/10	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW8	11/01/10	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW8	05/27/11	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW8	11/23/11	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW8	05/24/12	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW8	10/31/12	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW8	05/02/13	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW8	11/09/13	---	<0.50	<0.50	<0.50	<10	<0.50	<0.50	---
MW9	03/30/09	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW9	05/28/09	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW9	08/31/09	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW9	12/11/09	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW9	05/07/10	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW9	11/01/10	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW9	05/27/11	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW9	11/23/11	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW9	05/24/12	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW9	10/31/12	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW9	05/02/13	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---
MW9	11/09/13	---	Well inaccessible.						
RW1	05/24/12	---	<50	<50	<50	1,900	<50	<50	---
RW1	10/31/12 d	---	---	---	---	---	---	---	---
RW1	05/03/13	---	<40	<40	<40	880	<40	<40	---

TABLE 6 ADDITIONAL GROUNDWATER MONITORING DATA,
FORMER EXXON SERVICE STATION 70234, 3450 35TH AVENUE, OAKLAND, CALIFORNIA

Well Number	Date	Depth (feet)	Concentration (µg/L)						
			EDB	1,2-DCA	TAME	TBA	ETBE	DIPE	Ethanol
RW1	11/09/13	---	<10	<10	<10	1,100	<10	<10	---
Grab Groundwater Samples									
Pit Water	06/14/02	11.5a	---	---	---	---	---	---	---
UST Pit	06/19/02	13.5a	---	---	---	---	---	---	---
W-38-B11	11/14/07	38	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<50
W-15-B12	11/13/07	15	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<500
W-40-B13	11/12/07	40	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<50
W-15-B14	11/13/07	15	<1.0	<1.0	<1.0	<20	<1.0	<1.0	<100
W-38-B15	11/15/07	38	<25	<25	<25	1,900	<25	<25	<2,500
W-40-B16	11/15/07	40	<0.50	<0.50	<0.50	<10	<0.50	<0.50	85
W-37-B17	11/13/07	37	<0.50	<0.50	<0.50	58	<0.50	<0.50	<50
W-38-B18	11/12/07	38	<12	<12	<12	<250	<12	<12	<1,200
W-35-B19	03/03/09	35	<50	<50	<50	<500	<50	<50	<5,000
W-35-B20	03/03/09	35	<0.50	<0.50	<0.50	12	<0.50	<0.50	<50
W-35-B21	03/03/09	35	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<50

Notes: Data prior to 1999 provided by EA Engineering, Science, and Technology.
Data prior to 2013 provided by Cardno ERI.

TOC Elev. Top of well casing elevation; datum is NAVD88.

DTW Depth to water.

GW Elev. Groundwater elevation; datum is NAVD88.

NAPL Non-aqueous phase liquid.

TPH-g Total Petroleum Hydrocarbons as gasoline analyzed using EPA Method 8015B.

MTBE Methyl tertiary butyl ether analyzed using EPA Method 8260B.

BTEX Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8021B; from April 2009 to October 2010, analyzed using EPA Method 8260B.

Total Pb Total lead analyzed using EPA Method 6010.

Organic Pb Organic lead analyzed using CA DHS LUFT method.

EDB Ethylene dibromide or 1,2-Dibromoethane analyzed using EPA Method 8260B.

1,2-DCA 1,2-Dichloroethane analyzed using EPA Method 8260B.

TBA Tertiary butyl alcohol analyzed using EPA Method 8260B.

TAME Tertiary amyl methyl ether analyzed using EPA Method 8260B.

ETBE Ethyl tertiary butyl ether analyzed using EPA Method 8260B.

DIPE Di-isopropyl ether analyzed using EPA Method 8260B.

Ethanol Ethanol analyzed using EPA Method 8260B.

µg/L Micrograms per liter.

mg/L Milligrams per liter.

< Less than the stated laboratory reporting limit.

--- Not sampled/Not analyzed/Not measured/Not applicable.

a Approximate depth to groundwater surface at time of sampling.

b Hydrocarbon pattern does not match that of the specified standard.

TABLE 6 ADDITIONAL GROUNDWATER MONITORING DATA,
FORMER EXXON SERVICE STATION 70234, 3450 35TH AVENUE, OAKLAND, CALIFORNIA

Well Number	Date	Depth (feet)	Concentration (µg/L)						
			EDB	1,2-DCA	TAME	TBA	ETBE	DIPE	Ethanol
c	Analyte presence was not confirmed by second column or GC/MS analysis.								
d	Well inaccessible.								

TABLE 7 GRAB GROUNDWATER ANALYTICAL RESULTS
FORMER EXXON SERVICE STATION 70234, 3450 35TH AVENUE, OAKLAND, CALIFORNIA

Sample ID	Sampling Date	Depth (feet bgs)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (8260B) (µg/L)
Pit Water	06/14/02	11.5a	5,600	140	840	100	530	12,000
UST Pit	06/19/02	13.5a	680	2.7	36	18	130	640
W-38-B11	11/14/07	38	<50	<0.50	<0.50	<0.50	<0.50	<0.50
W-15-B12	11/13/07	15	8,400	67	<5.0	140	150	78
W-40-B13	11/12/07	40	<50	<0.50	<0.50	<0.50	<0.50	0.53
W-15-B14	11/13/07	15	2,500	1.7	3.0	26	13	16
W-38-B15	11/15/07	38	18,000	3,400	2,500	330	2,000	12,000
W-40-B16	11/15/07	40	<50	<0.50	<0.50	<0.50	<0.50	7.7
W-37-B17	11/13/07	37	630	1.8	<0.50	4.1	1.4	2,200
W-38-B18	11/12/07	38	4,300	52	<12	56	96	1,400
W-35-B19	03/03/09	35	4,400	<0.50	<0.50	<0.50	<1.0	7,100
W-35-B20	03/03/09	35	640	<0.50	<0.50	<0.50	<1.0	440
W-35-B21	03/03/09	35	<50	<0.50	<0.50	<0.50	<1.0	1.4
H1-70	04/15/14	56.5-70	<50	<0.50	<0.50	<0.50	<0.50	<0.50
H1-95	04/15/14	85-95	<50	<0.50	<0.50	<0.50	<0.50	<0.50
H2-62	04/10/14	58-62	<50	<0.50	<0.50	<0.50	<0.50	<0.50
H2-80	04/11/14	75-80	<50	<0.50	<0.50	<0.50	<0.50	<0.50
H3-65	04/14/14	55-65	<50	<0.50	<0.50	<0.50	<0.50	<0.50
H3-90	04/14/14	85-90	<50	<0.50	<0.50	<0.50	<0.50	<0.50
San Francisco Bay RWQCB ESLs ^b			100	1.0	40	30	20	5.0

Notes: Data prior to 2013 provided by Cardno ERI.
TPH-g Total Petroleum Hydrocarbons as gasoline analyzed using EPA Method 8015B.
MTBE Methyl tertiary butyl ether analyzed using EPA Method 8260B.
BTEX Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8021B.
bgs Below ground surface.
µg/L Micrograms per liter.
< Less than the stated laboratory reporting limit.
a Approximate depth to groundwater surface at time of sampling.
b San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels where groundwater is a current or potential source of drinking water, Interim Final-December 2013.

TABLE 8 ADDITIONAL GRAB GROUNDWATER ANALYTICAL RESULTS, FORMER EXXON SERVICE STATION 70234, 3450 35TH AVENUE, OAKLAND, CALIFORNIA

Sample ID	Sampling Date	Depth (feet bgs)	EDB (µg/L)	1,2-DCA (µg/L)	TAME (µg/L)	TBA (µg/L)	ETBE (µg/L)	DIPE (µg/L)	Ethanol (µg/L)	Naphthalene (µg/L)
Pit Water	06/14/02	11.5a	---	---	---	---	---	---	---	---
UST Pit	06/19/02	13.5a	---	---	---	---	---	---	---	---
W-38-B11	11/14/07	38	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<50	---
W-15-B12	11/13/07	15	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<500	---
W-40-B13	11/12/07	40	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<50	---
W-15-B14	11/13/07	15	<1.0	<1.0	<1.0	<20	<1.0	<1.0	<100	---
W-38-B15	11/15/07	38	<25	<25	<25	1,900	<25	<25	<2,500	---
W-40-B16	11/15/07	40	<0.50	<0.50	<0.50	<10	<0.50	<0.50	85	---
W-37-B17	11/13/07	37	<0.50	<0.50	<0.50	58	<0.50	<0.50	<50	---
W-38-B18	11/12/07	38	<12	<12	<12	<250	<12	<12	<1,200	---
W-35-B19	03/03/09	35	<50	<50	<50	<500	<50	<50	<5,000	---
W-35-B20	03/03/09	35	<0.50	<0.50	<0.50	12	<0.50	<0.50	<50	---
W-35-B21	03/03/09	35	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<50	---
H1-70	04/15/14	56.5-70	---	---	<0.50	18	<0.50	<0.50	---	<1.0
H1-95	04/15/14	85-95	---	---	<0.50	11	<0.50	<0.50	---	<1.0
H2-62	04/10/14	58-62	---	---	<0.50	<10	<0.50	<0.50	---	<1.0
H2-80	04/11/14	75-80	---	---	<0.50	<10	<0.50	<0.50	---	<1.0
H3-65	04/14/14	55-65	---	---	<0.50	<10	<0.50	<0.50	---	<1.0
H3-90	04/14/14	85-90	---	---	<0.50	<10	<0.50	<0.50	---	<1.0
San Francisco Bay RWQCB			0.05	0.5	NE	12	NE	NE	NE	6.1
ESLs^b										

Notes: Data prior to 2013 provided by Cardno ERI.

EDB Ethylene dibromide or 1,2-Dibromoethane analyzed using EPA Method 8260B.

1,2-DCA 1,2-Dichloroethane analyzed using EPA Method 8260B.

TAME Tertiary amyl methyl ether analyzed using EPA Method 8260B.

TBA Tertiary butyl alcohol analyzed using EPA Method 8260B.

ETBE Ethyl tertiary butyl ether analyzed using EPA Method 8260B.

DIPE Di-isopropyl ether analyzed using EPA Method 8260B.

Ethanol Ethanol analyzed using EPA Method 8260B.

Naphthalene Naphthalene analyzed using EPA Method 8260B.

µg/L Micrograms per liter.

bgs Below ground surface.

< Less than the stated laboratory reporting limit.

--- Not sampled/Not analyzed/Not measured/Not applicable.

a Approximate depth to groundwater surface at time of sampling.

b San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels where groundwater is a current or potential source of drinking water, Interim Final-December 2013.

NE Not established.

TABLE 9 SOIL VAPOR SAMPLE ANALYTICAL RESULTS, FORMER EXXON SERVICE STATION 70234, 3450 35TH AVENUE, OAKLAND, CALIFORNIA

Soil Vapor Monitoring Well	Screened Interval Depth (feet bgs)	Sampling Date	Concentration (% by Volume)				(% by volume)		Concentration ($\mu\text{g}/\text{m}^3$)										
			Oxygen and Argon	Carbon Dioxide	Methane	Lab Helium	Field Helium in Purged Soil Vapor	Field Helium under Shroud	TPH-g	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TBA	DIPE	ETBE	TAME	Naphthalene
V1	6.25-6.75	4/22/2014	12.9	4.81	<0.500	0.0348	0	21.7	30,000	<7.4	75	<10	<10	<34	<28	<39	<39	<39	<120
V2	6.25-6.75	4/22/2014	14.2	7.09	<0.500	0.0220	0	21.7	36,000	<6.5	110	<8.9	<8.9	<29	<25	<34	<34	<34	<110/<20*
V3	6.25-6.75	4/22/2014	15.4	5.76	<0.500	0.0969	0	38.8	24,000	<1.6	110	3.8	2.7	<7.2	<6.1	<8.4	<8.4	<8.4	<26
V4	6.25-6.75	4/23/2014	18.7	3.01	<0.500	0.0241	0	23.6	24,000	<1.6	<1.9	<2.2	<2.2	<7.2	<6.1	<8.4	<8.4	<8.4	<26
V5	6.25-6.75	4/23/2014	8.76	6.20	<0.500	0.0209	--	22.0	22,000	3.4	46	<2.2	<2.2	<7.2	<6.1	<8.4	<8.4	<8.4	<26
V5 (duplicate)	6.25-6.75	4/23/2014	9.12	6.03	<0.500	0.0298	--	22.0	19,000	3.2	38	2.5	2.3	<7.2	<6.1	<8.4	<8.4	<8.4	<26
Table E ESL	--	--	--	--	--	--	--	--	50,000	42	160,000	490	52,000	4,700	NE	NE	NE	NE	36

Notes:

bgs	Below ground surface.
TPH-g	Total Petroleum Hydrocarbons as gasoline.
MTBE	Methyl tertiary butyl ether.
TBA	Tertiary butyl alcohol.
ETBE	Ethyl tertiary butyl ether.
DIPE	Di-isopropyl ether.
TAME	Tertiary amyl methyl ether.
%	Percent.
$\mu\text{g}/\text{m}^3$	Micrograms per cubic meter.
--	Not analyzed, not measured, or not applicable.
Table E ESL	Residential Environmental Screening Level, Soil Gas, San Francisco Bay Regional Water Quality Control Board, December 2013.
<26	Not detected at or above the reporting limit indicated.
NE	Not established.
*	The first result is from EPA Method TO-15. The second result is from EPA Method TO-17.

Appendix A

Regulatory Correspondence

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Agency Director



ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

September 6, 2013

Ms. Jennifer Sedlachek
ExxonMobil
4096 Piedmont Ave., #194
Oakland, CA 94611
(Sent via E-mail to:
jennifer.c.sedlachek@exxonmobil.com)

Mr. R.J. Dodd
BNY Western Trust Company
3200 SW FRWY #3050
Houston, TX 77027

Mr. Roger Levin
The Valero Companies
10955 Westmoor Drive, Suite 400
West Minster, CO 80021
(Sent via E-mail to: roger.levin@valero.com)

MHCB (USA) Leasing Corp
c/o Ad Valorem Tax Department
PO Box 690110
San Antonio, TX 78269-0110

Subject: Fuel Leak Case No. RO0002515 and Geotracker Global ID #T06019757161, Exxon
#7-0234 3450 35th Avenue, Oakland, CA 94619

Dear Messrs. Levin, Dold and Ms. Sedlachek:

Alameda County Environmental Health (ACEH) staff has reviewed the case file including the *Work Plan for Subsurface Investigation*, dated May 24, 2013, *Conceptual Site Model* (CSM) dated May 9, 2013 and *Project Plan* dated May 24, 2013, which were prepared by ETIC Engineering Inc. (ETIC) for the subject site. The CSM identifies soil vapor and the vertical extent of contamination as being the remaining data gaps. The work plan addresses these data gaps and recommends installing and sampling six soil vapor wells to evaluate vapor intrusion at the site and advancing two deep cone penetrometer borings to define the vertical extent of contamination.

ACEH has evaluated the data and recommendations presented in the above-mentioned reports, in conjunction with the case files, and the State Water Resources Control Board's (SWRCBs) Low Threat Underground Storage Tank Case Closure Policy (LTCP). Based on ACEH staff review, we have determined that the site fails to meet LTCP General Criteria e (CSM) and f (secondary source removal), and the Media-Specific Criteria for Groundwater and the Media-Specific Criteria for Vapor Intrusion to Indoor Air.

ACEH generally concurs with the proposed scope of work presented in the work plan and the modifications discussed in the teleconference call dated September 5, 2013 that address the technical comments below. Submittal of a revised Work Plan is not required unless an alternate scope of work outside that described in the Work Plan and technical comments below is proposed. However, please submit a revised figure showing the modified boring locations.

TECHNICAL COMMENTS

1. **General Criteria e (Site Conceptual Model)** – According to the LTCP, the SCM is a fundamental element of a comprehensive site investigation. The SCM establishes the source and attributes of the unauthorized release, describes all affected media (including soil, groundwater, and soil vapor as appropriate), describes local geology, hydrogeology and other physical site characteristics that affect contaminant environmental transport and fate, and identifies all confirmed and potential contaminant receptors (including water supply wells, surface water bodies, structures and their inhabitants). The SCM is relied upon by practitioners as a guide for investigative design and data collection. All relevant site characteristics identified by the SCM shall be assessed and supported by data so that the nature, extent and mobility of the release have been established to determine conformance with applicable criteria in this policy.

ACEH's review of the case files indicates that insufficient data and analysis has been presented to assess the nature, extent, and mobility of the release and to support compliance with General Criteria f, as discussed in Technical Comment 2 below and the Media Specific Criteria for Groundwater and Media Specific Criteria for Vapor Intrusion to Indoor Air as described in Technical Comments 3 and 4, respectively.

Please update the SCM and submit with the Soil and Water Investigation Report (SWI) described in Technical Comment 5 and update with each subsequent submittal.

2. **General Criteria f (Secondary Source)** – The LTCP defines "secondary source" as petroleum-impacted soil or groundwater located at or immediately beneath the point of release from the primary source. Unless site attributes prevent secondary source removal (e.g. physical or infrastructural constraints exist whose removal or relocation would be technically or economically infeasible), petroleum-release sites are required to undergo secondary source removal to the extent practicable as described herein. "To the extent practicable" means implementing a cost-effective corrective action which removes or destroys-in-place the most readily recoverable fraction of source-area mass. According to the LTCP, following removal or destruction of the secondary source, additional removal or active remedial actions shall not be required by regulatory agencies unless (1) necessary to abate a demonstrated threat to human health or (2) the groundwater plume does not meet the definition of low threat as described in this policy."

ACEH's review of the case files indicates that insufficient data and analysis has been presented to support whether the secondary source in the vicinity of wells RW-1 and MW-5, and B-15 has been removed to the extent practicable. Specifically:

- TPHg was detected in soil samples collected from RW-1 at concentrations of 420 mg/kg at 37 feet below ground surface (bgs), and 440 mg/kg at 40 feet bgs.
- Soil samples collected from borings MW-5 and B-15 contained TPHg at concentrations of 260 mg/kg and 300 mg/kg at 20 feet bgs, respectively.
- The TPHg soil concentrations noted above are above the SWRCB's "Rule of Thumb" indicators for indirect evidence of free product presented in the

Technical Justification Paper for Vapor Intrusion into Indoor Air (e.g., 100 mg/kg to 200 mg/kg).

- Benzene concentrations in groundwater samples collected in well RW-1 are increasing with the most recent concentration detected at 1,200 µg/L, and are the highest benzene current concentrations detected in the monitoring well network.
- MTBE concentrations in groundwater samples collected in well RW-1 are fluctuating in the vicinity of 2,500 µg/L, and are the highest current MTBE concentrations detected in the monitoring well network.
- TPH-g concentrations in groundwater samples collected in well RW-1 are fluctuating in the vicinity of 5,000 µg/L, and are the highest current TPH-g concentrations detected in the monitoring well network.

Please advance a boring in the vicinity of RW-1 to define the vertical impacts to groundwater in this potential source area.

3. **LTCP Media Specific Criteria for Vapor Intrusion to Indoor Air** – The LTCP describes conditions, including bioattenuation zones, which if met will assure that exposure to petroleum vapors in indoor air will not pose unacceptable health risks to human occupants of existing or future site buildings, and adjacent parcels. Appendices 1 through 4 of the LTCP criteria illustrate four potential exposure scenarios and describe characteristics and criteria associated with each scenario.

Our review of the case files indicates that the site data may support the requisite characteristics of the bioattenuation zone and therefore, soil gas samples may not be necessary. ACEH recommends that you evaluate the depth to water and total petroleum hydrocarbon (TPH) concentrations in the upper ten feet of soil to see whether soil gas sampling is necessary. Please present your evaluation in the SWI requested in Item 5.

ETIC proposes installing 6 soil vapor monitoring wells to 6 feet below ground surface (bgs) using a hand auger. Please note that closure under the LTCP media specific criteria for vapor intrusion to indoor air is based on soil vapor concentrations of benzene, ethylbenzene and naphthalene meeting the concentrations listed in the policy. Please ensure that all soil gas samples including naphthalene are collected in accordance with DTSC protocols. Please collect confirmation samples using TO-17 for naphthalene in accordance with the DTSC guidance document. The work plan proposes collecting samples of additional analytes and comparing results to current Regional Water Quality Control Board, San Francisco Bay Region, environmental screening levels (ESLs).

Please note that closure under the vapor intrusion to Indoor air criteria are based on the LTCP screening levels for naphthalene, benzene and ethylbenzene.

Also, please ensure that the proposed depths of the soil probes are a minimum of five feet below existing and potential borings.

Please present the results of the investigation in the SWI described in Item 5 below.

4. **LTCP Media Specific Criteria for Groundwater** – To satisfy the media-specific criteria for groundwater, the contaminant plume that exceeds water quality objectives must be stable or decreasing in areal extent, and meet all of the additional characteristics of one of the five classes of sites listed in the policy.

Our review of the case files indicates that insufficient data and analysis has been presented to support the requisite characteristics of plume stability or plume classification. Specifically, the lateral and vertical extent of the source in the vicinity of RW-1 and MW-5 as discussed in Technical Comment 2 above, is undefined as is the vertical and lateral extent of the off-site MTBE plume.

ETIC proposes advancing two CPT borings to define the vertical extent of contamination at the site and determine if contaminants are coming onto the site from upgradient. In addition to these borings, and as discussed in our teleconference call please include an on-site boring to the northwest of MW-7 to define the downgradient extent of MTBE in this area in both the first water bearing zone and the second one encountered in proposed boring H1, borings in the vicinity of wells RW-1 and MW-5, and boring B-15. ETIC proposes to analyze the grab groundwater samples for naphthalene. ACEH requests that ETIC perform naphthalene analysis on the groundwater monitoring wells in the next groundwater monitoring event.

Please present the results of the investigation in the SWI described in Item 5 below.

5. **Soil and Water Investigation Report** – Please prepare an SWI presenting the results of the field investigation and submit by the due date specified below. Please update the SCM and submit with the SWI.

In order to expedite review, ACEH requests the focused SCM be presented in a tabular format that highlights the major SCM elements and associated data gaps, which need to be addressed to progress the site to case closure under the LTCP. Please see Attachment A "Site Conceptual Model Requisite Elements".

6. **Groundwater Monitoring** – ACEH is amenable to ETICs proposal to eliminate DIPE, ETBE, TAME, EDB, and EDC from the analytical suite in groundwater. However, we would like to ensure that tertiary butyl alcohol (TBA) is analyzed. Please continue to coordinate groundwater monitoring with the adjacent downgradient ConocoPhillips site and submit results in the Semi-Annual Groundwater Monitoring Reports according to the schedule below.

TECHNICAL REPORT REQUEST

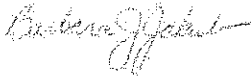
Please submit technical reports to ACEH (Attention: Barbara Jakub), according to Attachment 1 and the following naming convention and schedule:

- **December 6, 2013** – Soil and Water Investigation and Focused SCM Report
(File to be named: SWI_R_yyyy-mm-dd)
- **December 30, 2013** – Second Half Semi Annual Groundwater Monitoring Report
(File to be named: GWM_R_yyyy-mm-dd)

Should you have any questions or concerns regarding this correspondence or your case, please call me at (510) 639-1287 or send me an electronic mail message at barbara.jakub@acgov.org.

Messrs. Levin, Dold and Ms. Sedlachek
RO0002515
September 6, 2013, Page 5

Sincerely,



Digitally signed by Barbara J.
Jakub
DN: cn=Barbara J. Jakub, o, ou,
email=barbara.jakub@acgov.org,
c=US
Date: 2013.09.06 14:02:32 -07'00'

Barbara J. Jakub, P.G.
Hazardous Materials Specialist

Enclosures: Attachment 1 - Responsible Party(ies) Legal Requirements/Obligations &
ACEH Electronic Report Upload (ftp) Instructions

cc: Thomas Neely, ETIC Engineering, Inc., 2285 Morello Avenue, Pleasant Hill, CA 94523 (*Sent via E-mail to: tneely@eticeng.com*)
Dilan Roe, ACEH (*Sent via E-mail to: dilan.roe@acgov.org*)
Barbara Jakub, ACEH (*Sent via E-mail to: barbara.jakub@acgov.org*)
GeoTracker, file

Attachment 1
Responsible Party(ies) Legal Requirements/Obligations

REPORT/DATA REQUESTS

These reports/data are being requested pursuant to Division 7 of the California Water Code (Water Quality), Chapter 6.7 of Division 20 of the California Health and Safety Code (Underground Storage of Hazardous Substances), and Chapter 16 of Division 3 of Title 23 of the California Code of Regulations (Underground Storage Tank Regulations).

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (Local Oversight Program [LOP] for unauthorized releases from petroleum Underground Storage Tanks [USTs], and Site Cleanup Program [SCP] for unauthorized releases of non-petroleum hazardous substances) require submission of reports in electronic format pursuant to Chapter 3 of Division 7, Sections 13195 and 13197.5 of the California Water Code, and Chapter 30, Articles 1 and 2, Sections 3890 to 3895 of Division 3 of Title 23 of the California Code of Regulations (23 CCR). Instructions for submission of electronic documents to the ACEH FTP site are provided on the attached "Electronic Report Upload Instructions."

Submission of reports to the ACEH FTP site is in addition to requirements for electronic submittal of information (ESI) to the State Water Resources Control Board's (SWRCB) Geotracker website. In April 2001, the SWRCB adopted 23 CCR, Division 3, Chapter 16, Article 12, Sections 2729 and 2729.1 (Electronic Submission of Laboratory Data for UST Reports). Article 12 required electronic submittal of analytical laboratory data submitted in a report to a regulatory agency (effective September 1, 2001), and surveyed locations (latitude, longitude and elevation) of groundwater monitoring wells (effective January 1, 2002) in Electronic Deliverable Format (EDF) to Geotracker. Article 12 was subsequently repealed in 2004 and replaced with Article 30 (Electronic Submittal of Information) which expanded the ESI requirements to include electronic submittal of any report or data required by a regulatory agency from a cleanup site. The expanded ESI submittal requirements for petroleum UST sites subject to the requirements of 23 CCR, Division, 3, Chapter 16, Article 11, became effective December 16, 2004. All other electronic submittals required pursuant to Chapter 30 became effective January 1, 2005. Please visit the SWRCB website for more information on these requirements: (http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/).

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 7835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, late reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to \$10,000 per day for each day of violation.

Alameda County Environmental Cleanup Oversight Programs (LOP and SCP)	REVISION DATE: July 25, 2012
	ISSUE DATE: July 5, 2005
	PREVIOUS REVISIONS: October 31, 2005; December 16, 2005; March 27, 2009; July 8, 2010
SECTION: Miscellaneous Administrative Topics & Procedures	SUBJECT: Electronic Report Upload (ftp) Instructions

The Alameda County Environmental Cleanup Oversight Programs (petroleum UST and SCP) require submission of all reports in electronic form to the county's FTP site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

REQUIREMENTS

- **Please do not submit reports as attachments to electronic mail.**
- Entire report including cover letter must be submitted to the ftp site as a **single Portable Document Format (PDF) with no password protection.**
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- **Signature pages and perjury statements must be included and have either original or electronic signature.**
- **Do not password protect the document.** Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted.**
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:

RO#_Report Name_Year-Month-Date (e.g., RO#5555_WorkPlan_2005-06-14)

Submission Instructions

- 1) Obtain User Name and Password
 - a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
 - i) Send an e-mail to deh.loptoxic@acgov.org
 - b) In the subject line of your request, be sure to include "**ftp PASSWORD REQUEST**" and in the body of your request, include the **Contact Information, Site Addresses, and the Case Numbers (RO# available in Geotracker) you will be posting for.**
- 2) Upload Files to the ftp Site
 - a) Using Internet Explorer (IE4+), go to <ftp://alcoftp1.acgov.org>
 - i) Note: Netscape, Safari, and Firefox browsers will not open the FTP site as they are NOT being supported at this time.
 - b) Click on Page located on the Command bar on upper right side of window, and then scroll down to Open FTP Site in Windows Explorer.
 - c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
 - d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
 - e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.
- 3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
 - a) Send email to deh.loptoxic@acgov.org notify us that you have placed a report on our ftp site.
 - b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
 - c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO#, use the street address instead.
 - d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.

Deborah Hensley

From: Joseph Muehleck
Sent: Thursday, January 23, 2014 3:52 PM
To: Deborah Hensley
Cc: Thomas Neely
Subject: FW: RO2515, Exxon #70234, 3450 35th Avenue, Oakland, CA 94619

Joseph Muehleck
Project Manager

jmuehleck@eticeng.com
www.eticeng.com
ETIC Engineering, Inc.
2285 Morello Ave.
Pleasant Hill, CA 94523
Tel: 925-602-4710 x2127
Fax: 925-602-4720
Mobile: 925-301-7428

From: Nowell, Keith, Env. Health [<mailto:Keith.Nowell@acgov.org>]
Sent: Thursday, January 23, 2014 3:50 PM
To: Joseph Muehleck
Cc: Sedlachek, Jennifer C; 'Roger.Levin@valero.com'; Roe, Dilan, Env. Health
Subject: RE: RO2515, Exxon #70234, 3450 35th Avenue, Oakland, CA 94619

Dear Mr. Muehleck,

The extension request for the submittal of the Soil and Water Investigation and Focused SCM Report for the subject case is approved and has been extended to June 9, 2014.

Regards,
Keith Nowell

Keith Nowell PG, CHG
Hazardous Materials Specialist
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502-6540
phone: 510 / 567 - 6764
fax: 510 / 337 - 9335
email: keith.nowell@acgov.org

PDF copies of case files can be reviewed/downloaded at:

<http://www.acgov.org/aceh/lop/ust.htm>

From: Joseph Muehleck [<mailto:jmuehleck@eticeng.com>]
Sent: Thursday, January 23, 2014 11:39 AM
To: Nowell, Keith, Env. Health

Cc: Sedlachek, Jennifer C; 'Roger.Levin@valero.com'

Subject: R02515, Exxon #70234, 3450 35th Avenue, Oakland, CA 94619

Dear Mr. Nowell –

As discussed on Wednesday, 22 January 2014, outside counsel for ExxonMobil Environmental Services has been in contact with the property owner about access to perform a proposed investigation at the referenced site. Per previous email to Alameda County Environmental Health (Dilan Roe) dated 7 November 2013, the site was being used for parking for a nearby construction project that would last into 2014, which delayed the investigation. The property owner has recently indicated that the property should be accessible for the investigation by 1 April 2014. Therefore, on behalf of ExxonMobil Environmental Services, we request an extension of the Soil and Water Investigation and Focused SCM Report due date to 9 June 2014.

Please respond at your earliest convenience. Thank you for your consideration.

Joseph Muehleck

Project Manager

jmuehleck@eticeng.com

www.eticeng.com

ETIC Engineering, Inc.

2285 Morello Ave.

Pleasant Hill, CA 94523

Tel: 925-602-4710 x2127

Fax: 925-602-4720

Mobile: 925-301-7428

Appendix B

Drilling and Well Installation Permits

Alameda County Public Works Agency - Water Resources Well Permit



Public Works Agency
Alameda County

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

Application Approved on: 10/16/2013 By jamesy

Permit Numbers: W2013-0873 to W2013-0874
Permits Valid from 04/10/2014 to 04/17/2014

Application Id: 1381772486401
Site Location: 3450 35th Ave, Oakland, CA
Project Start Date: 11/04/2013
Extension Start Date: 04/10/2014
Extension Count: 1

City of Project Site:Oakland

Completion Date:11/13/2013
Extension End Date: 04/17/2014
Extended By: priest

Assigned Inspector: Contact Steve Miller at (510) 670-5517 or stevem@acpwa.org

Applicant: GREGG - Chris Pruner
950 Howe Road, Martinez, CA 94553
Property Owner: FWS Highland LLC
99 S Hill Drive, Brisbane, CA 94005
Client: ExxonMobil Corp
4096 Piedmont Ave #194, Oakland, CA 94611

Phone: 925-313-5800

Phone: 415-468-5000

Phone: 510-547-8196 x

Receipt Number: WR2013-0399 Total Due: \$530.00
Payer Name : ETIC Engineering Total Amount Paid: \$530.00
Paid By: CHECK PAID IN FULL

Works Requesting Permits:

Well Construction-Vapor monitoring well-Vapor monitoring well - 6 Wells
Driller: Gregg - Lic #: 485165 - Method: other

Work Total: \$265.00

Specifications

Permit #	Issued Date	Expire Date	Owner Well Id	Hole Diam.	Casing Diam.	Seal Depth	Max. Depth
W2013-0873	10/16/2013	02/02/2014	V1	4.00 in.	0.40 in.	4.00 ft	7.00 ft
W2013-0873	10/16/2013	02/02/2014	V2	4.00 in.	0.40 in.	4.00 ft	7.00 ft
W2013-0873	10/16/2013	02/02/2014	V3	4.00 in.	0.40 in.	4.00 ft	7.00 ft
W2013-0873	10/16/2013	02/02/2014	V4	4.00 in.	0.40 in.	4.00 ft	7.00 ft
W2013-0873	10/16/2013	02/02/2014	V5	4.00 in.	0.40 in.	4.00 ft	7.00 ft
W2013-0873	10/16/2013	02/02/2014	V6	4.00 in.	0.40 in.	4.00 ft	7.00 ft

Specific Work Permit Conditions

1. Drilling Permit(s) can be voided/ cancelled only in writing. It is the applicant's responsibility to notify Alameda County Public Works Agency, Water Resources Section in writing for an extension or to cancel the drilling permit application. No drilling permit application(s) shall be extended beyond ninety (90) days from the original start date. Applicants may not cancel a drilling permit application after the completion date of the permit issued has passed.
2. Compliance with the above well-sealing specifications shall not exempt the well-sealing contractor from complying with appropriate state reporting-requirements related to well destruction (Sections 13750 through 13755 (Division 7, Chapter 10, Article 3) of the California Water Code). Contractor must complete State DWR Form 188 and mail original to the Alameda County Public Works Agency, Water Resources Section, within 60 days, including permit number and site map.
3. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend

Alameda County Public Works Agency - Water Resources Well Permit

and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.

4. Permittee, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.

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

6. No changes in construction procedures or well type shall change, as described on this permit application. This permit may be voided if it contains incorrect information.

7. Applicant shall submit the copies of the approved encroachment permit to this office within 60 days.

8. Applicant shall contact Steve Miller for an inspection time at (510) 670-5517 or email to stevem@acpwa.org at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

9. Remove the Christy box or similar structure. Overdrill or clean out to original depth. After the seal has set, backfill the remaining hole with concrete or compacted material to match existing.

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

11. Vapor monitoring wells constructed with tubing shall be decomissioned by complete removal of tubing, grout seal, and fill material of sand or bentonite. Fill material may be removed by hand auger if material can be removed completely.

Vapor monitoring wells constructed with pvc pipe less than 2" shall be overdrilled to total depth.

Vapor monitoring wells constructed with 2" pvc pipe or larger may be grouted by tremie pipe (any depth) or pressure grouted (less than 30', 25 psi for 5 min).

Borehole(s) for Investigation-Environmental/Monitorinig Study - 11 Boreholes

Driller: Gregg - Lic #: 485165 - Method: other

Work Total: \$265.00

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2013- 0874	10/16/2013	02/02/2014	11	3.00 in.	100.00 ft

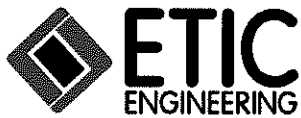
Specific Work Permit Conditions

Alameda County Public Works Agency - Water Resources Well Permit

1. Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings. All cuttings remaining or unused shall be containerized and hauled off site. The containers shall be clearly labeled to the ownership of the container and labeled hazardous or non-hazardous.
 2. Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.
 3. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.
 4. Applicant shall contact Steve Miller for an inspection time at (510) 670-5517 or email to stevem@acpwa.org at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.
 5. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of \$500.00.
 6. NOTE:
Under California laws, the owner/operator are responsible for reporting the contamination to the governmental regulatory agencies under Section 25295(a). The owner/operator is liable for civil penalties under Section 25299(a)(4) and criminal penalties under Section 25299(d) for failure to report a leak. The owner/operator is liable for civil penalties under Section 25299(b)(4) for knowing failure to ensure compliance with the law by the operator. These penalty provisions do not apply to a potential buyer.
 7. Prior to any drilling activities onto any public right-of-ways, it shall be the applicants responsibilities to contact and coordinate a Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits required for that City or to the County and follow all City or County Ordinances. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County a Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.
 8. Permit is valid only for the purpose specified herein. No changes in construction procedures, as described on this permit application. Boreholes shall not be converted to monitoring wells, without a permit application process.
-

Appendix C

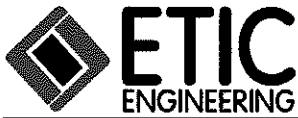
Boring Logs, Well Construction Diagrams, and DWR 188 Well Completion Reports



PROJECT NAME: FORMER EXXON SERVICE STATION 70234
 PROJECT NO: 14-070234-UP
 LOCATION: 3450 35TH AVE, OAKLAND, CA

DRILLING COMPANY: Gregg Drilling		LICENSE No.: C57-485165		ELEVATION AND DATUM (FT.):	
DRILLING METHOD 1: Hand Auger		DRILLER: Dustin Tidwell		DATE STARTED: 4/11/14 DATE FINISHED: 4/15/14	
DRILLING METHOD 2: CPT/Hydropunch/ /Direct push		DRILL BIT: CPT Cone/Hydropunch		BORING DEPTH (FT.): 100 (CPT) WELL DEPTH (FT.): N/A	
DRILLING EQUIPMENT: 30-Ton CPT Rig		SAMPLER: Hydropunch Soil Sampler		NO. OF SAMPLES: SOIL: 1 GW: 2 OTHER: 0	
SIZE AND TYPE OF CASING:		TYPE OF PERFORATION:		DEPTH TO WATER (FT.): FIRST: N/A COMPLETION: N/A OTHER: -	
TYPE OF SEAL: Neat Cement Grout		FROM 0.5 TO 100 FT.		LOGGED BY: Victor Ocegueda	
TYPE OF SEAL: Concrete		FROM 0 TO 0.5 FT.		CHECKED BY: [Signature]	

DEPTH (FT.)	DESCRIPTION	GRAPHIC LOG			WATER LEVEL	SAMPLES					REMARKS (Drilling Rate, Fluid Loss, Odor, etc.)
		LITHOLOGY	USCS	WELL CONSTRUCTION DIAGRAM		DRIVEN (in.)	RECOVERY (in.)	SAMPLING INTERVAL	BLOW COUNTS (per 6-in.)	QVM (ppmv)	
1	Concrete										At location H1: One CPT boring to 100 feet (CPT log as a separate attachment). One boring to 70 feet for Hydropunch sample. One boring to 95 feet for Hydropunch sample. One boring to 54 feet for soil sample. Each boring filled and sealed with neat cement. Information for the Hydropunch borings and the soil boring are summarized on this log. Cleared to 8' on 4/11/14
2	SILTY SAND with clay: Dark brown (10YR 3/3), fine to medium grained, loose, trace coarse red gravel, moist.	SM								0	
3	SILT WITH CLAY: Yellowish brown (10YR 3/6), soft, trace gravel up to 1/4 inch, moist.	ML									
4	CLAYEY SILT: Yellowish brown (7.5YR 5/6), soft, moist.	ML									
5	SILTY CLAY with sand: Dark yellowish brown (10YR 4/6), stiff, black streaks, fine grained sand, trace gravel, moist.	CL								0	
6											
7											
8	CLAYEY SILT with sand: Dark yellowish brown (10YR 4/6), soft, trace fine to coarse gravel up to 3" diameter, moist.	ML									
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											



PROJECT NAME: FORMER EXXON SERVICE STATION 70234
PROJECT NO: 14-070234-UP
LOCATION: 3450 35TH AVE, OAKLAND, CA

DEPTH (FT.)	DESCRIPTION	GRAPHIC LOG				SAMPLES					REMARKS (Drilling Rate, Fluid Loss, Odor, etc.)
		LITHOLOGY	USCS	WELL CONSTRUCTION DIAGRAM	WATER LEVEL	DRIVEN (in.)	RECOVERY (in.)	SAMPLING INTERVAL	BLOW COUNTS (per 6-in.)	QVM (ppmv)	
21											<i>Checked by:</i> <i>[Signature]</i> REMARKS (Drilling Rate, Fluid Loss, Odor, etc.)
22											
23											
24											
25											
26											
27											
28											
29											
30											
31											
32											
33											
34											
35											
36											
37											
38											
39											
40											
41											
42											
43											
44											
45											

DEPTH (FT.)	DESCRIPTION	GRAPHIC LOG			WATER LEVEL	SAMPLES					REMARKS (Drilling Rate, Fluid Loss, Odor, etc.)
		LITHOLOGY	USCS	WELL CONSTRUCTION DIAGRAM		DRIVEN (in.)	RECOVERY (in.)	SAMPLING INTERVAL	BLOW COUNTS (per 6-in.)	OWM (ppmv)	
46											
47											
48											
49											
50											
51											
52											
53	SILTY CLAY with some sand: dark yellowish brown (10YR 4/6), medium stiff, medium plasticity, moist, some fine sand, trace fine gravel up to 1/2 inch diameter.	CL				12	11			0	Soil sample H1-54 @1600 4/15/14
54											
55											
56											
57											
58											
59											
60											
61											
62											
63											
64											
65											
66											
67											
68											
69											
70											Hydropunch sample H1-70 @1640 4/15/14

Checked by: *JJ May*
REMARKS
(Drilling Rate, Fluid Loss, Odor, etc.)




PROJECT NAME: FORMER EXXON SERVICE STATION 70234
PROJECT NO: 14-070234-UP
LOCATION: 3450 35TH AVE, OAKLAND, CA

DEPTH (FT.)	DESCRIPTION	GRAPHIC LOG			WATER LEVEL	SAMPLES					Checked by: <i>[Signature]</i> REMARKS (Drilling Rate, Fluid Loss, Odor, etc.)
		LITHOLOGY	USCS	WELL CONSTRUCTION DIAGRAM		DRIVEN (in.)	RECOVERY (in.)	SAMPLING INTERVAL	BLOW COUNTS (per 6-in.)	QVM (ppmv)	
71											
72											
73											
74											
75											
76											
77											
78											
79											
80											
81											
82											
83											
84											
85											
86											
87											
88											
89											
90											
91											
92											
93											
94											
95											

Hydropunch sample
H1-95 @1120 4/15/14

BORING NO.: **H1**

Sheet 4 of 5

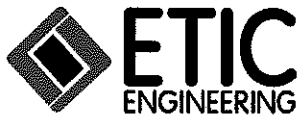
DEPTH (FT.)	DESCRIPTION	GRAPHIC LOG			WATER LEVEL	SAMPLES					Checked by: <i>[Signature]</i> REMARKS (Drilling Rate, Fluid Loss, Odor, etc.)
		LITHOLOGY	USCS	WELL CONSTRUCTION DIAGRAM		DRIVEN (in.)	RECOVERY (in.)	SAMPLING INTERVAL	BLOW COUNTS (per 6-in.)	Q/M (ppmv)	
96	END OF CPT BORING AT 100 feet.										
97											
98											
99											
100											
101											
102											
103											
104											
105											
106											
107											
108											
109											
110											
111											
112											
113											
114											
115											
116											
117											
118											
119											
120											



PROJECT NAME: FORMER EXXON SERVICE STATION 70234
 PROJECT NO: 14-070234-UP
 LOCATION: 3450 35TH AVE, OAKLAND, CA

DRILLING COMPANY: Gregg Drilling		LICENSE No.: C57-485165		ELEVATION AND DATUM (FT.):	
DRILLING METHOD 1: Hand Auger		DRILLER: Dustin Tidwell		DATE STARTED: 4/10/14	
DRILLING METHOD 2: CPT/Hydropunch		DRILL BIT: CPT Cone/Hydropunch		DATE FINISHED: 4/11/14	
DRILLING EQUIPMENT: 30-Ton CPT Rig		SAMPLER: Hydropunch Soil Sampler		BORING DEPTH (FT.) 100 (CPT)	
SIZE AND TYPE OF CASING:		NO. OF SAMPLES: 0		WELL DEPTH (FT.) N/A	
TYPE OF PERFORATION:		SOIL: 0		GW: 2	
FROM - TO - FT.		DEPTH TO WATER (FT.)		OTHER: 0	
SIZE AND TYPE OF FILTER PACK:		TIME:		FIRST: N/A	
TYPE OF SEAL: Neat Cement Grout		FROM 0.5 TO 100 FT.		COMPLETION: N/A	
TYPE OF SEAL: Concrete		FROM 0 TO 0.5 FT.		OTHER: -	
LOGGED BY: Karina Gillette				CHECKED BY: [Signature]	

DEPTH (FT.)	DESCRIPTION	GRAPHIC LOG				SAMPLES					REMARKS (Drilling Rate, Fluid Loss, Odor, etc.)
		LITHOLOGY	USCS	WELL CONSTRUCTION DIAGRAM	WATER LEVEL	DRIVEN (in.)	RECOVERY (in.)	SAMPLING INTERVAL	BLOW COUNTS (per 6-in.)	Q/M (ppmv)	
1	Concrete										Driller says material is fill.
2	SILTY SAND with clay: dark brown (10YR 3/3), fine grained sand, loose, dry.	SM									
3	CLAY with some silt: dark yellowish brown (10YR 4/6), medium plasticity, very stiff, slightly moist.	CL									<p>Cleared to 5' on 4/10/14.</p> <p>At location H2: One CPT boring to 100 feet (CPT log as a separate attachment). One boring to 62 feet for Hydropunch sample. One boring to 80 feet for Hydropunch sample.</p> <p>Each boring filled and sealed with neat cement. Information for the Hydropunch borings and the soil boring are summarized on this log.</p>
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											



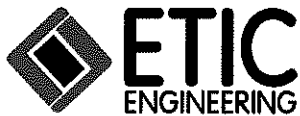
PROJECT NAME: FORMER EXXON SERVICE STATION 70234
PROJECT NO: 14-070234-UP
LOCATION: 3450 35TH AVE, OAKLAND, CA

DEPTH (FT.)	DESCRIPTION	GRAPHIC LOG				SAMPLES					REMARKS (Drilling Rate, Fluid Loss, Odor, etc.)
		LITHOLOGY	USCS	WELL CONSTRUCTION DIAGRAM	WATER LEVEL	DRIVEN (in.)	RECOVERY (in.)	SAMPLING INTERVAL	BLOW COUNTS (per 6-in.)	QVM (ppmv)	
21											<div>Checked by: <i>JS May</i></div> REMARKS (Drilling Rate, Fluid Loss, Odor, etc.)
22											
23											
24											
25											
26											
27											
28											
29											
30											
31											
32											
33											
34											
35											
36											
37											
38											
39											
40											
41											
42											
43											
44											
45											



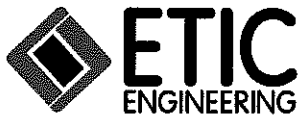
PROJECT NAME: FORMER EXXON SERVICE STATION 70234
PROJECT NO: 14-070234-UP
LOCATION: 3450 35TH AVE, OAKLAND, CA

DEPTH (FT.)	DESCRIPTION	GRAPHIC LOG				SAMPLES					Checked by: <i>J. May</i> REMARKS (Drilling Rate, Fluid Loss, Odor, etc.)
		LITHOLOGY	USCS	WELL CONSTRUCTION DIAGRAM	WATER LEVEL	DRIVEN (in.)	RECOVERY (in.)	SAMPLING INTERVAL	BLOW COUNTS (per 8-in.)	QVM (ppmv)	
46											
47											
48											
49											
50											
51											
52											
53											
54											
55											
56											
57											
58											
59											
60											
61											
62											Hydropunch sample H2-62 @1345 4/10/14
63											
64											
65											
66											
67											
68											
69											
70											



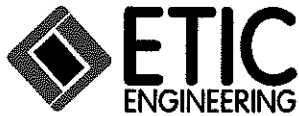
PROJECT NAME: FORMER EXXON SERVICE STATION 70234
PROJECT NO: 14-070234-UP
LOCATION: 3450 35TH AVE, OAKLAND, CA

DEPTH (FT.)	DESCRIPTION	GRAPHIC LOG				SAMPLES					REMARKS (Drilling Rate, Fluid Loss, Odor, etc.)
		LITHOLOGY	USCS	WELL CONSTRUCTION DIAGRAM	WATER LEVEL	DRIVEN (in.)	RECOVERY (in.)	SAMPLING INTERVAL	BLOW COUNTS (per 6-in.)	QVM (ppmv)	
71											<p>Checked by: <i>[Signature]</i></p> <p>Hydropunch sample H2-80 @1430 4/11/14</p>
72											
73											
74											
75											
76											
77											
78											
79											
80											
81											
82											
83											
84											
85											
86											
87											
88											
89											
90											
91											
92											
93											
94											
95											



PROJECT NAME: FORMER EXXON SERVICE STATION 70234
PROJECT NO: 14-070234-UP
LOCATION: 3450 35TH AVE, OAKLAND, CA

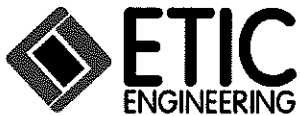
DEPTH (FT.)	DESCRIPTION	GRAPHIC LOG			WATER LEVEL	SAMPLES					Checked by: <i>JS Hef</i> REMARKS (Drilling Rate, Fluid Loss, Odor, etc.)
		LITHOLOGY	USCS	WELL CONSTRUCTION DIAGRAM		DRIVEN (in.)	RECOVERY (in.)	SAMPLING INTERVAL	BLOW COUNTS (per 6-in.)	QVM (ppmv)	
96	END OF CPT BORING AT 100 feet.										
97											
98											
99											
100											
101											
102											
103											
104											
105											
106											
107											
108											
109											
110											
111											
112											
113											
114											
115											
116											
117											
118											
119											
120											



PROJECT NAME: FORMER EXXON SERVICE STATION 70234
 PROJECT NO: 14-070234-UP
 LOCATION: 3450 35TH AVE, OAKLAND, CA

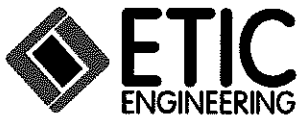
DRILLING COMPANY: Gregg Drilling		LICENSE No.: C57-485165		ELEVATION AND DATUM (FT.):	
DRILLING METHOD 1: Hand Auger		DRILLER: Dustin Tidwell		DATE STARTED: 4/10/14	
DRILLING METHOD 2: CPT/Hydropunch / Direct Push		DRILL BIT: CPT Cone/Hydropunch		DATE FINISHED: 4/14/14	
DRILLING EQUIPMENT: 30-Ton CPT Rig		SAMPLER: Hydropunch		BORING DEPTH (FT.) 100 (CPT)	
SIZE AND TYPE OF CASING:		Soil Sample		WELL DEPTH (FT.) N/A	
TYPE OF PERFORATION:		NO. OF SAMPLES:		SOIL: 1	
FROM - TO - FT.		DEPTH TO WATER (FT.)		GW: 2	
SIZE AND TYPE OF FILTER PACK:		TIME:		OTHER: 0	
TYPE OF SEAL: Neat Cement Grout		LOGGED BY: Victor Ocegueda		CHECKED BY: [Signature]	
TYPE OF SEAL: Concrete		FROM 0 TO 0.5 FT.		COMPLETION: N/A	
				OTHER: -	

DEPTH (FT.)	DESCRIPTION	GRAPHIC LOG			SAMPLES					REMARKS (Drilling Rate, Fluid Loss, Odor, etc.)	
		LITHOLOGY	USCS	WELL CONSTRUCTION DIAGRAM	WATER LEVEL	DRIVEN (in.)	RECOVERY (in.)	SAMPLING INTERVAL	BLOW COUNTS (per 6-in.)		Q/M (ppmv)
1	Concrete										At location H3: One CPT boring to 100 feet (CPT log as a separate attachment). One boring to 65 feet for Hydropunch sample. One boring to 90 feet for Hydropunch sample. One boring to 54 feet for soil sample. Each boring filled and sealed with neat cement. Information for the Hydropunch borings and the soil boring are summarized on this log. Cleared to 8' on 4/11/14
2	SILTY SAND with clay: dark brown (10YR 3/3), fine to medium grained, loose, moist.	SM							0.0		
3	SILT WITH CLAY and some sand: Brown (7.5YR 5/6), stiff, fine grained sand, moist.	ML							0.0		
4	CLAYEY SILT: Brown (7.5YR 5/6), stiff, moist, trace fine grained sand.	ML							0.0		
5	SILTY CLAY: Yellowish brown (10YR 4/6), very stiff, medium plasticity, moist, trace fine angular gravel, yellowish red (5YR 4/6).	CL							0.0		
6											
7	CLAYEY SILT with sand and gravel: Yellowish brown (10YR 5/6), soft, moist, some fine to coarse grained sand, little fine gravel.	ML							0.0		
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											



PROJECT NAME: FORMER EXXON SERVICE STATION 70234
PROJECT NO: 14-070234-UP
LOCATION: 3450 35TH AVE, OAKLAND, CA

DEPTH (FT.)	DESCRIPTION	GRAPHIC LOG			WATER LEVEL	SAMPLES					Checked by: <i>[Signature]</i> REMARKS (Drilling Rate, Fluid Loss, Odor, etc.)
		LITHOLOGY	USCS	WELL CONSTRUCTION DIAGRAM		DRIVEN (in.)	RECOVERY (in.)	SAMPLING INTERVAL	BLOW COUNTS (per 6-in.)	QVM (ppmv)	
21											
22											
23											
24											
25											
26											
27											
28											
29											
30											
31											
32											
33											
34											
35											
36											
37											
38											
39											
40											
41											
42											
43											
44											
45											

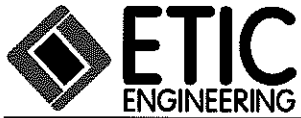


PROJECT NAME: FORMER EXXON SERVICE STATION 70234
PROJECT NO: 14-070234-UP
LOCATION: 3450 35TH AVE, OAKLAND, CA

DEPTH (FT.)	DESCRIPTION	GRAPHIC LOG			WATER LEVEL	SAMPLES					REMARKS (Drilling Rate, Fluid Loss, Odor, etc.)
		LITHOLOGY	USCS	WELL CONSTRUCTION DIAGRAM		DRIVEN (in.)	RECOVERY (in.)	SAMPLING INTERVAL	BLOW COUNTS (per 6-in.)	OVM (ppmv)	
46											
47											
48											
49											
50											
51											
52											
53											
54	SILTY SAND, dark yellowish brown (10YR 3/4) fine to coarse grained sand, loose, moist.	SM				12	12			0	Soil sample H3-54 @1345 4/14/14
55											
56											
57											
58											
59											
60											
61											
62											
63											
64											
65											Hydropunch sample H3-65 @1245 4/14/14
66											
67											
68											
69											
70											

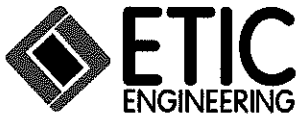
BORING NO.: **H3**

DEPTH (FT.)	DESCRIPTION	GRAPHIC LOG			WATER LEVEL	SAMPLES					Checked by: <i>JD May</i> REMARKS (Drilling Rate, Fluid Loss, Odor, etc.)
		LITHOLOGY	USCS	WELL CONSTRUCTION DIAGRAM		DRIVEN (in.)	RECOVERY (in.)	SAMPLING INTERVAL	BLOW COUNTS (per 6-in.)	QVM (ppmv)	
71											
72											
73											
74											
75											
76											
77											
78											
79											
80											
81											
82											
83											
84											
85											
86											
87											
88											
89											
90											Hydropunch sample H3-90 @1010 4/14/14
91											
92											
93											
94											
95											



PROJECT NAME: FORMER EXXON SERVICE STATION 70234
PROJECT NO: 14-070234-UP
LOCATION: 3450 35TH AVE, OAKLAND, CA

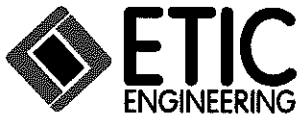
DEPTH (FT.)	DESCRIPTION	GRAPHIC LOG				SAMPLES					Checked by: <i>JJ Key</i> REMARKS (Drilling Rate, Fluid Loss, Odor, etc.)
		LITHOLOGY	USCS	WELL CONSTRUCTION DIAGRAM	WATER LEVEL	DRIVEN (in.)	RECOVERY (in.)	SAMPLING INTERVAL	BLOW COUNTS (per 6-in.)	Q/M (ppmv)	
96											
97											
98											
99											
100	END OF CPT BORING AT 100 feet.										
101											
102											
103											
104											
105											
106											
107											
108											
109											
110											
111											
112											
113											
114											
115											
116											
117											
118											
119											
120											



PROJECT NAME: FORMER EXXON SERVICE STATION 70234
PROJECT NO: 14-070234-UP
LOCATION: 3450 35TH AVE, OAKLAND, CA

DRILLING COMPANY: Gregg Drilling	LICENSE No.: C57-485165	ELEVATION AND DATUM (FT.):			
DRILLING METHOD 1: Hand Auger	DRILLER: German Garcia	DATE STARTED: 4/14/14	DATE FINISHED: 4/14/14		
DRILLING METHOD 2:	DRILL BIT:	BORING DEPTH (FT.) 7	WELL DEPTH (FT.) 6.75		
DRILLING EQUIPMENT: 5" Hand Auger	SAMPLER: 4-inch Ø Shelby Tube Slide Hammer	NO. OF SAMPLES:	SOIL: 2	GW: 0	OTHER: 0
SIZE AND TYPE OF CASING: 1/4" Ø Stainless steel		DEPTH TO WATER (FT.)	TIME:	▽ FIRST:	▼ COMPLETION:
TYPE OF PERFORATION: Stainless steel 0.0057" mesh	FROM 6.25 TO 6.75 FT.				
SIZE AND TYPE OF FILTER PACK: #3 Monterey sand	FROM 6 TO 7 FT.				
TYPE OF SEAL: Dry bentonite	FROM 5 TO 6 FT.				
TYPE OF SEAL: Bentonite Slurry	FROM 0.5 TO 5 FT.	LOGGED BY: Karina Gillette		CHECKED BY:	

DEPTH (FT.)	Concrete + traffic box	0-0.5 Ft.	GRAPHIC LOG				SAMPLES					REMARKS (Drilling Rate, Fluid Loss, Odor, etc.)
			LITHOLOGY	USCS	WELL CONSTRUCTION DIAGRAM	WATER LEVEL	DRIVEN (in.)	RECOVERY (in.)	SAMPLING INTERVAL	BLOW COUNTS (per 6-in.)	QVM (ppmv)	
	Concrete											
1												
2												
3	SILTY SAND with gravel: Dark brown (10YR 3/3), fine to medium grained, loose, slightly moist, some fine subangular gravel up to 1/2 inch diameter.											
4												
5												
6							18	18			0	Soil samples V1-6.5 @ 1315
7	END OF BORING AT 7 FEET.						6	6			0	V1-7 @ 1330
8												
9												
10												
11												
12												
13												
14												
15												
16												Swagelok valve on top of stainless steel tubing
17												
18												
19												
20												



PROJECT NAME: FORMER EXXON SERVICE STATION 70234
 PROJECT NO: 14-070234-UP
 LOCATION: 3450 35TH AVE, OAKLAND, CA

DRILLING COMPANY: Gregg Drilling	LICENSE No.: C57-485165	ELEVATION AND DATUM (FT.):	
DRILLING METHOD 1: Hand Auger	DRILLER: German Garcia	DATE STARTED: 4/15/14	DATE FINISHED: 4/15/14
DRILLING METHOD 2:	DRILL BIT:	BORING DEPTH (FT.) 7	WELL DEPTH (FT.) 6.75
DRILLING EQUIPMENT: 5" Hand Auger	SAMPLER: 4-inch Ø Shelby Tube Slide Hammer	NO. OF SAMPLES: 2	SOIL: 2
SIZE AND TYPE OF CASING: 1/4" Ø Stainless steel		GW: 0	OTHER: 0
TYPE OF PERFORATION: Stainless steel 0.0057" mesh	FROM 6.25 TO 6.75 FT.	DEPTH TO WATER (FT.):	▽ FIRST: 0
SIZE AND TYPE OF FILTER PACK: #3 Monterey sand	FROM 6 TO 7 FT.	TIME:	▽ COMPLETION: 0
TYPE OF SEAL: Dry bentonite	FROM 5 TO 6 FT.		OTHER: 0
TYPE OF SEAL: Bentonite Slurry	FROM 0.5 TO 5 FT.	LOGGED BY: Karina Gillette	CHECKED BY: <i>[Signature]</i>

DEPTH (FT.)	DESCRIPTION	GRAPHIC LOG				SAMPLES					REMARKS (Drilling Rate, Fluid Loss, Odor, etc.)
		LITHOLOGY	USCS	WELL CONSTRUCTION DIAGRAM	WATER LEVEL	DRIVEN (in.)	RECOVERY (in.)	SAMPLING INTERVAL	BLOW COUNTS (per 6-in.)	QVM (ppmv)	
0-0.5	Concrete + traffic box										
1	Concrete										
1	SILTY SAND with some gravel: Very dark grayish brown (10YR 3/2), fine to medium grained, loose, slightly moist, rounded gravel up to 3/8 inch diameter.	SM								0	
2	SAND: Brown (10YR 5/3), fine grained, loose, dry, trace rounded gravel up to 1/4 inch diameter.	SP				6	6			0	At 2.5' some ceramic fragments recovered.
3	SILT with some sand: Dark yellowish brown (10YR 4/4), hard, dry, very fine grained sand.									0	V2-3 @ 0940
4		ML								0	
5										0	
6	SILTY CLAY: Yellowish brown (10YR 4/4), stiff, moist, trace fine gravel.	CL				12	11.5			0	V2-6 @ 1020
7	END OF BORING AT 7 feet.					6	6			0	V2-6.5 @ 1030
8											
9											
10											
11											
12											
13											
14											
15											
16											Swagelok valve on top of stainless steel tubing
17											
18											
19											
20											



PROJECT NAME: FORMER EXXON SERVICE STATION 70234
 PROJECT NO: 14-070234-UP
 LOCATION: 3450 35TH AVE, OAKLAND, CA

DRILLING COMPANY: Gregg Drilling		LICENSE No.: C57-485165		ELEVATION AND DATUM (FT.):			
DRILLING METHOD 1: Hand Auger		DRILLER: German Garcia		DATE STARTED: 4/15/14		DATE FINISHED: 4/15/14	
DRILLING METHOD 2:		DRILL BIT:		BORING DEPTH (FT.) 7		WELL DEPTH (FT.) 6.75	
DRILLING EQUIPMENT: 5" Hand Auger		SAMPLER: 4-inch Ø Shelby Tube Slide Hammer		NO. OF SAMPLES: 3		SOIL: 3	
SIZE AND TYPE OF CASING: 1/4" Ø Stainless steel				GW: 0		OTHER: 0	
TYPE OF PERFORATION: Stainless steel 0.0057" mesh		FROM 6.25 TO 6.75 FT.		DEPTH TO WATER (FT.):		FIRST: 0	
SIZE AND TYPE OF FILTER PACK: #3 Monterey sand		FROM 6 TO 7 FT.		TIME:		COMPLETION: 0	
TYPE OF SEAL: Dry bentonite		FROM 5 TO 6 FT.		LOGGED BY: Victor Ocegueda		CHECKED BY: [Signature]	
TYPE OF SEAL: Bentonite Slurry		FROM 0.5 TO 5 FT.					

DEPTH (FT.)	DESCRIPTION	GRAPHIC LOG				WATER LEVEL	SAMPLES				REMARKS (Drilling Rate, Fluid Loss, Odor, etc.)
		LITHOLOGY	USCS	WELL CONSTRUCTION DIAGRAM	DRIVEN (in.)		RECOVERY (in.)	SAMPLING INTERVAL	BLOW COUNTS (per 6-in.)	Q/M (ppmw)	
0-0.5	Concrete + traffic box										
1	Concrete										
1	SILTY SAND: Dark brown (10YR 3/3), fine to coarse grained, loose, trace rounded fine gravel up to 1/4" diameter, moist.	SM									0
2	Grain size change to fine to medium sand.										0
3	SILT: Yellowish brown (10YR 5/6), trace fine grained sand, stiff, moist.	ML									0
4											0
5											0
6											0
6											0
7	END OF BORING AT 7 feet.										0
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											



PROJECT NAME: FORMER EXXON SERVICE STATION 70234
 PROJECT NO: 14-070234-UP
 LOCATION: 3450 35TH AVE, OAKLAND, CA

DRILLING COMPANY: Gregg Drilling		LICENSE No.: C57-485165		ELEVATION AND DATUM (FT.):			
DRILLING METHOD 1: Hand Auger		DRILLER: German Garcia		DATE STARTED: 4/14/14		DATE FINISHED: 4/15/14	
DRILLING METHOD 2:		DRILL BIT:		BORING DEPTH (FT.) 7.25		WELL DEPTH (FT.) 6.75	
DRILLING EQUIPMENT: 5" Hand Auger		SAMPLER: 4-inch Ø Shelby Tube Slide Hammer		NO. OF SAMPLES: 2		SOIL: 0	
SIZE AND TYPE OF CASING: 1/4" Ø Stainless steel				GW: 0		OTHER: 0	
TYPE OF PERFORATION: Stainless steel 0.0057" mesh		FROM 6.25 TO 6.75 FT.		DEPTH TO WATER (FT.):		FIRST: COMPLETION: OTHER:	
SIZE AND TYPE OF FILTER PACK: #3 Monterey sand		FROM 6 TO 7.25 FT.		TIME:			
TYPE OF SEAL: Dry bentonite		FROM 5 TO 6 FT.		LOGGED BY: Victor Ocegueda			
TYPE OF SEAL: Bentonite Slurry		FROM 0.5 TO 5 FT.					
				CHECKED BY: <i>[Signature]</i>			

DEPTH (FT.)	DESCRIPTION	GRAPHIC LOG				SAMPLES					REMARKS (Drilling Rate, Fluid Loss, Odor, etc.)
		LITHOLOGY	USCS	WELL CONSTRUCTION DIAGRAM	WATER LEVEL	DRIVEN (in.)	RECOVERY (in.)	SAMPLING INTERVAL	BLOW COUNTS (per 6-in.)	Q/M (ppmv)	
0-0.5 Ft.	Concrete + traffic box										
1	Concrete									0	
2	SILTY SAND with gravel: Dark brown (10YR 3/3), fine to medium grained, loose, some angular gravel up to 1/2 inch diameter, moist.	SM								0	
3	SANDY SILT: Dark brown (10YR 3/3), fine grained sand, soft, some angular gravel up to 1/2 inch diameter, moist.									0	
4	Color change: Dark yellowish brown (10YR 4/6) becoming medium stiff.	ML								0	
5										0	
6						12	12			0	V4-6 @ 0720
7	END OF BORING AT 7.25 feet.					6	6			0	V4-6.5 @ 0730
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											



PROJECT NAME: FORMER EXXON SERVICE STATION 70234
 PROJECT NO: 14-070234-UP
 LOCATION: 3450 35TH AVE, OAKLAND, CA

DRILLING COMPANY: Gregg Drilling		LICENSE No.: C57-485165		ELEVATION AND DATUM (FT.):			
DRILLING METHOD 1: Hand Auger		DRILLER: German Garcia		DATE STARTED: 4/14/14		DATE FINISHED: 4/15/14	
DRILLING METHOD 2:		DRILL BIT:		BORING DEPTH (FT.) 7		WELL DEPTH (FT.) 6.75	
DRILLING EQUIPMENT: 5" Hand Auger		SAMPLER: 4-inch Ø Shelby Tube Slide Hammer		NO. OF SAMPLES: 2		SOIL: 0	
SIZE AND TYPE OF CASING: 1/4" Ø stainless steel				GW: 0		OTHER: 0	
TYPE OF PERFORATION: Stainless steel 0.0057" mesh		FROM 6.25 TO 6.75 FT.		DEPTH TO WATER (FT.)		FIRST: COMPLETION:	
SIZE AND TYPE OF FILTER PACK: #3 Monterey sand		FROM 6 TO 7 FT.		TIME:		OTHER:	
TYPE OF SEAL: Dry bentonite		FROM 5 TO 6 FT.		LOGGED BY: Victor Ocegueda		CHECKED BY: [Signature]	
TYPE OF SEAL: Bentonite Slurry		FROM 0.5 TO 5 FT.					

DEPTH (FT.)	DESCRIPTION	GRAPHIC LOG				SAMPLES					REMARKS (Drilling Rate, Fluid Loss, Odor, etc.)
		LITHOLOGY	USCS	WELL CONSTRUCTION DIAGRAM	WATER LEVEL	DRIVEN (in.)	RECOVERY (in.)	SAMPLING INTERVAL	BLOW COUNTS (per 6-in.)	Q/M (ppmv)	
0-0.5	Concrete + traffic box										
1	Concrete										
1	SILTY CLAY: Dark brown (10YR 3/6), medium stiff, secondary color dark yellowish brown (10YR 5/6), moist.	CL									
2											
3											
4	SILT WITH CLAY: Dark brown (10YR 3/4), moist, trace angular gravel up to 1 inch diameter.	ML									
5	Color change: Dark yellowish brown (10YR 5/6)										
6						12	9			0	V5-6 @ 0830
6						6	6			0	V5-6.5 @ 0845
7	END OF BORING AT 7 feet.										
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

BORING NO.: V5

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

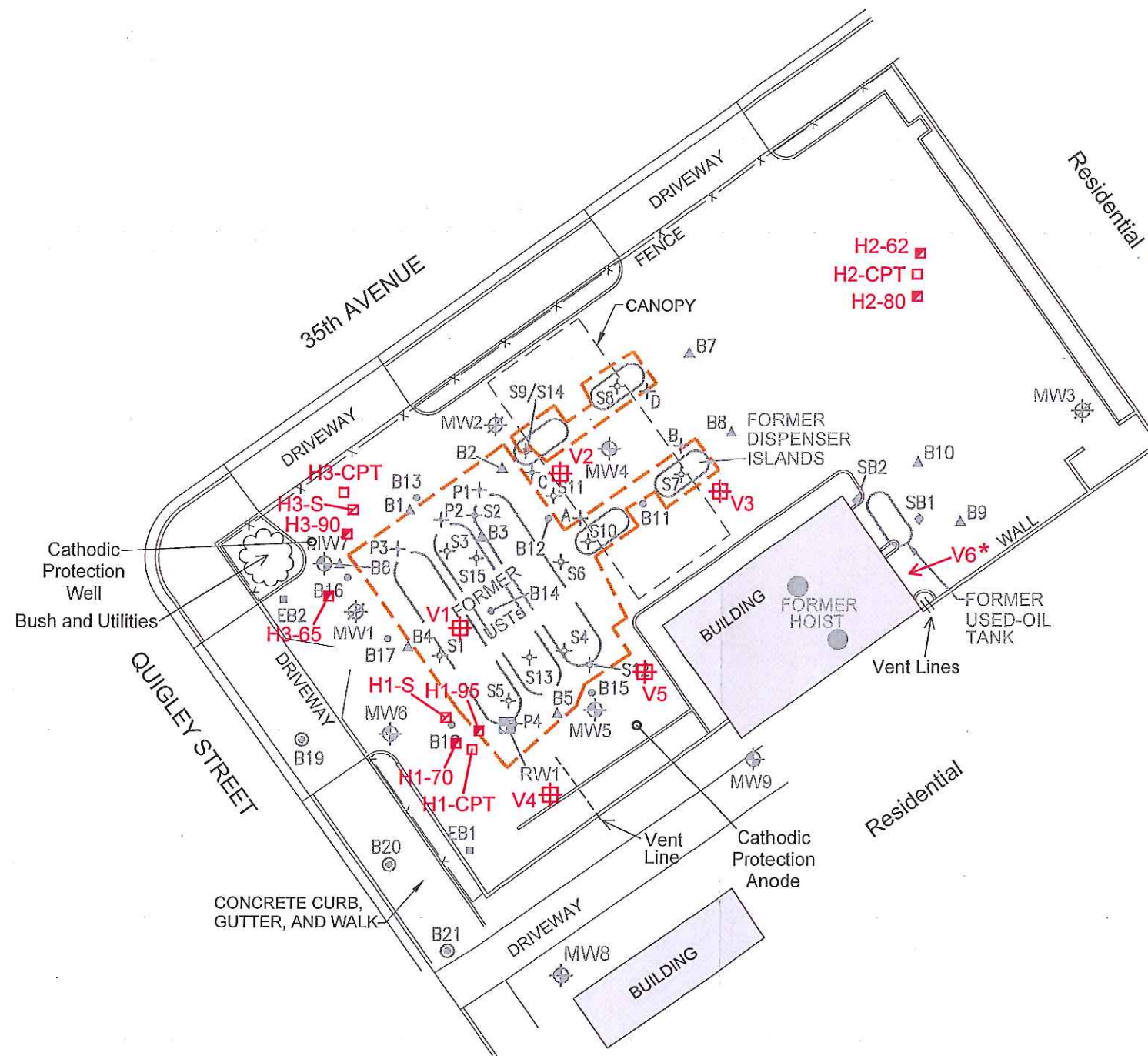
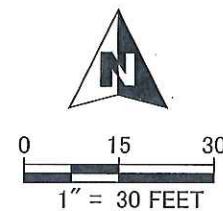
REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

06/03/2014, 10:37, G:\Graphics\14\070234\SITE0514.dwg, Tab: P2-Samples



LEGEND:

- EXCAVATED AREA
- GROUNDWATER MONITORING WELL
- GROUNDWATER MONITORING WELL (by others)
- DESTROYED GROUNDWATER MONITORING WELL
- GROUNDWATER RECOVERY WELL
- SOIL BORING (GTI, 1986)
- SOIL BORING (HLA, 1988)
- SOIL BORING (Alton, 1991)
- SOIL SAMPLE (Alton, 1991)
- SOIL SAMPLE (TRC, 2002)
- SOIL BORING (ERI, 2007)
- SOIL BORING (ERI, 2009)
- SOIL VAPOR MONITORING WELL
- CONE PENETROMETER TESTING BORING
- HYDROPUNCH GROUNDWATER SAMPLING LOCATION (WITH DEPTH BELOW GROUND SURFACE NOTED)
- SOIL BORING
- * DUE TO THE PRESENCE OF SUBSURFACE UTILITIES AND OBSTRUCTIONS, SOIL VAPOR MONITORING WELL V6 COULD NOT BE INSTALLED IN THE AREA INDICATED.



2285 MORELLO AVENUE
PLEASANT HILL, CA 94523
(925) 602-4710
eticeng.com

14-070234-UP	EXXONMOBIL OIL CORPORATION		FIGURE: 2
OR: TEN	SITE MAP SHOWING SAMPLING LOCATIONS		
DR: AJW	FORMER EXXON SERVICE STATION 70234		
CK:	3450 35th AVENUE		
FR:	OAKLAND, CALIFORNIA		

Appendix D

Field Documents for Soil Vapor Sampling



FIELD SUMMARY REPORT

Client:

Exxon Mobil

Site Location:

3450 35TH Ave
Oakland, CA

Project Number:

14-070234-UP

Task Number:

2.5E

On-Site Field Personnel:

C. Mitchell

Number of Waste Drums/
Containers on Site:

Water

Soil

Empty

—

4

—

Container Size/Number of
Total Drums/Containers:

SUMMARY:

4/22/14

- On Site 10:00

Well V3: Initial He reading 45.0 %

Final He reading 38.8 %

Summa Start End

(SLC011)

14:17

14:22

regulator

BGM125) -30"Hg

-5"Hg

He in purge sample: 0 ppm

Vapor concentration Purge Vol #1: 3.4 ppm

Vapor concentration Purge Vol #3: 2.1 ppm

Vapor concentration Purge Vol #10: 2.1 ppm

Well V2: Initial He reading 27.9 %

Final He reading 21.7 %

Preparer Name:

C. Mitchell

Date:

4/23/14

Office Location:

PH

MRTZ

PAS

CM

FRE

ROS

BAR

SD



FIELD SUMMARY REPORT

SUMMARY CONTINUED:

Well V2 continued:

Same	Start	End
(LC690)	15:22	15:27
regulator		
(SGM200)	-30" Hg	-7" Hg

He in purge sample: 0 ppm	
Sorbent Tube:	Start End
	15:33 15:35

Drew 100 ml over 2 min.

Well V1: Initial He reading 26.6%

Final He reading 21.7%

Same	Start	End
(LC408)	16:50	16:55
regulator		
(SGM248)	-30" Hg	-5" Hg

He in purge sample: 0 ppm

- Off site: 18:00

4/23/14

- On site: 09:30

Well V4: Initial He reading 26.5%

Final He reading 23.6

Same	Start	End
(LC360)	10:43	10:48
regulator		
(SGM396)	-31" Hg	-5" Hg

He in purge sample: 0 ppm



FIELD SUMMARY REPORT

Client:

Exxon Mobil

Site Location:

3450 35TH Ave
Oakland, CA

Project Number:

14-070234-WP

Task Number:

2.5E

On-Site Field Personnel:

C Mitchell

Number of Waste Drums/
Containers on Site:

Water

—

Soil

4

Empty

—

Container Size/Number of
Total Drums/Containers:

SUMMARY:

Well V5: Initial H₂ reading 25.9%
Final H₂ reading 22.0%

V5 Suma	Start	End
(LC 435)	12:17	12:22
regulator		
(SGM 238)	-34" Hg	-7" Hg

V5 dup Suma	-30" Hg	-4" Hg
(LC 575)		
regulator		
(SGM 007)		

T-Filling
(16)

- OAL Site: 1300

Preparer Name:

C Mitchell

Date:

4/23/14

Office Location:

PH	<input checked="" type="checkbox"/>	MRTZ	<input type="checkbox"/>	PAS	<input type="checkbox"/>	CM	<input type="checkbox"/>
FRE	<input type="checkbox"/>	ROS	<input type="checkbox"/>	BAR	<input type="checkbox"/>	SD	<input type="checkbox"/>

Appendix E

Field Procedures and CPT Logs



Cone Penetration Testing Procedure (CPT)

Gregg Drilling carries out all Cone Penetration Tests (CPT) using an integrated electronic cone system, *Figure CPT*. The soundings were conducted using a 20 ton capacity cone with a tip area of 15 cm^2 and a friction sleeve area of 225 cm^2 . The cone is designed with an equal end area friction sleeve and a tip end area ratio of 0.80.

The cone takes measurements of cone bearing (q_c), sleeve friction (f_s) and penetration pore water pressure (u_2) at 5-cm intervals during penetration to provide a nearly continuous log. CPT data reduction and interpretation is performed in real time facilitating on-site decision making. The above mentioned parameters are stored on disk for further analysis and reference. All CPT soundings are performed in accordance with revised (2007) ASTM standards (D 5778-07).

The cone also contains a porous filter element located directly behind the cone tip (u_2). It consists of porous plastic and is 5.0mm thick. The filter element is used to obtain penetration pore pressure as the cone is advanced as well as Pore Pressure Dissipation Tests (PPDT's) during appropriate pauses in penetration. It should be noted that prior to penetration, the element is fully saturated with oil under vacuum pressure to ensure accurate and fast dissipation.

The cone has the following accuracy:
1 tsf for q_c , 0.02 tsf for f_s and 0.5 psi for u_2 . In soft clays, a lower capacity cone should be used for improved accuracy.

When the soundings are complete, the test holes are grouted. The grouting procedures generally consist of pushing a hollow tremie pipe with a "knock out" plug to the termination depth of the CPT hole. Grout is then pumped under pressure as the tremie pipe is pulled from the hole. Disruption or further contamination to the site is therefore minimized.

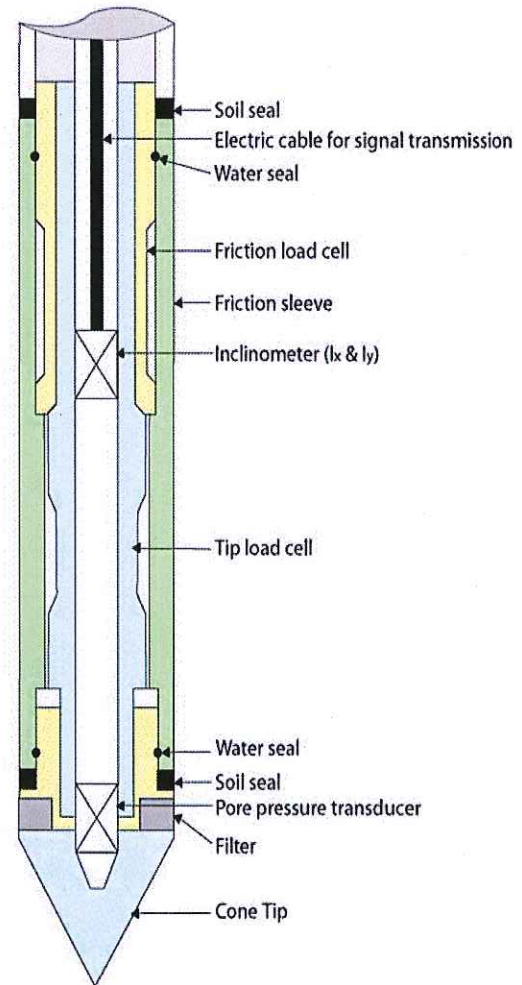


Figure CPT



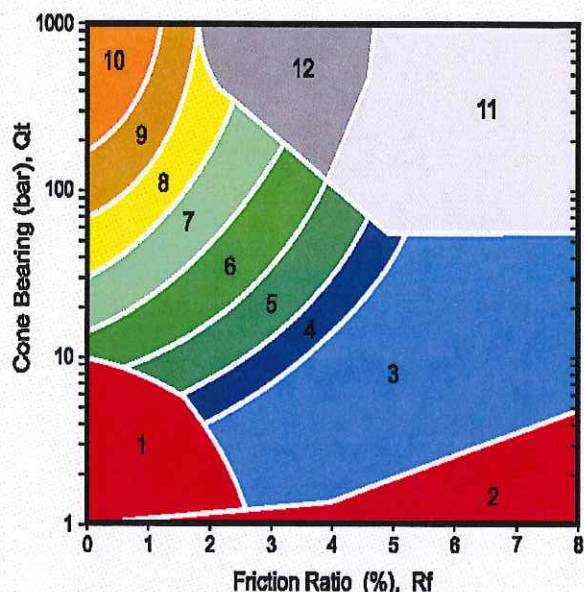
Cone Penetration Test Data & Interpretation

The Cone Penetration Test (CPT) data collected from your site are presented in graphical form in the attached report. The plots include interpreted Soil Behavior Type (SBT) based on the charts described by Robertson (1990). Typical plots display SBT based on the non-normalized charts of Robertson et al (1986). For CPT soundings extending greater than 50 feet, we recommend the use of the normalized charts of Robertson (1990) which can be displayed as SBT_n, upon request. The report also includes spreadsheet output of computer calculations of basic interpretation in terms of SBT and SBT_n and various geotechnical parameters using current published correlations based on the comprehensive review by Lunne, Robertson and Powell (1997), as well as recent updates by Professor Robertson. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed. Gregg Drilling & Testing Inc. do not warranty the correctness or the applicability of any of the geotechnical parameters interpreted by the software and do not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used in the software.

Some interpretation methods require input of the groundwater level to calculate vertical effective stress. An estimate of the in-situ groundwater level has been made based on field observations and/or CPT results, but should be verified by the user.

A summary of locations and depths is available in Table 1. Note that all penetration depths referenced in the data are with respect to the existing ground surface.

Note that it is not always possible to clearly identify a soil type based solely on q_t , f_s , and u_2 . In these situations, experience, judgment, and an assessment of the pore pressure dissipation data should be used to infer the correct soil behavior type.



(After Robertson, et al., 1986)

ZONE	SBT
1	Sensitive, fine grained
2	Organic materials
3	Clay
4	Silty clay to clay
5	Clayey silt to silty clay
6	Sandy silt to clayey silt
7	Silty sand to sandy silt
8	Sand to silty sand
9	Sand
10	Gravely sand to sand
11	Very stiff fine grained*
12	Sand to clayey sand*

*over consolidated or cemented

Figure SBT



Cone Penetration Test (CPT) Interpretation

Gregg has recently updated their CPT interpretation and plotting software (2007). The software takes the CPT data and performs basic interpretation in terms of soil behavior type (SBT) and various geotechnical parameters using current published empirical correlations based on the comprehensive review by Lunne, Robertson and Powell (1997). The interpretation is presented in tabular format using MS Excel. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed. Gregg does not warranty the correctness or the applicability of any of the geotechnical parameters interpreted by the software and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used in the software.

The following provides a summary of the methods used for the interpretation. Many of the empirical correlations to estimate geotechnical parameters have constants that have a range of values depending on soil type, geologic origin and other factors. The software uses 'default' values that have been selected to provide, in general, conservatively low estimates of the various geotechnical parameters.

Input:

- 1 Units for display (Imperial or metric) (atm. pressure, $pa = 0.96$ tsf or 0.1 MPa)
- 2 Depth interval to average results, (ft or m). Data are collected at either 0.02 or 0.05m and can be averaged every 1, 3 or 5 intervals.
- 3 Elevation of ground surface (ft or m)
- 4 Depth to water table, z_w (ft or m) – input required
- 5 Net area ratio for cone, a (default to 0.80)
- 6 Relative Density constant, C_{Dr} (default to 350)
- 7 Young's modulus number for sands, α (default to 5)
- 8 Small strain shear modulus number
 - a. for sands, S_G (default to 180 for SBT_n 5, 6, 7)
 - b. for clays, C_G (default to 50 for SBT_n 1, 2, 3 & 4)
- 9 Undrained shear strength cone factor for clays, N_{kt} (default to 15)
- 10 Over Consolidation ratio number, k_{ocr} (default to 0.3)
- 11 Unit weight of water, (default to $\gamma_w = 62.4$ lb/ft³ or 9.81 kN/m³)

Column

- 1 Depth, z , (m) – CPT data is collected in meters
- 2 Depth (ft)
- 3 Cone resistance, q_c (tsf or MPa)
- 4 Sleeve friction, f_s (tsf or MPa)
- 5 Penetration pore pressure, u (psi or MPa), measured behind the cone (i.e. u_2)
- 6 Other – any additional data, if collected, e.g. electrical resistivity or UVIF
- 7 Total cone resistance, q_t (tsf or MPa) $q_t = q_c + u(1-a)$

8	Friction Ratio, R_f (%)	$R_f = (f_s/q_t) \times 100\%$
9	Soil Behavior Type (non-normalized), SBT	see note
10	Unit weight, γ (pcf or kN/m^3)	based on SBT, see note
11	Total overburden stress, σ_v (tsf)	$\sigma_{v0} = \gamma z$
12	Insitu pore pressure, u_o (tsf)	$u_o = \gamma_w (z - z_w)$
13	Effective overburden stress, σ'_{v0} (tsf)	$\sigma'_{v0} = \sigma_{v0} - u_o$
14	Normalized cone resistance, Q_{t1}	$Q_{t1} = (q_t - \sigma_{v0}) / \sigma'_{v0}$
15	Normalized friction ratio, F_r (%)	$F_r = f_s / (q_t - \sigma_{v0}) \times 100\%$
16	Normalized Pore Pressure ratio, B_q	$B_q = u - u_o / (q_t - \sigma_{v0})$
17	Soil Behavior Type (normalized), SBT_n	see note
18	SBT_n Index, I_c	see note
19	Normalized Cone resistance, Q_{tn} (n varies with I_c)	see note
20	Estimated permeability, k_{SBT} (cm/sec or ft/sec)	see note
21	Equivalent SPT N_{60} , blows/ft	see note
22	Equivalent SPT $(N_1)_{60}$ blows/ft	see note
23	Estimated Relative Density, D_r , (%)	see note
24	Estimated Friction Angle, ϕ' , (degrees)	see note
25	Estimated Young's modulus, E_s (tsf)	see note
26	Estimated small strain Shear modulus, G_o (tsf)	see note
27	Estimated Undrained shear strength, s_u (tsf)	see note
28	Estimated Undrained strength ratio	s_u/σ_v'
29	Estimated Over Consolidation ratio, OCR	see note

Notes:

- 1 Soil Behavior Type (non-normalized), SBT listed below Lunne et al. (1997)
- 2 Unit weight, γ either constant at 119 pcf or based on Non-normalized SBT (Lunne et al., 1997 and table below)
- 3 Soil Behavior Type (Normalized), SBT_n Lunne et al. (1997)
- 4 SBT_n Index, I_c $I_c = ((3.47 - \log Q_{t1})^2 + (\log F_r + 1.22)^2)^{0.5}$
- 5 Normalized Cone resistance, Q_{tn} (n varies with I_c)

$Q_{tn} = ((q_t - \sigma_{v0})/p_a) (p_a/(\sigma'_{v0}))^n$ and recalculate I_c , then iterate:

When $I_c < 1.64$, $n = 0.5$ (clean sand)
 When $I_c > 3.30$, $n = 1.0$ (clays)
 When $1.64 < I_c < 3.30$, $n = (I_c - 1.64)0.3 + 0.5$
 Iterate until the change in n, $\Delta n < 0.01$

- 6 Estimated permeability, k_{SBT} (based on Normalized SBT_n)
(Lunne et al., 1997 and table below)
- 7 Equivalent SPT N_{60} , blows/ft Lunne et al. (1997)
- $$\frac{(q_t/p_a)}{N_{60}} = 8.5 \left(1 - \frac{I_c}{4.6} \right)$$
- 8 Equivalent SPT $(N_1)_{60}$ blows/ft $(N_1)_{60} = N_{60} C_N$
where $C_N = (p_a/\sigma'_{vo})^{0.5}$
- 9 Relative Density, D_r , (%) $D_r^2 = Q_{tn} / C_{Dr}$
Only SBT_n 5, 6, 7 & 8 Show 'N/A' in zones 1, 2, 3, 4 & 9
- 10 Friction Angle, ϕ' , (degrees) $\tan \phi' = \frac{1}{2.68} \left[\log \left(\frac{q_c}{\sigma'_{vo}} \right) + 0.29 \right]$
Only SBT_n 5, 6, 7 & 8 Show 'N/A' in zones 1, 2, 3, 4 & 9
- 11 Young's modulus, E_s $E_s = \alpha q_t$
Only SBT_n 5, 6, 7 & 8 Show 'N/A' in zones 1, 2, 3, 4 & 9
- 12 Small strain shear modulus, G_o
a. $G_o = S_G (q_t \sigma'_{vo} p_a)^{1/3}$ For SBT_n 5, 6, 7
b. $G_o = C_G q_t$ For SBT_n 1, 2, 3 & 4
Show 'N/A' in zones 8 & 9
- 13 Undrained shear strength, s_u $s_u = (q_t - \sigma_{vo}) / N_{kt}$
Only SBT_n 1, 2, 3, 4 & 9 Show 'N/A' in zones 5, 6, 7 & 8
- 14 Over Consolidation ratio, OCR $\text{OCR} = k_{\text{ocr}} Q_{t1}$
Only SBT_n 1, 2, 3, 4 & 9 Show 'N/A' in zones 5, 6, 7 & 8

SBT Zones

The following updated and simplified SBT descriptions have been used in the software:

- 1 sensitive fine grained
- 2 organic soil
- 3 clay
- 4 clay & silty clay
- 5 clay & silty clay
- 6 sandy silt & clayey silt
- 7 silty sand & sandy silt
- 8 sand & silty sand
- 9 sand
- 10 sand

SBT_n Zones

- 1 sensitive fine grained
- 2 organic soil
- 3 clay
- 4 clay & silty clay
- 5 silty sand & sandy silt
- 6 sand & silty sand
- 7 sand

11 very dense/stiff soil*

8 very dense/stiff soil*

12 very dense/stiff soil*

9 very dense/stiff soil*

*heavily overconsolidated and/or cemented

Track when soils fall with zones of same description and print that description (i.e. if soils fall only within SBT zones 4 & 5, print 'clays & silty clays')

Estimated Permeability (see Lunne et al., 1997)

SBT _n	Permeability (ft/sec)	(m/sec)
1	3×10^{-8}	1×10^{-8}
2	3×10^{-7}	1×10^{-7}
3	1×10^{-9}	3×10^{-10}
4	3×10^{-8}	1×10^{-8}
5	3×10^{-6}	1×10^{-6}
6	3×10^{-4}	1×10^{-4}
7	3×10^{-2}	1×10^{-2}
8	3×10^{-6}	1×10^{-6}
9	1×10^{-8}	3×10^{-9}

Estimated Unit Weight (see Lunne et al., 1997)

SBT	Approximate Unit Weight (lb/ft ³)	(kN/m ³)
1	111.4	17.5
2	79.6	12.5
3	111.4	17.5
4	114.6	18.0
5	114.6	18.0
6	114.6	18.0
7	117.8	18.5
8	120.9	19.0
9	124.1	19.5
10	127.3	20.0
11	130.5	20.5
12	120.9	19.0



Groundwater Sampling (GWS)

Gregg Drilling conducts groundwater sampling using a Hydropunch® type groundwater sampler, *Figure GWS*. The groundwater sampler has a retrievable stainless steel or disposable PVC screen with steel drop off tip. This allows for samples to be taken at multiple depth intervals within the same sounding location. In areas of slower water recharge, provisions may be made to set temporary PVC well screens during sampling to allow the drill rig to advance to the next sample location while the groundwater is allowed to infiltrate.

The groundwater sampler operates by advancing 1 3/4 inch hollow push rods with the filter tip in a closed configuration to the base of the desired sampling interval. Once at the desired sample depth, the push rods are retracted; exposing the encased filter screen and allowing groundwater to infiltrate hydrostatically from the formation into the inlet screen. A small diameter bailer (approximately 1/2 or 3/4 inch) is lowered through the push rods into the screen section for sample collection. The number of downhole trips with the bailer and time necessary to complete the sample collection at each depth interval is a function of sampling protocols, volume requirements, and the yield characteristics and storage capacity of the formation. Upon completion of sample collection, the push rods and sampler, with the exception of the PVC screen and steel drop off tip are retrieved to the ground surface, decontaminated and prepared for the next sampling event.

A summary of the groundwater samples collected, including the sampling date, depth and location identification, is presented in Table 1 and the corresponding CPT plot.

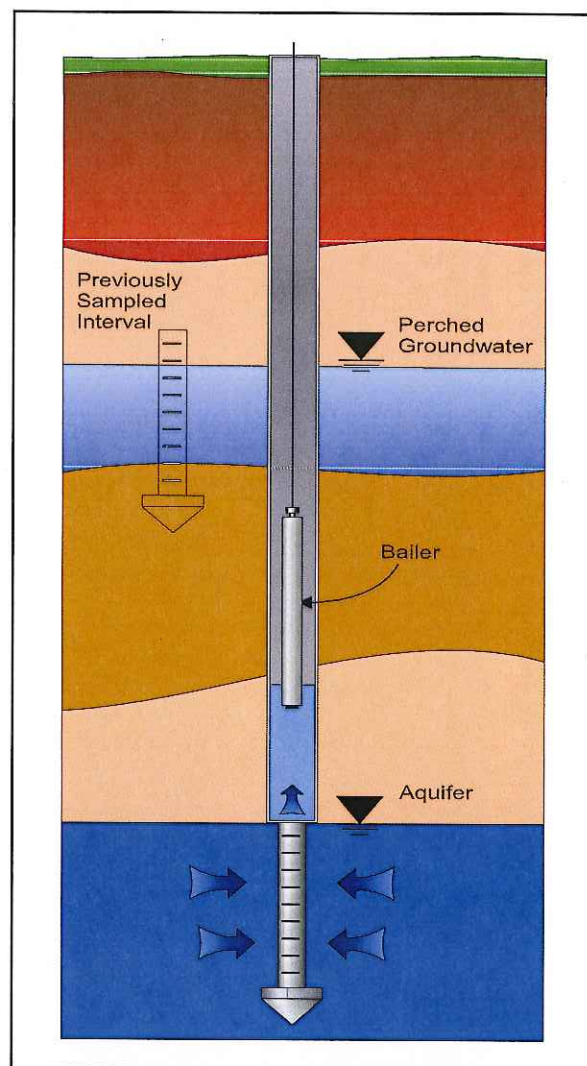


Figure GWS

For a detailed reference on direct push groundwater sampling, refer to Zemo et. al., 1992.



Soil Sampling (SS)

Gregg Drilling uses a piston-type sampler to obtain relatively undisturbed soil samples without generating any soil cuttings, *Figure SS*. Two different types of samplers (12 and 18 inch) are used depending on the soil type and density. The soil sampler is initially pushed in a "closed" position to the desired sampling interval using a hydraulic rig. Keeping the sampler closed minimizes the potential of cross contamination caused by sloughing. The inner tip of the sampler is then retracted 12 inches (or 18 inches if using the longer sampler) leaving a hollow soil sampler with two inner 1¼ inch diameter by 6 inch or four 3 inch long soil sample tubes. If using the 18 inch sampler, two 1½ inch diameter by 6 inch long tubes will be exposed. The hollow sampler is then pushed in a locked "open" position to collect a soil sample. The filled sampler and push rods are then retrieved to the ground surface. Because the soil enters the sampler at a constant rate, the opportunity for 100% recovery is increased. For environmental analysis, the soil sample tube ends are sealed with Teflon and plastic caps. Often, a longer "split tube" can be used for geotechnical sampling.

For a detailed reference on direct push soil sampling, refer to Robertson et al, 1998.

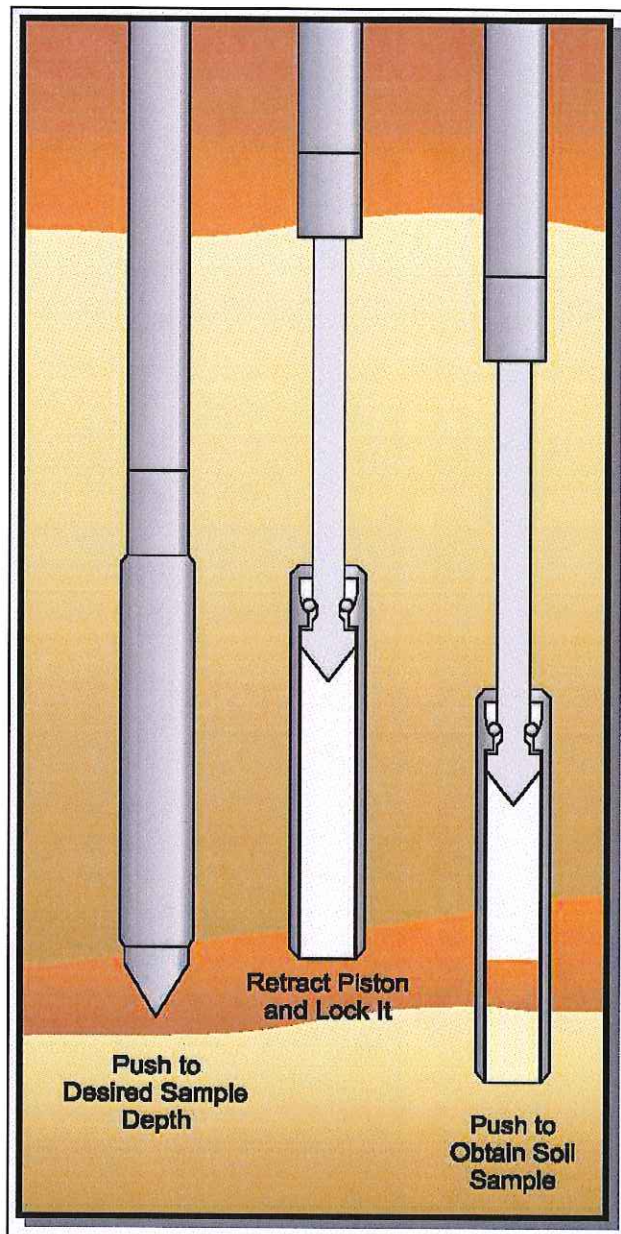


Figure SS

A summary of the soil samples collected, including the sampling date, depth and location identification, is presented in Table 1.



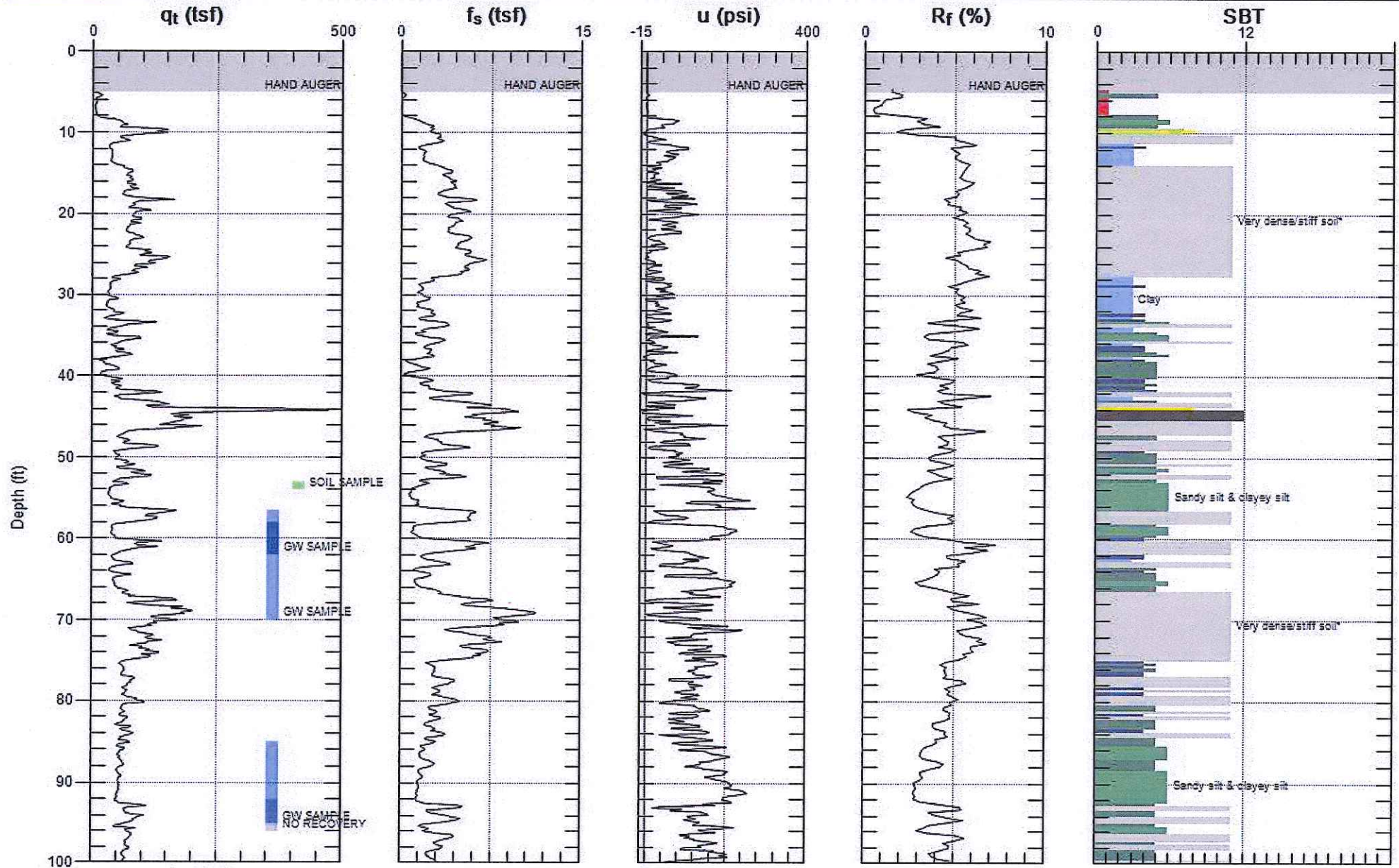
ETIC ENGINEERING

Site: 3450 35TH AVE.

Sounding: H-1

Engineer: K.GILLETTE

Date: 4/14/2014 02:42



Max. Depth: 100.066 (ft)

Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



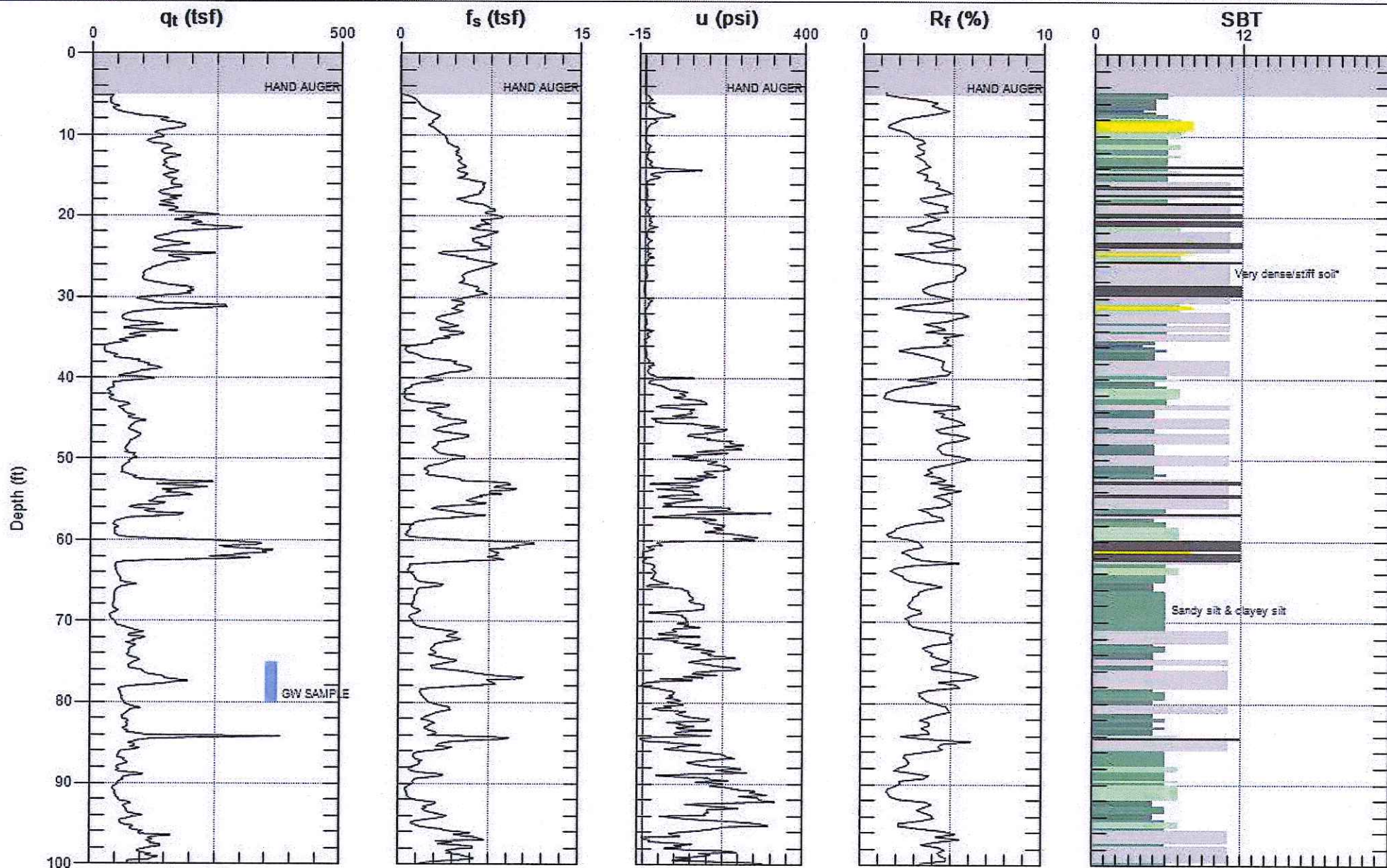
ETIC ENGINEERING

Site: 3450 35TH AVE.

Sounding: H-2

Engineer: K.GILLETTE

Date: 4/10/2014 09:15



Max. Depth: 100.066 (ft)

Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



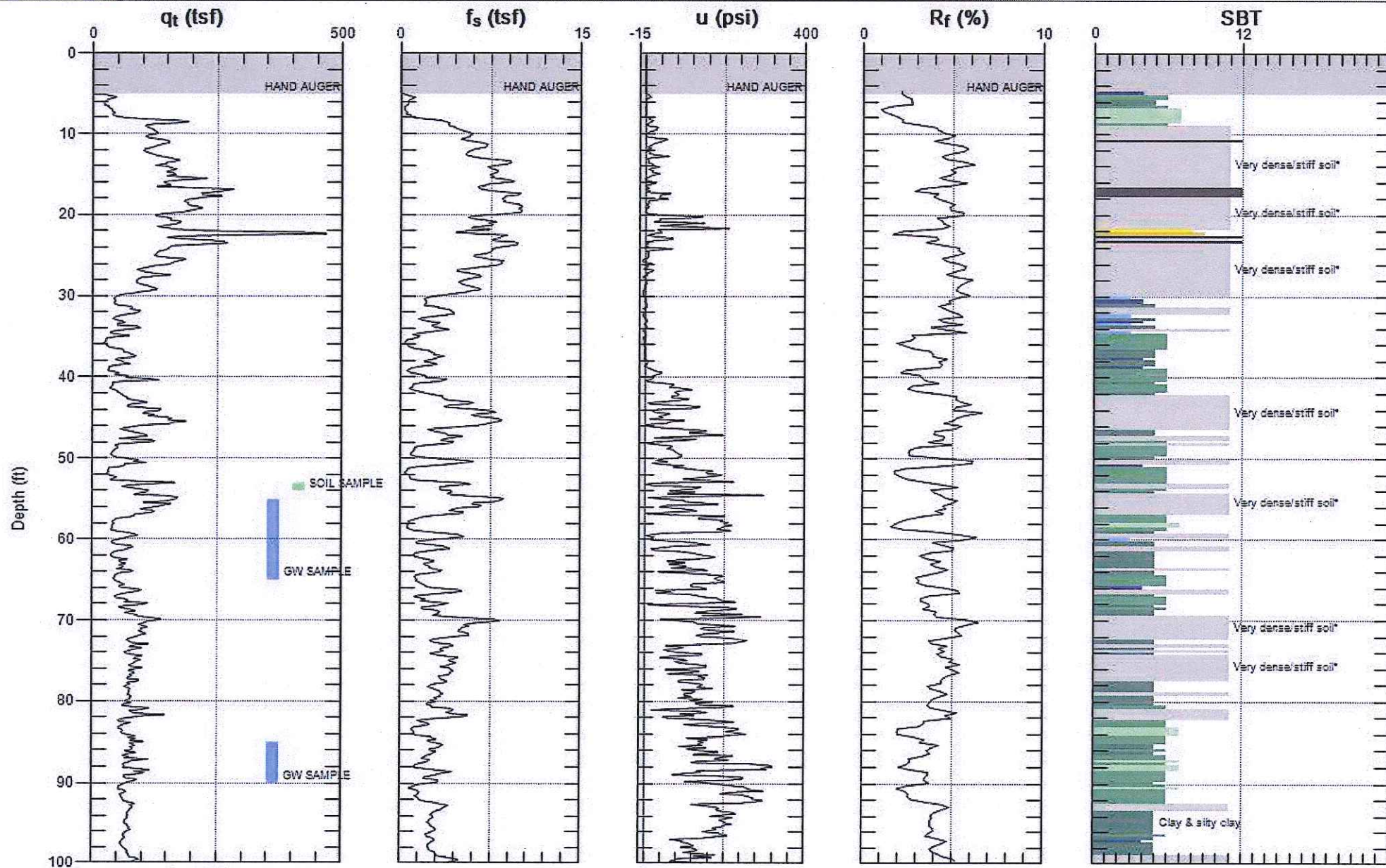
ETIC ENGINEERING

Site: 3450 35TH AVE.

Sounding: H-3

Engineer: K.GILLETTE

Date: 4/11/2014 11:50



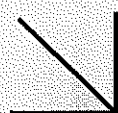
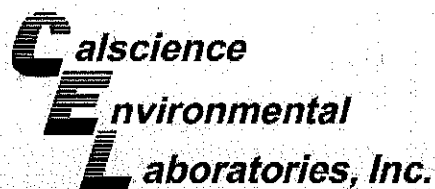
Max. Depth: 100.066 (ft)

Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

Appendix F

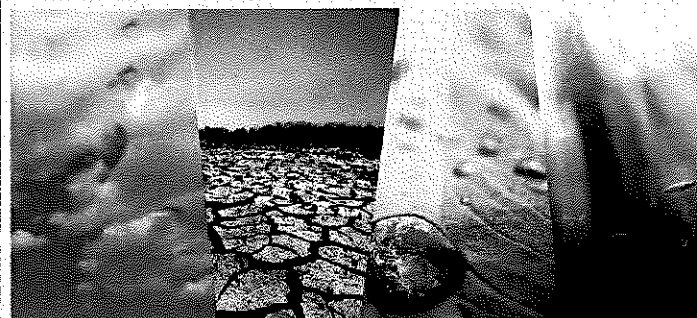
Laboratory Analytical Reports and Chain-of-Custody Documentation



CALSCIENCE

WORK ORDER NUMBER: 14-04-0862

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ETIC Engineering, Inc.

Client Project Name: ExxonMobil 70234

Attention: Joesph Muehleck
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Cecile L. de Guia

Approved for release on 04/23/2014 by:
Cecile deGuia
Project Manager

ResultLink ▶

Email your PM ▶



Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.



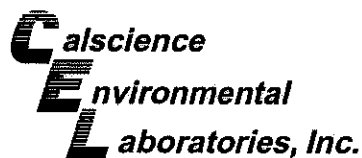
7440 Lincoln Way, Garden Grove, CA 92641-1432 • TEL: (714) 895-5494 • FAX: (714) 894-7501 • www.calscience.com

NELAP ID: 03220CA | DoD-ELAP ID: L10-41 | CSDLAC ID: 10109 | SGAQMD ID: 93LA0830

Contents

Client Project Name: ExxonMobil 70234
Work Order Number: 14-04-0862

1	Work Order Narrative.	3
2	Sample Summary.	4
3	Client Sample Data.	5
	3.1 EPA 8015B (M) TPH Gasoline (Aqueous).	5
	3.2 EPA 8260B Volatile Organics (Aqueous).	6
4	Quality Control Sample Data.	8
	4.1 MS/MSD.	8
	4.2 LCS/LCSD.	10
5	Glossary of Terms and Qualifiers.	12
6	Chain of Custody/Sample Receipt Form.	13



Work Order Narrative

Work Order: 14-04-0862

Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain of Custody (COC) on 04/11/14. They were assigned to Work Order 14-04-0862.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the CalScience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

New York NELAP air certification does not certify for all reported methods and analytes; reference the accredited items here: http://www.calscience.com/PDF/New_York.pdf

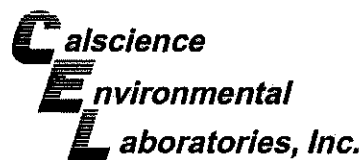
Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

EPA 8260B:

LCS Batch Number 140419L010: All target analytes were within acceptance criteria with the exception of p/m-Xylene. The LCS recovery for this analyte was slightly above the upper control limit of 120%, but was below the NELAC-defined upper marginal exceedance (ME) limit of 127%. (ME = ± 4 standard deviations.) Based upon the number of analytes spiked into the LCS, and per NELAC, the laboratory is allowed to report associated data when there is, in this case, one marginal exceedance in an LCS.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

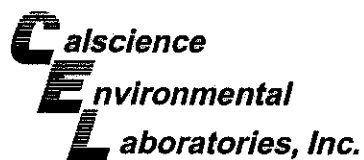


Sample Summary

Client: ETIC Engineering, Inc.	Work Order: 14-04-0862
2285 Morello Avenue	Project Name: ExxonMobil 70234
Pleasant Hill, CA 94523-1850	PO Number: 4410169993
	Date/Time Received: 04/11/14 11:15
	Number of Containers: 4

Attn: Joesph Muehleck

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
H2-62	14-04-0862-1	04/10/14 13:45	4	Aqueous



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/11/14
Work Order: 14-04-0862
Preparation: EPA 5030C
Method: EPA 8015B (M)
Units: ug/L

Project: ExxonMobil 70234

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
H2-62	14-04-0862-1-D	04/10/14 13:45	Aqueous	GC 56	04/12/14	04/12/14 17:17	140412L017

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline	ND	50	1.00	

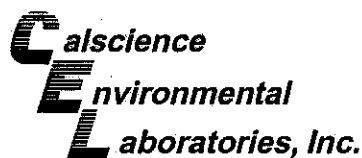
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	72	38-134	

Method Blank	099-12-436-9266	N/A	Aqueous	GC 56	04/12/14	04/12/14 11:30	140412L017
---------------------	------------------------	------------	----------------	--------------	-----------------	-----------------------	-------------------

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline	ND	50	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	63	38-134	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/11/14
Work Order: 14-04-0862
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: ExxonMobil 70234

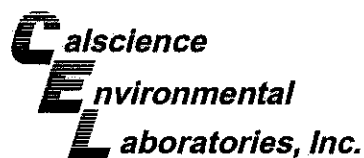
Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
H2-62	14-04-0862-1-B	04/10/14 13:45	Aqueous	GC/MS T	04/19/14	04/19/14 15:04	140419L010

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.50	1.00	
Ethylbenzene	ND	0.50	1.00	
Toluene	ND	0.50	1.00	
p/m-Xylene	ND	0.50	1.00	
o-Xylene	ND	0.50	1.00	
Xylenes (total)	ND	0.50	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.50	1.00	
Tert-Butyl Alcohol (TBA)	ND	10	1.00	
Diisopropyl Ether (DIPE)	ND	0.50	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1.00	
Naphthalene	ND	1.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	90	68-120	
Dibromofluoromethane	97	80-127	
1,2-Dichloroethane-d4	111	80-128	
Toluene-d8	101	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/11/14
Work Order: 14-04-0862
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: ExxonMobil 70234

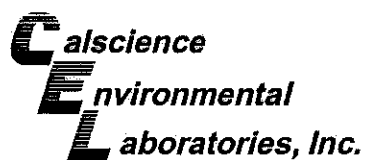
Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-10-025-3023	N/A	Aqueous	GC/MS T	04/19/14	04/19/14 10:52	140419L010

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.50	1.00	
Ethylbenzene	ND	0.50	1.00	
Toluene	ND	0.50	1.00	
p/m-Xylene	ND	0.50	1.00	
o-Xylene	ND	0.50	1.00	
Xylenes (total)	ND	0.50	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.50	1.00	
Tert-Butyl Alcohol (TBA)	ND	10	1.00	
Diisopropyl Ether (DIPE)	ND	0.50	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1.00	
Naphthalene	ND	1.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	84	68-120	
Dibromofluoromethane	99	80-127	
1,2-Dichloroethane-d4	106	80-128	
Toluene-d8	101	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Quality Control - Spike/Spike Duplicate

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

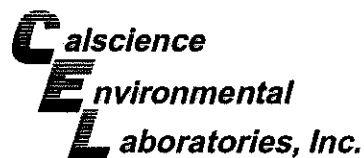
Date Received: 04/11/14
Work Order: 14-04-0862
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project: ExxonMobil 70234

Page 1 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number				
14-04-0848-2	Sample	Aqueous	GC 56	04/12/14	04/12/14 12:33	140412S011				
14-04-0848-2	Matrix Spike	Aqueous	GC 56	04/12/14	04/12/14 13:05	140412S011				
14-04-0848-2	Matrix Spike Duplicate	Aqueous	GC 56	04/12/14	04/12/14 13:36	140412S011				
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	ND	2000	2204	110	2209	110	68-122	0	0-18	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - Spike/Spike Duplicate

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/11/14
Work Order: 14-04-0862
Preparation: EPA 5030C
Method: EPA 8260B

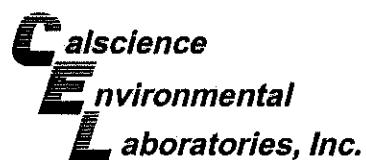
Project: ExxonMobil 70234

Page 2 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
14-04-1335-10	Sample	Aqueous	GC/MS T	04/19/14	04/19/14 11:23	140419S004
14-04-1335-10	Matrix Spike	Aqueous	GC/MS T	04/19/14	04/19/14 12:18	140419S004
14-04-1335-10	Matrix Spike Duplicate	Aqueous	GC/MS T	04/19/14	04/19/14 12:45	140419S004

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	10.00	11.16	112	11.49	115	75-125	3	0-20	
Ethylbenzene	ND	10.00	10.98	110	11.10	111	75-125	1	0-20	
Toluene	ND	10.00	11.05	110	11.25	113	75-125	2	0-20	
p/m-Xylene	ND	20.00	23.20	116	23.23	116	75-125	0	0-20	
o-Xylene	ND	10.00	11.59	116	11.55	116	75-127	0	0-20	
Methyl-t-Butyl Ether (MTBE)	0.7102	10.00	10.78	101	10.65	99	71-131	1	0-20	
Tert-Butyl Alcohol (TBA)	ND	50.00	49.40	99	56.42	113	20-180	13	0-40	
Diisopropyl Ether (DIPE)	ND	10.00	9.521	95	9.426	94	64-136	1	0-20	
Ethyl-t-Butyl Ether (ETBE)	3.430	10.00	13.02	96	12.99	96	73-133	0	0-20	
Tert-Amyl-Methyl Ether (TAME)	ND	10.00	10.23	102	10.38	104	75-125	1	0-20	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

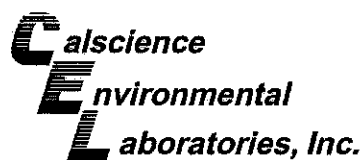
Date Received: 04/11/14
Work Order: 14-04-0862
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project: ExxonMobil 70234

Page 1 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-12-436-9266	LCS	Aqueous	GC 56	04/12/14	04/12/14 12:02	140412L017
Parameter	Spike Added		Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
TPH as Gasoline	2000		2110	106	78-120	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/11/14
Work Order: 14-04-0862
Preparation: EPA 5030C
Method: EPA 8260B

Project: ExxonMobil 70234

Page 2 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-10-025-3023	LCS	Aqueous	GC/MS T	04/19/14	04/19/14 09:52	140419L010
Parameter		Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
Benzene		10.00	10.39	104	80-120	
Ethylbenzene		10.00	11.49	115	80-120	
Toluene		10.00	10.41	104	80-120	
p/m-Xylene		20.00	24.17	121	80-120	LQ
o-Xylene		10.00	11.96	120	80-120	
Methyl-t-Butyl Ether (MTBE)		10.00	9.410	94	75-123	
Tert-Butyl Alcohol (TBA)		50.00	52.81	106	80-120	
Diisopropyl Ether (DIPE)		10.00	9.381	94	73-121	
Ethyl-t-Butyl Ether (ETBE)		10.00	9.342	93	76-124	
Tert-Amyl-Methyl Ether (TAME)		10.00	9.362	94	80-120	

RPD: Relative Percent Difference. CL: Control Limits

Glossary of Terms and Qualifiers

Work Order: 14-04-0862

Page 1 of 1

Qualifiers	Definition
AZ	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
B	Analyte was present in the associated method blank.
BA	The MS/MSD RPD was out of control due to suspected matrix interference.
BB	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
DF	Reporting limits elevated due to matrix interferences.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
GE	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
HD	Chromat. profile inconsistent with pattern(s) of ref. fuel stds.
HO	High concentration matrix spike recovery out of limits
HT	Analytical value calculated using results from associated tests.
HX	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS was in control.
IL	Relative percent difference out of control.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
LD	Analyte presence was not confirmed by second column or GC/MS analysis.
LP	The LCS and/or LCSD recoveries for this analyte were above the upper control limit. The associated sample was non-detected. Therefore, the sample data was reported without further clarification.
LQ	LCS recovery above method control limits.
LR	LCS recovery below method control limits.
ND	Parameter not detected at the indicated reporting limit.
QO	Compound did not meet method-described identification guidelines. Identification was based on additional GC/MS characteristics.
RU	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
SG	A silica gel cleanup procedure was performed.
SN	See applicable analysis comment.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

Sandy Tat

From: Joseph Muehleck [jmuehleck@eticeng.com]
Sent: Friday, April 11, 2014 5:48 PM
To: Sandy Tat
Cc: Karina Gillette
Subject: RE: ExxonMobil 70234 (14-04-0862)

Hi Sandy –

Global ID - T06019757161

Field point name for this sample is H2.

Sorry I forgot to include those.

Please include an EDF for this job. There will be more samples next week and the field point names should be the first 2 digits of each sample name.

Thanks,

Joe

Joseph Muehleck
Project Manager

jmuehleck@eticeng.com

www.eticeng.com

ETIC Engineering, Inc.

2285 Morello Ave.

Pleasant Hill, CA 94523

Tel: 925-602-4710 x2127

Fax: 925-602-4720

Mobile: 925-301-7428

From: Sandy Tat [<mailto:stat@calscience.com>]

Sent: Friday, April 11, 2014 5:23 PM

To: Joseph Muehleck

Subject: ExxonMobil 70234 (14-04-0862)

Hi Joe,

Can you please provide the Global ID & the Field Point Name for geotracker?

Thanks!

Sandy Tat
 Project Manager Assistant

 **CalScience**

7440 Lincoln Way

		< WebShip > > > > 800-322-5555 www.gso.com	
Ship From: ALAN KEMP CAL SCIENCE- CONCORD 5063 COMMERCIAL CIRCLE CONCORD, CA 94520		Tracking #: 524374652 	NPS A
Ship To: SAMPLE RECEIVING CEL 7440 LINCOLN WAY GARDEN GROVE, CA 92841		ORC GARDEN GROVE	
COD: \$0.00		D92843A  23217036	
Reference: CARDNO ERI, BTS (PARSONS)			
Delivery Instructions:			
Signature Type: SIGNATURE REQUIRED			
Print Date : 04/10/14 15:59 PM			

Package 1 of 1

Send Label To Printer	<input checked="" type="checkbox"/> Print All	Edit Shipment	Finish
-----------------------	---	---------------	--------

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

STEP 1 - Use the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.

STEP 2 - Fold this page in half.

STEP 3 - Securely attach this label to your package, do not cover the barcode.

STEP 4 - Request an on-call pickup for your package, if you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

ADDITIONAL OPTIONS:

Send Label Via Email	Create Return Label
----------------------	---------------------

TERMS AND CONDITIONS:

By giving us your shipment to deliver, you agree to all the service terms and conditions described in this section.

Our liability for loss or damage to any package is limited to your actual damages or \$100 whichever is less, unless you pay for and declare a higher authorized value. If you declare a higher value and pay the additional charge, our liability will be the lesser of your declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, whether direct, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had knowledge that such damage might be incurred including but not limited to loss of income or profit. We will not be liable for your acts or omissions, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of public enemies, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Package is \$500. For other shipments the highest declared value is \$10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is \$500. Items of "extraordinary value" include, but or not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.

WORK ORDER #: **14-04-0862**

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: ETIC

DATE: 04/11/14

TEMPERATURE: Thermometer ID: SC2 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 2.7 °C - 0.3 °C (CF) = 2.4 °C ☒ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter

Checked by: 826

CUSTODY SEALS INTACT:

☒ Cooler ☐ _____ ☐ No (Not Intact) ☐ Not Present ☐ N/A Checked by: 826

☐ Sample ☐ _____ ☐ No (Not Intact) ☒ Not Present Checked by: 659

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.

☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.

Sampler's name indicated on COC..... ☒ ☐ ☐

Sample container label(s) consistent with COC..... ☒ ☐ ☐

Sample container(s) intact and good condition..... ☒ ☐ ☐

Proper containers and sufficient volume for analyses requested..... ☒ ☐ ☐

Analyses received within holding time..... ☒ ☐ ☐

Aqueous samples received within 15-minute holding time

☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfides ☐ Dissolved Oxygen..... ☐ ☐ ☒

Proper preservation noted on COC or sample container..... ☒ ☐ ☐

☐ Unpreserved vials received for Volatiles analysis

Volatile analysis container(s) free of headspace..... ☒ ☐ ☐

Tedlar bag(s) free of condensation..... ☐ ☐ ☒

CONTAINER TYPE:

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (____) ☐ EnCores® ☐ TerraCores® ☐ _____

Aqueous: ☐ VOA ☒ VOAh ☐ VOAna₂ ☐ 125AGB ☐ 125AGBh ☐ 125AGBp ☐ 1AGB ☐ 1AGBna₂ ☐ 1AGBs

☐ 500AGB ☐ 500AGJ ☐ 500AGJs ☐ 250AGB ☐ 250CGB ☐ 250CGBs ☐ 1PB ☐ 1PBna ☐ 500PB

☐ 250PB ☐ 250PBn ☐ 125PB ☐ 125PBznna ☐ 100PJ ☐ 100PJna₂ ☐ _____ ☐ _____ ☐ _____

Air: ☐ Tedlar® ☐ Canister Other: ☐ _____ Trip Blank Lot#: _____ Labeled/Checked by: 659

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope Reviewed by: 826

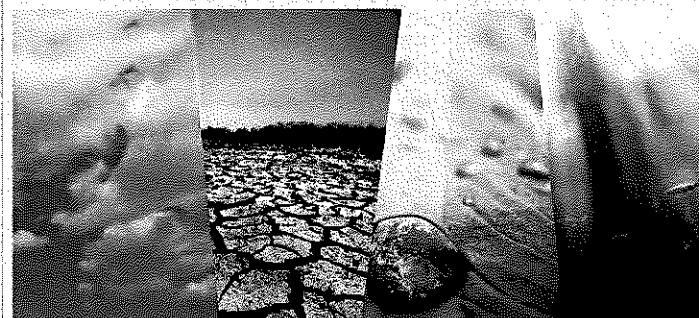
Preservative: h: HCL n: HNO₃ na₂: Na₂S₂O₃ na: NaOH p: H₃PO₄ s: H₂SO₄ u: Ultra-pure znna: ZnAc₂+NaOH f: Filtered Scanned by: 826



CALSCIENCE

WORK ORDER NUMBER: 14-04-0959

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ETIC Engineering, Inc.

Client Project Name: ExxonMobil 70234

Attention: Joseph Muehleck
 2285 Morello Avenue
 Pleasant Hill, CA 94523-1850

Cecile L. de Guia

Approved for release on 04/24/2014 by:
 Cecile de Guia
 Project Manager

ResultLink ▶

Email your PM ▶

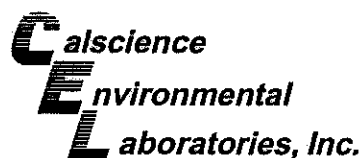


Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.



Client Project Name: ExxonMobil 70234
Work Order Number: 14-04-0959

1	Work Order Narrative.	3
2	Sample Summary.	4
3	Client Sample Data.	5
	3.1 EPA 8015B (M) TPH Gasoline (Aqueous).	5
	3.2 EPA 8260B Volatile Organics (Aqueous).	6
4	Quality Control Sample Data.	8
	4.1 MS/MSD.	8
	4.2 LCS/LCSD.	10
5	Glossary of Terms and Qualifiers.	12
6	Chain of Custody/Sample Receipt Form.	13



Work Order Narrative

Work Order: 14-04-0959

Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain of Custody (COC) on 04/12/14. They were assigned to Work Order 14-04-0959.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

New York NELAP air certification does not certify for all reported methods and analytes, reference the accredited items here: http://www.calscience.com/PDF/New_York.pdf

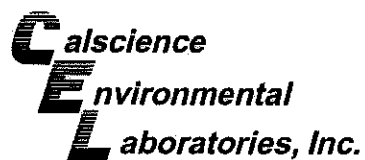
Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

EPA 8260B:

LCS Batch Number 140419L010: All target analytes were within acceptance criteria with the exception of p/m-Xylene. The LCS recovery for this analyte was slightly above the upper control limit of 120%, but was below the NELAC-defined upper marginal exceedance (ME) limit of 127%. (ME = ± 4 standard deviations.) Based upon the number of analytes spiked into the LCS, and per NELAC, the laboratory is allowed to report associated data when there is, in this case, one marginal exceedance in an LCS.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.



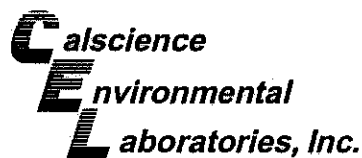
Sample Summary

Client: ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Work Order: 14-04-0959
Project Name: ExxonMobil 70234
PO Number: 4410169993
Date/Time Received: 04/12/14 09:50
Number of Containers: 4

Attn: Joseph Muehleck

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
H2-80	14-04-0959-1	04/11/14 14:30	4	Aqueous



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/12/14
Work Order: 14-04-0959
Preparation: EPA 5030C
Method: EPA 8015B (M)
Units: ug/L

Project: ExxonMobil 70234

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
H2-80	14-04-0959-1-C	04/11/14 14:30	Aqueous	GC 42	04/16/14	04/16/14 22:02	140416L049

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline	ND	50	1.00	

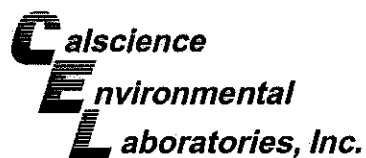
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	85	38-134	

Method Blank	099-12-436-9274	N/A	Aqueous	GC 42	04/16/14	04/16/14 14:27	140416L049
--------------	-----------------	-----	---------	-------	----------	-------------------	------------

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline	ND	50	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	80	38-134	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/12/14
Work Order: 14-04-0959
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: ExxonMobil 70234

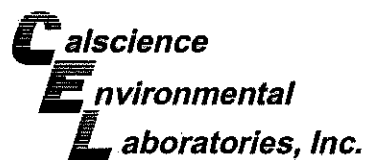
Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
H2-80	14-04-0959-1-B	04/11/14 14:30	Aqueous	GC/MS T	04/19/14	04/19/14 15:32	140419L010

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.50	1.00	
Ethylbenzene	ND	0.50	1.00	
Toluene	ND	0.50	1.00	
p/m-Xylene	ND	0.50	1.00	
o-Xylene	ND	0.50	1.00	
Xylenes (total)	ND	0.50	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.50	1.00	
Tert-Butyl Alcohol (TBA)	ND	10	1.00	
Diisopropyl Ether (DIPE)	ND	0.50	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1.00	
Naphthalene	ND	1.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	89	68-120	
Dibromofluoromethane	102	80-127	
1,2-Dichloroethane-d4	111	80-128	
Toluene-d8	100	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/12/14
Work Order: 14-04-0959
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: ExxonMobil 70234

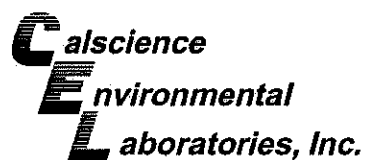
Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-10-025-3023	N/A	Aqueous	GC/MS T	04/19/14	04/19/14 10:52	140419L010

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.50	1.00	
Ethylbenzene	ND	0.50	1.00	
Toluene	ND	0.50	1.00	
p/m-Xylene	ND	0.50	1.00	
o-Xylene	ND	0.50	1.00	
Xylenes (total)	ND	0.50	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.50	1.00	
Tert-Butyl Alcohol (TBA)	ND	10	1.00	
Diisopropyl Ether (DIPE)	ND	0.50	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1.00	
Naphthalene	ND	1.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	84	68-120	
Dibromofluoromethane	99	80-127	
1,2-Dichloroethane-d4	106	80-128	
Toluene-d8	101	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Quality Control - Spike/Spike Duplicate

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/12/14
Work Order: 14-04-0959
Preparation: EPA 5030C
Method: EPA 8015B (M)

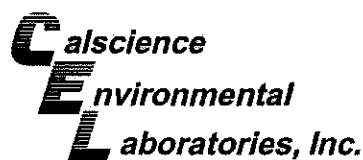
Project: ExxonMobil 70234

Page 1 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
14-04-1080-2	Sample	Aqueous	GC 42	04/16/14	04/16/14 15:37	140416S037
14-04-1080-2	Matrix Spike	Aqueous	GC 42	04/16/14	04/16/14 16:12	140416S037
14-04-1080-2	Matrix Spike Duplicate	Aqueous	GC 42	04/16/14	04/16/14 16:47	140416S037

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	ND	2000	1762	88	1809	90	68-122	3	0-18	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - Spike/Spike Duplicate

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

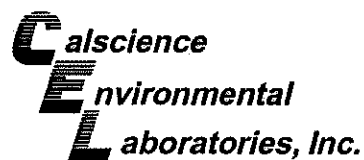
Date Received: 04/12/14
Work Order: 14-04-0959
Preparation: EPA 5030C
Method: EPA 8260B

Project: ExxonMobil 70234

Page 2 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number				
14-04-1335-10	Sample	Aqueous	GC/MS T	04/19/14	04/19/14 11:23	140419S004				
14-04-1335-10	Matrix Spike	Aqueous	GC/MS T	04/19/14	04/19/14 12:18	140419S004				
14-04-1335-10	Matrix Spike Duplicate	Aqueous	GC/MS T	04/19/14	04/19/14 12:45	140419S004				
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	10.00	11.16	112	11.49	115	75-125	3	0-20	
Ethylbenzene	ND	10.00	10.98	110	11.10	111	75-125	1	0-20	
Toluene	ND	10.00	11.05	110	11.25	113	75-125	2	0-20	
p/m-Xylene	ND	20.00	23.20	116	23.23	116	75-125	0	0-20	
o-Xylene	ND	10.00	11.59	116	11.55	116	75-127	0	0-20	
Methyl-t-Butyl Ether (MTBE)	0.7102	10.00	10.78	101	10.65	99	71-131	1	0-20	
Tert-Butyl Alcohol (TBA)	ND	50.00	49.40	99	56.42	113	20-180	13	0-40	
Diisopropyl Ether (DIPE)	ND	10.00	9.521	95	9.426	94	64-136	1	0-20	
Ethyl-t-Butyl Ether (ETBE)	3.430	10.00	13.02	96	12.99	96	73-133	0	0-20	
Tert-Amyl-Methyl Ether (TAME)	ND	10.00	10.23	102	10.38	104	75-125	1	0-20	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

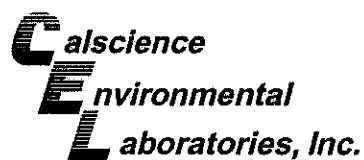
Date Received: 04/12/14
Work Order: 14-04-0959
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project: ExxonMobil 70234

Page 1 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-12-436-9274	LCS	Aqueous	GC 42	04/16/14	04/16/14 15:02	140416L049
Parameter	Spike Added		Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
TPH as Gasoline	2000		1805	90	78-120	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

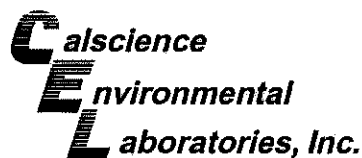
Date Received: 04/12/14
Work Order: 14-04-0959
Preparation: EPA 5030C
Method: EPA 8260B

Project: ExxonMobil 70234

Page 2 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-10-025-3023	LCS	Aqueous	GC/MS T	04/19/14	04/19/14 09:52	140419L010
Parameter		Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
Benzene		10.00	10.39	104	80-120	
Ethylbenzene		10.00	11.49	115	80-120	
Toluene		10.00	10.41	104	80-120	
p/m-Xylene		20.00	24.17	121	80-120	LQ
o-Xylene		10.00	11.96	120	80-120	
Methyl-t-Butyl Ether (MTBE)		10.00	9.410	94	75-123	
Tert-Butyl Alcohol (TBA)		50.00	52.81	106	80-120	
Diisopropyl Ether (DIPE)		10.00	9.381	94	73-121	
Ethyl-t-Butyl Ether (ETBE)		10.00	9.342	93	76-124	
Tert-Amyl-Methyl Ether (TAME)		10.00	9.362	94	80-120	

RPD: Relative Percent Difference, CL: Control Limits



Glossary of Terms and Qualifiers

Work Order: 14-04-0959

Page 1 of 1

Qualifiers	Definition
AZ	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
B	Analyte was present in the associated method blank.
BA	The MS/MSD RPD was out of control due to suspected matrix interference.
BB	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
DF	Reporting limits elevated due to matrix interferences.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
GE	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
HD	Chromat. profile inconsistent with pattern(s) of ref. fuel stds.
HO	High concentration matrix spike recovery out of limits
HT	Analytical value calculated using results from associated tests.
HX	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS was in control.
IL	Relative percent difference out of control.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
LD	Analyte presence was not confirmed by second column or GC/MS analysis.
LP	The LCS and/or LCSD recoveries for this analyte were above the upper control limit. The associated sample was non-detected. Therefore, the sample data was reported without further clarification.
LQ	LCS recovery above method control limits.
LR	LCS recovery below method control limits.
ND	Parameter not detected at the indicated reporting limit.
QO	Compound did not meet method-described identification guidelines. Identification was based on additional GC/MS characteristics.
RU	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
SG	A silica gel cleanup procedure was performed.
SN	See applicable analysis comment.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

Sandy Tat

From: Joseph Muehleck [jmuehleck@eticeng.com]
Sent: Monday, April 14, 2014 10:20 AM
To: Sandy Tat
Subject: RE: ExxonMobil 70234 (14-04-0959)

Yes. Thanks.

Joseph Muehleck
Project Manager

jmuehleck@eticeng.com
www.eticeng.com
ETIC Engineering, Inc.
2285 Morello Ave.
Pleasant Hill, CA 94523
Tel: 925-602-4710 x2127
Fax: 925-602-4720
Mobile: 925-301-7428

From: Sandy Tat [<mailto:stat@calscience.com>]
Sent: Monday, April 14, 2014 9:59 AM
To: Joseph Muehleck
Subject: RE: ExxonMobil 70234 (14-04-0959)

Hi Joe,

Should the Global ID & Field Point Name for this work order same as the work order below? Please advise.

Thanks!

Sandy Tat
Project Manager Assistant
(714) 895-5494

The difference is service

From: Joseph Muehleck [<mailto:jmuehleck@eticeng.com>]
Sent: Friday, April 11, 2014 5:48 PM
To: Sandy Tat
Cc: Karina Gillette
Subject: RE: ExxonMobil 70234 (14-04-0862)

Hi Sandy –

Global ID - T06019757161

Field point name for this sample is H2.

Sorry I forgot to include those.

Please include an EDF for this job. There will be more samples next week and the field point names should be the first 2 digits of each sample name.

Thanks,

Joe

Joseph Muehleck
Project Manager

jmuehleck@eticeng.com

www.eticeng.com

ETIC Engineering, Inc.

2285 Morello Ave.

Pleasant Hill, CA 94523

Tel: 925-602-4710 x2127

Fax: 925-602-4720

Mobile: 925-301-7428

From: Sandy Tat [<mailto:stat@calscience.com>]

Sent: Friday, April 11, 2014 5:23 PM

To: Joseph Muehleck

Subject: ExxonMobil 70234 (14-04-0862)

Hi Joe,

Can you please provide the Global ID & the Field Point Name for geotracker?

Thanks!

Sandy Tat

Project Manager Assistant

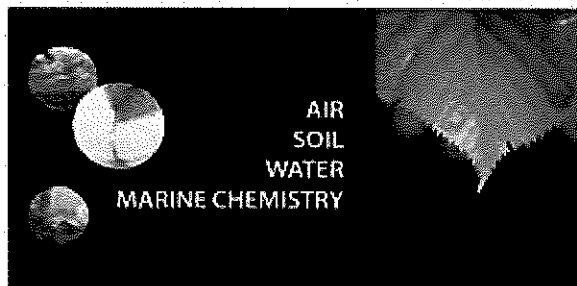


7440 Lincoln Way

Garden Grove, CA 92841-1427

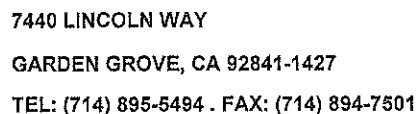
(714) 895-5494

www.calscience.com



PRIVACY NOTICE:

This email (and/or the documents attached to it) is intended only for the use of the individual or entity to which it is addressed and may contain information that is privileged, confidential, or exempt from disclosure under applicable



DATE: 4-11-14

PAGE: 1 OF 1

Page 15 of 17

0959

		< WebShip > > > > 800-322-5555 www.gso.com	
Ship From: ALAN KEMP CAL SCIENCE- CONCORD 5063 COMMERCIAL CIRCLE #H CONCORD, CA 94520		Tracking #: 524385070 	SDS A
Ship To: SAMPLE RECEIVING CEL 7440 LINCOLN WAY GARDEN GROVE, CA 92841		ORC GARDEN GROVE	
COD: \$0.00		D92843A  23269198	
Reference: ETIC, CARDNO ERI		Delivery Instructions:	
Signature Type: SIGNATURE REQUIRED		Print Date : 04/11/14 15:53 PM	

Package 1 of 1

Send Label To Printer	<input checked="" type="checkbox"/> Print All	Edit Shipment	Finish
-----------------------	---	---------------	--------

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

STEP 1 - Use the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.

STEP 2 - Fold this page in half.

STEP 3 - Securely attach this label to your package, do not cover the barcode.

STEP 4 - Request an on-call pickup for your package, if you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

ADDITIONAL OPTIONS:

Send Label Via Email	Create Return Label
----------------------	---------------------

TERMS AND CONDITIONS:

By giving us your shipment to deliver, you agree to all the service terms and conditions described in this section. Our liability for loss or damage to any package is limited to your actual damages or \$100 whichever is less, unless you pay for and declare a higher authorized value. If you declare a higher value and pay the additional charge, our liability will be the lesser of your declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, whether direct, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had knowledge that such damage might be incurred including but not limited to loss of income or profit. We will not be liable for your acts or omissions, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of public enemies, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Package is \$500. For other shipments the highest declared value is \$10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is \$500. Items of "extraordinary value" include, but or not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.

WORK ORDER #: **14-04-0959**

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: ETIC

DATE: 04/12/14

TEMPERATURE: Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 3.1 °C - 0.3 °C (CF) = 2.8 °C ☒ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter

Checked by: 802

CUSTODY SEALS INTACT:

☒ Cooler ☐ _____

☐ No (Not Intact)

☐ Not Present

☐ N/A

Checked by: 802

☐ Sample ☐ _____

☐ No (Not Intact)

☒ Not Present

Checked by: 776

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.

☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.

Sampler's name indicated on COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------------------	-------------------------------------	--------------------------	--------------------------

Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------

Sample container(s) intact and good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------

Proper containers and sufficient volume for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	-------------------------------------	--------------------------	--------------------------

Analyses received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------

Aqueous samples received within 15-minute holding time

<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfides <input type="checkbox"/> Dissolved Oxygen.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
---	--------------------------	--------------------------	-------------------------------------

Proper preservation noted on COC or sample container.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	-------------------------------------	--------------------------	--------------------------

☐ Unpreserved vials received for Volatiles analysis

Volatile analysis container(s) free of headspace.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	-------------------------------------	--------------------------	--------------------------

Tedlar bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
---	--------------------------	--------------------------	-------------------------------------

CONTAINER TYPE:

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (____) ☐ EnCores® ☐ TerraCores® ☐ _____

Aqueous: ☐ VOA ☒ VOAh ☐ VOAna₂ ☐ 125AGB ☐ 125AGBh ☐ 125AGBp ☐ 1AGB ☐ 1AGBna₂ ☐ 1AGBs

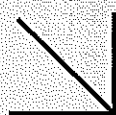
☐ 500AGB ☐ 500AGJ ☐ 500AGJs ☐ 250AGB ☐ 250CGB ☐ 250CGBs ☐ 1PB ☐ 1PBna ☐ 500PB

☐ 250PB ☐ 250PBn ☐ 125PB ☐ 125PBznn ☐ 100PJ ☐ 100PJna₂ ☐ _____ ☐ _____ ☐ _____

Air: ☐ Tedlar® ☐ Canister **Other:** ☐ _____ **Trip Blank Lot#:** _____ **Labeled/Checked by:** 776

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope **Reviewed by:** 681

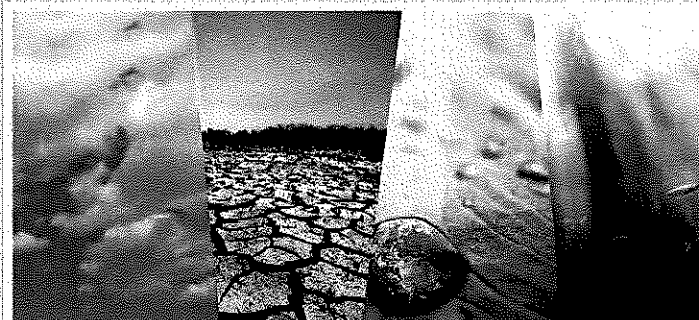
Preservative: h: HCL n: HNO₃ na₂: Na₂S₂O₃ na: NaOH p: H₃PO₄ s: H₂SO₄ u: Ultra-pure znn: ZnAc₂+NaOH f: Filtered **Scanned by:** 681



CALSCIENCE

WORK ORDER NUMBER: 14-04-1063

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ETIC Engineering, Inc.

Client Project Name: ExxonMobil 70234

Attention: Joseph Muehleck
 2285 Morello Avenue
 Pleasant Hill, CA 94523-1850

Cecile L. de Guia

Approved for release on 04/24/2014 by:
 Cecile deGuia
 Project Manager

ResultLink ▶

Email your PM ▶



Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.



7440 Lincoln Way, Garden Grove, CA 92841-1432 • TEL: (714) 895-5494 • FAX: (714) 894-7501 • www.calscience.com

NELAP ID: 03220CA | DoD-ELAP ID: L10-41 | CSDLAC ID: 10109 | SCAGMD ID: 83LA0830

Contents

Client Project Name: ExxonMobil 70234
 Work Order Number: 14-04-1063

1	Work Order Narrative.	3
2	Sample Summary.	4
3	Client Sample Data.	5
	3.1 EPA 8015B (M) TPH Gasoline (Aqueous).	5
	3.2 EPA 8015B (M) TPH Gasoline (Solid).	6
	3.3 EPA 8260B Volatile Organics (Aqueous).	7
	3.4 EPA 8260B Volatile Organics + Oxygenates (Solid).	10
4	Quality Control Sample Data.	13
	4.1 MS/MSD.	13
	4.2 LCS/LCSD.	17
5	Glossary of Terms and Qualifiers.	21
6	Chain of Custody/Sample Receipt Form.	22

Work Order Narrative

Work Order: 14-04-1063

Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain of Custody (COC) on 04/15/14. They were assigned to Work Order 14-04-1063.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Additional Comments:

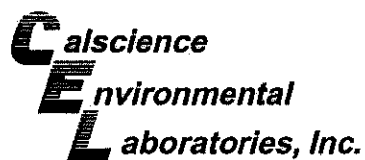
Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

New York NELAP air certification does not certify for all reported methods and analytes, reference the accredited items here: http://www.calscience.com/PDF/New_York.pdf

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.



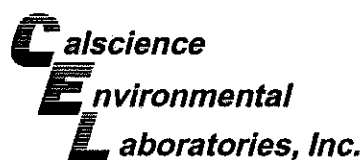
Sample Summary

Client: ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Work Order: 14-04-1063
Project Name: ExxonMobil 70234
PO Number: 4410169993
Date/Time Received: 04/15/14 11:00
Number of Containers: 11

Attn: Joseph Muehleck

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
V1-7	14-04-1063-1	04/14/14 13:30	1	Solid
H3-54	14-04-1063-2	04/14/14 13:45	1	Solid
H3-65	14-04-1063-3	04/14/14 12:45	4	Aqueous
H3-90	14-04-1063-4	04/14/14 10:10	4	Aqueous
V1-6.5	14-04-1063-5	04/14/14 13:15	1	Solid



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

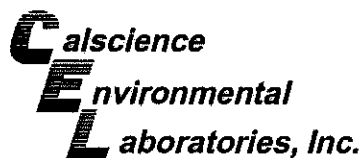
Date Received: 04/15/14
Work Order: 14-04-1063
Preparation: EPA 5030C
Method: EPA 8015B (M)
Units: ug/L

Project: ExxonMobil 70234

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
H3-65	14-04-1063-3-C	04/14/14 12:45	Aqueous	GC 42	04/16/14	04/17/14 09:18	140416L049
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
TPH as Gasoline		ND	50	1.00			
<u>Surrogate</u>		<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>			
1,4-Bromofluorobenzene		85	38-134				
H3-90	14-04-1063-4-C	04/14/14 10:10	Aqueous	GC 42	04/16/14	04/17/14 09:53	140416L049
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
TPH as Gasoline		ND	50	1.00			
<u>Surrogate</u>		<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>			
1,4-Bromofluorobenzene		84	38-134				
Method Blank	099-12-436-9274	N/A	Aqueous	GC 42	04/16/14	04/16/14 14:27	140416L049
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
TPH as Gasoline		ND	50	1.00			
<u>Surrogate</u>		<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>			
1,4-Bromofluorobenzene		80	38-134				

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

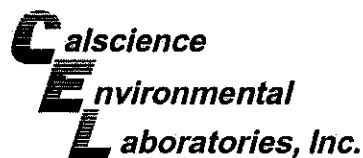
Date Received: 04/15/14
Work Order: 14-04-1063
Preparation: EPA 5030C
Method: EPA 8015B (M)
Units: mg/kg

Project: ExxonMobil 70234

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V1-7	14-04-1063-1-A	04/14/14 13:30	Solid	GC 1	04/15/14	04/17/14 22:43	140417L027
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
TPH as Gasoline		ND	0.51	1.00			
<u>Surrogate</u>		<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>			
1,4-Bromofluorobenzene - FID		82	42-126				
H3-54	14-04-1063-2-A	04/14/14 13:45	Solid	GC 1	04/15/14	04/17/14 23:19	140417L027
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
TPH as Gasoline		ND	0.52	1.00			
<u>Surrogate</u>		<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>			
1,4-Bromofluorobenzene - FID		79	42-126				
Method Blank	099-14-571-1560	N/A	Solid	GC 1	04/17/14	04/17/14 12:34	140417L027
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
TPH as Gasoline		ND	0.50	1.00			
<u>Surrogate</u>		<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>			
1,4-Bromofluorobenzene - FID		80	42-126				

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/15/14
Work Order: 14-04-1063
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: ExxonMobil 70234

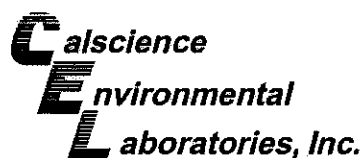
Page 1 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
H3-65	14-04-1063-3-A	04/14/14 12:45	Aqueous	GC/MS L	04/19/14	04/19/14 20:59	140419L006

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.50	1.00	
Ethylbenzene	ND	0.50	1.00	
Toluene	ND	0.50	1.00	
p/m-Xylene	ND	0.50	1.00	
o-Xylene	ND	0.50	1.00	
Xylenes (total)	ND	0.50	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.50	1.00	
Tert-Butyl Alcohol (TBA)	ND	10	1.00	
Diisopropyl Ether (DIPE)	ND	0.50	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1.00	
Naphthalene	ND	1.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	98	68-120	
Dibromofluoromethane	104	80-127	
1,2-Dichloroethane-d4	111	80-128	
Toluene-d8	101	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/15/14
Work Order: 14-04-1063
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: ExxonMobil 70234

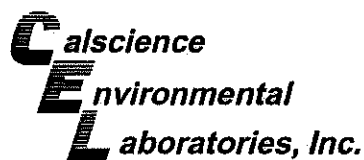
Page 2 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
H3-90	14-04-1063-4-A	04/14/14 10:10	Aqueous	GC/MS L	04/19/14	04/19/14 21:26	140419L006

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.50	1.00	
Ethylbenzene	ND	0.50	1.00	
Toluene	ND	0.50	1.00	
p/m-Xylene	ND	0.50	1.00	
o-Xylene	ND	0.50	1.00	
Xylenes (total)	ND	0.50	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.50	1.00	
Tert-Butyl Alcohol (TBA)	ND	10	1.00	
Diisopropyl Ether (DIPE)	ND	0.50	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1.00	
Naphthalene	ND	1.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	99	68-120	
Dibromofluoromethane	109	80-127	
1,2-Dichloroethane-d4	112	80-128	
Toluene-d8	102	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/15/14
Work Order: 14-04-1063
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: ExxonMobil 70234

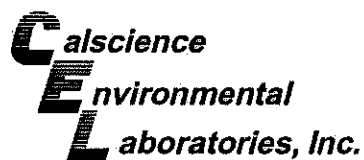
Page 3 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-10-025-3021	N/A	Aqueous	GC/MS L	04/19/14	04/19/14 11:58	140419L006

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.50	1.00	
Ethylbenzene	ND	0.50	1.00	
Toluene	ND	0.50	1.00	
p/m-Xylene	ND	0.50	1.00	
o-Xylene	ND	0.50	1.00	
Xylenes (total)	ND	0.50	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.50	1.00	
Tert-Butyl Alcohol (TBA)	ND	10	1.00	
Diisopropyl Ether (DIPE)	ND	0.50	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1.00	
Naphthalene	ND	1.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	97	68-120	
Dibromofluoromethane	108	80-127	
1,2-Dichloroethane-d4	116	80-128	
Toluene-d8	101	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

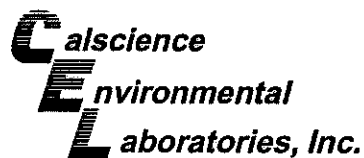
Date Received: 04/15/14
Work Order: 14-04-1063
Preparation: EPA 5030C
Method: EPA 8260B
Units: mg/kg

Project: ExxonMobil 70234

Page 1 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V1-7	14-04-1063-1-A	04/14/14 13:30	Solid	GC/MS XX	04/15/14	04/15/14 17:51	140415L003
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
Benzene		ND	0.0051	1.00			
Ethylbenzene		ND	0.0051	1.00			
Toluene		ND	0.0051	1.00			
p/m-Xylene		ND	0.0051	1.00			
o-Xylene		ND	0.0051	1.00			
Xylenes (total)		ND	0.0051	1.00			
Methyl-t-Butyl Ether (MTBE)		ND	0.0051	1.00			
Tert-Butyl Alcohol (TBA)		ND	0.051	1.00			
Diisopropyl Ether (DIPE)		ND	0.010	1.00			
Ethyl-t-Butyl Ether (ETBE)		ND	0.010	1.00			
Tert-Amyl-Methyl Ether (TAME)		ND	0.010	1.00			
Naphthalene		ND	0.051	1.00			
<u>Surrogate</u>		<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>			
1,4-Bromofluorobenzene		95	60-132				
Dibromofluoromethane		99	63-141				
1,2-Dichloroethane-d4		106	62-146				
Toluene-d8		99	80-120				

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/15/14
Work Order: 14-04-1063
Preparation: EPA 5030C
Method: EPA 8260B
Units: mg/kg

Project: ExxonMobil 70234

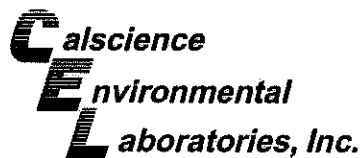
Page 2 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
H3-54	14-04-1063-2-A	04/14/14 13:45	Solid	GC/MS XX	04/15/14	04/15/14 18:21	140415L003

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.0052	1.00	
Ethylbenzene	ND	0.0052	1.00	
Toluene	ND	0.0052	1.00	
p/m-Xylene	ND	0.0052	1.00	
o-Xylene	ND	0.0052	1.00	
Xylenes (total)	ND	0.0052	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0052	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.052	1.00	
Diisopropyl Ether (DIPE)	ND	0.010	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.010	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.010	1.00	
Naphthalene	ND	0.052	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	93	60-132	
Dibromofluoromethane	100	63-141	
1,2-Dichloroethane-d4	105	62-146	
Toluene-d8	98	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/15/14
Work Order: 14-04-1063
Preparation: EPA 5030C
Method: EPA 8260B
Units: mg/kg

Project: ExxonMobil 70234

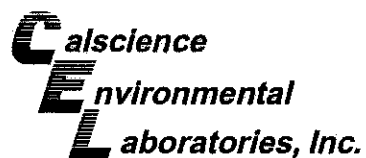
Page 3 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-796-8383	N/A	Solid	GC/MS XX	04/15/14	04/15/14 12:28	140415L003

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.0050	1.00	
Ethylbenzene	ND	0.0050	1.00	
Toluene	ND	0.0050	1.00	
p/m-Xylene	ND	0.0050	1.00	
o-Xylene	ND	0.0050	1.00	
Xylenes (total)	ND	0.0050	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0050	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.050	1.00	
Diisopropyl Ether (DIPE)	ND	0.010	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.010	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.010	1.00	
Naphthalene	ND	0.050	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	95	60-132	
Dibromofluoromethane	97	63-141	
1,2-Dichloroethane-d4	102	62-146	
Toluene-d8	100	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Quality Control - Spike/Spike Duplicate

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/15/14
Work Order: 14-04-1063
Preparation: EPA 5030C
Method: EPA 8015B (M)

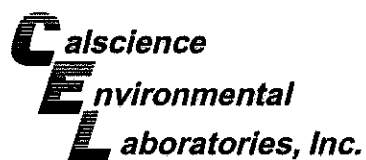
Project: ExxonMobil 70234

Page 1 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
14-04-1080-2	Sample	Aqueous	GC 42	04/16/14	04/16/14 15:37	140416S037
14-04-1080-2	Matrix Spike	Aqueous	GC 42	04/16/14	04/16/14 16:12	140416S037
14-04-1080-2	Matrix Spike Duplicate	Aqueous	GC 42	04/16/14	04/16/14 16:47	140416S037

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	ND	2000	1762	88	1809	90	68-122	3	0-18	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - Spike/Spike Duplicate

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

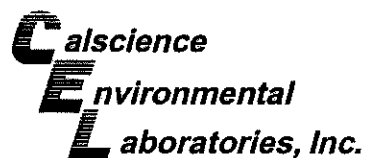
Date Received: 04/15/14
Work Order: 14-04-1063
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project: ExxonMobil 70234

Page 2 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number				
14-04-1137-2	Sample	Solid	GC 1	04/16/14	04/17/14 14:22	140417S010				
14-04-1137-2	Matrix Spike	Solid	GC 1	04/16/14	04/17/14 14:57	140417S010				
14-04-1137-2	Matrix Spike Duplicate	Solid	GC 1	04/16/14	04/17/14 15:33	140417S010				
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	ND	10.00	9.057	91	8.325	83	48-114	8	0-23	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - Spike/Spike Duplicate

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/15/14
Work Order: 14-04-1063
Preparation: EPA 5030C
Method: EPA 8260B

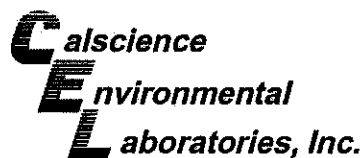
Project: ExxonMobil 70234

Page 3 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
14-04-0788-5	Sample	Aqueous	GC/MS L	04/19/14	04/19/14 12:25	140419S003
14-04-0788-5	Matrix Spike	Aqueous	GC/MS L	04/19/14	04/19/14 12:51	140419S003
14-04-0788-5	Matrix Spike Duplicate	Aqueous	GC/MS L	04/19/14	04/19/14 13:18	140419S003

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	10.00	10.60	106	11.10	111	75-125	5	0-20	
Ethylbenzene	ND	10.00	10.93	109	11.35	113	75-125	4	0-20	
Toluene	ND	10.00	10.80	108	11.33	113	75-125	5	0-20	
p/m-Xylene	ND	20.00	21.97	110	22.89	114	75-125	4	0-20	
o-Xylene	ND	10.00	10.89	109	11.32	113	75-127	4	0-20	
Methyl-t-Butyl Ether (MTBE)	ND	10.00	10.14	101	10.66	107	71-131	5	0-20	
Tert-Butyl Alcohol (TBA)	55.14	50.00	98.30	86	103.4	96	20-180	5	0-40	
Diisopropyl Ether (DIPE)	ND	10.00	10.37	104	10.79	108	64-136	4	0-20	
Ethyl-t-Butyl Ether (ETBE)	ND	10.00	9.629	96	10.06	101	73-133	4	0-20	
Tert-Amyl-Methyl Ether (TAME)	ND	10.00	9.330	93	9.861	99	75-125	6	0-20	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - Spike/Spike Duplicate

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/15/14
Work Order: 14-04-1063
Preparation: EPA 5030C
Method: EPA 8260B

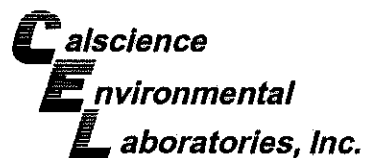
Project: ExxonMobil 70234

Page 4 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
14-04-0957-2	Sample	Solid	GC/MS XX	04/14/14	04/15/14 12:57	140415S013
14-04-0957-2	Matrix Spike	Solid	GC/MS XX	04/14/14	04/15/14 13:56	140415S013
14-04-0957-2	Matrix Spike Duplicate	Solid	GC/MS XX	04/14/14	04/15/14 14:25	140415S013

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	0.05000	0.04749	95	0.04758	95	61-127	0	0-20	
Ethylbenzene	ND	0.05000	0.04777	96	0.04727	95	57-129	1	0-22	
Toluene	ND	0.05000	0.04683	94	0.04641	93	63-123	1	0-20	
p/m-Xylene	ND	0.1000	0.09914	99	0.09605	96	70-130	3	0-30	
o-Xylene	ND	0.05000	0.05056	101	0.04922	98	70-130	3	0-30	
Methyl-t-Butyl Ether (MTBE)	ND	0.05000	0.04333	87	0.05276	106	57-123	20	0-21	
Tert-Butyl Alcohol (TBA)	ND	0.2500	0.2359	94	0.2353	94	30-168	0	0-34	
Diisopropyl Ether (DIPE)	ND	0.05000	0.04776	96	0.04809	96	57-129	1	0-20	
Ethyl-t-Butyl Ether (ETBE)	ND	0.05000	0.04665	93	0.04718	94	55-127	1	0-20	
Tert-Amyl-Methyl Ether (TAME)	ND	0.05000	0.04564	91	0.04597	92	58-124	1	0-20	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

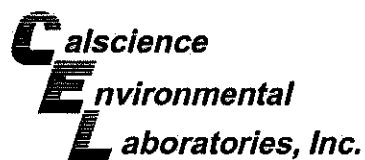
Date Received: 04/15/14
Work Order: 14-04-1063
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project: ExxonMobil 70234

Page 1 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-12-436-9274	LCS	Aqueous	GC 42	04/16/14	04/16/14 15:02	140416L049
Parameter	Spike Added		Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
TPH as Gasoline	2000		1805	90	78-120	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

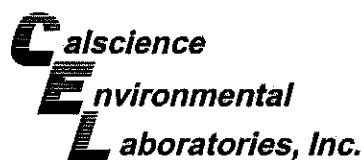
Date Received: 04/15/14
Work Order: 14-04-1063
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project: ExxonMobil 70234

Page 2 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-14-571-1560	LCS	Solid	GC 1	04/17/14	04/17/14 13:46	140417L027
Parameter	Spike Added		Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
TPH as Gasoline	10.00		9.154	92	70-124	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS/LCSD

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/15/14
Work Order: 14-04-1063
Preparation: EPA 5030C
Method: EPA 8260B

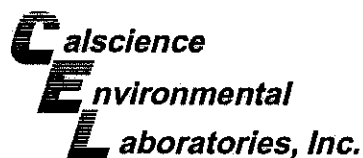
Project: ExxonMobil 70234

Page 3 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-10-025-3021	LCS	Aqueous	GC/MS L	04/19/14	04/19/14 10:27	140419L006
099-10-025-3021	LCSD	Aqueous	GC/MS L	04/19/14	04/19/14 10:54	140419L006

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	10.00	10.88	109	10.68	107	80-120	2	0-22	
Ethylbenzene	10.00	11.27	113	10.92	109	80-120	3	0-25	
Toluene	10.00	11.03	110	10.87	109	80-120	1	0-28	
p/m-Xylene	20.00	22.71	114	21.99	110	80-120	3	0-30	
o-Xylene	10.00	11.29	113	11.08	111	80-120	2	0-30	
Methyl-t-Butyl Ether (MTBE)	10.00	10.16	102	10.16	102	75-123	0	0-27	
Tert-Butyl Alcohol (TBA)	50.00	50.84	102	48.84	98	80-120	4	0-30	
Diisopropyl Ether (DIPE)	10.00	9.890	99	9.958	100	73-121	1	0-26	
Ethyl-t-Butyl Ether (ETBE)	10.00	9.614	96	9.572	96	76-124	0	0-30	
Tert-Amyl-Methyl Ether (TAME)	10.00	9.438	94	9.315	93	80-120	1	0-24	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/15/14
Work Order: 14-04-1063
Preparation: EPA 5030C
Method: EPA 8260B

Project: ExxonMobil 70234

Page 4 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-12-796-8383	LCS	Solid	GC/MS XX	04/15/14	04/15/14 10:57	140415L003
Parameter		Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
Benzene		0.05000	0.05497	110	78-120	
Ethylbenzene		0.05000	0.05665	113	76-120	
Toluene		0.05000	0.05418	108	77-120	
p/m-Xylene		0.1000	0.1163	116	75-125	
o-Xylene		0.05000	0.05910	118	75-125	
Methyl-t-Butyl Ether (MTBE)		0.05000	0.04859	97	77-120	
Tert-Butyl Alcohol (TBA)		0.2500	0.2755	110	68-122	
Diisopropyl Ether (DIPE)		0.05000	0.05466	109	78-120	
Ethyl-t-Butyl Ether (ETBE)		0.05000	0.05363	107	78-120	
Tert-Amyl-Methyl Ether (TAME)		0.05000	0.05223	104	75-120	

RPD: Relative Percent Difference. CL: Control Limits

Glossary of Terms and Qualifiers

Work Order: 14-04-1063

Page 1 of 1

Qualifiers	Definition
AZ	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
B	Analyte was present in the associated method blank.
BA	The MS/MSD RPD was out of control due to suspected matrix interference.
BB	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
DF	Reporting limits elevated due to matrix interferences.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
GE	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
HD	Chromat. profile inconsistent with pattern(s) of ref. fuel stds.
HO	High concentration matrix spike recovery out of limits
HT	Analytical value calculated using results from associated tests.
HX	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS was in control.
IL	Relative percent difference out of control.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
LD	Analyte presence was not confirmed by second column or GC/MS analysis.
LP	The LCS and/or LCSD recoveries for this analyte were above the upper control limit. The associated sample was non-detected. Therefore, the sample data was reported without further clarification.
LQ	LCS recovery above method control limits.
LR	LCS recovery below method control limits.
ND	Parameter not detected at the indicated reporting limit.
QO	Compound did not meet method-described identification guidelines. Identification was based on additional GC/MS characteristics.
RU	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
SG	A silica gel cleanup procedure was performed.
SN	See applicable analysis comment.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

DATE: 9/14/19
PAGE: 1 OF 1

06/21/10 Revision

		WebShip >>>>>	
		800-322-5555 www.gso.com	
Ship From: ALAN KEMP CAL SCIENCE- CONCORD 5063 COMMERCIAL CIRCLE #H CONCORD, CA 94520		Tracking #: 524420607 	NPS
Ship To: SAMPLE RECEIVING CEL 7440 LINCOLN WAY GARDEN GROVE, CA 92841		ORC GARDEN GROVE	A (1063)
COD: \$0.00		D92843A 	
Reference: ETIC		23431750	
Delivery Instructions:			
Signature Type: SIGNATURE REQUIRED			

Print Date : 04/16/14 15:36 PM

Package 1 of 1

Send Label To Printer	<input checked="" type="checkbox"/> Print All	Edit Shipment...	Finish
-----------------------	---	------------------	--------

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

STEP 1 - Use the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.

STEP 2 - Fold this page in half.

STEP 3 - Securely attach this label to your package, do not cover the barcode.

STEP 4 - Request an on-call pickup for your package, if you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

ADDITIONAL OPTIONS:

Send Label Via Email	Create Return Label
----------------------	---------------------

TERMS AND CONDITIONS:

By giving us your shipment to deliver, you agree to all the service terms and conditions described in this section. Our liability for loss or damage to any package is limited to your actual damages or \$100 whichever is less, unless you pay for and declare a higher authorized value. If you declare a higher value and pay the additional charge, our liability will be the lesser of your declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, whether direct, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had knowledge that such damage might be incurred including but not limited to loss of income or profit. We will not be liable for your acts or omissions, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of public enemies, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Package is \$500. For other shipments the highest declared value is \$10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is \$500. Items of "extraordinary value" include, but are not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.

WORK ORDER #: **14-04-1063**

SAMPLE RECEIPT FORM

Cooler / of /

CLIENT: ETIC

DATE: 04/17/14

TEMPERATURE: Thermometer ID: SC2 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1 . 6 °C - 0.3 °C (CF) = 1 . 3 °C ☒ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by:)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter

Checked by: 876

CUSTODY SEALS INTACT:

☒ Cooler ☐ ☐ No (Not Intact) ☐ Not Present ☐ N/A Checked by: 876

☐ Sample ☐ ☐ No (Not Intact) ☒ Not Present Checked by: 876

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.

☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.

Sampler's name indicated on COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------------------	-------------------------------------	--------------------------	--------------------------

Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------

Sample container(s) intact and good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------

Proper containers and sufficient volume for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	-------------------------------------	--------------------------	--------------------------

Analyses received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------

Aqueous samples received within 15-minute holding time

<input type="checkbox"/> pH: <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfides <input type="checkbox"/> Dissolved Oxygen.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--	--------------------------	--------------------------	-------------------------------------

Proper preservation noted on COC or sample container.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
---	--------------------------	--------------------------	-------------------------------------

☐ Unpreserved vials received for Volatiles analysis

Volatile analysis container(s) free of headspace.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
---	--------------------------	--------------------------	-------------------------------------

Tedlar bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
---	--------------------------	--------------------------	-------------------------------------

CONTAINER TYPE:

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☒ Sleeve (C-5) ☐ EnCores® ☐ TerraCores® ☐

Aqueous: ☐ VOA ☐ VOA_h ☐ VOAn₂ ☐ 125AGB ☐ 125AGB_h ☐ 125AGB_p ☐ 1AGB ☐ 1AGB_{na} ☐ 1AGB_s

☐ 500AGB ☐ 500AGJ ☐ 500AGJ_s ☐ 250AGB ☐ 250CGB ☐ 250CGB_s ☐ 1PB ☐ 1PB_{na} ☐ 500PB

☐ 250PB ☐ 250PB_n ☐ 125PB ☐ 125PB_{znna} ☐ 100PJ ☐ 100PJ_{na} ☐ ☐ ☐

Air: ☐ Tedlar® ☐ Canister Other: ☐ Trip Blank Lot#: Labeled/Checked by: 876

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope Reviewed by: 876

Preservative: h: HCL n: HNO₃ na₂: Na₂S₂O₃ na: NaOH p: H₃PO₄ s: H₂SO₄ u: Ultra-pure znna: ZnAc₂+NaOH f: Filtered Scanned by: 876

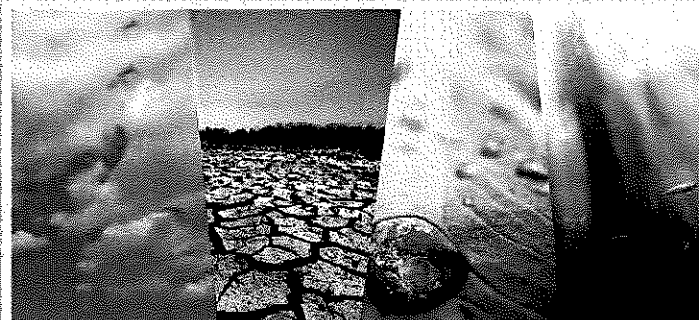
Subcontract analyses are reported as a stand-alone report.



CALSCIENCE

WORK ORDER NUMBER: 14-04-1063

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ETIC Engineering, Inc.

Client Project Name: ExxonMobil 70234

Attention: Joseph Muehleck
 2285 Morello Avenue
 Pleasant Hill, CA 94523-1850

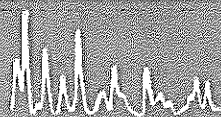
Approved for release on 05/12/2014 by:
 Cecile deGuia
 Project Manager

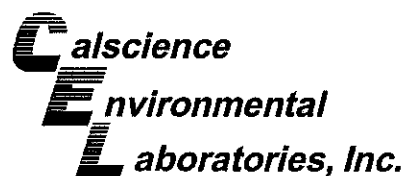
ResultLink ▶

Email your PM ▶



Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.





Contents

Client Project Name: ExxonMobil 70234
Work Order Number: 14-04-1063

1	Chain of Custody/Sample Receipt Form.	3
2	Subcontract Narrative.	6
3	Subcontract Report (PTS) - Geotechnical.	7

DATE: 4/14/14
PAGE: 1 OF 1

05/01/10 Revision

		< WebShip > > > > > 800-322-5555 www.gso.com	
Ship From: ALAN KEMP CAL SCIENCE- CONCORD 5063 COMMERCIAL CIRCLE #H CONCORD, CA 94520		Tracking #: 524420607 	
Ship To: SAMPLE RECEIVING CEL 7440 LINCOLN WAY GARDEN GROVE, CA 92841		NPS <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> ORC GARDEN GROVE </div> <div style="border: 1px solid black; border-radius: 50%; padding: 5px; text-align: center;"> 1063 </div> <div style="text-align: center;"> A </div> </div>	
COD: \$0.00		D92843A 	
Reference: ETIC		23431750	
Delivery Instructions:		Signature Type: SIGNATURE REQUIRED	
		Print Date : 04/16/14 15:36 PM	

Package 1 of 1

Send Label To Printer	<input checked="" type="checkbox"/> Print All	Edit Shipment...	Finish
-----------------------	---	------------------	--------

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

STEP 1 - Use the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.

STEP 2 - Fold this page in half.

STEP 3 - Securely attach this label to your package, do not cover the barcode.

STEP 4 - Request an on-call pickup for your package, if you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

ADDITIONAL OPTIONS:

Send Label Via Email	Create Return Label
----------------------	---------------------

TERMS AND CONDITIONS:

By giving us your shipment to deliver, you agree to all the service terms and conditions described in this section. Our liability for loss or damage to any package is limited to your actual damages or \$100 whichever is less, unless you pay for and declare a higher authorized value. If you declare a higher value and pay the additional charge, our liability will be the lesser of your declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, whether direct, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had knowledge that such damage might be incurred including but not limited to loss of income or profit. We will not be liable for your acts or omissions, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of public enemies, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Package is \$500. For other shipments the highest declared value is \$10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is \$500. Items of "extraordinary value" include, but are not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.

WORK ORDER #: **14-04-1063**

SAMPLE RECEIPT FORM

Cooler / of /

CLIENT: ETIC

DATE: 04/17/14

TEMPERATURE: Thermometer ID: SC2 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1 . 6 °C - 0.3 °C (CF) = 1 . 3 °C ☒ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by:)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter

Checked by: 876

CUSTODY SEALS INTACT:

☒ Cooler ☐ ☐ No (Not Intact) ☐ Not Present ☐ N/A Checked by: 876

☐ Sample ☐ ☐ No (Not Intact) ☒ Not Present Checked by: 876

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.

☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.

Sampler's name indicated on COC..... ☒ Yes ☐ No ☐ N/A

Sample container label(s) consistent with COC..... ☒ Yes ☐ No ☐ N/A

Sample container(s) intact and good condition..... ☒ Yes ☐ No ☐ N/A

Proper containers and sufficient volume for analyses requested..... ☒ Yes ☐ No ☐ N/A

Analyses received within holding time..... ☒ Yes ☐ No ☐ N/A

Aqueous samples received within 15-minute holding time

☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfides ☐ Dissolved Oxygen..... ☐ Yes ☐ No ☒ N/A

Proper preservation noted on COC or sample container..... ☐ Yes ☐ No ☒ N/A

☐ Unpreserved vials received for Volatiles analysis

Volatile analysis container(s) free of headspace..... ☐ Yes ☐ No ☒ N/A

Tedlar bag(s) free of condensation..... ☐ Yes ☐ No ☒ N/A

CONTAINER TYPE:

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☒ Sleeve (C-5) ☐ EnCores® ☐ TerraCores® ☐

Aqueous: ☐ VOA ☐ VOA_h ☐ VOAn₂ ☐ 125AGB ☐ 125AGB_h ☐ 125AGB_p ☐ 1AGB ☐ 1AGBna₂ ☐ 1AGBs

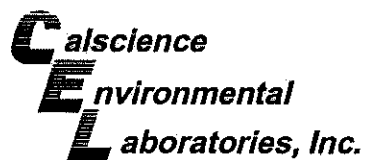
☐ 500AGB ☐ 500AGJ ☐ 500AGJs ☐ 250AGB ☐ 250CGB ☐ 250CGBs ☐ 1PB ☐ 1PBna ☐ 500PB

☐ 250PB ☐ 250PBn ☐ 125PB ☐ 125PBznna ☐ 100PJ ☐ 100PJna₂ ☐ ☐ ☐

Air: ☐ Tedlar® ☐ Canister Other: ☐ Trip Blank Lot#: Labeled/Checked by: 876

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope Reviewed by: 876

Preservative: h: HCL n: HNO₃ na₂: Na₂S₂O₃ na: NaOH p: H₃PO₄ s: H₂SO₄ u: Ultra-pure znna: ZnAc₂+NaOH f: Filtered Scanned by: 876



Subcontractor Analysis Report

Work Order: 14-04-1063

Page 1 of 1

One or more samples in this work order have tests that were subcontracted. The subcontract report(s) follows.

For subcontracted tests, please reference the laboratory information noted below.

1. PTS Laboratories, Inc. - Santa Fe Springs, CA
Geotechnical Testing



8100 Secura Way • Santa Fe Springs, CA 90670
Telephone (562) 347-2500 • Fax (562) 907-3610

May 12, 2014

Cecile de Guia
Calscience Environmental Laboratories, Inc.
7440 Lincoln Way
Garden Grove, CA 92841

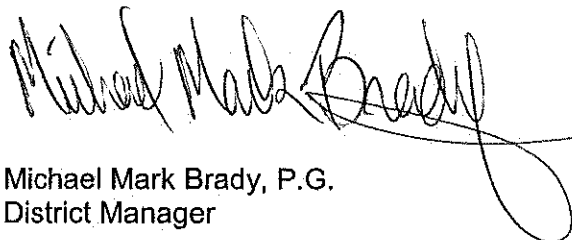
Re: PTS File No: 44230
Physical Properties Data
ExxonMobil 70234; 14041063

Dear Ms. de Guia:

Please find enclosed report for Physical Properties analyses conducted upon the sample received from your ExxonMobil 70234; 14041063 project. All analyses were performed by applicable ASTM, EPA, or API methodologies. An electronic version of the report has previously been sent to your attention via the internet. The sample is currently in storage and will be retained for thirty days past completion of testing at no charge. Please note that the sample will be disposed of at that time. You may contact me regarding storage, disposal, or return of the sample.

PTS Laboratories Inc. appreciates the opportunity to be of service. If you have any questions or require additional information, please contact Morgan Richards at (562) 347-2509.

Sincerely,
PTS Laboratories, Inc.



Michael Mark Brady, P.G.
District Manager

Encl.

Project Name: ExxonMobil 70234
Project Number: 14041063

PTS File No: 44230
Client: Calscience Environmental Laboratories, Inc.

TEST PROGRAM - 20140423

CORE ID	Depth ft.	Core Recovery ft.	Moisture Content ASTM D2216	Total/Air/Water Porosity API RP 40	Dry Bulk Density API RP40	TOC/foc Walkley- Black		Comments
		Plugs:	Vert. 1.5"	Vert. 1.5"	Vert. 1.5"	Grab		
Date Received: 20140417								
V1-6.5	N/A	2.50	X	X	X	X		
TOTALS:	1 core	2.50	1	1	1	1		

Laboratory Test Program Notes

Contaminant identification: _____

Standard TAT for basic analysis is 10 business days.

Sample V1-6.2 was received with sample ID V1-6.5 -- Sample ID corrected by C. de Guia/Calscience 20140423

PTS File No: 44230
 Client: Calscience Environmental Laboratories, Inc.
 Report Date: 05/12/14

PHYSICAL PROPERTIES DATA

Project Name: ExxonMobil 70234
 Project No: 14041063

SAMPLE ID.	DEPTH, ft.	METHODS: SAMPLE ORIENTATION (1)	API RP 40 / ASTM D2216 MOISTURE CONTENT, % weight	API RP 40		API RP 40		
				DENSITY		POROSITY, %V _b (2)		
				DRY BULK, g/cc	GRAIN, g/cc	TOTAL	AIR-FILLED	WATER-FILLED
V1-6.5	N/A	V	7.9	2.05	--	24.3	8.0	16.2

(1) Sample Orientation: H = horizontal; V = vertical; R = remold

(2) Total Porosity = all interconnected pore channels; Air Filled = pore channels not occupied by pore fluids.

V_b = Bulk Volume, cc; -- = Analysis not requested.

PTS File No: 44230
 Client: Calscience Environmental Laboratories, Inc.
 Report Date: 05/12/14

ORGANIC CARBON DATA - TOC (foc)

(Methodology: Walkley-Black)

Project Name: ExxonMobil 70234
 Project No: 14041063

SAMPLE ID.	DEPTH, ft.	ANALYSIS DATE	ANALYSIS TIME	SAMPLE MATRIX	TOTAL ORGANIC CARBON, mg/kg	FRACTION ORGANIC CARBON, g/g
V1-6.5	N/A	20140501	1300	SOIL	1850	1.85E-03

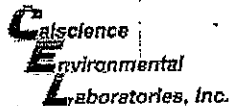
Blank	N/A	20140501	1300	BLANK	ND	ND
SRM D083-542	N/A	20140501	1300	SRM	2930	2.93E-03

Reporting Limit: 100 1.00E-04

QC DATA

SRM ID/Lot No.	REC (%)	Control Limits	Certified Concentration mg/kg	QC Performance	
				Acceptance Limits, mg/kg	
				Lower	Upper
SRM D083-542	84	75-125	3470	2603	4338

ND = Not Detected



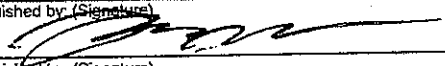

7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

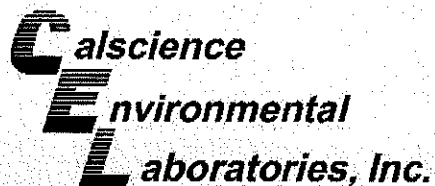
TO: PTS - Morgan Richards

44230

CHAIN OF CUSTODY RECORD

DATE: April 17, 2014
PAGE: 1 OF 1

LABORATORY CLIENT: CALSCIENCE ENVIRONMENTAL LABORATORIES, INC.						CLIENT PROJECT NAME / NUMBER: ExxonMobil 70234/14041063						P.O. NO:								
ADDRESS: 7440 LINCOLN WAY						PROJECT CONTACT: Cecile de Guia						LAB USE ONLY: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>								
GARDEN GROVE, CA 92841-1427						SAMPLER(S): (PRINT NAME)						COELT LOG CODE <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>								
TEL: 714-895-5494		FAX:		E-MAIL: cdeguia@calscience.com								COOLER RECEIPT Temp: °C								
TURNAROUND TIME <input type="checkbox"/> SAME DAY <input type="checkbox"/> 24 HR <input type="checkbox"/> 48HR <input type="checkbox"/> 72 HR <input type="checkbox"/> 5 DAYS <input checked="" type="checkbox"/> STANDARD						REQUESTED ANALYSIS 30.3 °F														
SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY) <input type="checkbox"/> RWQCB REPORTING <input type="checkbox"/> COELT EDF <input type="checkbox"/>																				
SPECIAL INSTRUCTIONS PTS Quote#: Q14-065																				
LAB USE ONLY	SAMPLE ID		SAMPLING		MAT- RIX	NO. OF CONT.	Moisture Content (ASTM D2216-92)	Porosity (including dry bulk density) by API RP40	Total Organic Carbon (TOC) (foc) by Walkley-Black	Air-Filled Void Space by API 40RP	CONTAINER TYPE									
	DATE	TIME																		
	V1-6.2/5		04/14/14	1315	Soil	1	X	X	X	X	Stainless Steel sleeve									
											V1-6.5 FFA									
											CODE LABEL									
	Relinquished by: (Signature)  (CALSCIENCE)						Received by: (Signature / Affiliation)  PTS LABS						Date: 04-17-14		Time: 15:10					
Relinquished by: (Signature)						Received by: (Signature / Affiliation)						Date:		Time:						
Relinquished by: (Signature)						Received by: (Signature / Affiliation)						Date:		Time:						



Supplemental Report 1

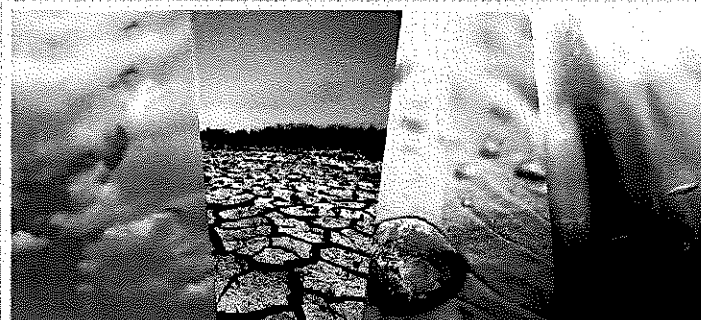
Additional requested analyses have been added to the original report.



CALSCIENCE

WORK ORDER NUMBER: 14-04-1137

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ETIC Engineering, Inc.

Client Project Name: ExxonMobil 70234

Attention: Joseph Muehleck
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Cecile L. de Guia

Approved for release on 05/07/2014 by:
Cecile deGuia
Project Manager

ResultLink ▶

Email your PM ▶

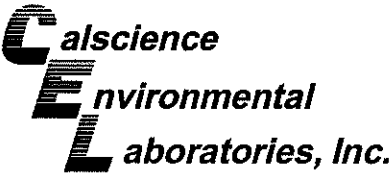


Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.



7440 Lincoln Way, Garden Grove, CA 92841-1432 • TEL: (714) 895-5494 • FAX: (714) 894-7501 • www.calscience.com

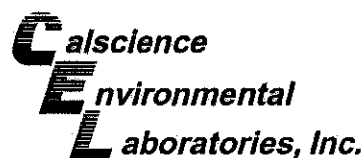
NELAP ID: 03220CA | ACLASS DoD-ELAP ID: ADE-1864 (ISO/IEC 17025:2005) | CSDLAC ID: 10109 | SCAQMD ID: 93LA0830



Contents

Client Project Name: ExxonMobil 70234
Work Order Number: 14-04-1137

1	Work Order Narrative.	3
2	Sample Summary.	4
3	Client Sample Data.	5
	3.1 EPA 8015B (M) TPH Gasoline (Aqueous).	5
	3.2 EPA 8015B (M) TPH Gasoline (Solid).	6
	3.3 EPA 8260B Volatile Organics (Aqueous).	8
	3.4 EPA 8260B Volatile Organics + Oxygenates (Solid).	10
4	Quality Control Sample Data.	18
	4.1 MS/MSD.	18
	4.2 LCS/LCSD.	23
5	Glossary of Terms and Qualifiers.	28
6	Chain of Custody/Sample Receipt Form.	29
7	Subcontract Narrative.	33
8	Subcontract Report (PTS) - 14-04-1137.	34



Work Order Narrative

Work Order: 14-04-1137

Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain of Custody (COC) on 04/16/14. They were assigned to Work Order 14-04-1137.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Additional Comments:

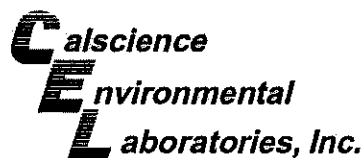
Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

New York NELAP air certification does not certify for all reported methods and analytes, reference the accredited items here: http://www.calscience.com/PDF/New_York.pdf

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.



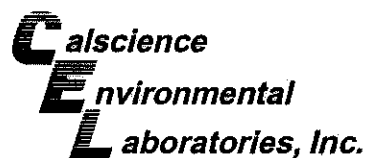
Sample Summary

Client: ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Work Order: 14-04-1137
Project Name: ExxonMobil 70234
PO Number: 4410169993
Date/Time Received: 04/16/14 10:35
Number of Containers: 14

Attn: Joseph Muehleck

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
V4-6	14-04-1137-1	04/15/14 07:20	1	Solid
V4-6.5	14-04-1137-2	04/15/14 07:30	1	Solid
V5-6	14-04-1137-3	04/15/14 08:30	1	Solid
V5-6.5	14-04-1137-4	04/15/14 08:45	1	Solid
V2-3	14-04-1137-5	04/15/14 09:40	1	Solid
V2-6	14-04-1137-6	04/15/14 10:20	1	Solid
V2-6.5	14-04-1137-7	04/15/14 10:30	1	Solid
V3-3	14-04-1137-8	04/15/14 09:45	1	Solid
V3-6.5	14-04-1137-9	04/15/14 12:00	1	Solid
V3-6	14-04-1137-10	04/15/14 11:40	1	Solid
H1-95	14-04-1137-11	04/15/14 11:20	4	Aqueous



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/16/14
Work Order: 14-04-1137
Preparation: EPA 5030C
Method: EPA 8015B (M)
Units: ug/L

Project: ExxonMobil 70234

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
H1-95	14-04-1137-11-C	04/15/14 11:20	Aqueous	GC 4	04/17/14	04/18/14 03:00	140417L063

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline	ND	50	1.00	

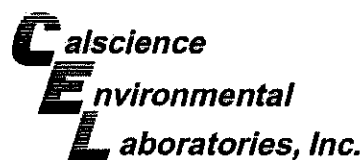
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	75	38-134	

Method Blank	099-12-436-9281	N/A	Aqueous	GC 4	04/17/14	04/17/14 13:53	140417L063
--------------	-----------------	-----	---------	------	----------	----------------	------------

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline	ND	50	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	72	38-134	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

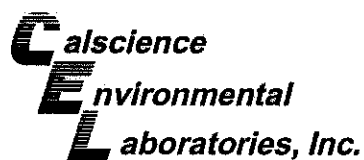
Date Received: 04/16/14
Work Order: 14-04-1137
Preparation: EPA 5030C
Method: EPA 8015B (M)
Units: mg/kg

Project: ExxonMobil 70234

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V4-6.5	14-04-1137-2-A	04/15/14 07:30	Solid	GC 1	04/16/14	04/17/14 14:22	140417L027
<u>Parameter</u>		<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	
TPH as Gasoline		ND		0.48	1.00		
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>	<u>Qualifiers</u>		
1,4-Bromofluorobenzene - FID		77		42-126			
V5-6.5	14-04-1137-4-A	04/15/14 08:45	Solid	GC 1	04/16/14	04/17/14 19:08	140417L027
<u>Parameter</u>		<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	
TPH as Gasoline		ND		0.49	1.00		
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>	<u>Qualifiers</u>		
1,4-Bromofluorobenzene - FID		80		42-126			
V2-3	14-04-1137-5-A	04/15/14 09:40	Solid	GC 1	04/16/14	04/17/14 19:44	140417L027
<u>Parameter</u>		<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	
TPH as Gasoline		ND		0.52	1.00		
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>	<u>Qualifiers</u>		
1,4-Bromofluorobenzene - FID		80		42-126			
V2-6.5	14-04-1137-7-A	04/15/14 10:30	Solid	GC 1	04/16/14	04/17/14 20:20	140417L027
<u>Parameter</u>		<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	
TPH as Gasoline		ND		0.49	1.00		
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>	<u>Qualifiers</u>		
1,4-Bromofluorobenzene - FID		79		42-126			
V3-3	14-04-1137-8-A	04/15/14 09:45	Solid	GC 1	04/16/14	04/17/14 20:55	140417L027
<u>Parameter</u>		<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	
TPH as Gasoline		ND		0.49	1.00		
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>	<u>Qualifiers</u>		
1,4-Bromofluorobenzene - FID		78		42-126			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/16/14
Work Order: 14-04-1137
Preparation: EPA 5030C
Method: EPA 8015B (M)
Units: mg/kg

Project: ExxonMobil 70234

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V3-6.5	14-04-1137-9-A	04/15/14 12:00	Solid	GC 1	04/16/14	04/17/14 21:31	140417L027

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline	ND	0.48	1.00	

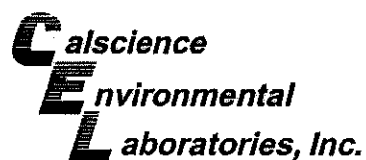
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene - FID	79	42-126	

Method Blank	099-14-571-1560	N/A	Solid	GC 1	04/17/14	04/17/14 12:34	140417L027
--------------	-----------------	-----	-------	------	----------	----------------	------------

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline	ND	0.50	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene - FID	80	42-126	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/16/14
Work Order: 14-04-1137
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: ExxonMobil 70234

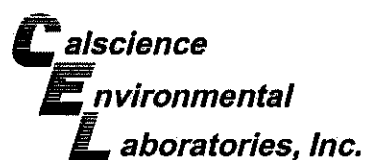
Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
H1-95	14-04-1137-11-B	04/15/14 11:20	Aqueous	GC/MS L	04/22/14	04/22/14 14:50	140422L005

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.50	1.00	
Ethylbenzene	ND	0.50	1.00	
Toluene	ND	0.50	1.00	
p/m-Xylene	ND	0.50	1.00	
o-Xylene	ND	0.50	1.00	
Xylenes (total)	ND	0.50	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.50	1.00	
Tert-Butyl Alcohol (TBA)	11	10	1.00	
Diisopropyl Ether (DIPE)	ND	0.50	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1.00	
Naphthalene	ND	1.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	99	68-120	
Dibromofluoromethane	113	80-127	
1,2-Dichloroethane-d4	118	80-128	
Toluene-d8	102	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

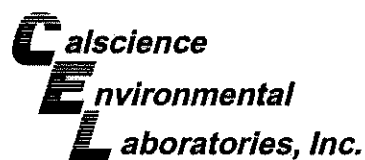
Date Received: 04/16/14
Work Order: 14-04-1137
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: ExxonMobil 70234

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-10-025-3025	N/A	Aqueous	GC/MS L	04/22/14	04/22/14 11:41	140422L005
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
Benzene		ND	0.50	1.00			
Ethylbenzene		ND	0.50	1.00			
Toluene		ND	0.50	1.00			
p/m-Xylene		ND	0.50	1.00			
o-Xylene		ND	0.50	1.00			
Xylenes (total)		ND	0.50	1.00			
Methyl-t-Butyl Ether (MTBE)		ND	0.50	1.00			
Tert-Butyl Alcohol (TBA)		ND	10	1.00			
Diisopropyl Ether (DIPE)		ND	0.50	1.00			
Ethyl-t-Butyl Ether (ETBE)		ND	0.50	1.00			
Tert-Amyl-Methyl Ether (TAME)		ND	0.50	1.00			
Naphthalene		ND	1.0	1.00			
<u>Surrogate</u>		<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>			
1,4-Bromofluorobenzene		97	68-120				
Dibromofluoromethane		113	80-127				
1,2-Dichloroethane-d4		122	80-128				
Toluene-d8		102	80-120				

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/16/14
Work Order: 14-04-1137
Preparation: EPA 5030C
Method: EPA 8260B
Units: mg/kg

Project: ExxonMobil 70234

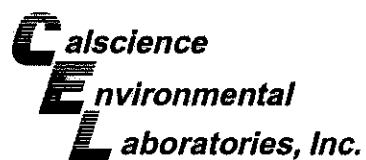
Page 1 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V4-6.5	14-04-1137-2-A	04/15/14 07:30	Solid	GC/MS XX	04/16/14	04/16/14 17:09	140416L003

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.0051	1.00	
Ethylbenzene	ND	0.0051	1.00	
Toluene	ND	0.0051	1.00	
p/m-Xylene	ND	0.0051	1.00	
o-Xylene	ND	0.0051	1.00	
Xylenes (total)	ND	0.0051	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0051	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.051	1.00	
Diisopropyl Ether (DIPE)	ND	0.010	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.010	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.010	1.00	
Naphthalene	ND	0.051	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	98	60-132	
Dibromofluoromethane	97	63-141	
1,2-Dichloroethane-d4	100	62-146	
Toluene-d8	98	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/16/14
Work Order: 14-04-1137
Preparation: EPA 5030C
Method: EPA 8260B
Units: mg/kg

Project: ExxonMobil 70234

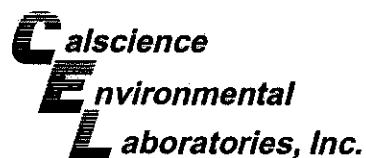
Page 2 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V5-6.5	14-04-1137-4-A	04/15/14 08:45	Solid	GC/MS XX	04/16/14	04/16/14 17:38	140416L003

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.0050	1.00	
Ethylbenzene	ND	0.0050	1.00	
Toluene	ND	0.0050	1.00	
p/m-Xylene	ND	0.0050	1.00	
o-Xylene	ND	0.0050	1.00	
Xylenes (total)	ND	0.0050	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0050	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.050	1.00	
Diisopropyl Ether (DIPE)	ND	0.010	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.010	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.010	1.00	
Naphthalene	ND	0.050	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	98	60-132	
Dibromofluoromethane	94	63-141	
1,2-Dichloroethane-d4	100	62-146	
Toluene-d8	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

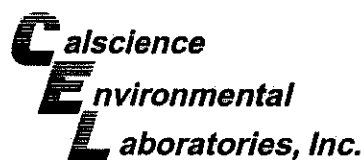
Date Received: 04/16/14
Work Order: 14-04-1137
Preparation: EPA 5030C
Method: EPA 8260B
Units: mg/kg

Project: ExxonMobil 70234

Page 3 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V2-3	14-04-1137-5-A	04/15/14 09:40	Solid	GC/MS XX	04/16/14	04/16/14 18:08	140416L003
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
Benzene		ND	0.0048	1.00			
Ethylbenzene		ND	0.0048	1.00			
Toluene		ND	0.0048	1.00			
p/m-Xylene		ND	0.0048	1.00			
o-Xylene		ND	0.0048	1.00			
Xylenes (total)		ND	0.0048	1.00			
Methyl-t-Butyl Ether (MTBE)		ND	0.0048	1.00			
Tert-Butyl Alcohol (TBA)		ND	0.048	1.00			
Diisopropyl Ether (DIPE)		ND	0.0096	1.00			
Ethyl-t-Butyl Ether (ETBE)		ND	0.0096	1.00			
Tert-Amyl-Methyl Ether (TAME)		ND	0.0096	1.00			
Naphthalene		ND	0.048	1.00			
<u>Surrogate</u>		<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>			
1,4-Bromofluorobenzene		97	60-132				
Dibromofluoromethane		95	63-141				
1,2-Dichloroethane-d4		101	62-146				
Toluene-d8		99	80-120				

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/16/14
Work Order: 14-04-1137
Preparation: EPA 5030C
Method: EPA 8260B
Units: mg/kg

Project: ExxonMobil 70234

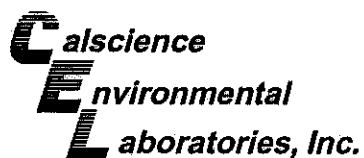
Page 4 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V2-6.5	14-04-1137-7-A	04/15/14 10:30	Solid	GC/MS XX	04/16/14	04/16/14 18:37	140416L003

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.0052	1.00	
Ethylbenzene	ND	0.0052	1.00	
Toluene	ND	0.0052	1.00	
p/m-Xylene	ND	0.0052	1.00	
o-Xylene	ND	0.0052	1.00	
Xylenes (total)	ND	0.0052	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0052	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.052	1.00	
Diisopropyl Ether (DIPE)	ND	0.010	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.010	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.010	1.00	
Naphthalene	ND	0.052	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	97	60-132	
Dibromofluoromethane	96	63-141	
1,2-Dichloroethane-d4	102	62-146	
Toluene-d8	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/16/14
Work Order: 14-04-1137
Preparation: EPA 5030C
Method: EPA 8260B
Units: mg/kg

Project: ExxonMobil 70234

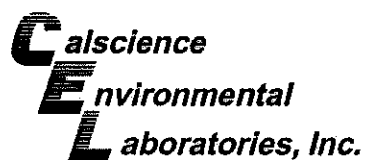
Page 5 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V3-3	14-04-1137-8-A	04/15/14 09:45	Solid	GC/MS XX	04/16/14	04/17/14 13:13	140417L005

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.0053	1.00	
Ethylbenzene	ND	0.0053	1.00	
Toluene	ND	0.0053	1.00	
p/m-Xylene	ND	0.0053	1.00	
o-Xylene	ND	0.0053	1.00	
Xylenes (total)	ND	0.0053	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0053	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.053	1.00	
Diisopropyl Ether (DIPE)	ND	0.011	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.011	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.011	1.00	
Naphthalene	ND	0.053	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	94	60-132	
Dibromofluoromethane	106	63-141	
1,2-Dichloroethane-d4	104	62-146	
Toluene-d8	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/16/14
Work Order: 14-04-1137
Preparation: EPA 5030C
Method: EPA 8260B
Units: mg/kg

Project: ExxonMobil 70234

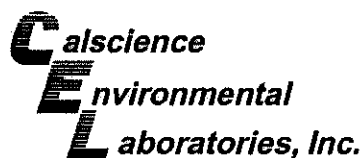
Page 6 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V3-6.5	14-04-1137-9-A	04/15/14 12:00	Solid	GC/MS XX	04/16/14	04/17/14 13:42	140417L005

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.0050	1.00	
Ethylbenzene	ND	0.0050	1.00	
Toluene	ND	0.0050	1.00	
p/m-Xylene	ND	0.0050	1.00	
o-Xylene	ND	0.0050	1.00	
Xylenes (total)	ND	0.0050	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0050	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.050	1.00	
Diisopropyl Ether (DIPE)	ND	0.0099	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.0099	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.0099	1.00	
Naphthalene	ND	0.050	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	95	60-132	
Dibromofluoromethane	104	63-141	
1,2-Dichloroethane-d4	106	62-146	
Toluene-d8	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/16/14
Work Order: 14-04-1137
Preparation: EPA 5030C
Method: EPA 8260B
Units: mg/kg

Project: ExxonMobil 70234

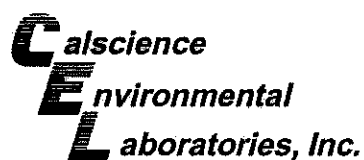
Page 7 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-796-8388	N/A	Solid	GC/MS XX	04/16/14	04/16/14 12:15	140416L003

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.0050	1.00	
Ethylbenzene	ND	0.0050	1.00	
Toluene	ND	0.0050	1.00	
p/m-Xylene	ND	0.0050	1.00	
o-Xylene	ND	0.0050	1.00	
Xylenes (total)	ND	0.0050	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0050	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.050	1.00	
Diisopropyl Ether (DIPE)	ND	0.010	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.010	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.010	1.00	
Naphthalene	ND	0.050	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	95	60-132	
Dibromofluoromethane	96	63-141	
1,2-Dichloroethane-d4	101	62-146	
Toluene-d8	98	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/16/14
Work Order: 14-04-1137
Preparation: EPA 5030C
Method: EPA 8260B
Units: mg/kg

Project: ExxonMobil 70234

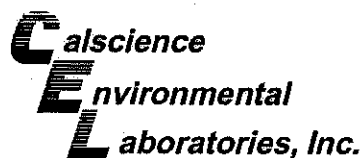
Page 8 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-796-8391	N/A	Solid	GC/MS XX	04/17/14	04/17/14 12:14	140417L005

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.0050	1.00	
Ethylbenzene	ND	0.0050	1.00	
Toluene	ND	0.0050	1.00	
p/m-Xylene	ND	0.0050	1.00	
o-Xylene	ND	0.0050	1.00	
Xylenes (total)	ND	0.0050	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0050	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.050	1.00	
Diisopropyl Ether (DIPE)	ND	0.010	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.010	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.010	1.00	
Naphthalene	ND	0.050	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	95	60-132	
Dibromofluoromethane	105	63-141	
1,2-Dichloroethane-d4	101	62-146	
Toluene-d8	98	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Quality Control - Spike/Spike Duplicate

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

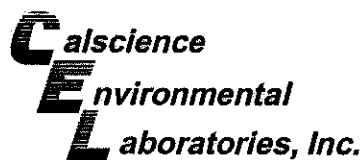
Date Received: 04/16/14
Work Order: 14-04-1137
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project: ExxonMobil 70234

Page 1 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number				
14-04-1244-1	Sample	Aqueous	GC 4	04/17/14	04/17/14 14:59	140417S040				
14-04-1244-1	Matrix Spike	Aqueous	GC 4	04/17/14	04/17/14 15:32	140417S040				
14-04-1244-1	Matrix Spike Duplicate	Aqueous	GC 4	04/17/14	04/17/14 16:04	140417S040				
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	365.8	2000	2010	82	1979	81	68-122	2	0-18	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - Spike/Spike Duplicate

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

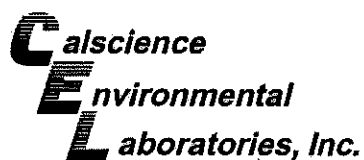
Date Received: 04/16/14
Work Order: 14-04-1137
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project: ExxonMobil 70234

Page 2 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number				
V4-6.5	Sample	Solid	GC 1	04/16/14	04/17/14 14:22	140417S010				
V4-6.5	Matrix Spike	Solid	GC 1	04/16/14	04/17/14 14:57	140417S010				
V4-6.5	Matrix Spike Duplicate	Solid	GC 1	04/16/14	04/17/14 15:33	140417S010				
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	ND	10.00	9.057	91	8.325	83	48-114	8	0-23	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - Spike/Spike Duplicate

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

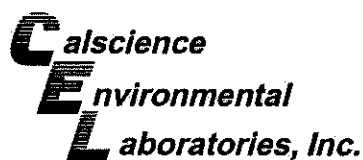
Date Received: 04/16/14
Work Order: 14-04-1137
Preparation: EPA 5030C
Method: EPA 8260B

Project: ExxonMobil 70234

Page 3 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number				
14-04-1523-2	Sample	Aqueous	GC/MS L	04/22/14	04/22/14 14:23	140422S040				
14-04-1523-2	Matrix Spike	Aqueous	GC/MS L	04/22/14	04/22/14 13:29	140422S040				
14-04-1523-2	Matrix Spike Duplicate	Aqueous	GC/MS L	04/22/14	04/22/14 13:56	140422S040				
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	10.00	11.29	113	9.728	97	75-125	15	0-20	
Ethylbenzene	ND	10.00	11.22	112	9.559	96	75-125	16	0-20	
Toluene	ND	10.00	11.12	111	9.710	97	75-125	13	0-20	
p/m-Xylene	ND	20.00	22.63	113	19.25	96	75-125	16	0-20	
o-Xylene	ND	10.00	11.25	112	9.840	98	75-127	13	0-20	
Methyl-t-Butyl Ether (MTBE)	ND	10.00	10.69	107	10.29	103	71-131	4	0-20	
Tert-Butyl Alcohol (TBA)	ND	50.00	65.04	130	52.87	106	20-180	21	0-40	
Diisopropyl Ether (DIPE)	ND	10.00	11.03	110	10.13	101	64-136	9	0-20	
Ethyl-t-Butyl Ether (ETBE)	ND	10.00	10.32	103	9.566	96	73-133	8	0-20	
Tert-Amyl-Methyl Ether (TAME)	ND	10.00	9.665	97	9.111	91	75-125	6	0-20	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - Spike/Spike Duplicate

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/16/14
Work Order: 14-04-1137
Preparation: EPA 5030C
Method: EPA 8260B

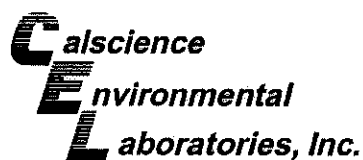
Project: ExxonMobil 70234

Page 4 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
14-04-1090-1	Sample	Solid	GC/MS XX	04/15/14	04/16/14 12:45	140416S008
14-04-1090-1	Matrix Spike	Solid	GC/MS XX	04/15/14	04/16/14 13:14	140416S008
14-04-1090-1	Matrix Spike Duplicate	Solid	GC/MS XX	04/15/14	04/16/14 13:44	140416S008

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	0.05000	0.04207	84	0.04217	84	61-127	0	0-20	
Ethylbenzene	ND	0.05000	0.03878	78	0.03930	79	57-129	1	0-22	
Toluene	ND	0.05000	0.04060	81	0.04080	82	63-123	0	0-20	
p/m-Xylene	ND	0.1000	0.07922	79	0.08013	80	70-130	1	0-30	
o-Xylene	ND	0.05000	0.04049	81	0.04103	82	70-130	1	0-30	
Methyl-t-Butyl Ether (MTBE)	ND	0.05000	0.03918	78	0.03815	76	57-123	3	0-21	
Tert-Butyl Alcohol (TBA)	ND	0.2500	0.2188	88	0.2142	86	30-168	2	0-34	
Diisopropyl Ether (DIPE)	ND	0.05000	0.04287	86	0.04220	84	57-129	2	0-20	
Ethyl-t-Butyl Ether (ETBE)	ND	0.05000	0.04129	83	0.04070	81	55-127	1	0-20	
Tert-Amyl-Methyl Ether (TAME)	ND	0.05000	0.03980	80	0.03938	79	58-124	1	0-20	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - Spike/Spike Duplicate

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

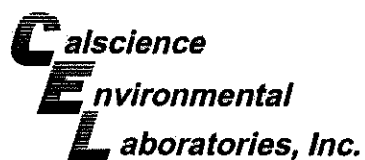
Date Received: 04/16/14
Work Order: 14-04-1137
Preparation: EPA 5030C
Method: EPA 8260B

Project: ExxonMobil 70234

Page 5 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number				
14-04-1159-8	Sample	Solid	GC/MS XX	04/17/14	04/17/14 12:44	140417S012				
14-04-1159-8	Matrix Spike	Solid	GC/MS XX	04/17/14	04/17/14 14:12	140417S012				
14-04-1159-8	Matrix Spike Duplicate	Solid	GC/MS XX	04/17/14	04/17/14 14:41	140417S012				
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	0.05000	0.04989	100	0.04867	97	61-127	2	0-20	
Ethylbenzene	ND	0.05000	0.04965	99	0.04874	97	57-129	2	0-22	
Toluene	ND	0.05000	0.04966	99	0.04844	97	63-123	2	0-20	
p/m-Xylene	ND	0.1000	0.1027	103	0.1005	100	70-130	2	0-30	
o-Xylene	ND	0.05000	0.05155	103	0.05043	101	70-130	2	0-30	
Methyl-t-Butyl Ether (MTBE)	ND	0.05000	0.04833	97	0.04236	85	57-123	13	0-21	
Tert-Butyl Alcohol (TBA)	ND	0.2500	0.2184	87	0.2038	82	30-168	7	0-34	
Diisopropyl Ether (DIPE)	ND	0.05000	0.04903	98	0.04883	98	57-129	0	0-20	
Ethyl-t-Butyl Ether (ETBE)	ND	0.05000	0.04514	90	0.04510	90	55-127	0	0-20	
Tert-Amyl-Methyl Ether (TAME)	ND	0.05000	0.04272	85	0.04221	84	58-124	1	0-20	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

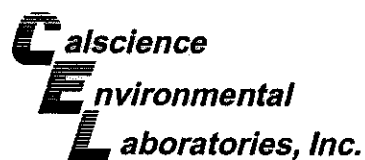
Date Received: 04/16/14
Work Order: 14-04-1137
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project: ExxonMobil 70234

Page 1 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-12-436-9281	LCS	Aqueous	GC 4	04/17/14	04/17/14 14:26	140417L063
Parameter	Spike Added		Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
TPH as Gasoline	2000		1728	86	78-120	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

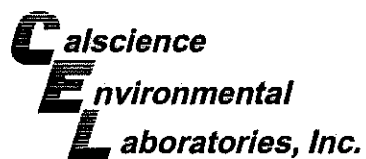
Date Received: 04/16/14
Work Order: 14-04-1137
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project: ExxonMobil 70234

Page 2 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-14-571-1560	LCS	Solid	GC 1	04/17/14	04/17/14 13:46	140417L027
Parameter	Spike Added		Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
TPH as Gasoline	10.00		9.154	92	70-124	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS/LCSD

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

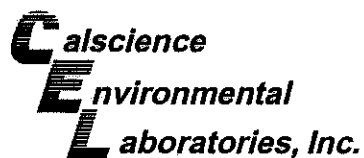
Date Received: 04/16/14
Work Order: 14-04-1137
Preparation: EPA 5030C
Method: EPA 8260B

Project: ExxonMobil 70234

Page 3 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-10-025-3025	LCS	Aqueous	GC/MS L	04/22/14	04/22/14 10:03	140422L005			
099-10-025-3025	LCSD	Aqueous	GC/MS L	04/22/14	04/22/14 10:30	140422L005			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	10.00	11.11	111	10.72	107	80-120	4	0-22	
Ethylbenzene	10.00	11.08	111	10.68	107	80-120	4	0-25	
Toluene	10.00	11.10	111	10.91	109	80-120	2	0-28	
p/m-Xylene	20.00	22.31	112	21.54	108	80-120	4	0-30	
o-Xylene	10.00	10.95	110	10.70	107	80-120	2	0-30	
Methyl-t-Butyl Ether (MTBE)	10.00	10.20	102	10.49	105	75-123	3	0-27	
Tert-Butyl Alcohol (TBA)	50.00	51.62	103	52.22	104	80-120	1	0-30	
Diisopropyl Ether (DIPE)	10.00	10.18	102	10.44	104	73-121	3	0-26	
Ethyl-t-Butyl Ether (ETBE)	10.00	9.974	100	9.940	99	76-124	0	0-30	
Tert-Amyl-Methyl Ether (TAME)	10.00	9.422	94	9.407	94	80-120	0	0-24	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

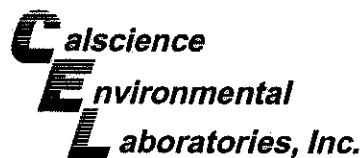
Date Received: 04/16/14
Work Order: 14-04-1137
Preparation: EPA 5030C
Method: EPA 8260B

Project: ExxonMobil 70234

Page 4 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-12-796-8388	LCS	Solid	GC/MS XX	04/16/14	04/16/14 10:35	140416L003
Parameter		Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
Benzene		0.05000	0.05305	106	78-120	
Ethylbenzene		0.05000	0.05435	109	76-120	
Toluene		0.05000	0.05307	106	77-120	
p/m-Xylene		0.1000	0.1137	114	75-125	
o-Xylene		0.05000	0.05799	116	75-125	
Methyl-t-Butyl Ether (MTBE)		0.05000	0.04924	98	77-120	
Tert-Butyl Alcohol (TBA)		0.2500	0.2324	93	68-122	
Diisopropyl Ether (DIPE)		0.05000	0.05385	108	78-120	
Ethyl-t-Butyl Ether (ETBE)		0.05000	0.05295	106	78-120	
Tert-Amyl-Methyl Ether (TAME)		0.05000	0.05115	102	75-120	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/16/14
Work Order: 14-04-1137
Preparation: EPA 5030C
Method: EPA 8260B

Project: ExxonMobil 70234

Page 5 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-12-796-8391	LCS	Solid	GC/MS XX	04/17/14	04/17/14 10:43	140417L005
Parameter		Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
Benzene		0.05000	0.05306	106	78-120	
Ethylbenzene		0.05000	0.05441	109	76-120	
Toluene		0.05000	0.05302	106	77-120	
p/m-Xylene		0.1000	0.1128	113	75-125	
o-Xylene		0.05000	0.05737	115	75-125	
Methyl-t-Butyl Ether (MTBE)		0.05000	0.05094	102	77-120	
Tert-Butyl Alcohol (TBA)		0.2500	0.2591	104	68-122	
Diisopropyl Ether (DIPE)		0.05000	0.05469	109	78-120	
Ethyl-t-Butyl Ether (ETBE)		0.05000	0.05190	104	78-120	
Tert-Amyl-Methyl Ether (TAME)		0.05000	0.04901	98	75-120	

RPD: Relative Percent Difference. CL: Control Limits

Glossary of Terms and Qualifiers

Work Order: 14-04-1137

Page 1 of 1

<u>Qualifiers</u>	<u>Definition</u>
AZ	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
B	Analyte was present in the associated method blank.
BA	The MS/MSD RPD was out of control due to suspected matrix interference.
BB	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
DF	Reporting limits elevated due to matrix interferences.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
GE	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
HD	Chromat. profile inconsistent with pattern(s) of ref. fuel stds.
HO	High concentration matrix spike recovery out of limits
HT	Analytical value calculated using results from associated tests.
HX	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS was in control.
IL	Relative percent difference out of control.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
LD	Analyte presence was not confirmed by second column or GC/MS analysis.
LP	The LCS and/or LCSD recoveries for this analyte were above the upper control limit. The associated sample was non-detected. Therefore, the sample data was reported without further clarification.
LQ	LCS recovery above method control limits.
LR	LCS recovery below method control limits.
ND	Parameter not detected at the indicated reporting limit.
QO	Compound did not meet method-described identification guidelines. Identification was based on additional GC/MS characteristics.
RU	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
SG	A silica gel cleanup procedure was performed.
SN	See applicable analysis comment.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

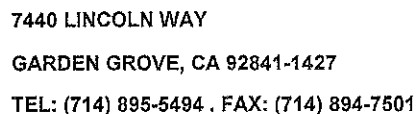
A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

DATE: 4/15/14
PAGE: 1 OF 2

WO # / LAB USE ONLY
14-04-1137

LABORATORY CLIENT: ETIC Engineering, Inc.						CLIENT PROJECT NAME / NUMBER: Former ExxonMobil Site 70234 - 3450 36th Avenue, Oakland, California						P.O. NO.: 4410169993																									
ADDRESS: 2285 Morello Avenue						PROJECT CONTACT: Joseph Muehleck (jmuehleck@eticeng.com)						SAMPLER(S): (PRINT) <i>Karina Gillette</i>																									
CITY: Pleasant Hill		STATE: CA		ZIP: 94523																																	
TEL: 925.602.4710 x2127		E-MAIL: jmuehleck@eticeng.com				REQUESTED ANALYSES																															
TURNAROUND TIME: <input type="checkbox"/> SAME DAY <input type="checkbox"/> 24 HR <input type="checkbox"/> 48 HR <input type="checkbox"/> 72 HR <input type="checkbox"/> 5 DAYS <input checked="" type="checkbox"/> 10 DAYS						<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>TPH-g (8015B)</td> <td>BTEX, 5 Oxys, naphthalene By 8260B</td> <td>PAHs BY 8270</td> <td>Moisture Content (ASTM D2216-92)</td> <td>Porosity (including dry bulk density) by SSSA #5 or equivalent</td> <td>Total Organic Carbon (TOC) by EPA 9060A or equivalent methods</td> <td>Air-Filled Void Space by API 40RP</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>												TPH-g (8015B)	BTEX, 5 Oxys, naphthalene By 8260B	PAHs BY 8270	Moisture Content (ASTM D2216-92)	Porosity (including dry bulk density) by SSSA #5 or equivalent	Total Organic Carbon (TOC) by EPA 9060A or equivalent methods	Air-Filled Void Space by API 40RP													
TPH-g (8015B)	BTEX, 5 Oxys, naphthalene By 8260B	PAHs BY 8270	Moisture Content (ASTM D2216-92)	Porosity (including dry bulk density) by SSSA #5 or equivalent	Total Organic Carbon (TOC) by EPA 9060A or equivalent methods													Air-Filled Void Space by API 40RP																			
<input type="checkbox"/> COELT EDF		GLOBAL ID: <u>T06019757161</u>																																			
SPECIAL INSTRUCTIONS: Email results to eticlabreports@eticeng.com and jmuehleck@eticeng.com						Unpreserved	Preserved	Field Filtered																													
LAB USE ONLY	SAMPLE ID	SAMPLING		MATRIX	NO. OF CONT.																																
		DATE	TIME																																		
1	V4-6	4-15-14	0720	Soil	1	X						X	X	X	X																						
2	V4-6.5	4-15-14	0730	Soil	1	X			X	X																											
3	V5-6	4-15-14	0830	Soil	1	X						X	X	X	X																						
4	V5-6.5	4-15-14	0845	Soil	1	X			X	X																											
5	V2-3	4-15-14	0940	Soil	1	X			X	X																											
6	V2-6	4-15-14	1020	Soil	1	X						X	X	X	X																						
7	V2-6.5	4-15-14	1030	Soil	1	X			X	X																											
8	V3-3	4-15-14	0945	Soil	1	X			X	X																											
9	V3-6.5	4-15-14	1200	Soil	1	X			X	X																											
10	V3-6	4-15-14	1140	Soil	1	X						X	X	X	X																						

Relinquished by: (Signature) <i>Tom O'Malley</i>		Received by: (Signature/Affiliation) <i>Tom O'Malley CEC</i>		Date: <u>4/15/14</u>	Time: <u>1500</u>
Relinquished by: (Signature) <i>Tom O'Malley to GSO 4/15/14 1730</i>		Received by: (Signature/Affiliation) <i>Prey / P. G</i>		Date: <u>4/16/14</u>	Time: <u>1035</u>
Relinquished by: (Signature)		Received by: (Signature/Affiliation)		Date:	Time:



DATE: 4/15/14
PAGE: 2 OF 2

Page 30 of 38

1137

 <div style="text-align: right;"> < WebShip > > > > 800-322-5555 www.gso.com </div>	
Ship From: ALAN KEMP CAL SCIENCE- CONCORD 5063 COMMERCIAL CIRCLE #H CONCORD, CA 94520	Tracking #: 524409666 
Ship To: SAMPLE RECEIVING CEL 7440 LINCOLN WAY GARDEN GROVE, CA 92841	<div style="text-align: right;"> NPS  </div> <div style="text-align: center;"> ORC GARDEN GROVE </div>
COD: \$0.00	D92843A  23385023
Reference: ETIC Delivery Instructions: Signature Type: SIGNATURE REQUIRED	Print Date : 04/15/14 16:59 PM

Package 1 of 1

☒ Print All

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

STEP 1 - Use the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.

STEP 2 - Fold this page in half.

STEP 3 - Securely attach this label to your package, do not cover the barcode.

STEP 4 - Request an on-call pickup for your package, if you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

ADDITIONAL OPTIONS:

TERMS AND CONDITIONS:

By giving us your shipment to deliver, you agree to all the service terms and conditions described in this section.

Our liability for loss or damage to any package is limited to your actual damages or \$100 whichever is less, unless you pay for and declare a higher authorized value. If you declare a higher value and pay the additional charge, our liability will be the lesser of your declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, whether direct, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had knowledge that such damage might be incurred including but not limited to loss of income or profit. We will not be liable for your acts or omissions, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of public enemies, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Package is \$500. For other shipments the highest declared value is \$10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is \$500. Items of "extraordinary value" include, but not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.

WORK ORDER #: **14-04-1137**

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: ETIC

DATE: 04/16/14

TEMPERATURE: Thermometer ID: SC2 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.3 °C - 0.3 °C (CF) = 1.0 °C ☒ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter

Checked by: 826

CUSTODY SEALS INTACT:

☒ Cooler ☐ _____

☐ No (Not Intact)

☐ Not Present

☐ N/A

Checked by: 826

☐ Sample ☐ _____

☐ No (Not Intact)

☒ Not Present

Checked by: 920

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.

☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.

Sampler's name indicated on COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------------------	-------------------------------------	--------------------------	--------------------------

Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------

Sample container(s) intact and good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------

Proper containers and sufficient volume for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	-------------------------------------	--------------------------	--------------------------

Analyses received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------

Aqueous samples received within 15-minute holding time

<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfides <input type="checkbox"/> Dissolved Oxygen.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
---	--------------------------	--------------------------	-------------------------------------

Proper preservation noted on COC or sample container.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	-------------------------------------	--------------------------	--------------------------

☐ Unpreserved vials received for Volatiles analysis

Volatile analysis container(s)-free of headspace.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	-------------------------------------	--------------------------	--------------------------

Tedlar bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
---	--------------------------	--------------------------	-------------------------------------

CONTAINER TYPE:

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☒ Sleeve (S) ☐ EnCores® ☐ TerraCores® ☐ _____

Aqueous: ☐ VOA ☒ VOAh ☐ VOAna₂ ☐ 125AGB ☐ 125AGBh ☐ 125AGBp ☐ 1AGB ☐ 1AGBna₂ ☐ 1AGBs

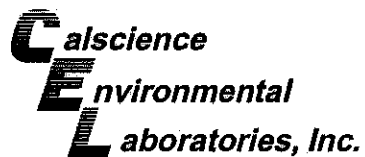
☐ 500AGB ☐ 500AGJ ☐ 500AGJs ☐ 250AGB ☐ 250CGB ☐ 250CGBs ☐ 1PB ☐ 1PBna ☐ 500PB

☐ 250PB ☐ 250PBn ☐ 125PB ☐ 125PBznn ☐ 100PJ® ☐ 100PJna₂ ☐ _____ ☐ _____ ☐ _____

Air: ☐ Tedlar® ☐ Canister Other: ☐ _____ Trip Blank Lot#: _____ Labeled/Checked by: 920

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope Reviewed by: 659

Preservative: h: HCL n: HNO₃ na₂: Na₂S₂O₃ na: NaOH p: H₃PO₄ s: H₂SO₄ u: Ultra-pure znn: ZnAc₂+NaOH f: Filtered Scanned by: 659



Subcontractor Analysis Report

Work Order: 14-04-1137

Page 1 of 1

One or more samples in this work order have tests that were subcontracted. The subcontract report(s) follows.

For subcontracted tests, please reference the laboratory information noted below.

1. PTS Laboratories, Inc. - Santa Fe Springs, CA
Geotechnical Testing



8100 Secura Way • Santa Fe Springs, CA 90670
Telephone (562) 347-2500 • Fax (562) 907-3610

May 6, 2014

Cecile de Guia
Calscience Environmental Laboratories, Inc.
7440 Lincoln Way
Garden Grove, CA 92841

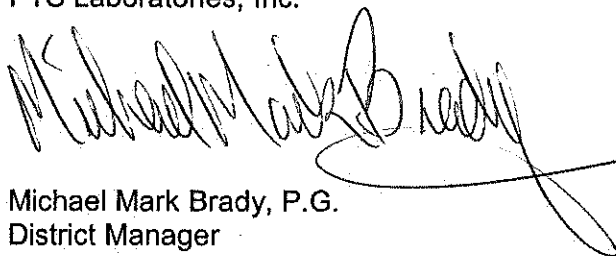
Re: PTS File No: 44222
Physical Properties Data
ExxonMobil 70234; 14041137

Dear Ms. de Guia:

Please find enclosed report for Physical Properties analyses conducted upon samples received from your ExxonMobil 70234; 14041137 project. All analyses were performed by applicable ASTM, EPA, or API methodologies. An electronic version of the report has previously been sent to your attention via the internet. The samples are currently in storage and will be retained for thirty days past completion of testing at no charge. Please note that the samples will be disposed of at that time. You may contact me regarding storage, disposal, or return of the samples.

PTS Laboratories Inc. appreciates the opportunity to be of service. If you have any questions or require additional information, please contact Morgan Richards at (562) 347-2509.

Sincerely,
PTS Laboratories, Inc.



Michael Mark Brady, P.G.
District Manager

Encl.

Project Name: ExxonMobil 70234
Project Number: 14041137

PTS File No: 44222
Client: Calscience Environmental Laboratories, Inc.

TEST PROGRAM - 20140416

CORE ID	Depth ft.	Core Recovery ft.	Moisture Content ASTM D2216	Total/Air/Water Porosity API RP 40	Dry Bulk Density API RP40	TOC/foc Walkley- Black		Comments
		Plugs:	Vert. 1.5"	Vert. 1.5"	Vert. 1.5"	Grab		
Date Received: 20140416								
V4-6	N/A	1.15	X	X	X	X		
V5-6	N/A	1.15	X	X	X	X		
V2-6	N/A	1.15	X	X	X	X		
V3-6	N/A	1.15	X	X	X	X		
TOTALS:	4 cores	4.60	4	4	4	4		

Laboratory Test Program Notes

Contaminant identification: _____

Standard TAT for basic analysis is 10 business days.

PTS File No: 44222
 Client: CalScience Environmental Laboratories, Inc.
 Report Date: 05/06/14

PHYSICAL PROPERTIES DATA

Project Name: ExxonMobil 70234
 Project No: 14041137

SAMPLE ID.	DEPTH, ft.	METHODS: SAMPLE ORIENTATION (1)	API RP 40 / ASTM D2216 MOISTURE CONTENT, % weight	API RP 40		API RP 40		
				DENSITY		POROSITY, %Vb (2)		
				DRY BULK, g/cc	GRAIN, g/cc	TOTAL	AIR-FILLED	WATER-FILLED
V4-6	N/A	V	24.8	1.52	--	42.6	4.8	37.8
V5-6	N/A	V	15.2	1.75	--	34.2	7.6	26.6
V2-6	N/A	V	22.2	1.59	--	39.8	4.3	35.4
V3-6	N/A	V	22.3	1.50	--	43.3	9.7	33.6

(1) Sample Orientation: H = horizontal; V = vertical; R = remold

(2) Total Porosity = all interconnected pore channels; Air Filled = pore channels not occupied by pore fluids.

Vb = Bulk Volume, cc; -- = Analysis not requested.

PTS File No: 44222
 Client: Calscience Environmental Laboratories, Inc.
 Report Date: 05/06/14

ORGANIC CARBON DATA - TOC (foc)

(Methodology: Walkley-Black)

Project Name: ExxonMobil 70234
 Project No: 14041137

SAMPLE ID.	DEPTH, ft.	ANALYSIS DATE	ANALYSIS TIME	SAMPLE MATRIX	TOTAL ORGANIC CARBON, mg/kg	FRACTION ORGANIC CARBON, g/g
V4-6	N/A	20140501	1300	SOIL	1600	1.60E-03
V5-6	N/A	20140501	1300	SOIL	620	6.20E-04
V2-6	N/A	20140501	1300	SOIL	1150	1.15E-03
V3-6	N/A	20140501	1300	SOIL	1250	1.25E-03

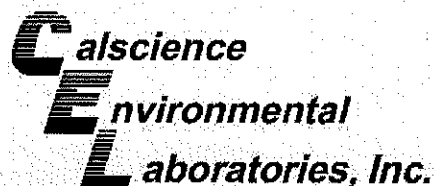
Blank	N/A	20140501	1300	BLANK	ND	ND
SRM D083-542	N/A	20140501	1300	SRM	2930	2.93E-03

Reporting Limit: 100 1.00E-04

QC DATA

SRM ID/Lot No.	REC (%)	Control Limits	Certified Concentration mg/kg	QC Performance	
				Acceptance Limits, mg/kg	
				Lower	Upper
SRM D083-542	84	75-125	3470	2603	4338

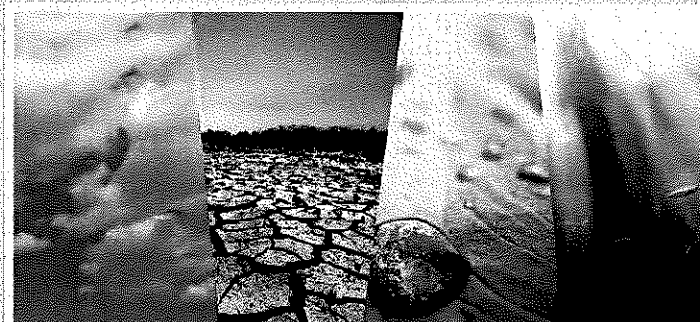
ND = Not Detected



CALSCIENCE

WORK ORDER NUMBER: 14-04-1293

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ETIC Engineering, Inc.

Client Project Name: ExxonMobil 70234

Attention: Joseph Muehleck
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Cecile L. de Guia

Approved for release on 04/29/2014 by:
Cecile deGuia
Project Manager

ResultLink ▶

Email your PM ▶



Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.



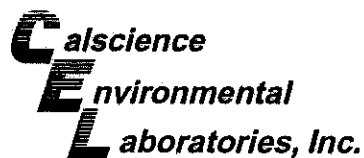
7440 Lincoln Way, Garden Grove, CA 92641-1432 • TEL: (714) 895-5494 • FAX: (714) 894-7501 • www.calscience.com

NELAP ID: 032220CA | DoD-ELAP ID: L10-41 | CSOLAC ID: 10109 | SCAQMD ID: 03LA0830

Contents

Client Project Name: ExxonMobil 70234
Work Order Number: 14-04-1293

1	Work Order Narrative.	3
2	Sample Summary.	4
3	Client Sample Data.	5
	3.1 EPA 8015B (M) TPH Gasoline (Aqueous).	5
	3.2 EPA 8015B (M) TPH Gasoline (Solid).	6
	3.3 EPA 8260B Volatile Organics (Aqueous).	7
	3.4 EPA 8260B Volatile Organics + Oxygenates (Solid).	9
4	Quality Control Sample Data.	11
	4.1 MS/MSD.	11
	4.2 LCS/LCSD.	15
5	Glossary of Terms and Qualifiers.	19
6	Chain of Custody/Sample Receipt Form.	20



Work Order Narrative

Work Order: 14-04-1293

Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain of Custody (COC) on 04/17/14. They were assigned to Work Order 14-04-1293.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Additional Comments:

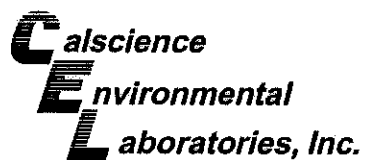
Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

New York NELAP air certification does not certify for all reported methods and analytes, reference the accredited items here: http://www.calscience.com/PDF/New_York.pdf

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.



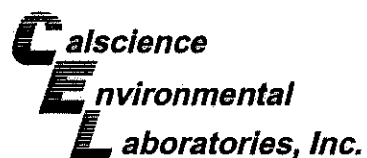
Sample Summary

Client: ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Work Order: 14-04-1293
Project Name: ExxonMobil 70234
PO Number: 4410169993
Date/Time Received: 04/17/14 11:35
Number of Containers: 4

Attn: Joseph Muehleck

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
H1-70	14-04-1293-1	04/15/14 16:40	3	Aqueous
H1-54	14-04-1293-2	04/15/14 16:00	1	Solid



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/17/14
Work Order: 14-04-1293
Preparation: EPA 5030C
Method: EPA 8015B (M)
Units: ug/L

Project: ExxonMobil 70234

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
H1-70	14-04-1293-1-C	04/15/14 16:40	Aqueous	GC 42	04/21/14	04/22/14 00:32	140421L032

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline	ND	50	1.00	

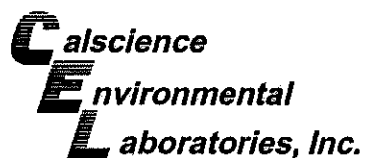
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	69	38-134	

Method Blank	099-12-436-9285	N/A	Aqueous	GC 42	04/21/14	04/21/14 14:02	140421L032
---------------------	------------------------	------------	----------------	--------------	-----------------	---------------------------	-------------------

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline	ND	50	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	70	38-134	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/17/14
Work Order: 14-04-1293
Preparation: EPA 5030C
Method: EPA 8015B (M)
Units: mg/kg

Project: ExxonMobil 70234

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
H1-54	14-04-1293-2-A	04/15/14 16:00	Solid	GC 29	04/17/14	04/20/14 07:17	140419L028

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline	ND	0.50	1.00	

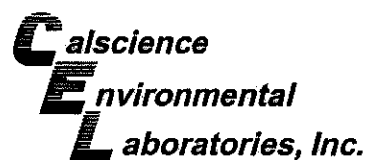
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene - FID	81	42-126	

Method Blank	099-14-571-1568	N/A	Solid	GC 29	04/19/14	04/20/14 05:28	140419L028
--------------	-----------------	-----	-------	-------	----------	----------------	------------

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline	ND	0.50	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene - FID	83	42-126	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

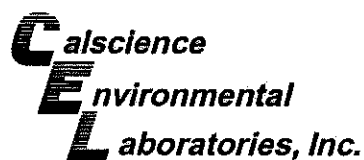
Date Received: 04/17/14
Work Order: 14-04-1293
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: ExxonMobil 70234

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
H1-70	14-04-1293-1-A	04/15/14 16:40	Aqueous	GC/MS L	04/22/14	04/22/14 13:02	140422L005
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
Benzene		ND	0.50	1.00			
Ethylbenzene		ND	0.50	1.00			
Toluene		ND	0.50	1.00			
p/m-Xylene		ND	0.50	1.00			
o-Xylene		ND	0.50	1.00			
Xylenes (total)		ND	0.50	1.00			
Methyl-t-Butyl Ether (MTBE)		ND	0.50	1.00			
Tert-Butyl Alcohol (TBA)		18	10	1.00			
Diisopropyl Ether (DIPE)		ND	0.50	1.00			
Ethyl-t-Butyl Ether (ETBE)		ND	0.50	1.00			
Tert-Amyl-Methyl Ether (TAME)		ND	0.50	1.00			
Naphthalene		ND	1.0	1.00			
<u>Surrogate</u>		<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>			
1,4-Bromofluorobenzene		99	68-120				
Dibromofluoromethane		108	80-127				
1,2-Dichloroethane-d4		120	80-128				
Toluene-d8		103	80-120				

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/17/14
Work Order: 14-04-1293
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: ExxonMobil 70234

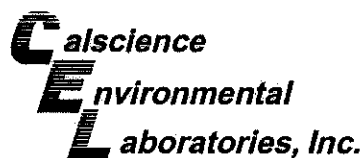
Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-10-025-3025	N/A	Aqueous	GC/MS L	04/22/14	04/22/14 11:41	140422L005

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.50	1.00	
Ethylbenzene	ND	0.50	1.00	
Toluene	ND	0.50	1.00	
p/m-Xylene	ND	0.50	1.00	
o-Xylene	ND	0.50	1.00	
Xylenes (total)	ND	0.50	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.50	1.00	
Tert-Butyl Alcohol (TBA)	ND	10	1.00	
Diisopropyl Ether (DIPE)	ND	0.50	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1.00	
Naphthalene	ND	1.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	97	68-120	
Dibromofluoromethane	113	80-127	
1,2-Dichloroethane-d4	122	80-128	
Toluene-d8	102	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/17/14
Work Order: 14-04-1293
Preparation: EPA 5030C
Method: EPA 8260B
Units: mg/kg

Project: ExxonMobil 70234

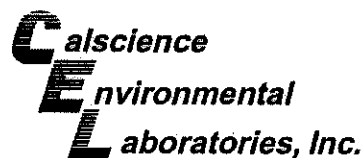
Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
H1-54	14-04-1293-2-A	04/15/14 16:00	Solid	GC/MS BB	04/17/14	04/23/14 09:07	140422L038

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.0051	1.00	
Ethylbenzene	ND	0.0051	1.00	
Toluene	ND	0.0051	1.00	
p/m-Xylene	ND	0.0051	1.00	
o-Xylene	ND	0.0051	1.00	
Xylenes (total)	ND	0.0051	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0051	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.051	1.00	
Diisopropyl Ether (DIPE)	ND	0.010	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.010	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.010	1.00	
Naphthalene	ND	0.051	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	92	60-132	
Dibromofluoromethane	95	63-141	
1,2-Dichloroethane-d4	92	62-146	
Toluene-d8	97	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/17/14
Work Order: 14-04-1293
Preparation: EPA 5030C
Method: EPA 8260B
Units: mg/kg

Project: ExxonMobil 70234

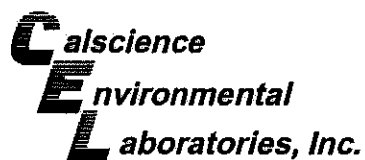
Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-796-8411	N/A	Solid	GC/MS BB	04/22/14	04/23/14 08:13	140422L038

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.0050	1.00	
Ethylbenzene	ND	0.0050	1.00	
Toluene	ND	0.0050	1.00	
p/m-Xylene	ND	0.0050	1.00	
o-Xylene	ND	0.0050	1.00	
Xylenes (total)	ND	0.0050	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0050	1.00	
Tert-Butyl Alcohol (TBA)	ND	0.050	1.00	
Diisopropyl Ether (DIPE)	ND	0.010	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	0.010	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	0.010	1.00	
Naphthalene	ND	0.050	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	93	60-132	
Dibromofluoromethane	95	63-141	
1,2-Dichloroethane-d4	91	62-146	
Toluene-d8	97	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Quality Control - Spike/Spike Duplicate

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

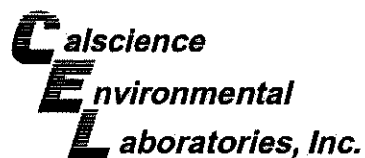
Date Received: 04/17/14
Work Order: 14-04-1293
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project: ExxonMobil 70234

Page 1 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number				
14-04-1416-1	Sample	Aqueous	GC 42	04/21/14	04/21/14 15:12	140421S015				
14-04-1416-1	Matrix Spike	Aqueous	GC 42	04/21/14	04/21/14 15:47	140421S015				
14-04-1416-1	Matrix Spike Duplicate	Aqueous	GC 42	04/21/14	04/21/14 16:22	140421S015				
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	ND	2000	1694	85	1667	83	68-122	2	0-18	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - Spike/Spike Duplicate

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/17/14
Work Order: 14-04-1293
Preparation: EPA 5030C
Method: EPA 8015B (M)

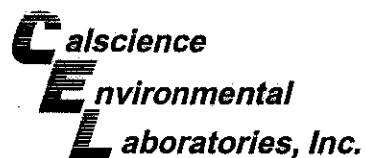
Project: ExxonMobil 70234

Page 2 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
H1-54	Sample	Solid	GC 29	04/17/14	04/20/14 07:17	140419S017
H1-54	Matrix Spike	Solid	GC 29	04/17/14	04/20/14 07:53	140419S017
H1-54	Matrix Spike Duplicate	Solid	GC 29	04/17/14	04/20/14 08:29	140419S017

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	ND	10.00	9.559	96	9.693	97	48-114	1	0-23	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - Spike/Spike Duplicate

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

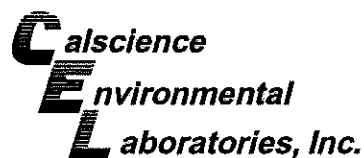
Date Received: 04/17/14
Work Order: 14-04-1293
Preparation: EPA 5030C
Method: EPA 8260B

Project: ExxonMobil 70234

Page 3 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number				
14-04-1523-2	Sample	Aqueous	GC/MS L	04/22/14	04/22/14 14:23	140422S040				
14-04-1523-2	Matrix Spike	Aqueous	GC/MS L	04/22/14	04/22/14 13:29	140422S040				
14-04-1523-2	Matrix Spike Duplicate	Aqueous	GC/MS L	04/22/14	04/22/14 13:56	140422S040				
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	10.00	11.29	113	9.728	97	75-125	15	0-20	
Ethylbenzene	ND	10.00	11.22	112	9.559	96	75-125	16	0-20	
Toluene	ND	10.00	11.12	111	9.710	97	75-125	13	0-20	
p/m-Xylene	ND	20.00	22.63	113	19.25	96	75-125	16	0-20	
o-Xylene	ND	10.00	11.25	112	9.840	98	75-127	13	0-20	
Methyl-t-Butyl Ether (MTBE)	ND	10.00	10.69	107	10.29	103	71-131	4	0-20	
Tert-Butyl Alcohol (TBA)	ND	50.00	65.04	130	52.87	106	20-180	21	0-40	
Diisopropyl Ether (DIPE)	ND	10.00	11.03	110	10.13	101	64-136	9	0-20	
Ethyl-t-Butyl Ether (ETBE)	ND	10.00	10.32	103	9.566	96	73-133	8	0-20	
Tert-Amyl-Methyl Ether (TAME)	ND	10.00	9.665	97	9.111	91	75-125	6	0-20	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - Spike/Spike Duplicate

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

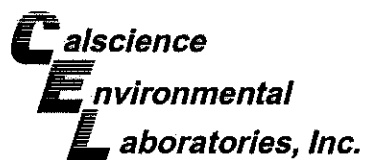
Date Received: 04/17/14
Work Order: 14-04-1293
Preparation: EPA 5030C
Method: EPA 8260B

Project: ExxonMobil 70234

Page 4 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number				
H1-54	Sample	Solid	GC/MS BB	04/17/14	04/23/14 09:07	140422S021				
H1-54	Matrix Spike	Solid	GC/MS BB	04/17/14	04/23/14 09:49	140422S021				
H1-54	Matrix Spike Duplicate	Solid	GC/MS BB	04/17/14	04/23/14 10:16	140422S021				
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	0.05000	0.04266	85	0.04216	84	61-127	1	0-20	
Ethylbenzene	ND	0.05000	0.04474	89	0.04506	90	57-129	1	0-22	
Toluene	ND	0.05000	0.04407	88	0.04372	87	63-123	1	0-20	
p/m-Xylene	ND	0.1000	0.09011	90	0.09104	91	70-130	1	0-30	
o-Xylene	ND	0.05000	0.04684	94	0.04701	94	70-130	0	0-30	
Methyl-t-Butyl Ether (MTBE)	ND	0.05000	0.04276	86	0.04142	83	57-123	3	0-21	
Tert-Butyl Alcohol (TBA)	ND	0.2500	0.2040	82	0.1979	79	30-168	3	0-34	
Diisopropyl Ether (DIPE)	ND	0.05000	0.04338	87	0.04281	86	57-129	1	0-20	
Ethyl-t-Butyl Ether (ETBE)	ND	0.05000	0.04386	88	0.04338	87	55-127	1	0-20	
Tert-Amyl-Methyl Ether (TAME)	ND	0.05000	0.04361	87	0.04297	86	58-124	1	0-20	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

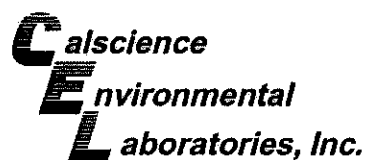
Date Received: 04/17/14
Work Order: 14-04-1293
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project: ExxonMobil 70234

Page 1 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-12-436-9285	LCS	Aqueous	GC 42	04/21/14	04/21/14 14:37	140421L032
Parameter	Spike Added		Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
TPH as Gasoline	2000		1649	82	78-120	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

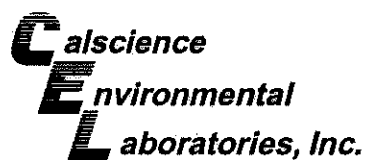
Date Received: 04/17/14
Work Order: 14-04-1293
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project: ExxonMobil 70234

Page 2 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-14-571-1568	LCS	Solid	GC 29	04/19/14	04/20/14 06:40	140419L028
Parameter	Spike Added		Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
TPH as Gasoline	10.00		7.109	71	70-124	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS/LCSD

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

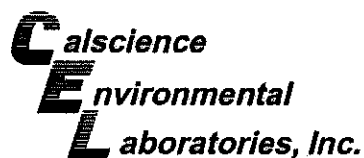
Date Received: 04/17/14
Work Order: 14-04-1293
Preparation: EPA 5030C
Method: EPA 8260B

Project: ExxonMobil 70234

Page 3 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-10-025-3025	LCS	Aqueous	GC/MS L	04/22/14	04/22/14 10:03	140422L005			
099-10-025-3025	LCSD	Aqueous	GC/MS L	04/22/14	04/22/14 10:30	140422L005			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	10.00	11.11	111	10.72	107	80-120	4	0-22	
Ethylbenzene	10.00	11.08	111	10.68	107	80-120	4	0-25	
Toluene	10.00	11.10	111	10.91	109	80-120	2	0-28	
p/m-Xylene	20.00	22.31	112	21.54	108	80-120	4	0-30	
o-Xylene	10.00	10.95	110	10.70	107	80-120	2	0-30	
Methyl-t-Butyl Ether (MTBE)	10.00	10.20	102	10.49	105	75-123	3	0-27	
Tert-Butyl Alcohol (TBA)	50.00	51.62	103	52.22	104	80-120	1	0-30	
Diisopropyl Ether (DIPE)	10.00	10.18	102	10.44	104	73-121	3	0-26	
Ethyl-t-Butyl Ether (ETBE)	10.00	9.974	100	9.940	99	76-124	0	0-30	
Tert-Amyl-Methyl Ether (TAME)	10.00	9.422	94	9.407	94	80-120	0	0-24	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/17/14
Work Order: 14-04-1293
Preparation: EPA 5030C
Method: EPA 8260B

Project: ExxonMobil 70234

Page 4 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-12-796-8411	LCS	Solid	GC/MS BB	04/22/14	04/23/14 07:19	140422L038

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
Benzene	0.05000	0.04521	90	78-120	
Ethylbenzene	0.05000	0.04864	97	76-120	
Toluene	0.05000	0.04757	95	77-120	
p/m-Xylene	0.1000	0.09763	98	75-125	
o-Xylene	0.05000	0.05091	102	75-125	
Methyl-t-Butyl Ether (MTBE)	0.05000	0.04670	93	77-120	
Tert-Butyl Alcohol (TBA)	0.2500	0.2775	111	68-122	
Diisopropyl Ether (DIPE)	0.05000	0.04713	94	78-120	
Ethyl-t-Butyl Ether (ETBE)	0.05000	0.04906	98	78-120	
Tert-Amyl-Methyl Ether (TAME)	0.05000	0.04925	99	75-120	

RPD: Relative Percent Difference. CL: Control Limits

Glossary of Terms and Qualifiers

Work Order: 14-04-1293

Page 1 of 1

<u>Qualifiers</u>	<u>Definition</u>
AZ	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
B	Analyte was present in the associated method blank.
BA	The MS/MSD RPD was out of control due to suspected matrix interference.
BB	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
DF	Reporting limits elevated due to matrix interferences.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
GE	The PDS/PDS or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
HD	Chromat. profile inconsistent with pattern(s) of ref. fuel stds.
HO	High concentration matrix spike recovery out of limits
HT	Analytical value calculated using results from associated tests.
HX	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS was in control.
IL	Relative percent difference out of control.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
LD	Analyte presence was not confirmed by second column or GC/MS analysis.
LP	The LCS and/or LCSD recoveries for this analyte were above the upper control limit. The associated sample was non-detected. Therefore, the sample data was reported without further clarification.
LQ	LCS recovery above method control limits.
LR	LCS recovery below method control limits.
ND	Parameter not detected at the indicated reporting limit.
QO	Compound did not meet method-described identification guidelines. Identification was based on additional GC/MS characteristics.
RU	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
SG	A silica gel cleanup procedure was performed.
SN	See applicable analysis comment.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

Cecile de Guia

From: Karina Gillette [kgillette@eticeng.com]
Sent: Friday, April 18, 2014 8:40 AM
To: Cecile de Guia; Joseph Muehleck
Subject: RE: ExxonMobil 70234; 14-04-1293
Attachments: 14-04-1293 corrected COC.pdf

Good morning Cecile,

Please see the attached corrected COC. I apologize for the inconvenience.

Thank you,
Karina

Karina Gillette
Staff Geologist

kgillette@eticeng.com
www.eticeng.com
ETIC Engineering, Inc.
2285 Morello Ave.
Pleasant Hill, CA 94523
Tel: 925-602-4710 x2133
Fax: 925-602-4720
Mobile: 925-360-4950

From: Cecile de Guia [<mailto:cdeguia@calscience.com>]
Sent: Thursday, April 17, 2014 5:17 PM
To: Joseph Muehleck; Karina Gillette
Subject: ExxonMobil 70234; 14-04-1293

Good Afternoon,

Please refer to the attached sample anomaly form and fix the attached COC. Sampling times on the labels didn't match the COC.

Thank you.

Best regards,
Cecile de Guia
Project Manager

 **CalScience**

7440 Lincoln Way
Garden Grove, CA 92841-1427
(714) 895-5494
www.calscience.com

Page 21 of 25

Page 22 of 25

		< WebShip > > > > 800-322-5555 www.gso.com		1293	
Ship From: ALAN KEMP CAL SCIENCE- CONCORD 5053 COMMERCIAL CIRCLE #H CONCORD, CA 94520		Tracking #: 524419463 			NPS
Ship To: SAMPLE RECEIVING CEL 7440 LINCOLN WAY GARDEN GROVE, CA 92841		ORC GARDEN GROVE			A
COD: \$0.00		D92843A  23429144			
Reference: BTS, PHILLIPS 66, ETIC					
Delivery Instructions:					
Signature Type: SIGNATURE REQUIRED					
				Print Date : 04/16/14 15:03 PM	

Package 1 of 1

Send Label To Printer	<input checked="" type="checkbox"/> Print All	Edit Shipment	Finish
-----------------------	---	---------------	--------

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

STEP 1 - Use the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.

STEP 2 - Fold this page in half.

STEP 3 - Securely attach this label to your package, do not cover the barcode.

STEP 4 - Request an on-call pickup for your package, if you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

ADDITIONAL OPTIONS:

Send Label Via Email	Create Return Label
----------------------	---------------------

TERMS AND CONDITIONS:

By giving us your shipment to deliver, you agree to all the service terms and conditions described in this section.

Our liability for loss or damage to any package is limited to your actual damages or \$100 whichever is less, unless you pay for and declare a higher authorized value. If you declare a higher value and pay the additional charge, our liability will be the lesser of your declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, whether direct, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had knowledge that such damage might be incurred including but not limited to loss of income or profit. We will not be liable for your acts or omissions, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of public enemies, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Package is \$500. For other shipments the highest declared value is \$10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is \$500. Items of "extraordinary value" include, but are not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.

WORK ORDER #: **14-04-1293**

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: ETIC

DATE: 04/17/14

TEMPERATURE: Thermometer ID: SC2 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.8 °C - 0.3 °C (CF) = 1.5 °C ☒ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter

Checked by: 876

CUSTODY SEALS INTACT:

☒ Cooler ☐ _____ ☐ No (Not Intact) ☐ Not Present ☐ N/A Checked by: 876

☐ Sample ☐ _____ ☐ No (Not Intact) ☒ Not Present Checked by: 876

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.

☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.

Sampler's name indicated on COC..... ☒ ☐ ☐

Sample container label(s) consistent with COC..... ☐ ☒ ☐

Sample container(s) intact and good condition..... ☒ ☐ ☐

Proper containers and sufficient volume for analyses requested..... ☒ ☐ ☐

Analyses received within holding time..... ☒ ☐ ☐

Aqueous samples received within 15-minute holding time

☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfides ☐ Dissolved Oxygen..... ☐ ☐ ☒

Proper preservation noted on COC or sample container..... ☒ ☐ ☐

☐ Unpreserved vials received for Volatiles analysis

Volatile analysis container(s) free of headspace..... ☒ ☐ ☐

Tedlar bag(s) free of condensation..... ☐ ☐ ☒

CONTAINER TYPE:

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☒ Sleeve (S) ☐ EnCores® ☐ TerraCores® ☐ _____

Aqueous: ☐ VOA ☒ VOA⁽²⁾ ☐ VOAna₂ ☐ 125AGB ☐ 125AGBh ☐ 125AGBp ☐ 1AGB ☐ 1AGBna₂ ☐ 1AGBs

☐ 500AGB ☐ 500AGJ ☐ 500AGJs ☐ 250AGB ☐ 250CGB ☐ 250CGBs ☐ 1PB ☐ 1PBna ☐ 500PB

☐ 250PB ☐ 250PBn ☐ 125PB ☐ 125PBz_{nna} ☐ 100PJ ☐ 100PJna₂ ☐ _____ ☐ _____ ☐ _____

Air: ☐ Tedlar® ☐ Canister Other: ☐ _____ Trip Blank Lot#: _____ Labeled/Checked by: 876

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope Reviewed by: 876

Preservative: h: HCL n: HNO₃ na₂: Na₂S₂O₃ na: NaOH p: H₃PO₄ s: H₂SO₄ u: Ultra-pure z_{nna}: ZnAc₂+NaOH f: Filtered Scanned by: 876

WORK ORDER #: 14-04-1293

SAMPLE ANOMALY FORM**SAMPLES - CONTAINERS & LABELS:**

Comments:

- ☐ Sample(s) NOT RECEIVED but listed on COC
☐ Sample(s) received but NOT LISTED on COC
☐ Holding time expired – list sample ID(s) and test
☐ Insufficient quantities for analysis – list test
☐ Improper container(s) used – list test
☐ Improper preservative used – list test
☐ No preservative noted on COC or label – list test & notify lab
☐ Sample labels illegible – note test/container type
☒ Sample label(s) do not match COC – Note in comments
- ☐ Sample ID
☒ Date and/or Time Collected
☐ Project Information
☐ # of Container(s)
☐ Analysis
- ☐ Sample container(s) compromised – Note in comments
- ☐ Water present in sample container
☐ Broken
- ☐ Sample container(s) not labeled
- ☐ Air sample container(s) compromised – Note in comments
- ☐ Flat
☐ Very low in volume
☐ Leaking (Not transferred - duplicate bag submitted)
☐ Leaking (transferred into Calscience Tedlar® Bag*)
☐ Leaking (transferred into Client's Tedlar® Bag*)
- ☐ Other: _____

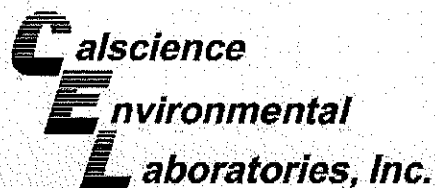
Collection time per label:(-1) 1640(-2) 1600**HEADSPACE – Containers with Bubble > 6mm or ¼ inch:**

Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Cont. received	Analysis

Comments: _____

*Transferred at Client's request.

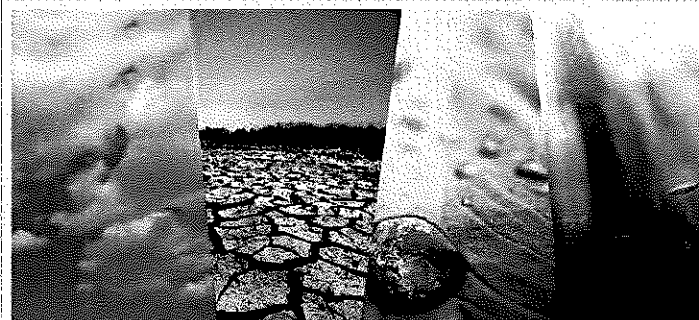
Initial / Date: 8/16/04 11/7/14



CALSCIENCE

WORK ORDER NUMBER: 14-04-1294

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ETIC Engineering, Inc.

Client Project Name: ExxonMobil 70234

Attention: Joseph Muehleck
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Cecile L. de Guia

Approved for release on 04/29/2014 by:
Cecile deGuia
Project Manager

ResultLink ▶

Email your PM ▶



Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.



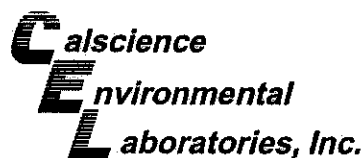
7440 Lincoln Way, Garden Grove, CA 92841-1432 • TEL: (714) 895-5494 • FAX: (714) 894-7501 • www.calscience.com

NELAP ID: 03220CA | DoD-ELAP ID: L10-41 | CSDLAC ID: 10109 | SCAQMD ID: 93LA0230

Contents

Client Project Name: ExxonMobil 70234
Work Order Number: 14-04-1294

1	Work Order Narrative.	3
2	Sample Summary.	4
3	Client Sample Data.	5
	3.1 EPA 8015B (M) TPH Motor Oil (Solid).	5
	3.2 EPA 8015B (M) TPH Diesel (Solid).	6
	3.3 EPA 8015B (M) TPH Gasoline (Solid).	7
	3.4 EPA 6010B ICP Metals (Solid).	8
	3.5 EPA 8260B BTEX/MTBE (Solid).	9
4	Quality Control Sample Data.	10
	4.1 MS/MSD.	10
	4.2 LCS/LCSD.	15
5	Glossary of Terms and Qualifiers.	20
6	Chain of Custody/Sample Receipt Form.	21



Work Order Narrative

Work Order: 14-04-1294

Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain of Custody (COC) on 04/17/14. They were assigned to Work Order 14-04-1294.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Additional Comments:

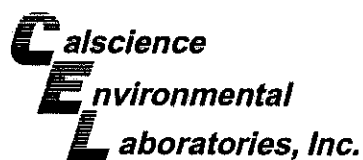
Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

New York NELAP air certification does not certify for all reported methods and analytes, reference the accredited items here: http://www.calscience.com/PDF/New_York.pdf

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.



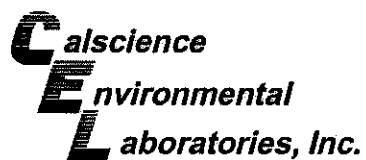
Sample Summary

Client: ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Work Order: 14-04-1294
Project Name: ExxonMobil 70234
PO Number: 4410169993
Date/Time Received: 04/17/14 11:35
Number of Containers: 3

Attn: Joseph Muehleck

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
DRUM1	14-04-1294-1	04/15/14 17:30	1	Solid
DRUM2	14-04-1294-2	04/15/14 17:20	1	Solid
DRUM1,2	14-04-1294-3	04/15/14 00:00	1	Solid



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/17/14
Work Order: 14-04-1294
Preparation: EPA 3550B
Method: EPA 8015B (M)
Units: mg/kg

Project: ExxonMobil 70234

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
DRUM1,2	14-04-1294-3-A	04/15/14 00:00	Solid	GC 48	04/22/14	04/23/14 05:14	140422B18

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
TPH as Motor Oil	ND	25	1.00	SG

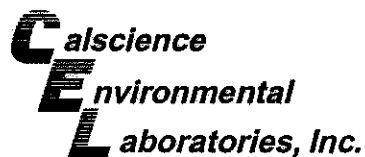
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
n-Octacosane	106	61-145	

Method Blank	099-15-420-882	N/A	Solid	GC 48	04/22/14	04/23/14 00:17	140422B18
---------------------	-----------------------	------------	--------------	--------------	-----------------	-----------------------	------------------

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
TPH as Motor Oil	ND	25	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
n-Octacosane	90	61-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/17/14
Work Order: 14-04-1294
Preparation: EPA 3550B
Method: EPA 8015B (M)
Units: mg/kg

Project: ExxonMobil 70234

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
DRUM1,2	14-04-1294-3-A	04/15/14 00:00	Solid	GC 48	04/22/14	04/23/14 05:14	140422B17

Parameter	Result	RL	DF	Qualifiers
TPH as Diesel	ND	5.0	1.00	SG

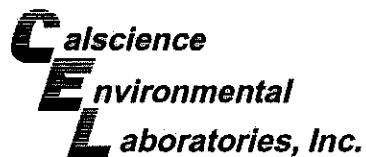
Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	106	61-145	

Method Blank	099-15-422-1084	N/A	Solid	GC 48	04/22/14	04/23/14 00:17	140422B17
--------------	-----------------	-----	-------	-------	----------	----------------	-----------

Parameter	Result	RL	DF	Qualifiers
TPH as Diesel	ND	5.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	90	61-145	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/17/14
Work Order: 14-04-1294
Preparation: EPA 5030C
Method: EPA 8015B (M)
Units: mg/kg

Project: ExxonMobil 70234

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
DRUM1,2	14-04-1294-3-A	04/15/14 00:00	Solid	GC 29	04/17/14	04/20/14 09:05	140419L028

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline	ND	0.49	1.00	

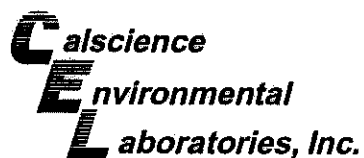
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene - FID	83	42-126	

Method Blank	099-14-571-1568	N/A	Solid	GC 29	04/19/14	04/20/14 05:28	140419L028
--------------	-----------------	-----	-------	-------	----------	----------------	------------

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline	ND	0.50	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene - FID	83	42-126	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/17/14
Work Order: 14-04-1294
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: ExxonMobil 70234

Page 1 of 1

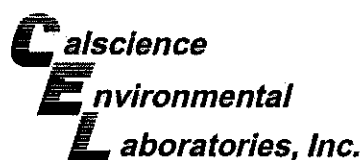
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
DRUM1,2	14-04-1294-3-A	04/15/14 00:00	Solid	ICP 7300	04/18/14	04/18/14 19:21	140418L02

Parameter	Result	RL	DF	Qualifiers
Lead	15.7	0.498	0.995	

Method Blank	097-01-002-18300	N/A	Solid	ICP 7300	04/18/14	04/18/14 18:12	140418L02
--------------	------------------	-----	-------	----------	----------	----------------	-----------

Parameter	Result	RL	DF	Qualifiers
Lead	ND	0.500	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/17/14
Work Order: 14-04-1294
Preparation: EPA 5030C
Method: EPA 8260B
Units: mg/kg

Project: ExxonMobil 70234

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
DRUM1,2	14-04-1294-3-A	04/15/14 00:00	Solid	GC/MS BB	04/17/14	04/22/14 13:20	140422L019

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.0050	1.00	
Ethylbenzene	ND	0.0050	1.00	
Toluene	ND	0.0050	1.00	
p/m-Xylene	ND	0.0050	1.00	
o-Xylene	ND	0.0050	1.00	
Xylenes (total)	ND	0.0050	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0050	1.00	

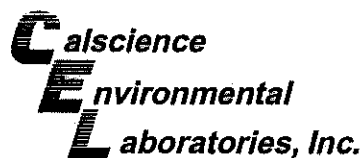
Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	95	60-132	
Dibromofluoromethane	104	63-141	
1,2-Dichloroethane-d4	101	62-146	
Toluene-d8	97	80-120	

Method Blank	099-12-796-8407	N/A	Solid	GC/MS BB	04/22/14	04/22/14 11:40	140422L019
--------------	-----------------	-----	-------	----------	----------	----------------	------------

Parameter	Result	RL	DF	Qualifiers
Benzene	ND	0.0050	1.00	
Ethylbenzene	ND	0.0050	1.00	
Toluene	ND	0.0050	1.00	
p/m-Xylene	ND	0.0050	1.00	
o-Xylene	ND	0.0050	1.00	
Xylenes (total)	ND	0.0050	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.0050	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	94	60-132	
Dibromofluoromethane	100	63-141	
1,2-Dichloroethane-d4	100	62-146	
Toluene-d8	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Quality Control - Spike/Spike Duplicate

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/17/14
Work Order: 14-04-1294
Preparation: EPA 3550B
Method: EPA 8015B (M)

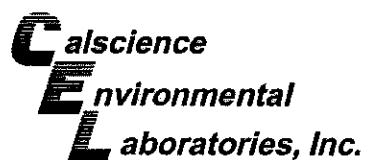
Project: ExxonMobil 70234

Page 1 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
14-04-1394-1	Sample	Solid	GC 48	04/22/14	04/23/14 02:53	140422S18
14-04-1394-1	Matrix Spike	Solid	GC 48	04/22/14	04/23/14 01:51	140422S18
14-04-1394-1	Matrix Spike Duplicate	Solid	GC 48	04/22/14	04/23/14 02:07	140422S18

Parameter	<u>Sample</u> <u>Conc.</u>	<u>Spike</u> <u>Added</u>	<u>MS</u> <u>Conc.</u>	<u>MS</u> <u>%Rec.</u>	<u>MSD</u> <u>Conc.</u>	<u>MSD</u> <u>%Rec.</u>	<u>%Rec. CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
TPH as Motor Oil	ND	400.0	429.6	107	405.8	101	64-130	6	0-15	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - Spike/Spike Duplicate

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/17/14
Work Order: 14-04-1294
Preparation: EPA 3550B
Method: EPA 8015B (M)

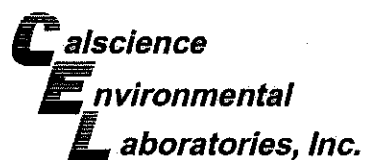
Project: ExxonMobil 70234

Page 2 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
14-04-1394-1	Sample	Solid	GC 48	04/22/14	04/23/14 02:53	140422S17
14-04-1394-1	Matrix Spike	Solid	GC 48	04/22/14	04/23/14 01:19	140422S17
14-04-1394-1	Matrix Spike Duplicate	Solid	GC 48	04/22/14	04/23/14 01:35	140422S17

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
TPH as Diesel	ND	400.0	385.8	96	383.7	96	64-130	1	0-15	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - Spike/Spike Duplicate

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

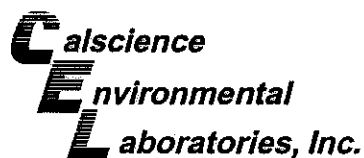
Date Received: 04/17/14
Work Order: 14-04-1294
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project: ExxonMobil 70234

Page 3 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number				
14-04-1293-2	Sample	Solid	GC 29	04/17/14	04/20/14 07:17	140419S017				
14-04-1293-2	Matrix Spike	Solid	GC 29	04/17/14	04/20/14 07:53	140419S017				
14-04-1293-2	Matrix Spike Duplicate	Solid	GC 29	04/17/14	04/20/14 08:29	140419S017				
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	ND	10.00	9.559	96	9.693	97	48-114	1	0-23	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - Spike/Spike Duplicate

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/17/14
Work Order: 14-04-1294
Preparation: EPA 3050B
Method: EPA 6010B

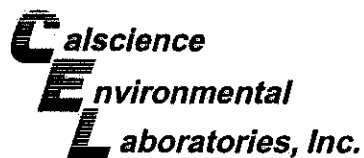
Project: ExxonMobil 70234

Page 4 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
14-04-1300-17	Sample	Solid	ICP 7300	04/18/14	04/18/14 18:17	140418S02
14-04-1300-17	Matrix Spike	Solid	ICP 7300	04/18/14	04/18/14 18:19	140418S02
14-04-1300-17	Matrix Spike Duplicate	Solid	ICP 7300	04/18/14	04/18/14 18:20	140418S02

Parameter	<u>Sample</u> <u>Conc.</u>	<u>Spike</u> <u>Added</u>	<u>MS</u> <u>Conc.</u>	<u>MS</u> <u>%Rec.</u>	<u>MSD</u> <u>Conc.</u>	<u>MSD</u> <u>%Rec.</u>	<u>%Rec. CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Lead	4.126	25.00	28.68	98	30.12	104	75-125	5	0-20	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - Spike/Spike Duplicate

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

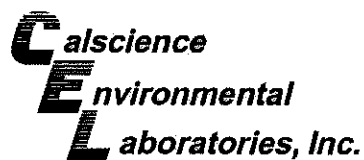
Date Received: 04/17/14
Work Order: 14-04-1294
Preparation: EPA 5030C
Method: EPA 8260B

Project: ExxonMobil 70234

Page 5 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number				
DRUM1,2	Sample	Solid	GC/MS BB	04/17/14	04/22/14 13:20	140422S008				
DRUM1,2	Matrix Spike	Solid	GC/MS BB	04/17/14	04/22/14 13:47	140422S008				
DRUM1,2	Matrix Spike Duplicate	Solid	GC/MS BB	04/17/14	04/22/14 14:15	140422S008				
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	0.05000	0.04503	90	0.04403	88	61-127	2	0-20	
Ethylbenzene	ND	0.05000	0.04791	96	0.04664	93	57-129	3	0-22	
Toluene	ND	0.05000	0.04656	93	0.04541	91	63-123	3	0-20	
p/m-Xylene	ND	0.1000	0.09773	98	0.09540	95	70-130	2	0-30	
o-Xylene	ND	0.05000	0.05073	101	0.04935	99	70-130	3	0-30	
Methyl-t-Butyl Ether (MTBE)	ND	0.05000	0.04716	94	0.04576	92	57-123	3	0-21	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

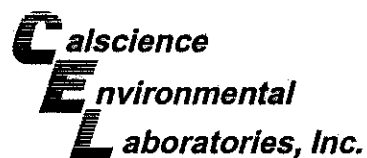
Date Received: 04/17/14
Work Order: 14-04-1294
Preparation: EPA 3550B
Method: EPA 8015B (M)

Project: ExxonMobil 70234

Page 1 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-15-420-882	LCS	Solid	GC 48	04/22/14	04/23/14 00:48	140422B18
Parameter	Spike Added		Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
TPH as Motor Oil	400.0		416.4	104	75-123	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

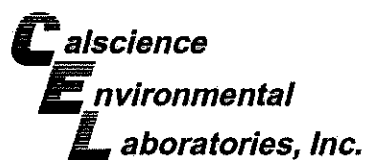
Date Received: 04/17/14
Work Order: 14-04-1294
Preparation: EPA 3550B
Method: EPA 8015B (M)

Project: ExxonMobil 70234

Page 2 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-15-422-1084	LCS	Solid	GC 48	04/22/14	04/23/14 00:33	140422B17
Parameter	Spike Added		Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
TPH as Diesel	400.0		369.1	92	75-123	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

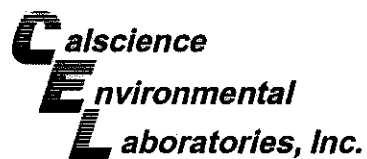
Date Received: 04/17/14
Work Order: 14-04-1294
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project: ExxonMobil 70234

Page 3 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-14-571-1568	LCS	Solid	GC 29	04/19/14	04/20/14 06:40	140419L028
Parameter	Spike Added		Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
TPH as Gasoline	10.00		7.109	71	70-124	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

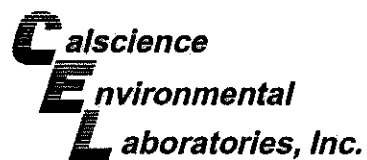
Date Received: 04/17/14
Work Order: 14-04-1294
Preparation: EPA 3050B
Method: EPA 6010B

Project: ExxonMobil 70234

Page 4 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
097-01-002-18300	LCS	Solid	ICP 7300	04/18/14	04/18/14 18:16	140418L02
Parameter	Spike Added		Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
Lead	25.00		26.35	105	80-120	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/17/14
Work Order: 14-04-1294
Preparation: EPA 5030C
Method: EPA 8260B

Project: ExxonMobil 70234

Page 5 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-12-796-8407	LCS	Solid	GC/MS BB	04/22/14	04/22/14 10:19	140422L019

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
Benzene	0.05000	0.04727	95	78-120	
Ethylbenzene	0.05000	0.04896	98	76-120	
Toluene	0.05000	0.04854	97	77-120	
p/m-Xylene	0.1000	0.09921	99	75-125	
o-Xylene	0.05000	0.05249	105	75-125	
Methyl-t-Butyl Ether (MTBE)	0.05000	0.05018	100	77-120	

RPD: Relative Percent Difference. CL: Control Limits

Glossary of Terms and Qualifiers

Work Order: 14-04-1294

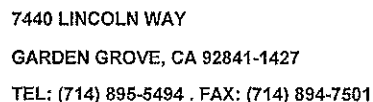
Page 1 of 1

<u>Qualifiers</u>	<u>Definition</u>
AZ	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
B	Analyte was present in the associated method blank.
BA	The MS/MSD RPD was out of control due to suspected matrix interference.
BB	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
DF	Reporting limits elevated due to matrix interferences.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
GE	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
HD	Chromat. profile inconsistent with pattern(s) of ref. fuel stds.
HO	High concentration matrix spike recovery out of limits
HT	Analytical value calculated using results from associated tests.
HX	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS was in control.
IL	Relative percent difference out of control.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
LD	Analyte presence was not confirmed by second column or GC/MS analysis.
LP	The LCS and/or LCSD recoveries for this analyte were above the upper control limit. The associated sample was non-detected. Therefore, the sample data was reported without further clarification.
LQ	LCS recovery above method control limits.
LR	LCS recovery below method control limits.
ND	Parameter not detected at the indicated reporting limit.
QO	Compound did not meet method-described identification guidelines. Identification was based on additional GC/MS characteristics.
RU	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
SG	A silica gel cleanup procedure was performed.
SN	See applicable analysis comment.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.



DATE: 4-15-14
PAGE: 1 OF 1

06/01/10 Revision

		< WebShip > > > > 800-322-5555 www.gso.com		1294
Ship From: ALAN KEMP CAL SCIENCE- CONCORD 5063 COMMERCIAL CIRCLE #H CONCORD, CA 94520		Tracking #: 524419463 		
Ship To: SAMPLE RECEIVING CEL 7440 LINCOLN WAY GARDEN GROVE, CA 92841		NPS <div style="border: 1px solid black; padding: 10px; text-align: center;"> ORC GARDEN GROVE D92843A  23429144 </div>		
COD: \$0.00		Reference: BTS, PHILLIPS 66, ETIC Delivery Instructions: Signature Type: SIGNATURE REQUIRED		
Print Date : 04/16/14 15:03 PM				

Package 1 of 1

Send Label To Printer	<input checked="" type="checkbox"/> Print All	Edit Shipment	Finish
-----------------------	---	---------------	--------

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

STEP 1 - Use the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.

STEP 2 - Fold this page in half.

STEP 3 - Securely attach this label to your package, do not cover the barcode.

STEP 4 - Request an on-call pickup for your package, if you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

ADDITIONAL OPTIONS:

Send Label Via Email	Create Return Label
----------------------	---------------------

TERMS AND CONDITIONS:

By giving us your shipment to deliver, you agree to all the service terms and conditions described in this section. Our liability for loss or damage to any package is limited to your actual damages or \$100 whichever is less, unless you pay for and declare a higher authorized value. If you declare a higher value and pay the additional charge, our liability will be the lesser of your declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, whether direct, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had knowledge that such damage might be incurred including but not limited to loss of income or profit. We will not be liable for your acts or omissions, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of public enemies, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Package is \$500. For other shipments the highest declared value is \$10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is \$500. Items of "extraordinary value" include, but or not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.

WORK ORDER #: **14-04-1294**

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: ETIC

DATE: 04/17/14

TEMPERATURE: Thermometer ID: SC2 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.8 °C - 0.3 °C (CF) = 1.5 °C ☒ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter

Checked by: 836

CUSTODY SEALS INTACT:

☒ Cooler ☐ _____ ☐ No (Not Intact) ☐ Not Present ☐ N/A Checked by: 836

☐ Sample ☐ _____ ☐ No (Not Intact) ☒ Not Present Checked by: 802

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.

☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.

Sampler's name indicated on COC..... ☒ ☐ ☐

Sample container label(s) consistent with COC..... ☒ ☐ ☐

Sample container(s) intact and good condition..... ☒ ☐ ☐

Proper containers and sufficient volume for analyses requested..... ☒ ☐ ☐

Analyses received within holding time..... ☒ ☐ ☐

Aqueous samples received within 15-minute holding time

☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfides ☐ Dissolved Oxygen..... ☐ ☐ ☒

Proper preservation noted on COC or sample container..... ☐ ☐ ☒

☐ Unpreserved vials received for Volatiles analysis

Volatile analysis container(s) free of headspace..... ☐ ☐ ☒

Tedlar bag(s) free of condensation..... ☐ ☐ ☒

CONTAINER TYPE:

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☒ Sleeve (S) ☐ EnCores® ☐ TerraCores® ☐ _____

Aqueous: ☐ VOA ☐ VOA_h ☐ VOA_{na2} ☐ 125AGB ☐ 125AGB_h ☐ 125AGB_p ☐ 1AGB ☐ 1AGB_{na2} ☐ 1AGB_s

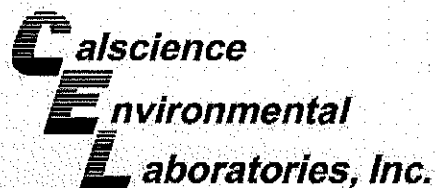
☐ 500AGB ☐ 500AGJ ☐ 500AGJ_s ☐ 250AGB ☐ 250CGB ☐ 250CGB_s ☐ 1PB ☐ 1PB_{na} ☐ 500PB

☐ 250PB ☐ 250PB_n ☐ 125PB ☐ 125PB_{znna} ☐ 100PJ ☐ 100PJ_{na2} ☐ _____ ☐ _____ ☐ _____

Air: ☐ Tedlar® ☐ Canister Other: ☐ _____ Trip Blank Lot#: _____ Labeled/Checked by: 802

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope Reviewed by: 836

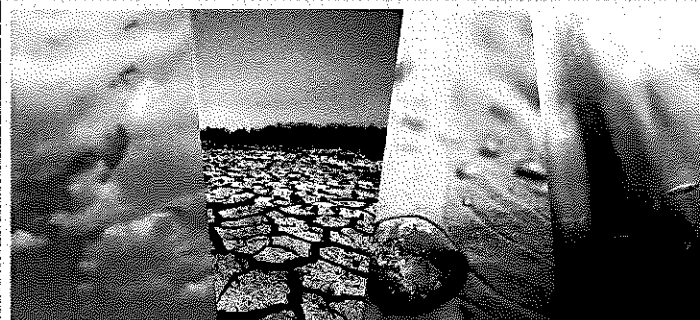
Preservative: h: HCL n: HNO₃ na₂: Na₂S₂O₃ na: NaOH p: H₃PO₄ s: H₂SO₄ u: Ultra-pure znna: ZnAc₂+NaOH f: Filtered Scanned by: 836



CALSCIENCE

WORK ORDER NUMBER: 14-04-1763

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ETIC Engineering, Inc.

Client Project Name: ExxonMobil 70234

Attention: Joe Muehleck
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Cecile L. de Guia

Approved for release on 05/06/2014 by:
Cecile deGuia
Project Manager

ResultLink ▶

Email your PM ▶



Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.



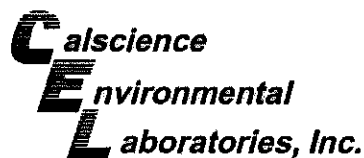
7440 Lincoln Way, Garden Grove, CA 92641-1432 • TEL: (714) 895-5494 • FAX: (714) 894-7501 • www.calscience.com

NELAP ID: 03220CA | ACLASS DoD-ELAP ID: ADE-1864 (ISO/IEC 17025:2005) | CSDLAC ID: 10109 | SCAQMD ID: 93LA0830

Contents

Client Project Name: ExxonMobil 70234
Work Order Number: 14-04-1763

1	Work Order Narrative.	3
2	Sample Summary.	4
3	Client Sample Data.	5
	3.1 EPA TO-17 Volatiles (Sorbent Tubes) (Air).	5
4	Quality Control Sample Data.	6
	4.1 LCS/LCSD.	6
5	Glossary of Terms and Qualifiers.	7
6	Chain of Custody/Sample Receipt Form.	8



Work Order Narrative

Work Order: 14-04-1763

Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain of Custody (COC) on 04/24/14. They were assigned to Work Order 14-04-1763.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Additional Comments:

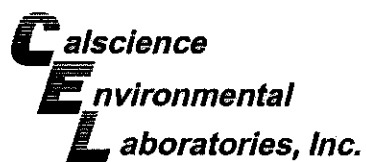
Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

New York NELAP air certification does not certify for all reported methods and analytes, reference the accredited items here: http://www.calscience.com/PDF/New_York.pdf

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

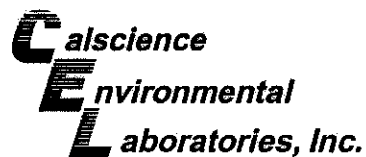


Sample Summary

Client: ETIC Engineering, Inc.	Work Order: 14-04-1763
2285 Morello Avenue	Project Name: ExxonMobil 70234
Pleasant Hill, CA 94523-1850	PO Number: 4410169993
	Date/Time Received: 04/24/14 10:15
	Number of Containers: 1

Attn: Joe Muehleck

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
V2	14-04-1763-1	04/22/14 15:35	1	Air



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/24/14
Work Order: 14-04-1763
Preparation: N/A
Method: EPA TO-17 (M)
Units: ug/m3

Project: ExxonMobil 70234

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V2	14-04-1763-1-A	04/22/14 15:35	Air	GC/MS MMM	N/A	04/26/14 21:17	140426L01

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Naphthalene	ND	20	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	100	57-129	

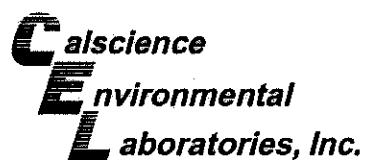
Method Blank	099-15-178-23	N/A	Air	GC/MS MMM	N/A	04/26/14 16:04	140426L01
---------------------	----------------------	------------	------------	------------------	------------	-----------------------	------------------

Comment(s): - MB data is reported in ng/sample.

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Naphthalene	ND	2.0	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	95	57-129	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Quality Control - LCS/LCSD

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/24/14
Work Order: 14-04-1763
Preparation: N/A
Method: EPA TO-17 (M)

Project: ExxonMobil 70234

Page 1 of 1

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-15-178-23	LCS	Air	GC/MS MMM	N/A	04/26/14 12:09	140426L01			
099-15-178-23	LCSD	Air	GC/MS MMM	N/A	04/26/14 14:05	140426L01			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Naphthalene	100.0	84.73	85	83.66	84	40-190	1	0-35	

RPD: Relative Percent Difference. CL: Control Limits

Glossary of Terms and Qualifiers

Work Order: 14-04-1763

Page 1 of 1

<u>Qualifiers</u>	<u>Definition</u>
AZ	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
B	Analyte was present in the associated method blank.
BA	The MS/MSD RPD was out of control due to suspected matrix interference.
BB	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
DF	Reporting limits elevated due to matrix interferences.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
GE	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
HD	Chromat. profile inconsistent with pattern(s) of ref. fuel stds.
HO	High concentration matrix spike recovery out of limits
HT	Analytical value calculated using results from associated tests.
HX	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS was in control.
IL	Relative percent difference out of control.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
LD	Analyte presence was not confirmed by second column or GC/MS analysis.
LP	The LCS and/or LCSD recoveries for this analyte were above the upper control limit. The associated sample was non-detected. Therefore, the sample data was reported without further clarification.
LQ	LCS recovery above method control limits.
LR	LCS recovery below method control limits.
ND	Parameter not detected at the indicated reporting limit.
QO	Compound did not meet method-described identification guidelines. Identification was based on additional GC/MS characteristics.
RU	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
SG	A silica gel cleanup procedure was performed.
SN	See applicable analysis comment.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

AIR CHAIN OF CUSTODY RECORD

DATE: 4/22/14
PAGE: 1 OF 1

LABORATORY CLIENT: ExxonMobil/ ETIC Engineering Inc.				CLIENT PROJECT NAME / NUMBER: 70234				P.O. NO.: 4410169993												
ADDRESS: 2285 Morello Ave				PROJECT ADDRESS: Former Exxon Site 70234 - 3450 35th Avenue				LAB CONTACT OR QUOTE NO.:												
CITY: Pleasant Hill		STATE: CA ZIP: 94523		CITY: Oakland		STATE: CA ZIP:		LAB USE ONLY 14-04-1763												
TEL: 925-602-4710		E-MAIL: jmuehleack@eticeng.com		PROJECT CONTACT: Joe Muehleack 925-602-4710 ext. 2127																
TURNAROUND TIME: <input type="checkbox"/> SAME DAY <input type="checkbox"/> 24 HR <input type="checkbox"/> 48 HR <input type="checkbox"/> 72 HR <input type="checkbox"/> 5 DAYS <input checked="" type="checkbox"/> 10 DAYS								SAMPLER(S): (NAME / SIGNATURE): <i>Christopher Mitchell / [Signature]</i>												
SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY) <input checked="" type="checkbox"/> EDD GLOBAL ID T06019757161								REQUESTED ANALYSES												
SPECIAL INSTRUCTIONS: Provide EDF. Email to: jmuehleack@eticeng.com; eticlabreports@eticeng.com <div style="text-align: right; margin-top: 10px;"><i>new 100 mL</i></div>																				
LAB USE ONLY	SAMPLE ID	FIELD ID / POINT OF COLLECTION	Air Type (I) Indoor (SV) Soil Vap. (A) Ambient	Canister ID #	Canister Size 6L or 1L	Flow Controller ID #	Start Sampling Information		Stop Sampling Information			TPH-g (TO-3M)	BTEX, 5 oxy, naphthalene (TO-15M)	Carbon dioxide, oxygen, methane, and helium (as a leak detection compound)	naphthalene (TO-17)					
							Date	Time (24 hr clock)	Canister Pressure ("Hg)	Date	Time (24 hr clock)					Canister Pressure ("Hg)				
	V2	V2	SOIL VAPOR	G0187123	Sorbent tube	NA	4/23/14	1533	NA	4/23/14	1535					NA				X
Relinquished by: (Signature) <i>[Signature]</i>				Received by: (Signature) <i>[Signature]</i> CEL				Date: 4/23/14		Time: 13:40										
Relinquished by: (Signature) <i>[Signature]</i>				Received by: (Signature) <i>[Signature]</i>				Date: 4/24/14		Time: 1015										
Relinquished by: (Signature) <i>[Signature]</i>				Received by: (Signature) <i>[Signature]</i>				Date:		Time:										

		< WebShip > > > > > 800-322-5555 www.gso.com		1765
Ship From: ALAN KEMP CAL SC ENCE- CONCORD 5063 COMMERCIAL CIRCLE #H CONCORD, CA 94520		Tracking #: 524476782 		
Ship To: SAMPLE RECEIVING CEL 7440 LINCOLN WAY GARDEN GROVE, CA 92841		NPS ORC GARDEN GROVE A		
COD: \$0.00		D92843A  23670854		
Reference: TERRA PACIFIC GROUP, ETIC, CRA Delivery Instructions:				
Signature Type: SIGNATURE REQUIRED				
Print Date : 04/23/14 15:06 PM				

Package 1 of 1

☒ Print All

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

STEP 1 - Use the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.

STEP 2 - Fold this page in half.

STEP 3 - Securely attach this label to your package, do not cover the barcode.

STEP 4 - Request an on-call pickup for your package, if you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

ADDITIONAL OPTIONS:

TERMS AND CONDITIONS:

By giving us your shipment to deliver, you agree to all the service terms and conditions described in this section. Our liability for loss or damage to any package is limited to your actual damages or \$100 whichever is less, unless you pay for and declare a higher authorized value. If you declare a higher value and pay the additional charge, our liability will be the lesser of your declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, whether direct, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had knowledge that such damage might be incurred including but not limited to loss of income or profit. We will not be liable for your acts or omissions, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of public enemies, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Package is \$500. For other shipments the highest declared value is \$10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is \$500. Items of "extraordinary value" include, but are not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.

WORK ORDER #: **14-04-** 1 7 6 3

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: ETIC

DATE: 04/24/14

TEMPERATURE: Thermometer ID: SC2 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.9 °C - 0.3 °C (CF) = 1.6 °C ☒ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter

Checked by: 876

CUSTODY SEALS INTACT:

☒ Cooler ☐ _____ ☐ No (Not Intact) ☐ Not Present ☐ N/A Checked by: 876

☐ Sample ☐ _____ ☐ No (Not Intact) ☒ Not Present Checked by: 876

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------

☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.

☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.

Sampler's name indicated on COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------------------	-------------------------------------	--------------------------	--------------------------

Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------

Sample container(s) intact and good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------

Proper containers and sufficient volume for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	-------------------------------------	--------------------------	--------------------------

Analyses received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------

Aqueous samples received within 15-minute holding time

<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfides <input type="checkbox"/> Dissolved Oxygen.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
---	--------------------------	-------------------------------------

Proper preservation noted on COC or sample container.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
---	--------------------------	-------------------------------------

☐ Unpreserved vials received for Volatiles analysis

Volatile analysis container(s) free of headspace.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
---	--------------------------	-------------------------------------

Tedlar bag(s) free of condensation.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>
---	--------------------------	-------------------------------------

CONTAINER TYPE:

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (____) ☐ EnCores® ☐ TerraCores® ☐ _____

Aqueous: ☐ VOA ☐ VOAh ☐ VOAna₂ ☐ 125AGB ☐ 125AGBh ☐ 125AGBp ☐ 1AGB ☐ 1AGBna₂ ☐ 1AGBs

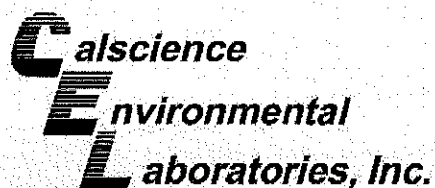
☐ 500AGB ☐ 500AGJ ☐ 500AGJs ☐ 250AGB ☐ 250CGB ☐ 250CGBs ☐ 1PB ☐ 1PBna ☐ 500PB

☐ 250PB ☐ 250PBn ☐ 125PB ☐ 125PBznna ☐ 100PJ ☐ 100PJna₂ ☐ _____ ☐ _____ ☐ _____

Air: ☐ Tedlar® ☐ Canister **Other:** ☒ ST **Trip Blank Lot#:** _____ **Labeled/Checked by:** 876

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope **Reviewed by:** 876

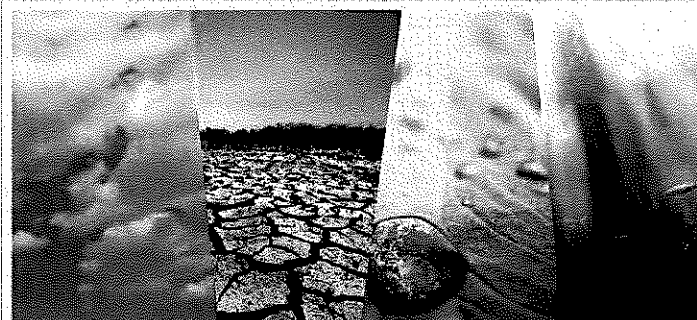
Preservative: h: HCL n: HNO₃ na₂: Na₂S₂O₃ na: NaOH p: H₃PO₄ s: H₂SO₄ u: Ultra-pure znna: ZnAc₂+NaOH f: Filtered **Scanned by:** 876



CALSCIENCE

WORK ORDER NUMBER: 14-04-1765

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ETIC Engineering, Inc.

Client Project Name: ExxonMobil 70234

Attention: Joe Muehleck
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Cecile L. de Guia

Approved for release on 05/07/2014 by:
Cecile deGuia
Project Manager

ResultLink ▶

Email your PM ▶



Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.



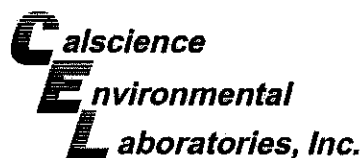
7440 Lincoln Way, Garden Grove, CA 92641-1432 • TEL: (714) 895-5494 • FAX: (714) 894-7501 • www.calscience.com

NELAP ID: 03220CA | ACLASS DoD-ELAP ID: ADE-1864 (ISO/IEC 17025:2005) | CSDLAC ID: 10109 | SCAQMD ID: 93LA0830

Contents

Client Project Name: ExxonMobil 70234
 Work Order Number: 14-04-1765

1	Work Order Narrative.	3
2	Sample Summary.	4
3	Client Sample Data.	5
	3.1 ASTM D-1946 Fixed Gases (Air).	5
	3.2 ASTM D-1946 (M) Fixed Gases (H2 and/or He) (Air).	7
	3.3 EPA TO-15 Full List (Air).	8
	3.4 EPA TO-3 (M) TPH Gasoline (Air).	16
4	Quality Control Sample Data.	17
	4.1 Sample Duplicate.	17
	4.2 LCS/LCSD.	18
5	Summa Canister Vacuum Summary.	23
6	Glossary of Terms and Qualifiers.	24
7	Chain of Custody/Sample Receipt Form.	25



Work Order Narrative

Work Order: 14-04-1765

Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain of Custody (COC) on 04/24/14. They were assigned to Work Order 14-04-1765.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Additional Comments:

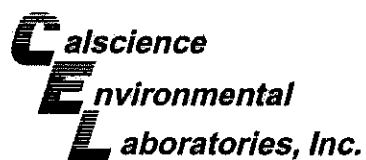
Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

New York NELAP air certification does not certify for all reported methods and analytes, reference the accredited items here: http://www.calscience.com/PDF/New_York.pdf

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.



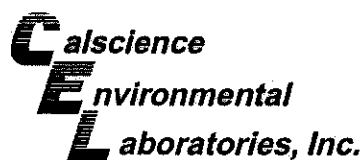
Sample Summary

Client: ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Work Order: 14-04-1765
Project Name: ExxonMobil 70234
PO Number: 4410169993
Date/Time Received: 04/24/14 10:15
Number of Containers: 6

Attn: Joe Muehleck

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
V1	14-04-1765-1	04/22/14 16:55	1	Air
V2	14-04-1765-2	04/22/14 15:27	1	Air
V3	14-04-1765-3	04/22/14 14:22	1	Air
V4	14-04-1765-4	04/23/14 10:48	1	Air
V5	14-04-1765-5	04/23/14 12:22	1	Air
V5 dup	14-04-1765-6	04/23/14 12:22	1	Air



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

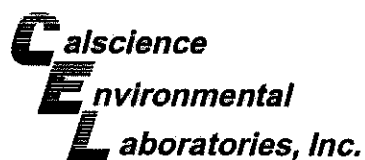
Date Received: 04/24/14
Work Order: 14-04-1765
Preparation: N/A
Method: ASTM D-1946
Units: %v

Project: ExxonMobil 70234

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V1	14-04-1765-1-A	04/22/14 16:55	Air	GC 65	N/A	04/25/14 17:43	140425L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
Methane		ND	0.500	1.00			
Carbon Dioxide		4.81	0.500	1.00			
Oxygen + Argon		12.9	0.500	1.00			
V2	14-04-1765-2-A	04/22/14 15:27	Air	GC 65	N/A	04/25/14 18:01	140425L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
Methane		ND	0.500	1.00			
Carbon Dioxide		7.09	0.500	1.00			
Oxygen + Argon		14.2	0.500	1.00			
V3	14-04-1765-3-A	04/22/14 14:22	Air	GC 65	N/A	04/25/14 18:37	140425L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
Methane		ND	0.500	1.00			
Carbon Dioxide		5.76	0.500	1.00			
Oxygen + Argon		15.4	0.500	1.00			
V4	14-04-1765-4-A	04/23/14 10:48	Air	GC 65	N/A	04/25/14 18:57	140425L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
Methane		ND	0.500	1.00			
Carbon Dioxide		3.01	0.500	1.00			
Oxygen + Argon		18.7	0.500	1.00			
V5	14-04-1765-5-A	04/23/14 12:22	Air	GC 65	N/A	04/25/14 19:15	140425L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
Methane		ND	0.500	1.00			
Carbon Dioxide		6.20	0.500	1.00			
Oxygen + Argon		8.76	0.500	1.00			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/24/14
Work Order: 14-04-1765
Preparation: N/A
Method: ASTM D-1946
Units: %v

Project: ExxonMobil 70234

Page 2 of 2

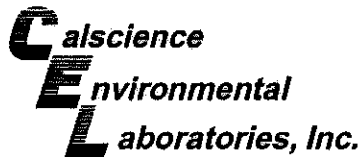
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V5 dup	14-04-1765-6-A	04/23/14 12:22	Air	GC 65	N/A	04/25/14 19:40	140425L01

Parameter	Result	RL	DF	Qualifiers
Methane	ND	0.500	1.00	
Carbon Dioxide	6.03	0.500	1.00	
Oxygen + Argon	9.12	0.500	1.00	

Method Blank	099-03-002-2047	N/A	Air	GC 65	N/A	04/25/14 17:06	140425L01
--------------	-----------------	-----	-----	-------	-----	-------------------	-----------

Parameter	Result	RL	DF	Qualifiers
Methane	ND	0.500	1.00	
Carbon Dioxide	ND	0.500	1.00	
Oxygen + Argon	ND	0.500	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

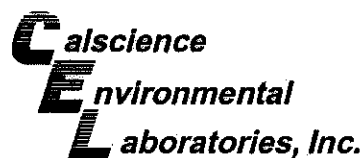
Date Received: 04/24/14
Work Order: 14-04-1765
Preparation: N/A
Method: ASTM D-1946 (M)
Units: %v

Project: ExxonMobil 70234

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V1	14-04-1765-1-A	04/22/14 16:55	Air	GC 55	N/A	04/25/14 12:32	140425L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
Helium		0.0348	0.0100	1.00			
V2	14-04-1765-2-A	04/22/14 15:27	Air	GC 55	N/A	04/25/14 13:25	140425L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
Helium		0.0220	0.0100	1.00			
V3	14-04-1765-3-A	04/22/14 14:22	Air	GC 55	N/A	04/25/14 15:39	140425L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
Helium		0.0969	0.0100	1.00			
V4	14-04-1765-4-A	04/23/14 10:48	Air	GC 55	N/A	04/25/14 17:01	140425L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
Helium		0.0241	0.0100	1.00			
V5	14-04-1765-5-A	04/23/14 12:22	Air	GC 55	N/A	04/25/14 17:50	140425L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
Helium		0.0209	0.0100	1.00			
V5 dup	14-04-1765-6-A	04/23/14 12:22	Air	GC 55	N/A	04/25/14 18:32	140425L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
Helium		0.0298	0.0100	1.00			
Method Blank	099-12-872-610	N/A	Air	GC 55	N/A	04/25/14 11:00	140425L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
Helium		ND	0.0100	1.00			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

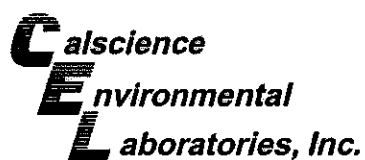
Date Received: 04/24/14
Work Order: 14-04-1765
Preparation: N/A
Method: EPA TO-15
Units: ug/m3

Project: ExxonMobil 70234

Page 1 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V1	14-04-1765-1-A	04/22/14 16:55	Air	GC/MS KKK	N/A	05/01/14 20:10	140501L06
<u>Parameter</u>		<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	
Benzene		ND		7.4	4.65		
Toluene		75		8.8	4.65		
Ethylbenzene		ND		10	4.65		
p/m-Xylene		ND		40	4.65		
o-Xylene		ND		10	4.65		
Xylenes (total)		ND		10	1.00		
Methyl-t-Butyl Ether (MTBE)		ND		34	4.65		
Tert-Butyl Alcohol (TBA)		ND		28	4.65		
Diisopropyl Ether (DIPE)		ND		39	4.65		
Ethyl-t-Butyl Ether (ETBE)		ND		39	4.65		
Tert-Amyl-Methyl Ether (TAME)		ND		39	4.65		
Naphthalene		ND		120	4.65		
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>	<u>Qualifiers</u>		
1,4-Bromofluorobenzene		104		57-129			
1,2-Dichloroethane-d4		97		47-137			
Toluene-d8		100		78-156			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

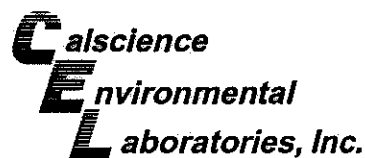
Date Received: 04/24/14
Work Order: 14-04-1765
Preparation: N/A
Method: EPA TO-15
Units: ug/m3

Project: ExxonMobil 70234

Page 2 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V2	14-04-1765-2-A	04/22/14 15:27	Air	GC/MS KKK	N/A	04/30/14 16:11	140430L05
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
Benzene		ND	6.5	4.08			
Toluene		110	7.7	4.08			
Ethylbenzene		ND	8.9	4.08			
p/m-Xylene		ND	35	4.08			
o-Xylene		ND	8.9	4.08			
Xylenes (total)		ND	8.9	1.00			
Methyl-t-Butyl Ether (MTBE)		ND	29	4.08			
Tert-Butyl Alcohol (TBA)		ND	25	4.08			
Diisopropyl Ether (DIPE)		ND	34	4.08			
Ethyl-t-Butyl Ether (ETBE)		ND	34	4.08			
Tert-Amyl-Methyl Ether (TAME)		ND	34	4.08			
Naphthalene		ND	110	4.08			
<u>Surrogate</u>		<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>			
1,4-Bromofluorobenzene		106	57-129				
1,2-Dichloroethane-d4		104	47-137				
Toluene-d8		102	78-156				

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

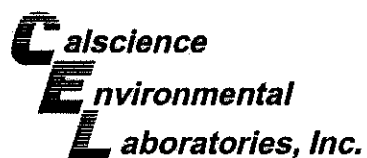
Date Received: 04/24/14
Work Order: 14-04-1765
Preparation: N/A
Method: EPA TO-15
Units: ug/m3

Project: ExxonMobil 70234

Page 3 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V3	14-04-1765-3-A	04/22/14 14:22	Air	GC/MS KKK	N/A	04/30/14 10:13	140430L05
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
Benzene		ND	1.6	1.00			
Toluene		110	1.9	1.00			
Ethylbenzene		3.8	2.2	1.00			
p/m-Xylene		ND	8.7	1.00			
o-Xylene		2.7	2.2	1.00			
Xylenes (total)		2.7	2.2	1.00			
Methyl-t-Butyl Ether (MTBE)		ND	7.2	1.00			
Tert-Butyl Alcohol (TBA)		ND	6.1	1.00			
Diisopropyl Ether (DIPE)		ND	8.4	1.00			
Ethyl-t-Butyl Ether (ETBE)		ND	8.4	1.00			
Tert-Amyl-Methyl Ether (TAME)		ND	8.4	1.00			
Naphthalene		ND	26	1.00			
<u>Surrogate</u>		<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>			
1,4-Bromofluorobenzene		104	57-129				
1,2-Dichloroethane-d4		103	47-137				
Toluene-d8		103	78-156				

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

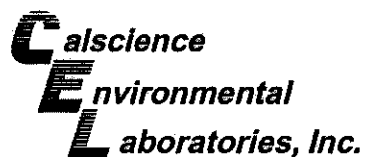
Date Received: 04/24/14
Work Order: 14-04-1765
Preparation: N/A
Method: EPA TO-15
Units: ug/m3

Project: ExxonMobil 70234

Page 4 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V4	14-04-1765-4-A	04/23/14 10:48	Air	GC/MS KKK	N/A	04/30/14 11:04	140430L05
<u>Parameter</u>		<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	
Benzene		ND		1.6	1.00		
Toluene		ND		1.9	1.00		
Ethylbenzene		ND		2.2	1.00		
p/m-Xylene		ND		8.7	1.00		
o-Xylene		ND		2.2	1.00		
Xylenes (total)		ND		2.2	1.00		
Methyl-t-Butyl Ether (MTBE)		ND		7.2	1.00		
Tert-Butyl Alcohol (TBA)		ND		6.1	1.00		
Diisopropyl Ether (DIPE)		ND		8.4	1.00		
Ethyl-t-Butyl Ether (ETBE)		ND		8.4	1.00		
Tert-Amyl-Methyl Ether (TAME)		ND		8.4	1.00		
Naphthalene		ND		26	1.00		
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>	<u>Qualifiers</u>		
1,4-Bromofluorobenzene		105		57-129			
1,2-Dichloroethane-d4		102		47-137			
Toluene-d8		100		78-156			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

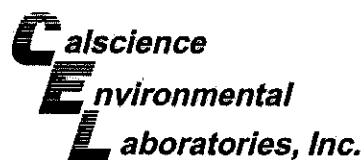
Date Received: 04/24/14
Work Order: 14-04-1765
Preparation: N/A
Method: EPA TO-15
Units: ug/m3

Project: ExxonMobil 70234

Page 5 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V5	14-04-1765-5-A	04/23/14 12:22	Air	GC/MS KKK	N/A	04/30/14 13:41	140430L05
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
Benzene		3.4	1.6	1.00			
Toluene		46	1.9	1.00			
Ethylbenzene		ND	2.2	1.00			
p/m-Xylene		ND	8.7	1.00			
o-Xylene		ND	2.2	1.00			
Xylenes (total)		ND	2.2	1.00			
Methyl-t-Butyl Ether (MTBE)		ND	7.2	1.00			
Tert-Butyl Alcohol (TBA)		ND	6.1	1.00			
Diisopropyl Ether (DIPE)		ND	8.4	1.00			
Ethyl-t-Butyl Ether (ETBE)		ND	8.4	1.00			
Tert-Amyl-Methyl Ether (TAME)		ND	8.4	1.00			
Naphthalene		ND	26	1.00			
<u>Surrogate</u>		<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>			
1,4-Bromofluorobenzene		102	57-129				
1,2-Dichloroethane-d4		102	47-137				
Toluene-d8		100	78-156				

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/24/14
Work Order: 14-04-1765
Preparation: N/A
Method: EPA TO-15
Units: ug/m3

Project: ExxonMobil 70234

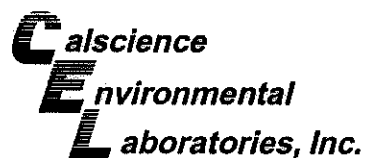
Page 6 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V5 dup	14-04-1765-6-A	04/23/14 12:22	Air	GC/MS KKK	N/A	04/30/14 14:31	140430L05

Parameter	Result	RL	DF	Qualifiers
Benzene	3.2	1.6	1.00	
Toluene	38	1.9	1.00	
Ethylbenzene	2.5	2.2	1.00	
p/m-Xylene	ND	8.7	1.00	
o-Xylene	2.3	2.2	1.00	
Xylenes (total)	2.3	2.2	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	7.2	1.00	
Tert-Butyl Alcohol (TBA)	ND	6.1	1.00	
Diisopropyl Ether (DIPE)	ND	8.4	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	8.4	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	8.4	1.00	
Naphthalene	ND	26	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	107	57-129	
1,2-Dichloroethane-d4	105	47-137	
Toluene-d8	103	78-156	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

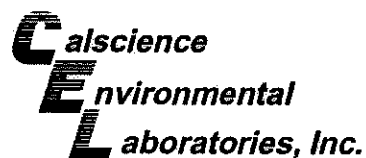
Date Received: 04/24/14
Work Order: 14-04-1765
Preparation: N/A
Method: EPA TO-15
Units: ug/m3

Project: ExxonMobil 70234

Page 7 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-765-36	N/A	Air	GC/MS KKK	N/A	04/30/14 06:20	140430L05
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
Benzene		ND	1.6	1.00			
Toluene		ND	1.9	1.00			
Ethylbenzene		ND	2.2	1.00			
p/m-Xylene		ND	8.7	1.00			
o-Xylene		ND	2.2	1.00			
Xylenes (total)		ND	2.2	1.00			
Methyl-t-Butyl Ether (MTBE)		ND	7.2	1.00			
Tert-Butyl Alcohol (TBA)		ND	6.1	1.00			
Diisopropyl Ether (DIPE)		ND	8.4	1.00			
Ethyl-t-Butyl Ether (ETBE)		ND	8.4	1.00			
Tert-Amyl-Methyl Ether (TAME)		ND	8.4	1.00			
Naphthalene		ND	26	1.00			
<u>Surrogate</u>		<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>			
1,4-Bromofluorobenzene		104	57-129				
1,2-Dichloroethane-d4		100	47-137				
Toluene-d8		99	78-156				

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

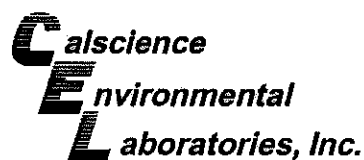
Date Received: 04/24/14
Work Order: 14-04-1765
Preparation: N/A
Method: EPA TO-15
Units: ug/m3

Project: ExxonMobil 70234

Page 8 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-765-37	N/A	Air	GC/MS KKK	N/A	05/01/14 08:40	140501L06
<u>Parameter</u>		<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>	
Benzene		ND		1.6	1.00		
Toluene		ND		1.9	1.00		
Ethylbenzene		ND		2.2	1.00		
p/m-Xylene		ND		8.7	1.00		
o-Xylene		ND		2.2	1.00		
Xylenes (total)		ND		2.2	1.00		
Methyl-t-Butyl Ether (MTBE)		ND		7.2	1.00		
Tert-Butyl Alcohol (TBA)		ND		6.1	1.00		
Diisopropyl Ether (DIPE)		ND		8.4	1.00		
Ethyl-t-Butyl Ether (ETBE)		ND		8.4	1.00		
Tert-Amyl-Methyl Ether (TAME)		ND		8.4	1.00		
Naphthalene		ND		26	1.00		
<u>Surrogate</u>		<u>Rec. (%)</u>		<u>Control Limits</u>	<u>Qualifiers</u>		
1,4-Bromofluorobenzene		104		57-129			
1,2-Dichloroethane-d4		98		47-137			
Toluene-d8		100		78-156			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

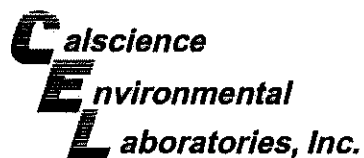
Date Received: 04/24/14
Work Order: 14-04-1765
Preparation: N/A
Method: EPA TO-3M
Units: ug/m3

Project: ExxonMobil 70234

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
V1	14-04-1765-1-A	04/22/14 16:55	Air	GC 13	N/A	04/24/14 14:25	140424L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
TPH as Gasoline		30000	7000	1.00			
V2	14-04-1765-2-A	04/22/14 15:27	Air	GC 13	N/A	04/24/14 14:34	140424L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
TPH as Gasoline		36000	7000	1.00			
V3	14-04-1765-3-A	04/22/14 14:22	Air	GC 13	N/A	04/24/14 14:45	140424L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
TPH as Gasoline		24000	7000	1.00			
V4	14-04-1765-4-A	04/23/14 10:48	Air	GC 13	N/A	04/24/14 14:55	140424L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
TPH as Gasoline		24000	7000	1.00			
V5	14-04-1765-5-A	04/23/14 12:22	Air	GC 13	N/A	04/24/14 15:08	140424L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
TPH as Gasoline		22000	7000	1.00			
V5 dup	14-04-1765-6-A	04/23/14 12:22	Air	GC 13	N/A	04/24/14 15:16	140424L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
TPH as Gasoline		19000	7000	1.00			
Method Blank	098-01-005-5463	N/A	Air	GC 13	N/A	04/24/14 11:42	140424L01
<u>Parameter</u>		<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>		
TPH as Gasoline		ND	7000	1.00			

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Quality Control - Sample Duplicate

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/24/14
Work Order: 14-04-1765
Preparation: N/A
Method: EPA TO-3M

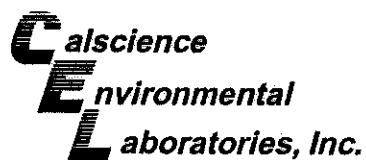
Project: ExxonMobil 70234

Page 1 of 1

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
V5 dup	Sample	Air	GC 13	N/A	04/24/14 15:16	140424D01
V5 dup	Sample Duplicate	Air	GC 13	N/A	04/24/14 15:31	140424D01

<u>Parameter</u>	<u>Sample Conc.</u>	<u>DUP Conc.</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
TPH as Gasoline	18600	17160	8	0-20	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS/LCSD

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

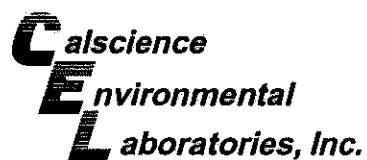
Date Received: 04/24/14
Work Order: 14-04-1765
Preparation: N/A
Method: ASTM D-1946

Project: ExxonMobil 70234

Page 1 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-03-002-2047	LCS	Air	GC 65	N/A	04/25/14 16:26	140425L01			
099-03-002-2047	LCSD	Air	GC 65	N/A	04/25/14 16:44	140425L01			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Methane	4.500	4.322	96	4.330	96	80-120	0	0-30	
Carbon Dioxide	15.00	15.77	105	16.06	107	80-120	2	0-30	
Oxygen + Argon	4.010	4.098	102	3.986	99	80-120	3	0-30	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS/LCSD

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/24/14
Work Order: 14-04-1765
Preparation: N/A
Method: ASTM D-1946 (M)

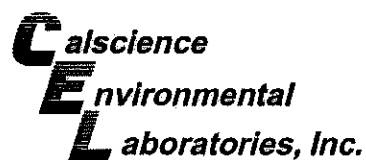
Project: ExxonMobil 70234

Page 2 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-872-610	LCS	Air	GC 55	N/A	04/25/14 10:10	140425L01
099-12-872-610	LCSD	Air	GC 55	N/A	04/25/14 10:35	140425L01

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Helium	1.000	0.8608	86	1.010	101	80-120	16	0-30	

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS/LCSD

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/24/14
Work Order: 14-04-1765
Preparation: N/A
Method: EPA TO-15

Project: ExxonMobil 70234

Page 3 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-15-765-36	LCS	Air	GC/MS KKK	N/A	04/30/14 03:49	140430L05
099-15-765-36	LCSD	Air	GC/MS KKK	N/A	04/30/14 04:39	140430L05

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	79.87	86.06	108	85.68	107	60-156	44-172	0	0-40	
Toluene	94.21	100.3	106	100.6	107	56-146	41-161	0	0-43	
Ethylbenzene	108.6	114.8	106	116.0	107	52-154	35-171	1	0-38	
p/m-Xylene	217.1	228.0	105	231.2	106	42-156	23-175	1	0-41	
o-Xylene	108.6	112.1	103	113.9	105	52-148	36-164	2	0-38	
Methyl-t-Butyl Ether (MTBE)	90.13	93.82	104	96.02	107	50-150	33-167	2	0-35	
Tert-Butyl Alcohol (TBA)	151.6	134.9	89	145.9	96	50-150	33-167	8	0-35	
Diisopropyl Ether (DIPE)	104.5	102.8	98	104.4	100	50-150	33-167	2	0-35	
Ethyl-t-Butyl Ether (ETBE)	104.5	101.5	97	104.0	100	50-150	33-167	2	0-35	
Tert-Amyl-Methyl Ether (TAME)	104.5	101.0	97	102.6	98	50-150	33-167	1	0-35	
Naphthalene	131.1	129.1	99	126.9	97	40-190	15-215	2	0-30	

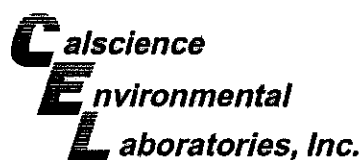
Total number of LCS compounds: 11

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS/LCSD

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

Date Received: 04/24/14
Work Order: 14-04-1765
Preparation: N/A
Method: EPA TO-15

Project: ExxonMobil 70234

Page 4 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-15-765-37	LCS	Air	GC/MS KKK	N/A	05/01/14 06:50	140501L06
099-15-765-37	LCSD	Air	GC/MS KKK	N/A	05/01/14 10:20	140501L06

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	79.87	83.45	104	85.69	107	60-156	44-172	3	0-40	
Toluene	94.21	98.21	104	101.2	107	56-146	41-161	3	0-43	
Ethylbenzene	108.6	113.1	104	116.2	107	52-154	35-171	3	0-38	
p/m-Xylene	217.1	224.0	103	230.8	106	42-156	23-175	3	0-41	
o-Xylene	108.6	110.8	102	113.9	105	52-148	36-164	3	0-38	
Methyl-t-Butyl Ether (MTBE)	90.13	91.59	102	94.91	105	50-150	33-167	4	0-35	
Tert-Butyl Alcohol (TBA)	151.6	141.9	94	147.2	97	50-150	33-167	4	0-35	
Diisopropyl Ether (DIPE)	104.5	96.81	93	101.7	97	50-150	33-167	5	0-35	
Ethyl-t-Butyl Ether (ETBE)	104.5	99.86	96	101.8	97	50-150	33-167	2	0-35	
Tert-Amyl-Methyl Ether (TAME)	104.5	97.64	93	100.6	96	50-150	33-167	3	0-35	
Naphthalene	131.1	126.3	96	132.0	101	40-190	15-215	4	0-30	

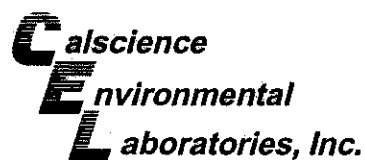
Total number of LCS compounds: 11

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, CA 94523-1850

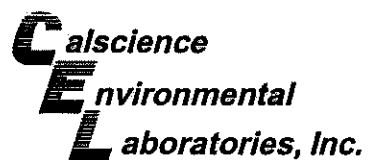
Date Received: 04/24/14
Work Order: 14-04-1765
Preparation: N/A
Method: EPA TO-3M

Project: ExxonMobil 70234

Page 5 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
098-01-005-5463	LCS	Air	GC 13	N/A	04/24/14 11:31	140424L01
Parameter	Spike Added		Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
TPH as Gasoline	932500		805500	86	80-120	

RPD: Relative Percent Difference. CL: Control Limits

**Summa Canister Vacuum Summary**

Work Order: 14-04-1765

Page 1 of 1

Sample Name	Vacuum Out	Vacuum In	Equipment	Description
V1	-29.60 in Hg	-5.00 in Hg	LC408	Summa Canister 1L
V2	-29.60 in Hg	-7.00 in Hg	LC690	Summa Canister 1L
V3	-29.70 in Hg	-5.00 in Hg	SLC011	Summa Canister 1L
V4	-29.70 in Hg	-5.00 in Hg	LC360	Summa Canister 1L
V5	-29.60 in Hg	-7.00 in Hg	LC435	Summa Canister 1L
V5 dup	-29.60 in Hg	-4.00 in Hg	LC575	Summa Canister 1L

Glossary of Terms and Qualifiers

Work Order: 14-04-1765

Page 1 of 1

<u>Qualifiers</u>	<u>Definition</u>
AZ	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
B	Analyte was present in the associated method blank.
BA	The MS/MSD RPD was out of control due to suspected matrix interference.
BB	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
DF	Reporting limits elevated due to matrix interferences.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
GE	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
HD	Chromat. profile inconsistent with pattern(s) of ref. fuel stds.
HO	High concentration matrix spike recovery out of limits
HT	Analytical value calculated using results from associated tests.
HX	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS was in control.
IL	Relative percent difference out of control.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
LD	Analyte presence was not confirmed by second column or GC/MS analysis.
LP	The LCS and/or LCSD recoveries for this analyte were above the upper control limit. The associated sample was non-detected. Therefore, the sample data was reported without further clarification.
LQ	LCS recovery above method control limits.
LR	LCS recovery below method control limits.
ND	Parameter not detected at the indicated reporting limit.
QO	Compound did not meet method-described identification guidelines. Identification was based on additional GC/MS characteristics.
RU	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
SG	A silica gel cleanup procedure was performed.
SN	See applicable analysis comment.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

AIR CHAIN OF CUSTODY RECORD

DATE: 4/23/14
PAGE: 1 OF 1

LABORATORY CLIENT: ExxonMobil/ ETIC Engineering Inc.				CLIENT PROJECT NAME / NUMBER: 70234				P.O. NO.: 4410169993							
ADDRESS: 2285 Morello Ave				PROJECT ADDRESS: Former Exxon Site 70234 - 3450 35th Avenue				LAB CONTACT OR QUOTE NO.:							
CITY: Pleasant Hill		STATE: CA		ZIP: 94523		CITY: Oakland		STATE: CA		ZIP:					
TEL: 925-602-4710		E-MAIL: jmuehleack@eticeng.com		PROJECT CONTACT: Joe Muehleack 925-602-4710 ext. 2127				14-04-1765							
TURNAROUND TIME: <input type="checkbox"/> SAME DAY <input type="checkbox"/> 24 HR <input type="checkbox"/> 48 HR <input type="checkbox"/> 72 HR <input type="checkbox"/> 5 DAYS <input checked="" type="checkbox"/> 10 DAYS								SAMPLER(S): (NAME / SIGNATURE): <i>Christopher Mitchell / [Signature]</i>				REQUESTED ANALYSES <div style="display: flex; justify-content: space-around; font-size: small;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH-g (TO-3M)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">BTEX, 5 olys, naphthalene (TO-15M)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Carbon dioxide, oxygen, methane, and helium (as a leak detection compound)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">naphthalene (TO-17)</div> </div>			
SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY) <input checked="" type="checkbox"/> EDD GLOBAL ID T06019757161															
SPECIAL INSTRUCTIONS: Provide EDF. Email to: jmuehleack@eticeng.com; eticlabreports@eticeng.com															

LAB USE ONLY	SAMPLE ID	FIELD ID / POINT OF COLLECTION	Air Type	Sampling Equipment			Start Sampling Information			Stop Sampling Information			TPH-g (TO-3M)	BTEX, 5 olys, naphthalene (TO-15M)	Carbon dioxide, oxygen, methane, and helium (as a leak detection compound)	naphthalene (TO-17)
			(I) Indoor (SV) Soil Vap. (A) Ambient	Canister ID #	Canister Size 6L or 1L	Flow Controller ID #	Date	Time (24 hr clock)	Canister Pressure ("Hg)	Date	Time (24 hr clock)	Canister Pressure ("Hg)				
1	V1	V1	SOIL VAPOR	LC408	1	SGM248	4/23/14	1650	-30	4/23/14	1655	-5	X	X	X	
2	V2	V2	SOIL VAPOR	LC640	1	SGM300	4/23/14	1522	-30	4/23/14	1527	-7	X	X	X	
3	V3	V3	SOIL VAPOR	SLC011	1	SGM125	4/23/14	1417	-30	4/23/14	1422	-5	X	X	X	
4	V4	V4	SOIL VAPOR	LC360	1	SGM356	4/23/14	1043	-31	4/23/14	1048	-5	X	X	X	
5	V5	V5	SOIL VAPOR	LC435	1	SGM238	4/23/14	1217	-34	4/23/14	1222	-7	X	X	X	
6	V5 dup	V5 dup	SOIL VAPOR	LC575	1	SGM100	4/23/14	1217	-30	4/23/14	1222	-4	X	X	X	
7																
8																
9																
10																
11																
12																
13																
14																
15																

Relinquished by: (Signature) <i>[Signature]</i>				Received by: (Signature) <i>[Signature]</i> CEL				Date: <u>4/23/14</u>		Time: <u>13:40</u>	
Relinquished by: (Signature) <i>[Signature]</i> to (SU) 4/23/14 1730				Received by: (Signature) <i>[Signature]</i> 1. ca				Date: <u>4/24/14</u>		Time: <u>1015</u>	
Relinquished by: (Signature)				Received by: (Signature)				Date:		Time:	

		< WebShip > > > > 800-322-5555 www.gso.com	
Ship From: ALAN KEMP CAL SCIENCE- CONCORD 5063 COMMERCIAL CIRCLE #H CONCORD, CA 94520		Tracking #: 524475557 	NPS
Ship To: SAMPLE RECEIVING CEL 7440 LINCOLN WAY GARDEN GROVE, CA 92841		ORC GARDEN GROVE	
COD: \$0.00		D92843A  23668968	
Reference: ETIC			
Delivery Instructions:			
Signature Type: SIGNATURE REQUIRED			

Print Date : 04/23/14 14:27 PM

1765

Package 1 of 1

Send Label To Printer	<input checked="" type="checkbox"/> Print All	Edit Shipment	Finish
-----------------------	---	---------------	--------

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

STEP 1 - Use the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.

STEP 2 - Fold this page in half.

STEP 3 - Securely attach this label to your package, do not cover the barcode.

STEP 4 - Request an on-call pickup for your package, if you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

ADDITIONAL OPTIONS:

Send Label Via Email	Create Return Label
----------------------	---------------------

TERMS AND CONDITIONS:

By giving us your shipment to deliver, you agree to all the service terms and conditions described in this section.

Our liability for loss or damage to any package is limited to your actual damages or \$100 whichever is less, unless you pay for and declare a higher authorized value. If you declare a higher value and pay the additional charge, our liability will be the lesser of your declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, whether direct, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had knowledge that such damage might be incurred including but not limited to loss of income or profit. We will not be liable for your acts or omissions, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of public enemies, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Package is \$500. For other shipments the highest declared value is \$10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is \$500. Items of "extraordinary value" include, but are not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.

WORK ORDER #: **14-04-** 1 7 6 5

SAMPLE RECEIPT FORM

 Cooler 0 of 0

 CLIENT: ETIC

 DATE: 04/24/14
TEMPERATURE: Thermometer ID: SC2 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

 Temperature _____ °C - 0.3 °C (CF) = _____ °C ☐ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

 Ambient Temperature: ☒ Air ☐ Filter

 Checked by: 876
CUSTODY SEALS INTACT:
☐ Cooler ☒ Box ☐ No (Not Intact) ☐ Not Present ☐ N/A Checked by: 876
☐ Sample ☐ _____ ☐ No (Not Intact) ☒ Not Present Checked by: 652
SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------

☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.

☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.

Sampler's name indicated on COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------------------	-------------------------------------	--------------------------	--------------------------

Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------

Sample container(s) intact and good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------

Proper containers and sufficient volume for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	-------------------------------------	--------------------------	--------------------------

Analyses received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	-------------------------------------	--------------------------	--------------------------

☐ Aqueous samples received within 15-minute holding time

<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfides <input type="checkbox"/> Dissolved Oxygen.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
---	--------------------------	--------------------------	-------------------------------------

Proper preservation noted on COC or sample container.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
---	--------------------------	--------------------------	-------------------------------------

☐ Unpreserved vials received for Volatiles analysis

Volatile analysis container(s) free of headspace.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
---	--------------------------	--------------------------	-------------------------------------

Tedlar bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
---	--------------------------	--------------------------	-------------------------------------

CONTAINER TYPE:

 Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (____) ☐ EnCores® ☐ TerraCores® ☐ _____

 Aqueous: ☐ VOA ☐ VOA_h ☐ VOAn₂ ☐ 125AGB ☐ 125AGB_h ☐ 125AGB_p ☐ 1AGB ☐ 1AGBn₂ ☐ 1AGBs

☐ 500AGB ☐ 500AGJ ☐ 500AGJs ☐ 250AGB ☐ 250CGB ☐ 250CGBs ☐ 1PB ☐ 1PBna ☐ 500PB

☐ 250PB ☐ 250PBn ☐ 125PB ☐ 125PBznna ☐ 100PJ ☐ 100PJna ☐ _____ ☐ _____ ☐ _____

 Air: ☐ Tedlar® ☒ Canister Other: ☐ _____ Trip Blank Lot#: _____ Labeled/Checked by: 652

 Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope Reviewed by: 876

 Preservative: h: HCL n: HNO₃ na₂: Na₂S₂O₃ na: NaOH p: H₃PO₄ s: H₂SO₄ u: Ultra-pure.znna: ZnAc₂+NaOH f: Filtered Scanned by: 876

Appendix G

Waste Disposal Documentation

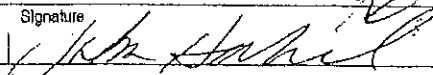
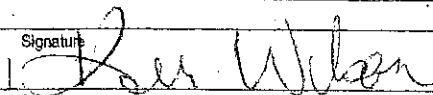
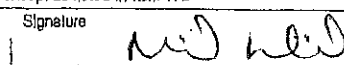
911233-4

NON-HAZARDOUS WASTE MANIFEST		1. Generator ID Number N/A	2. Page 1 of 1	3. Emergency Response Phone 800-675-1055	4. Waste Tracking Number 05122014A
5. Generator's Name and Mailing Address Exxon Mobil Oil Corporation (70234) 2555 W. 190TH Street, #1105 Torrance, CA 90504 USA Generator's Phone: 310-212-2956-32			Generator's Site Address (if different than mailing address) 3450 85th Ave Oakland, CA 94604 USA		
6. Transporter 1 Company Name DILLARD ENVIRONMENTAL SERVICES			U.S. EPA ID Number CAD982523433		
7. Transporter 2 Company Name			U.S. EPA ID Number		
8. Designated Facility Name and Site Address US ECOLOG CORPORATION HIGHWAY 95 - 12 MILES SOUTH OF BEATTY BEATTY, NV 89333 USA Facility's Phone: 600-239-3243			U.S. EPA ID Number NV1350010000		
9. Waste Shipping Name and Description		10. Containers		11. Total Quantity	12. Unit Wt/Vol.
1. Non-Hazardous Waste Solid (Soil Cuttings)		No.	Type	800	P
2.					
3.					
4.					
13. Special Handling Instructions and Additional Information DES JOB #911-233 RE: 2X55DM ON BEHALF OF EXXON MOBIL OIL CORPORATION					
14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.					
Generator's/Offeror's Printed/Typed Name JOHN HABERLAND Signature Month Day Year					
15. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: Date leaving U.S.:					
16. Transporter Acknowledgment of Receipt of Materials					
Transporter 1 Printed/Typed Name KEN WILSON Signature Month Day Year					
Transporter 2 Printed/Typed Name Signature Month Day Year					
17. Discrepancy					
17a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection					
17b. Alternate Facility (or Generator) Manifest Reference Number: U.S. EPA ID Number					
Facility's Phone:					
17c. Signature of Alternate Facility (or Generator) Month Day Year					
18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a					
Printed/Typed Name Amber Park Signature Month Day Year					

169-BLC-O 5 11977 (Rev. 9/09)

DESIGNATED FACILITY TO GENERATOR

MAY 20 2014

NON-HAZARDOUS WASTE MANIFEST		1. Generator ID Number N/A	2. Page 1 of 1	3. Emergency Response Phone 800-675-1056	4. Waste Tracking Number 05092014A
5. Generator's Name and Mailing Address Exxon Mobil Oil Corporation (70234) 2555 W. 190TH Street, #1106 Torrance, CA 90504 USA			Generator's Site Address (if different than mailing address) 3450 35th Ave Oakland, CA 94604 USA		
Generator's Phone: 310-212-2938-32					
6. Transporter 1 Company Name DILLARD ENVIRONMENTAL SERVICES			U.S. EPA ID Number CAD982523433		
7. Transporter 2 Company Name			U.S. EPA ID Number		
8. Designated Facility Name and Site Address INSTRAT INC. 1105 AIRPORT DRIVE RIO VISTA, CA 94571			U.S. EPA ID Number		
Facility's Phone: 520-753-1829					
9. Waste Shipping Name and Description		10. Containers		11. Total Quantity	12. Unit WL/Vol.
		No.	Type		
1. Non Hazardous Waste Liquid (Monitoring Well) Purge Water		2 3	DM	150	G
2.					
3.					
4.					
13. Special Handling Instructions and Additional Information DES JOB # 911- 233 3xSS DM1 ON BEHALF OF EXXONMOBIL OIL CORPORATION					
14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.					
Generator's/Offor's Printed/Typed Name JOHN HABERLAND			Signature 		Month Day Year / /
15. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: Date leaving U.S.:					
16. Transporter Acknowledgment of Receipt of Materials					
Transporter 1 Printed/Typed Name KEN WILSON			Signature 		Month Day Year 5/9/14
Transporter 2 Printed/Typed Name			Signature		Month Day Year
17. Discrepancy					
17a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection					
Manifest Reference Number:					
17b. Alternate Facility (or Generator) U.S. EPA ID Number					
Facility's Phone:					
17c. Signature of Alternate Facility (or Generator) Month Day Year					
18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a					
Printed/Typed Name MICHAEL WHITEHEAD			Signature 		Month Day Year 5/21/14

MAY 21 2014