

Final First Quarter 2013 - Quarterly Groundwater Monitoring Report Inside Tunnel Wells

**Red Hill Bulk Fuel Storage Facility
Joint Base Pearl Harbor-Hickam, Oahu, Hawaii**

**DOH Facility ID: 9-102271
DOH Release ID: 990051, 010011, and 020028**

April 2013

**Department of the Navy
Naval Facilities Engineering Command, Hawaii
400 Marshall Road
JBPHH HI 96860-3139**



Contract Number N62742-12-D-1853, CTO 0002

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Prepared for:



**Department of the Navy
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400 Marshall Road
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Prepared by:

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Prepared under:

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FINAL
FIRST QUARTER 2013 - QUARTERLY GROUNDWATER MONITORING REPORT
INSIDE TUNNEL WELLS
RED HILL BULK FUEL STORAGE FACILITY

Long-Term Groundwater and Soil Vapor Monitoring
 Red Hill Bulk Fuel Storage Facility
 Joint-Base Pearl Harbor-Hickam, Oahu, Hawaii

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ACRONYMS AND ABBREVIATIONS

| ACRONYMS/ ABBREVIATIONS | DEFINITION/MEANING |
|----------------------------|--|
| % | percent |
| bgs | below ground surface |
| COPC | Contaminant of Potential Concern |
| DLNR | State of Hawaii Department of Land and Natural Resources |
| DOH | State of Hawaii Department of Health |
| DON | Department of the Navy |
| EAL | Environmental Action Level |
| EPA | Environmental Protection Agency |
| ESI | Environmental Science International |
| F-76 | Marine Diesel Fuel |
| ID | Identification |
| JBPHH | Joint Base Pearl Harbor-Hickam |
| JP-5 | Jet Fuel Propellant-5 |
| JP-8 | Jet Fuel Propellant-8 |
| LCS | Laboratory Control Sample |
| LCSD | Laboratory Control Sample Duplicate |
| LOD | Limit of Detection |
| LOQ | Limit of Quantitation |
| µg/L | micrograms per Liter |
| MS | Matrix Spike |
| MSD | Matrix Spike Duplicate |
| NAVFAC | Naval Facilities Engineering Command |
| NAVSUP FLC | Naval Supply Systems Command Fleet Logistics Center |
| PAH | Polycyclic Aromatic Hydrocarbons |
| PARCCS | Precision, Accuracy, Representativeness, Completeness, Comparability, and Sensitivity |
| pH | hydrogen activity |
| RHSF | Red Hill Bulk Fuel Storage Facility |
| RPD | Relative Percent Difference |
| SAP | Sampling and Analysis Plan |
| TEC | The Environmental Company, Inc. |
| TPH | Total Petroleum Hydrocarbons |
| TPH-d | Total Petroleum Hydrocarbons as diesel |
| TPH-g | Total Petroleum Hydrocarbons as gasoline |
| U.S. | United States of America |
| UST | Underground Storage Tank |
| VOC | Volatile Organic Compound |
| WP | Work Plan |

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EXECUTIVE SUMMARY

This quarterly groundwater monitoring report presents the results of the first quarter 2013 groundwater sampling conducted on January 28 to 29 and February 4, 2013, at the Red Hill Bulk Fuel Storage Facility [RHSF], Joint Base Pearl Harbor-Hickam [JBPHH], Hawaii. The RHSF is located in Halawa Heights on the Island of Oahu. There are 18 active and 2 inactive Underground Storage Tanks [USTs] located at the RHSF. The State of Hawaii Department of Health [DOH] Facility Identification [ID] number is 9-102271. The DOH Release ID numbers are 990051, 010011, and 020028.

The groundwater sampling was conducted as part of the long-term groundwater and soil vapor monitoring at the RHSF, under Naval Facilities Engineering Command [NAVFAC] Contract Number N62742-12-D-1853. The sampling was conducted in accordance with the approved Work Plan [WP]/Sampling and Analysis Plan [SAP] prepared by Environmental Science International [ESI].

On January 28 to 29 and February 4, 2013, ESI personnel collected groundwater samples from five monitoring wells at the RHSF (wells RHMW01, RHMW02, RHMW03, RHMW05, and RHMW2254-01). A summary of the analytical results is provided below.

- **RHMW01** – Total Petroleum Hydrocarbons as diesel [TPH-d] (79 micrograms per liter [$\mu\text{g/L}$]), Total Petroleum Hydrocarbons as gasoline [TPH-g] (13 $\mu\text{g/L}$), naphthalene (0.10 $\mu\text{g/L}$), and dissolved lead (0.846 $\mu\text{g/L}$) were detected. None of the chemical constituents analyzed for were detected at concentrations above the DOH Environmental Action Levels [EALs].
- **RHMW02** – TPH-d (1,700 $\mu\text{g/L}$), TPH-g (660 $\mu\text{g/L}$), acenaphthene (0.57 $\mu\text{g/L}$), fluorene (0.3 $\mu\text{g/L}$), 1-methylnaphthalene (47 $\mu\text{g/L}$), 2-methylnaphthalene (35 $\mu\text{g/L}$), naphthalene (110 $\mu\text{g/L}$), ethylbenzene (0.21 $\mu\text{g/L}$), and xylenes (0.65 $\mu\text{g/L}$) were detected. TPH-d, TPH-g, 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene were detected at concentrations above the DOH EALs for both drinking water toxicity and gross contamination.
- **RHMW03** – TPH-d (59 $\mu\text{g/L}$), 1-methylnaphthalene (0.10 $\mu\text{g/L}$), 2-methylnaphthalene (0.069 $\mu\text{g/L}$), and naphthalene (0.32 $\mu\text{g/L}$) were detected. None of the chemical constituents analyzed for were detected at concentrations above the DOH EALs.
- **RHMW05** – TPH-d (62 $\mu\text{g/L}$) and naphthalene (0.075 $\mu\text{g/L}$) were detected. None of the chemical constituents analyzed for were detected at concentrations above the DOH EALs.
- **RHMW2254-01** – TPH-g (22 $\mu\text{g/L}$), naphthalene (0.052 $\mu\text{g/L}$), and total lead (0.242 $\mu\text{g/L}$) were detected. None of the chemical constituents analyzed for were detected at concentrations above the DOH EALs.

Since the wells were last sampled (October 2012), groundwater contaminant concentrations in four wells (RHMW01, RHMW03, RHMW05, and RHMW2254-01) remained at low concentrations and did not change significantly, or were not detected. Only the groundwater samples from RHMW02 showed concentrations of Contaminants of Potential Concern [COPCs] exceeding the DOH EALs. TPH-d concentrations detected in the sample collected from well RHMW02 are consistent with previous analytical data. 1-Methylnaphthalene, 2-methylnaphthalene, and naphthalene concentrations have increased since the last sampling event; however, elevated concentrations have been detected in groundwater samples collected during past sampling events. TPH-g concentrations increased since the last sampling event, and is the highest concentration since routine groundwater sampling was initiated in 2005.

With the exception of TPH-g, concentrations of COPCs in well RHMW02 have not changed significantly. The COPCs TPH-d, 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene concentrations have been decreasing over the long-term. However, 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene have increased since April 2012.

Based on the results of the groundwater monitoring, ESI recommends continuing the groundwater monitoring program at the RHSF. If TPH-g concentrations in Well RHMW02 continue to increase, we recommend increasing monitoring frequency to monthly in accordance with the RHSF Groundwater Protection Plan.

SECTION 1 – INTRODUCTION

This quarterly groundwater monitoring report presents the results of the first quarter 2013 groundwater sampling conducted on January 28 to 29 and February 4, 2013, at the RHSF, JBPHH. The RHSF is located in Halawa Heights on the Island of Oahu. The purpose of the sampling is to (1) assess the condition of groundwater beneath the RHSF with respect to chemical constituents associated with jet fuel propellant and marine diesel fuel, and (2) to ensure the Navy remains in compliance with DOH UST release response requirements as described in Hawaii Administrative Rules 11-281 Subchapter 7, Release Response Action. The DOH Facility ID number for the RHSF is 9-102271. The DOH Release ID numbers are 990051, 010011, and 020028.

The groundwater sampling was conducted as part of the long-term groundwater and soil vapor monitoring at the RHSF, under NAVFAC Contract Number N62742-12-D-1853. The sampling was conducted in accordance with the approved WP/SAP prepared by ESI (ESI, 2012).

1.1 SITE DESCRIPTION

The RHSF is located on federal government land (zoned F1- Military and Federal), located in Halawa Heights, approximately 2.5 miles northeast of Pearl Harbor (Figure 1). It is located on a low ridge on the western edge of the Koolau Mountain Range that divides Halawa Valley from Moanalua Valley. The RHSF is bordered on the north by Halawa Correctional Facility and private businesses, on the west by the United States of America [U.S.] Coast Guard reservation, on the south by residential neighborhoods, and on the east by Moanalua Valley. A quarry is located less than a quarter mile away to the northwest. The RHSF occupies 144 acres of land and the majority of the site is at an elevation of approximately 200 to 500 feet above mean sea level.

The RHSF contains 18 active and 2 inactive USTs that are operated by Naval Supply Systems Command Fleet Logistics Center [NAVSUP FLC] Pearl Harbor (formerly Fleet and Industrial Supply Center). Each UST has a capacity of approximately 12.5 million gallons. The RHSF is located approximately 100 feet above the basal aquifer. The USTs contain Jet Fuel Propellant-5 [JP-5], Jet Fuel Propellant-8 [JP-8], and Marine Diesel Fuel [F-76]. The current status of the USTs are summarized in Table 1.1.

Five groundwater monitoring wells (wells RHMW01, RHMW02, RHMW03, RHMW05, and RHMW2254-01) are located within the RHSF lower access tunnel (Figure 2). Two groundwater monitoring wells (wells HDMW2253-03 and OWDFMW01) are located outside of the RHSF tunnel system. (Monitoring data for the two wells located outside the tunnel are included in a separate report.)

Monitoring wells RHMW01, RHMW02, RHMW03, and RHMW05 are located inside the underground tunnels. Monitoring well RHMW2254-01 is located inside the infiltration gallery of the Department of the Navy [DON] Well 2254-01. The DON Well 2254-01 is located

approximately 2,400 feet downgradient of the USTs and provides approximately 24 percent [%] of the potable water to the Pearl Harbor System, which serves approximately 52,200 military customers. NAVFAC Public Works Department operates the infiltration gallery and DON Well 2254-01.

TABLE 1.1
Current Status of the USTs
Red Hill Bulk Fuel Storage Facility
January 2013 Quarterly Monitoring Report

| Tank Identification | Fuel Type | Status | Capacity |
|---------------------|-----------|----------|----------------------|
| F-1 | None | Inactive | 12.5 million gallons |
| F-2 | JP-8 | Active | 12.5 million gallons |
| F-3 | JP-8 | Active | 12.5 million gallons |
| F-4 | JP-8 | Active | 12.5 million gallons |
| F-5 | JP-8 | Active | 12.5 million gallons |
| F-6 | JP-8 | Active | 12.5 million gallons |
| F-7 | JP-5 | Active | 12.5 million gallons |
| F-8 | JP-5 | Active | 12.5 million gallons |
| F-9 | JP-5 | Active | 12.5 million gallons |
| F-10 | JP-5 | Active | 12.5 million gallons |
| F-11 | JP-5 | Active | 12.5 million gallons |
| F-12 | JP-5 | Active | 12.5 million gallons |
| F-13 | F-76 | Active | 12.5 million gallons |
| F-14 | F-76 | Active | 12.5 million gallons |
| F-15 | F-76 | Active | 12.5 million gallons |
| F-16 | F-76 | Active | 12.5 million gallons |
| F-17 | JP-5 | Active | 12.5 million gallons |
| F-18 | JP-5 | Active | 12.5 million gallons |
| F-19 | None | Inactive | 12.5 million gallons |
| F-20 | JP-5 | Active | 12.5 million gallons |

F-76 Marine Diesel Fuel
JP-5 Jet Fuel Propellant-5
JP-8 Jet Fuel Propellant-8

1.2 PHYSICAL SETTING

Climatological conditions in the area of the RHSF consist of warm to moderate temperatures and low to moderate rainfall. The RHSF is leeward of the prevailing northeasterly trade winds. The average annual precipitation is approximately 40 inches, which occurs mainly between November and April (State of Hawaii Department of Land and Natural Resources [DLNR], 1986). Annual pan evaporation is approximately 75 inches (DLNR, 1985). Average temperatures range from the low 60's to high 80's (degrees Fahrenheit) (Atlas of Hawaii, 1983).

Oahu consists of the eroded remnants of two shield volcanoes, Waianae and Koolau. The RHSF is located on the southwest flank of the Koolau volcanic shield. Lavas erupted during the shield-building phase of the volcano belong to the *Koolau Volcanic Series* (Stearns and Vaksvik, 1935). Following formation of the Koolau shield, a long period of volcanic quiescence occurred, during which the shield was deeply eroded. Following this erosional period, eruptive activity resumed. Lavas and pyroclastic material erupted during this period belong to the *Honolulu*

Volcanic Series (Stearns and Vaksvik, 1935).

In the immediate area of the RHSF, Koolau Volcanic Series lavas dominate, although there are consolidated and unconsolidated non-calcareous deposits in the vicinity that consist of alluvium generated during erosion of the Koolau volcanic shield. South-southwest of the RHSF, and in isolated exposures to the west, are pyroclastic deposits formed during eruptions from three Honolulu Volcanic Series vents, Salt Lake, Aliamanu, and Makalapa (Stearns and Vaksvik, 1935). Based on established geology and records of the drilled wells (Stearns and Vaksvik, 1938), the RHSF is underlain by Koolau Volcanic Series basalts. The area of the RHSF is classified as *Rock Land*, where 25-90% of the land surface is covered by exposed rock and there are only shallow soils (Foote, et al., 1972).

Groundwater in Hawaii exists in two principal types of aquifers. The first and most important type, in terms of drinking water resources, is the basal aquifer. The basal aquifer exists as a lens of fresh water floating on and displacing seawater within the pore spaces, fractures, and voids of the basalt that forms the underlying mass of each Hawaiian island. In parts of Oahu, groundwater in the basal aquifer is confined by the overlying caprock and is under pressure. Waters that flow freely to the surface from wells that tap the basal aquifer are referred to as *artesian*.

The second type of aquifer is the caprock aquifer, which consists of various kinds of unconfined and semi-confined groundwater. Commonly, the caprock consists of a thick sequence of nearly impermeable clays, coral, and basalt, which separates the caprock aquifer from the basal aquifer. The impermeable nature of these materials and the artesian nature of the basal aquifer severely restrict the downward migration of groundwater from the upper caprock aquifer. In the area of the RHSF, there is no discernible caprock.

Groundwater in the area of the RHSF is part of the *Waimalu Aquifer System* of the *Pearl Harbor Aquifer Sector*. The aquifer is classified as a basal, unconfined, flank-type; and is currently used as a drinking water source. The aquifer is considered fresh with less than 250 milligrams per liter of chloride and is considered an irreplaceable resource with a high vulnerability to contamination (Mink and Lau, 1990).

The nearest drinking water supply well is DON Well 2254-01, located in the infiltration gallery within the RHSF. The DON Well 2254-01 is located approximately 2,400 feet downgradient of the USTs (Figure 2).

1.3 BACKGROUND

The RHSF was constructed by the U.S. Government in the early 1940s. Twenty USTs and a series of tunnels were constructed. The USTs were constructed of steel and they currently contain JP-5, JP-8, and F-76. Several tanks in the past have stored DON special fuel oil, DON distillate, aviation gasoline, and motor gasoline (Environet, 2010). The fueling system is a self-contained underground unit that was installed into native rock comprised primarily of basalt with

some interbedded tuffs and breccias (Environet, 2010). Each UST measures approximately 245 feet in height and 100 feet in diameter. The upper domes of the tanks lie at a depth varying between 100 feet and 200 feet below ground surface [bgs].

In 1998, Earth Tech conducted a Phase II remedial investigation/feasibility study for the Oily Waste Disposal Facility located within the RHSF. The study involved installing well OWDFMW01 (which was originally MW08) (Earth Tech, 1999).

In February 2001, the DON installed groundwater monitoring well RHMW01 to monitor for contamination in the basal aquifer beneath the RHSF. Well RHMW01 was installed approximately 100 feet below grade within the lower access tunnel. The depth to water was measured at 86 feet below grade at the time of the well completion. In February 2001, a groundwater sample was collected from the well. Total Petroleum Hydrocarbons [TPH] and lead were detected in the samples. Lead was detected at a concentration above the DOH EAL (The Environmental Company, Inc. [TEC], 2009; DOH, 2000).

In 2005, the RHSF groundwater monitoring program was initiated. It involved routine groundwater sampling of wells RHMW01 and RHMW2254-01. Samples were collected in February, June, September, and December of 2005. Lead was detected at concentrations above the DOH EAL in samples collected in February and June. The samples collected in February and June were not filtered prior to analysis, whereas the samples collected in September and December were filtered prior to analysis. Since the samples collected in February and June were not filtered prior to analysis, the lead results were not considered appropriate for a risk assessment (TEC, 2008).

Between June and September 2005, TEC installed three groundwater monitoring wells (wells RHMW02, RHMW03, and RHMW04) within the RHSF (TEC, 2008). Well RHMW04 was installed upgradient of the USTs to provide background geochemistry information for water moving through the basal aquifer beneath the RHSF. Wells RHMW02 and RHMW03 were installed approximately 125 feet below grade within the RHSF lower tunnel and well RHMW04 was installed to a depth of approximately 300 feet bgs outside of the RHSF tunnels. In September 2005, groundwater samples were collected from the three newly installed groundwater monitoring wells (wells RHMW02, RHMW03, and RHMW04) along with the two existing wells (wells RHMW01 and RHMW2254-01). The COPCs with concentrations exceeding DOH EALs are summarized below.

- **RHMW01** – TPH-d was detected at concentrations above the DOH EAL.
- **RHMW02** – TPH-g, TPH-d, naphthalene, trichloroethylene, 1-methylnaphthalene, and 2-methylnaphthalene were detected at concentrations above the DOH EALs.
- **RHMW03** – TPH-d was detected at concentrations above the DOH EAL.

In 2006, TEC installed dedicated sampling pumps in the five wells (wells RHWM01, RHWM02, RHMW03, RHWM04, and RHMW2254-01). In July and December of 2006, groundwater

samples were collected from the five wells. The COPCs with concentrations exceeding DOH EALs are summarized below.

- **RHMW01** – TPH-d and naphthalene were detected at concentrations above the DOH EALs.
- **RHMW02** – TPH-g, TPH-d, and naphthalene were detected at concentrations above the DOH EALs.
- **RHMW03** – TPH-d was detected at concentrations above the DOH EAL.

In 2007, groundwater samples were collected from the four wells RHMW01, RHMW02, RHMW03, and RHMW2254-01. Samples were collected in March, June, and September of 2007. The COPCs with concentrations exceeding DOH EALs are summarized below.

- **RHMW01** – TPH-d was detected at concentrations above the DOH EAL.
- **RHMW02** – TPH-g, TPH-d, naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene were detected at concentrations above the DOH EALs.
- **RHMW03** – TPH-d was detected at concentrations above the DOH EAL.

In 2008, groundwater samples were collected from wells RHMW01, RHMW02, RHMW03, and RHMW2254-01. Samples were collected in January, April, July, and October of 2008. The COPCs with concentrations exceeding DOH EALs are summarized below. In addition, a groundwater protection plan (TEC, 2008) was prepared.

- **RHMW01** – TPH-d was detected at concentrations above the DOH EAL.
- **RHMW02** – TPH-d, naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene were detected at concentrations above the DOH EALs.
- **RHMW03** – TPH-d was detected at concentrations above the DOH EAL.

In April 2009, groundwater monitoring well RHMW05 was installed downgradient of the USTs, within the lower access tunnel between RHMW01 and RHMW2254-01. It was installed to identify the extent of contamination downgradient of the USTs. Well RHMW05 was added to the quarterly groundwater sampling program. In 2009, quarterly groundwater samples were collected from wells RHMW01, RHMW02, RHMW03, RHMW05, and RHMW2254-01. Samples were collected in February, May, July, and October of 2009. The COPCs with concentrations exceeding DOH EALs are summarized below.

- **RHMW01** – TPH-d and 1-methylnaphthalene were detected at concentrations above the DOH EAL.
- **RHMW02** – TPH-d, naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene were detected at concentrations above the DOH EALs.
- **RHMW03** – TPH-d was detected at a concentration above the DOH EAL.
- **RHMW05** – TPH-d was detected at a concentration above the DOH EAL.

In 2010, groundwater samples were collected from wells RHMW01, RHMW02, RHMW03, RHMW05, and RHMW2254-01. Samples were collected in January, April, July, and October. The COPCs with concentrations exceeding DOH EALs are summarized below.

- **RHMW01** – TPH-d was detected at concentrations above the DOH EAL.
- **RHMW02** – TPH-g, TPH-d, naphthalene, and 1-methylnaphthalene were detected at concentrations above the DOH EALs.
- **RHMW03** – TPH-d was detected at a concentration above the DOH EAL.
- **RHMW05** – TPH-d was detected at a concentration above the DOH EAL.

In 2011, quarterly groundwater samples were collected from wells RHMW01, RHMW02, RHMW03, RHMW05, and RHMW2254-01. Samples were collected in January, April, July, and October. The COPCs with concentrations exceeding DOH EALs are summarized below.

- **RHMW01** – TPH-d was detected at concentrations above the DOH EAL.
- **RHMW02** – TPH-d, naphthalene, ideno[1,2,3-cd]pyrene, and 1-methylnaphthalene were detected at concentrations above the DOH EALs.

In 2012, quarterly groundwater samples were collected from wells RHMW01, RHMW02, RHMW03, RHMW05, and RHMW2254-01. Samples were collected in February, April, July, and November. The COPCs with concentrations exceeding DOH EALs are summarized below.

- **RHMW01** – TPH-d was detected at concentrations above the DOH EAL.
- **RHMW02** – TPH-d, TPH-g, naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene were detected at concentrations above the DOH EALs.

1.3.1 Previous Reports

The following groundwater monitoring reports were previously submitted to the DOH:

1. Groundwater Sampling Report, First Quarter 2005 (submitted April 2005).
2. Groundwater Sampling Report, Second Quarter 2005 (submitted August 2005).
3. Groundwater Sampling Report, Third Quarter 2005 (submitted November 2005).
4. Groundwater Sampling Report, Fourth Quarter 2005 (submitted February 2006).
5. Groundwater Monitoring Results, July 2006 (submitted September 2006).
6. Groundwater Monitoring Results, December 2006 (submitted January 2007).
7. Groundwater Monitoring Results, March 2007 (submitted May 2007).
8. Groundwater Monitoring Results, June 2007 (submitted August 2007).

9. Groundwater Monitoring Results, September 2007 (submitted October 2007).
10. Groundwater Monitoring Report, January 2008 (submitted March 2008).
11. Groundwater Monitoring Report, April 2008 (submitted May 2008).
12. Groundwater Monitoring Report, July 2008 (submitted October 2008).
13. Groundwater Monitoring Report, October and December 2008 (submitted February 2009).
14. Groundwater Monitoring Report, February 2009 (submitted May 2009).
15. Groundwater Monitoring Report, May 2009 (submitted July 2009).
16. Groundwater Monitoring Report, July 2009 (submitted September 2009).
17. Groundwater Monitoring Report, October 2009 (submitted December 2009).
18. Groundwater Monitoring Report, January, February, and March 2010 (submitted April 2010).
19. Groundwater Monitoring Report, April 2010 (submitted May 2010).
20. Groundwater Monitoring Report, July 2010 (submitted August 2010).
21. Groundwater Monitoring Report, October 2010 (submitted December 2010).
22. Groundwater Monitoring Report, January 2011 (submitted March 2011).
23. Groundwater Monitoring Report, April 2011 (submitted June 2011).
24. Groundwater Monitoring Report, July 2011 (submitted September 2011).
25. Groundwater Monitoring Report, October 2011 (submitted December 2011).
26. Groundwater Monitoring Report, January-February 2012 (submitted March 2012).
27. Groundwater Monitoring Report, April 2012 (Submitted July 2012).
28. Groundwater Monitoring Report, October 2012 (Submitted in January 2013).

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SECTION 2 – GROUNDWATER SAMPLING

From January 28 to 29 and February 4, 2013, ESI personnel collected groundwater samples from five monitoring wells at the RHSF (wells RHMW01, RHMW02, RHMW03, RHMW05, and RHMW2254-01). The samples were collected in accordance with DOH UST release response requirements (DOH, 2000) and the RHSF Groundwater Protection Plan (TEC, 2008). Prior to purging and sampling, the depth to groundwater and the depth to the bottoms of the wells were measured using a Geotech oil/water interface probe. No measurable product, sheen, or petroleum hydrocarbon odor was detected in any of the wells.

2.1 GROUNDWATER SAMPLING

Prior to collecting groundwater samples, the monitoring wells were purged of water in the well casings. Each well contains a dedicated bladder pump which was used to purge the well and to collect samples. To operate the pump, a portable air compressor with an in-line filter was connected to a QED MP50 MicroPurge Basics Controller box, which was then connected to the pump. The compressor was turned on to power the pump and the controller was used to adjust the pumping rate to less than one liter of water per minute.

Water quality parameters were monitored on a periodic basis during well purging. The water quality parameters that were measured included hydrogen activity [pH], temperature, conductivity, dissolved oxygen, and oxidation reduction potential. The water quality parameters were evaluated to assess whether the natural characteristics of the aquifer formation water were present within the monitoring wells before collecting the samples. At least four readings were collected during the purging process. Purging was considered complete when at least three consecutive water quality measurements stabilized within approximately 10%. The readings were recorded on groundwater monitoring logs. The groundwater monitoring logs are included in Appendix A. In addition, field notes were taken to document the sampling event. The field notes are included in Appendix B.

When the water quality parameters stabilized, groundwater samples were collected from the wells using the bladder pumps. The groundwater samples were collected no more than two hours after purging was completed to decrease groundwater interaction with the monitoring well casing and atmosphere. Prior to collecting the sample, the water level in the monitoring wells was measured and recorded to ensure that water was not drawn down. The groundwater samples were collected at a flow rate of approximately 0.06 to 0.5 liters per minute. Samples collected for dissolved lead analysis were filtered in the field using 0.45 micron filters.

2.2 ANALYTICAL RESULTS

The samples were analyzed for TPH-d using U.S. Environmental Protection Agency [EPA] Method 8015M, TPH-g and Volatile Organic Compounds [VOCs] using EPA Method 8260B, Polycyclic Aromatic Hydrocarbons [PAHs] using EPA Method 8270C SIM, dissolved lead using EPA Method 6020, and total lead using EPA Method 200.8. The sample collected from well

RHMW2254-01 was analyzed for total lead (unfiltered) as DON Well 2254-01 is a drinking water supply well. The analytical results are summarized below and in Table 2.1. A copy of the laboratory report is included in Appendix C.

- **RHMW01** – TPH-d (79 µg/L), TPH-g (13 µg/L), naphthalene (0.10 µg/L) and dissolved lead (0.846 µg/L) were detected. None of the chemical constituents analyzed for were detected at concentrations above the DOH EALs.
- **RHMW02** – TPH-d (1,700 µg/L), TPH-g (660 µg/L), acenaphthene (0.57 µg/L), fluorene (0.30 µg/L), 1-methylnaphthalene (47 µg/L), 2-methylnaphthalene (35 µg/L), naphthalene (110 µg/L), ethylbenzene (0.21 µg/L), and xylenes (0.65 µg/L) were detected. TPH-d, TPH-g, 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene were detected at concentrations above the DOH EALs for both drinking water toxicity and gross contamination.
- **RHMW03** – TPH-d (59 µg/L), 1-methylnaphthalene (0.10 µg/L), 2-methylnaphthalene (0.069 µg/L), and naphthalene (0.32 µg/L) were detected. None of the chemical constituents analyzed for were detected at concentrations above the DOH EALs.
- **RHMW05** – TPH-d (62 µg/L) and naphthalene (0.075 µg/L) were detected. None of the chemical constituents analyzed for were detected at concentrations above the DOH EALs.
- **RHMW2254-01** – TPH-g (22 µg/L), naphthalene (0.052 µg/L), and total lead (0.242 µg/L) were detected. None of the chemical constituents analyzed for were detected at concentrations above the DOH EALs.

2.2.1 Groundwater Contaminant Trends

Historical groundwater contaminant concentration trends of COPCs that exceeded the DOH EALs are presented in Appendix D. A summary of groundwater contaminant trends are provided below.

- **RHMW01** – COPCs detected during this round of quarterly sampling were consistent with historical data. TPH-d has historically been detected at concentrations above the DOH EAL for both drinking water toxicity and gross contamination. TPH-d concentrations showed a decreasing trend from 1,500 µg/L in February 2005 to 79 µg/L in February 2013.
- **RHMW02** – TPH-d, TPH-g, 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene have historically been detected at concentrations above the DOH EALs. TPH-d concentrations show a decreasing trend from a high average of 5,420 µg/L in October 2008 to concentrations ranging from 1,500-2,200 µg/L during the last several rounds of sampling.

1-Methylnaphthalene, 2-methylnaphthalene, and naphthalene show a decreasing trend over the long-term. However, 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene have steadily increased since April 2012.

TPH-g concentrations show an increasing trend with a significant increase from 320 µg/L during the last round of sampling to 660 µg/L during this round of sampling.

- **RHMW03** – COPCs detected during this round of quarterly sampling were consistent with historical data. TPH-d has historically been detected at concentrations above the DOH EAL for both drinking water toxicity and gross contamination; however, it has not been detected at concentrations above the DOH EALs since October 2010.
- **RHMW05** – COPCs detected during this round of quarterly sampling were consistent with historical data. TPH-d has historically been detected at concentrations above the DOH EAL for both drinking water toxicity and gross contamination; however, it has not been detected at concentrations above the DOH EALs since January 2010.
- **RHMW2254-01** – COPCs detected during this round of quarterly sampling were consistent with historical data. None of the COPCs have been detected at concentrations above the DOH EALs.

Historical groundwater contaminants concentrations above the DOH EALs for both drinking water toxicity and gross contamination are presented in Appendix D.

2.3 WASTE DISPOSAL

The purged groundwater and decontamination water generated during sampling of the inside tunnel wells was stored in a 55-gallon drum along with the purged water and decontamination water from the outside tunnel wells. The water was disposed of following receipt of the analytical results for the outside tunnel wells. The drum was stored onsite at Adit 3. On February 26, 2013, the drum of water was picked up by Pacific Commercial Services, LLC, and disposed of at Unitek Solvent Services, Inc. The waste disposal manifest is included in Appendix E.

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TABLE 2.1
Analytical Results for Groundwater Sampling (January 28 to 29 and February 4, 2013)
Red Hill Bulk Fuel Storage Facility
January 2013 Quarterly Monitoring Report

| Method | Chemical | DOH EALs | | RHMW2254-01 (ES 014) | | | | | RHMW01 (ES010) | | | | | RHMW02 (ES011) | | | | | RHMW03 (ES013) | | | | | RHMW05 (ES015) | | | | | |
|-----------|--|-------------------------|---------------------|----------------------|-------------|-----|------|-------|----------------|-------------|-----|------|-------|----------------|------|-------------|------|-------|----------------|------|-------------|------|-------|----------------|------|-------------|------|-------|----|
| | | Drinking Water Toxicity | Gross Contamination | Results | Q | LOQ | LOD | DL | Results | Q | LOQ | LOD | DL | Results | Q | LOQ | LOD | DL | Results | Q | LOQ | LOD | DL | Results | Q | LOQ | LOD | DL | |
| EPA 8015B | TPH-d | 190 | 100 | 22 | HD,J | 56 | 22 | 16 | 79 | | 54 | 22 | 16 | 1,700 | HD | 56 | 22 | 16 | 59 | HD | 56 | 22 | 16 | 62 | HD | 56 | 22 | 16 | |
| EPA 8260B | TPH-g | 100 | 100 | N.D. | U | 50 | 30 | 13 | 13 | J | 50 | 30 | 13 | 660 | | 50 | 30 | 13 | N.D. | | 50 | 30 | 13 | N.D. | | 50 | 30 | 13 | |
| EPA 8270B | Acenaphthene | 370 | 20 | N.D. | U | 0.2 | 0.05 | 0.021 | N.D. | U | 0.2 | 0.05 | 0.021 | 0.57 | | 0.2 | 0.05 | 0.021 | N.D. | | 0.2 | 0.05 | 0.021 | N.D. | | 0.2 | 0.05 | 0.021 | |
| | Acenaphthylene | 240 | 2,000 | N.D. | U | 0.2 | 0.05 | 0.018 | N.D. | U | 0.2 | 0.05 | 0.018 | N.D. | U | 0.2 | 0.05 | 0.018 | N.D. | U | 0.2 | 0.05 | 0.018 | N.D. | U | 0.2 | 0.05 | 0.018 | |
| | Anthracene | 1,800 | 22 | N.D. | U | 0.2 | 0.05 | 0.034 | N.D. | U | 0.2 | 0.05 | 0.034 | N.D. | U | 0.2 | 0.05 | 0.034 | N.D. | U | 0.2 | 0.05 | 0.034 | N.D. | U | 0.2 | 0.05 | 0.034 | |
| | Benzo[a]anthracene | 0.092 | 4.7 | N.D. | U | 0.2 | 0.05 | 0.024 | N.D. | U | 0.2 | 0.05 | 0.024 | N.D. | U | 0.2 | 0.05 | 0.024 | N.D. | U | 0.2 | 0.05 | 0.024 | N.D. | U | 0.2 | 0.05 | 0.024 | |
| | Benzo[g,h,i]perylene | 1,500 | 0.13 | N.D. | U | 0.2 | 0.05 | 0.022 | N.D. | U | 0.2 | 0.05 | 0.022 | N.D. | U | 0.2 | 0.05 | 0.022 | N.D. | U | 0.2 | 0.05 | 0.022 | N.D. | U | 0.2 | 0.05 | 0.022 | |
| | Benzo[a]pyrene | 0.2 | 0.81 | N.D. | U | 0.2 | 0.05 | 0.036 | N.D. | U | 0.2 | 0.05 | 0.036 | N.D. | U | 0.2 | 0.05 | 0.036 | N.D. | U | 0.2 | 0.05 | 0.036 | N.D. | U | 0.2 | 0.05 | 0.036 | |
| | Benzo[b]fluoranthene | 0.092 | 0.75 | N.D. | U | 0.2 | 0.05 | 0.025 | N.D. | U | 0.2 | 0.05 | 0.025 | N.D. | U | 0.2 | 0.05 | 0.025 | N.D. | U | 0.2 | 0.05 | 0.025 | N.D. | U | 0.2 | 0.05 | 0.025 | |
| | Benzo[k]fluoranthene | 0.92 | 0.4 | N.D. | U | 0.2 | 0.05 | 0.023 | N.D. | U | 0.2 | 0.05 | 0.023 | N.D. | U | 0.2 | 0.05 | 0.023 | N.D. | U | 0.2 | 0.05 | 0.023 | N.D. | U | 0.2 | 0.05 | 0.023 | |
| | Chrysene | 9.2 | 1 | N.D. | U | 0.2 | 0.05 | 0.019 | N.D. | U | 0.2 | 0.05 | 0.019 | N.D. | U | 0.2 | 0.05 | 0.019 | N.D. | U | 0.2 | 0.05 | 0.019 | N.D. | U | 0.2 | 0.05 | 0.019 | |
| | Dibenzo[a,h]anthracene | 0.0092 | 0.52 | N.D. | U | 0.2 | 0.05 | 0.027 | N.D. | U | 0.2 | 0.05 | 0.027 | N.D. | U | 0.2 | 0.05 | 0.027 | N.D. | U | 0.2 | 0.05 | 0.027 | N.D. | U | 0.2 | 0.05 | 0.027 | |
| | Fluoranthene | 1,500 | 130 | N.D. | U | 0.2 | 0.05 | 0.027 | N.D. | U | 0.2 | 0.05 | 0.027 | N.D. | U | 0.2 | 0.05 | 0.027 | N.D. | U | 0.2 | 0.05 | 0.027 | N.D. | U | 0.2 | 0.05 | 0.027 | |
| | Fluorene | 240 | 950 | N.D. | U | 0.2 | 0.05 | 0.024 | N.D. | U | 0.2 | 0.05 | 0.024 | 0.30 | | 0.2 | 0.05 | 0.024 | N.D. | U | 0.2 | 0.05 | 0.024 | N.D. | U | 0.2 | 0.05 | 0.024 | |
| | Indeno[1,2,3-cd]pyrene | 0.092 | 0.095 | N.D. | U | 0.2 | 0.05 | 0.022 | N.D. | U | 0.2 | 0.05 | 0.022 | N.D. | U | 0.2 | 0.05 | 0.022 | N.D. | U | 0.2 | 0.05 | 0.022 | N.D. | U | 0.2 | 0.05 | 0.022 | |
| | 1-Methylnaphthalene | 4.7 | 10 | N.D. | U | 0.2 | 0.05 | 0.028 | N.D. | U | 0.2 | 0.05 | 0.028 | 47 | | 5 | 1.2 | 0.71 | 0.10 | J | 0.2 | 0.05 | 0.028 | N.D. | U | 0.2 | 0.05 | 0.028 | |
| | 2-Methylnaphthalene | 24 | 10 | N.D. | U | 0.2 | 0.05 | 0.026 | N.D. | U | 0.2 | 0.05 | 0.026 | 35 | | 5 | 1.2 | 0.66 | 0.069 | J | 0.2 | 0.05 | 0.026 | N.D. | U | 0.2 | 0.05 | 0.026 | |
| | Naphthalene | 17 | 21 | 0.052 | J | 0.2 | 0.05 | 0.023 | 0.10 | J | 0.2 | 0.05 | 0.023 | 110 | | 5 | 1.2 | 0.57 | 0.32 | | 0.2 | 0.05 | 0.023 | 0.075 | J | 0.2 | 0.05 | 0.023 | |
| | Phenanthrene | 240 | 410 | N.D. | U | 0.2 | 0.05 | 0.031 | N.D. | U | 0.2 | 0.05 | 0.031 | N.D. | U | 0.2 | 0.05 | 0.031 | N.D. | U | 0.2 | 0.05 | 0.031 | N.D. | U | 0.2 | 0.05 | 0.031 | |
| | Pyrene | 180 | 68 | N.D. | U | 0.2 | 0.05 | 0.025 | N.D. | U | 0.2 | 0.05 | 0.025 | N.D. | U | 0.2 | 0.05 | 0.025 | N.D. | U | 0.2 | 0.05 | 0.025 | N.D. | U | 0.2 | 0.05 | 0.025 | |
| EPA 8260B | 1,1,1-Trichloroethane | 200 | 970 | N.D. | U | 5 | 0.5 | 0.3 | N.D. | U | 5 | 0.5 | 0.3 | N.D. | U | 5 | 0.5 | 0.3 | N.D. | U | 5 | 0.5 | 0.3 | N.D. | U | 5 | 0.5 | 0.3 | |
| | 1,1,2-Trichloroethane | 5 | 50,000 | N.D. | U | 1 | 0.5 | 0.38 | N.D. | U | 1 | 0.5 | 0.38 | N.D. | U | 1 | 0.5 | 0.38 | N.D. | U | 1 | 0.5 | 0.38 | N.D. | U | 1 | 0.5 | 0.38 | |
| | 1,1-Dichloroethane | 2.4 | 50,000 | N.D. | U | 5 | 0.5 | 0.28 | N.D. | U | 5 | 0.5 | 0.28 | N.D. | U | 5 | 0.5 | 0.28 | N.D. | U | 5 | 0.5 | 0.28 | N.D. | U | 5 | 0.5 | 0.28 | |
| | 1,1-Dichloroethylene | 7 | 1,500 | N.D. | U | 1 | 0.5 | 0.431 | N.D. | U | 1 | 0.5 | 0.431 | N.D. | U | 1 | 0.5 | 0.431 | N.D. | U | 1 | 0.5 | 0.431 | N.D. | U | 1 | 0.5 | 0.431 | |
| | 1,2,3-Trichloropropane | 0.6 | 50,000 | N.D. | U | 5 | 1 | 0.64 | N.D. | U | 5 | 1 | 0.64 | N.D. | U | 5 | 1 | 0.64 | N.D. | U | 5 | 1 | 0.64 | N.D. | U | 5 | 1 | 0.64 | |
| | 1,2,4-Trichlorobenzene | 70 | 3,000 | N.D. | U | 5 | 1 | 0.5 | N.D. | U | 5 | 1 | 0.5 | N.D. | U | 5 | 1 | 0.5 | N.D. | U | 5 | 1 | 0.5 | N.D. | U | 5 | 1 | 0.5 | |
| | 1,2-Dibromo-3-chloropropane | 0.04 | 10 | N.D. | U | 10 | 5 | 1.2 | N.D. | U | 10 | 5 | 1.2 | N.D. | U | 10 | 5 | 1.2 | N.D. | U | 10 | 5 | 1.2 | N.D. | U | 10 | 5 | 1.2 | |
| | 1,2-Dibromoethane | 0.04 | 50,000 | N.D. | U | 1 | 0.5 | 0.36 | N.D. | U | 1 | 0.5 | 0.36 | N.D. | U | 1 | 0.5 | 0.36 | N.D. | U | 1 | 0.5 | 0.36 | N.D. | U | 1 | 0.5 | 0.36 | |
| | 1,2-Dichlorobenzene | 600 | 10 | N.D. | U | 1 | 0.5 | 0.46 | N.D. | U | 1 | 0.5 | 0.46 | N.D. | U | 1 | 0.5 | 0.46 | N.D. | U | 1 | 0.5 | 0.46 | N.D. | U | 1 | 0.5 | 0.46 | |
| | 1,2-Dichloroethane | 0.15 | 7,000 | N.D. | U | 1 | 0.5 | 0.24 | N.D. | U | 1 | 0.5 | 0.24 | N.D. | U | 1 | 0.5 | 0.24 | N.D. | U | 1 | 0.5 | 0.24 | N.D. | U | 1 | 0.5 | 0.24 | |
| | 1,2-Dichloropropane | 5 | 10 | N.D. | U | 5 | 0.5 | 0.42 | N.D. | U | 5 | 0.5 | 0.42 | N.D. | U | 5 | 0.5 | 0.42 | N.D. | U | 5 | 0.5 | 0.42 | N.D. | U | 5 | 0.5 | 0.42 | |
| | 1,3-Dichlorobenzene | 180 | 5 | N.D. | U | 1 | 0.5 | 0.4 | N.D. | U | 1 | 0.5 | 0.4 | N.D. | U | 1 | 0.5 | 0.4 | N.D. | U | 1 | 0.5 | 0.4 | N.D. | U | 1 | 0.5 | 0.4 | |
| | 1,3-Dichloropropene (total of cis/trans) | 0.43 | 50,000 | N.D. | U | 1 | 0.5 | 0.25 | N.D. | U | 1 | 0.5 | 0.25 | N.D. | U | 1 | 0.5 | 0.25 | N.D. | U | 1 | 0.5 | 0.25 | N.D. | U | 1 | 0.5 | 0.25 | |
| | 1,4-Dichlorobenzene | 75 | 5 | N.D. | U | 1 | 0.5 | 0.43 | N.D. | U | 1 | 0.5 | 0.43 | N.D. | U | 1 | 0.5 | 0.43 | N.D. | U | 1 | 0.5 | 0.43 | N.D. | U | 1 | 0.5 | 0.43 | |
| | Acetone | 22,000 | 20,000 | N.D. | I,J, ICH, U | 20 | 10 | 10 | N.D. | I,J, ICH, U | 20 | 10 | 10 | 6 | N.D. | I,J, ICH, U | 20 | 10 | 10 | N.D. | I,J, ICH, U | 20 | 10 | 10 | N.D. | I,J, ICH, U | 20 | 10 | 10 |
| | Benzene | 5 | 170 | N.D. | U | 1 | 0.5 | 0.14 | N.D. | U | 1 | 0.5 | 0.14 | N.D. | U | 1 | 0.5 | 0.14 | N.D. | U | 1 | 0.5 | 0.14 | N.D. | U | 1 | 0.5 | 0.14 | |
| | Bromodichloromethane | 0.12 | 50,000 | N.D. | U | 5 | 0.5 | 0.21 | N.D. | U | 5 | 0.5 | 0.21 | N.D. | U | 5 | 0.5 | 0.21 | N.D. | U | 5 | 0.5 | 0.21 | N.D. | U | 5 | 0.5 | 0.21 | |
| | Bromoform | 80 | 510 | N.D. | U | 10 | 1 | 0.5 | N.D. | U | 10 | 1 | 0.5 | N.D. | U | 10 | 1 | 0.5 | N.D. | U | 10 | 1 | 0.5 | N.D. | U | 10 | 1 | 0.5 | |
| | Bromomethane | 8.7 | 50,000 | N.D. | U | 20 | 5 | 3.9 | N.D. | U | 20 | 5 | 3.9 | N.D. | U | 20 | 5 | 3.9 | N.D. | U | 20 | 5 | 3.9 | N.D. | U | 20 | 5 | 3.9 | |
| | Carbon Tetrachloride | 5 | 520 | N.D. | U | 1 | 0.5 | 0.23 | N.D. | U | 1 | 0.5 | 0.23 | N.D. | U | 1 | 0.5 | 0.23 | N.D. | U | 1 | 0.5 | 0.23 | N.D. | U | 1 | 0.5 | 0.23 | |
| | Chlorobenzene | 100 | 50 | N.D. | U | 5 | 0.5 | 0.17 | N.D. | U | 5 | 0.5 | 0.17 | N.D. | U | 5 | 0.5 | 0.17 | N.D. | U | 5 | 0.5 | 0.17 | N.D. | U | 5 | 0.5 | 0.17 | |
| | Chloroethane | 21,000 | 16 | N.D. | U | 10 | 5 | 2.3 | N.D. | U | 10 | 5 | 2.3 | N.D. | U | 10 | 5 | 2.3 | N.D. | U | 10 | 5 | 2.3 | N.D. | U | 10 | 5 | 2.3 | |
| | Chloroform | 70 | 2,400 | N.D. | U | 5 | 0.5 | 0.46 | N.D. | U | 5 | 0.5 | 0.46 | N.D. | U | 5 | 0.5 | 0.46 | N.D. | U | 5 | 0.5 | 0.46 | N.D. | U | 5 | 0.5 | 0.46 | |
| | Chloromethane | 1.8 | 50,000 | N.D. | U | 10 | 5 | 1.8 | N.D. | U | 10 | 5 | 1.8 | N.D. | U | 10 | 5 | 1.8 | N.D. | U | 10 | 5 | 1.8 | N.D. | U | 10 | 5 | 1.8 | |
| | cis-1,2-Dichloroethylene | 70 | 50,000 | N.D. | U | 1 | 0.5 | 0.48 | N.D. | U | 1 | 0.5 | 0.48 | N.D. | U | 1 | 0.5 | 0.48 | N.D. | U | 1 | 0.5 | 0.48 | N.D. | U | 1 | 0.5 | 0.48 | |
| | Dibromochloromethane | 0.16 | 50,000 | N.D. | U | 1 | 0.5 | 0.25 | N.D. | U | 1 | 0.5 | 0.25 | N.D. | U | 1 | 0.5 | 0.25 | N.D. | U | 1 | 0.5 | 0.25 | N.D. | U | 1 | 0.5 | 0.25 | |
| | Ethylbenzene | 700 | 30 | N.D. | U | 1 | 0.5 | 0.14 | N.D. | U | 1 | 0.5 | 0.14 | 0.21 | J | 1 | 0.5 | 0.14 | N.D. | U | 1 | 0.5 | 0.14 | N.D. | U | 1 | 0.5 | 0.14 | |
| | Hexachlorobutadiene | 0.86 | 6 | N.D. | U | 1 | 0.5 | 0.32 | N.D. | U | 1 | 0.5 | 0.32 | N.D. | U | 1 | 0.5 | 0.32 | N.D. | U | 1 | 0.5 | 0.32 | N.D. | U | | | | |

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SECTION 3 – DATA QUALITY ASSESSMENT

A data quality assessment, which consists of a review of the overall groundwater sample collection and analysis process, was performed in order to determine whether the analytical data generated meets the quality objectives for the project. The data quality assessment was performed in accordance with the approved WP/SAP prepared by ESI (ESI, 2012). The field quality control program consisted of standardized sample collection and management procedures, and the collection of field duplicate samples, matrix spike samples, and trip blank samples. The laboratory quality assurance program consisted of the use of standard analytical methods and the preparation and analyses of Matrix Spike [MS]/Matrix Spike Duplicate [MSD] samples, surrogate spikes, method blanks, and Laboratory Control Samples [LCSs].

3.1 Data Validation and Assessment

The objective of data validation is to provide data of known quality for project decisions. Data quality is judged in terms of its Precision, Accuracy, Representativeness, Completeness, Comparability, and Sensitivity [PARCCS]. A number of factors may affect the quality of data, including: sample collection methods, sample analysis methods, and adherence to established procedures for sample collection, preservation, management, shipment, and analysis.

Precision

Precision is defined as the reproducibility of replicate measurements. Precision is evaluated by Relative Percentage Difference [RPD] of field duplicates and laboratory LCS/Laboratory Control Sample Duplicates [LCSDs] or MS/MSD results. Field duplicate and MS/MSD samples were collected at a rate of approximately 10% of project samples. Field duplicates were sent to the laboratory along with the primary samples.

For this monitoring event, all RPDs for MS/MSD and LCS/LCSD pairs were within the acceptance range. The RPDs of primary and field duplicate samples are provided in Table 3.1. All RPDs are less than 20% (below 50% as recommended in the NAVFAC Project Procedures Manual (DON 2007), and therefore, the data precision is considered acceptable.

Accuracy

Accuracy is defined as the degree of conformity of a measurement to a standard or true value. Accuracy is evaluated through measurement of the percent recovery of an analyte in a reference standard or spiked sample. Accuracy limits for surrogates, laboratory control spike, MS, and MSD samples are established by the individual laboratory.

All surrogate spike recoveries for analyzed constituents were within acceptable percent recovery limits. The LCS analyzed for acetone was higher than the acceptable percent recovery limit and indicates a high bias. Acetone was not detected in the sample, therefore the high bias does not compromise the sample data accuracy. All other LCS recoveries were within recovery limits. The analyte concentrations (naphthalene, 2-methylnaphthalene and 1-methylnaphthalene) for ES011, the primary sample on which the MS/MSD were performed,

were significantly higher than the added spike concentration which prevented an accurate evaluation of the MS/MSD recovery. All other MS and MSD recoveries were within acceptable recovery limits, therefore, the data accuracy for this monitoring event is considered acceptable.

Representativeness

Representativeness is the degree that data accurately and precisely represents a characteristic of a population, parameter variations at a sampling point, or an environmental condition. Representativeness was achieved by conducting sampling in compliance with the sample collection procedures described in the WP/SAP (ESI, 2012).

Representativeness is also evaluated via compliance with established sample holding time and sample preservation, and through the analysis of blank samples, including method blank and trip blank samples. The sample holding time and sample preservation complied with the EPA guidance. For this sampling event, two trip blanks were collected. TPH-g and VOCs were not detected in the first trip blank. TPH-g and toluene were detected in the second trip blank. TPH-g was detected in the trip blank at a concentration below the limit of detection [LOD]. Toluene was not detected in any of the samples. The groundwater sample data are considered representative of the groundwater quality on site. The quality control results are provided in Table 3.2.

Completeness

Completeness is defined as the overall percentage of valid analytical results (including estimated results) compared to the total number of analytical results reported by the analytical laboratory. No data were rejected for this project, and therefore the completeness goal for this project (90%), was successfully met. Successful completion of data acquisition can only be accomplished if both the field and laboratory portions of the project are performed according to the procedures described in the WP/SAP (ESI, 2012).

Comparability

Comparability expresses the confidence with which one data set can be compared to another data set. Comparability can be related to accuracy and precision because these quantities are measures of data reliability. Data, with acceptable precision and accuracy, are considered comparable if collection techniques, analytical procedures, methods and reporting are equivalent. For this monitoring event, the samples were collected using approaches consistent with those in the previous events, and the same analytical methods/procedures were used to measure the concentration of COPCs. Therefore, the results are considered comparable within this data set and with the data collected from previous sampling events.

Sensitivity

The limits of quantitation [LOQs] are established by the laboratory based on the LODs or instrument detection limits, historical data, and EPA limits established for the methods. The LOQs for samples may require adjustment due to matrix interference or if high levels of target analytes necessitate dilution before analysis. Matrix interference and sample dilutions have the effect of increasing the LOQs. Laboratory LODs and LOQs for several analytes differed from the

LODs and LOQs in the WP/SAP because the laboratory updates them quarterly and in some cases, dilution was necessary due to the presence of high concentrations of analytes. LODs and LOQs for several analytes were greater than the DOH EALs (as stated in the WP/SAP) and therefore it is not possible to determine whether the analytes are present at concentrations greater than or equal to the DOH EALs. As suggested by the DOH Technical Guidance Manual, the project action level will be the LOD for these analytes.

3.2 Data Assessment and Usability Conclusions

The PARCCS criteria were evaluated, and with a few exceptions, all criteria were met. These exceptions include the exceedances of recovery criteria for MS/MSDs for the three PAHs (naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene) due to significantly higher concentrations in the sample (which exceeded DOH EALs) compared to the spiked concentration, which prevents the accurate evaluation of MS/MSD recovery. Since the surrogate recoveries and the recoveries of these three PAHs in the LCS/LCSD are all within recovery criteria, the accuracy is considered acceptable, and the exceedance is attributed to the high concentration in the sample. The data assessment concludes that all data generated during this event are usable for the intended use for project decisions.

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TABLE 3.1
Quality Control Results for Groundwater Sampling (January 28, 2013)
Red Hill Bulk Fuel Storage Facility
January 2013 Quarterly Monitoring Report

| Method | Chemical Constituent | DOH EALs | | RHMW02 (ES011) | | | | | RHMW02 (ES012) | | | | | RPD Duplicate (%) | ES Trip (01/29/13) | | | | | |
|-----------------------------|---|-------------------------|---------------------|----------------|------------|-----|-------|--------|----------------|------------|-----|-------|--------|-------------------|--------------------|------------|-----|------|------|------|
| | | Drinking Water Toxicity | Gross Contamination | Result | Q | LOQ | LOD | DL | Result | Q | LOQ | LOD | DL | | Result | Q | LOQ | LOD | DL | |
| EPA 8015B | TPH-d | 190 | 100 | 1,700 | HD | 56 | 22 | 16 | 1,500 | HD | 56 | 22 | 16 | 12.5 | - | - | - | - | - | |
| EPA 8260B | TPH-g | 100 | 100 | 660 | | 50 | 30 | 13 | 650 | | 50 | 30 | 13 | 1.53 | N.D. | U | 50 | 30 | 13 | |
| EPA 8270C | Acenaphthene | 370 | 20 | 0.57 | | 0.2 | 0.05 | 0.021 | 0.54 | | 0.2 | 0.05 | 0.021 | 5.41 | - | - | - | - | - | |
| | Acenaphthylene | 240 | 2,000 | N.D. | U | 0.2 | 0.05 | 0.018 | N.D. | U | 0.2 | 0.05 | 0.018 | NA | - | - | - | - | - | |
| | Anthracene | 1,800 | 22 | N.D. | U | 0.2 | 0.05 | 0.034 | N.D. | U | 0.2 | 0.05 | 0.034 | NA | - | - | - | - | - | |
| | Benzo[a]anthracene | 0.092 | 4.7 | N.D. | U | 0.2 | 0.05 | 0.024 | N.D. | U | 0.2 | 0.05 | 0.024 | NA | - | - | - | - | - | |
| | Benzo[g,h,i]perylene | 1,500 | 0.13 | N.D. | U | 0.2 | 0.05 | 0.022 | N.D. | U | 0.2 | 0.05 | 0.022 | NA | - | - | - | - | - | |
| | Benzo[a]pyrene | 0.2 | 0.81 | N.D. | U | 0.2 | 0.05 | 0.036 | N.D. | U | 0.2 | 0.05 | 0.036 | NA | - | - | - | - | - | |
| | Benzo[b]fluoranthene | 0.092 | 0.75 | N.D. | U | 0.2 | 0.05 | 0.025 | N.D. | U | 0.2 | 0.05 | 0.025 | NA | - | - | - | - | - | |
| | Benzo[k]fluoranthene | 0.92 | 0.4 | N.D. | U | 0.2 | 0.05 | 0.023 | N.D. | U | 0.2 | 0.05 | 0.023 | NA | - | - | - | - | - | |
| | Chrysene | 9.2 | 1 | N.D. | U | 0.2 | 0.05 | 0.019 | N.D. | U | 0.2 | 0.05 | 0.019 | NA | - | - | - | - | - | |
| | Dibenzo[a,h]anthracene | 0.0092 | 0.52 | N.D. | U | 0.2 | 0.05 | 0.027 | N.D. | U | 0.2 | 0.05 | 0.027 | NA | - | - | - | - | - | |
| | Fluoranthene | 1,500 | 130 | N.D. | U | 0.2 | 0.05 | 0.027 | N.D. | U | 0.2 | 0.05 | 0.027 | NA | - | - | - | - | - | |
| | Fluorene | 240 | 950 | 0.30 | | 0.2 | 0.05 | 0.024 | 0.27 | | 0.2 | 0.05 | 0.024 | 10.53 | - | - | - | - | - | |
| | Indeno[1,2,3-cd]pyrene | 0.092 | 0.095 | N.D. | U | 0.2 | 0.05 | 0.022 | N.D. | U | 0.2 | 0.05 | 0.022 | NA | - | - | - | - | - | |
| | 1-Methylnaphthalene | 4.7 | 10 | 47 | | 5 | 1.2 | 0.71 | 41 | | 5 | 1.2 | 0.71 | 13.64 | - | - | - | - | - | |
| | 2-Methylnaphthalene | 24 | 10 | 35 | | 5 | 1.2 | 0.66 | 31 | | 5 | 1.2 | 0.66 | 12.12 | - | - | - | - | - | |
| | Naphthalene | 17 | 21 | 110 | | 5 | 1.2 | 0.57 | 100 | | 5 | 1.2 | 0.57 | 9.52 | - | - | - | - | - | |
| | Phenanthrene | 240 | 410 | N.D. | U | 0.2 | 0.05 | 0.031 | N.D. | U | 0.2 | 0.05 | 0.031 | NA | - | - | - | - | - | |
| | Pyrene | 180 | 68 | N.D. | U | 0.2 | 0.05 | 0.025 | N.D. | U | 0.2 | 0.05 | 0.025 | NA | - | - | - | - | - | |
| EPA 8260B | 1,1,1-Trichloroethane | 200 | 970 | N.D. | U | 5 | 0.5 | 0.3 | N.D. | U | 5 | 0.5 | 0.3 | NA | N.D. | U | 5 | 0.5 | 0.3 | |
| | 1,1,2-Trichloroethane | 5 | 50,000 | N.D. | U | 1 | 0.5 | 0.38 | N.D. | U | 1 | 0.5 | 0.38 | NA | N.D. | U | 1 | 0.5 | 0.38 | |
| | 1,1-Dichloroethane | 2.4 | 50,000 | N.D. | U | 5 | 0.5 | 0.28 | N.D. | U | 5 | 0.5 | 0.28 | NA | N.D. | U | 5 | 0.5 | 0.28 | |
| | 1,1-Dichloroethylene | 7 | 1,500 | N.D. | U | 1 | 0.5 | 0.431 | N.D. | U | 1 | 0.5 | 0.431 | NA | N.D. | U | 1 | 0.5 | 0.43 | |
| | 1,2,3-Trichloropropane | 0.6 | 50,000 | N.D. | U | 5 | 1 | 0.64 | N.D. | U | 5 | 1 | 0.64 | NA | N.D. | U | 5 | 1 | 0.64 | |
| | 1,2,4-Trichlorobenzene | 70 | 3,000 | N.D. | U | 5 | 1 | 0.5 | N.D. | U | 5 | 1 | 0.5 | NA | N.D. | U | 5 | 1 | 0.5 | |
| | 1,2-Dibromo-3-chloropropane | 0.04 | 10 | N.D. | U | 10 | 5 | 1.2 | N.D. | U | 10 | 5 | 1.2 | NA | N.D. | U | 10 | 5 | 1.2 | |
| | 1,2-Dibromoethane | 0.04 | 50,000 | N.D. | U | 1 | 0.5 | 0.36 | N.D. | U | 1 | 0.5 | 0.36 | NA | N.D. | U | 1 | 0.5 | 0.36 | |
| | 1,2-Dichlorobenzene | 600 | 10 | N.D. | U | 1 | 0.5 | 0.46 | N.D. | U | 1 | 0.5 | 0.46 | NA | N.D. | U | 1 | 0.5 | 0.46 | |
| | 1,2-Dichloroethane | 0.15 | 7,000 | N.D. | U | 1 | 0.5 | 0.24 | N.D. | U | 1 | 0.5 | 0.24 | NA | N.D. | U | 1 | 0.5 | 0.24 | |
| | 1,2-Dichloropropane | 5 | 10 | N.D. | U | 5 | 0.5 | 0.42 | N.D. | U | 5 | 0.5 | 0.42 | NA | N.D. | U | 5 | 0.5 | 0.42 | |
| | 1,3-Dichlorobenzene | 180 | 5 | N.D. | U | 1 | 0.5 | 0.4 | N.D. | U | 1 | 0.5 | 0.4 | NA | N.D. | U | 1 | 0.5 | 0.4 | |
| | 1,3-Dichloropropene (total of cis/trans) | 0.43 | 50,000 | N.D. | U | 1 | 0.5 | 0.25 | N.D. | U | 1 | 0.5 | 0.25 | NA | N.D. | U | 1 | 0.5 | 0.25 | |
| | 1,4-Dichlorobenzene | 75 | 5 | N.D. | U | 1 | 0.5 | 0.43 | N.D. | U | 1 | 0.5 | 0.43 | NA | N.D. | U | 1 | 0.5 | 0.43 | |
| | Acetone | 22,000 | 20,000 | N.D. | IJ, ICH, U | 20 | 10 | 10 | N.D. | IJ, ICH, U | 20 | 10 | 10 | NA | N.D. | IJ, ICH, U | 20 | 10 | 10 | 0.43 |
| | Benzene | 5 | 170 | N.D. | U | 1 | 0.5 | 0.14 | N.D. | U | 1 | 0.5 | 0.14 | NA | N.D. | U | 1 | 0.5 | 0.14 | |
| | Bromodichloromethane | 0.12 | 50,000 | N.D. | U | 5 | 0.5 | 0.21 | N.D. | U | 5 | 0.5 | 0.21 | NA | N.D. | U | 5 | 0.5 | 0.21 | |
| | Bromoform | 80 | 510 | N.D. | U | 10 | 1 | 0.5 | N.D. | U | 10 | 1 | 0.5 | NA | N.D. | U | 10 | 1 | 0.5 | |
| | Bromomethane | 8.7 | 50,000 | N.D. | U | 20 | 5 | 3.9 | N.D. | U | 20 | 5 | 3.9 | NA | N.D. | U | 20 | 5 | 3.9 | |
| | Carbon Tetrachloride | 5 | 520 | N.D. | U | 1 | 0.5 | 0.23 | N.D. | U | 1 | 0.5 | 0.23 | NA | N.D. | U | 1 | 0.5 | 0.23 | |
| | Chlorobenzene | 100 | 50 | N.D. | U | 5 | 0.5 | 0.17 | N.D. | U | 5 | 0.5 | 0.17 | NA | N.D. | U | 5 | 0.5 | 0.17 | |
| | Chloroethane | 21,000 | 16 | N.D. | U | 10 | 5 | 2.3 | N.D. | U | 10 | 5 | 2.3 | NA | N.D. | U | 10 | 5 | 2.3 | |
| | Chloroform | 70 | 2,400 | N.D. | U | 5 | 0.5 | 0.46 | N.D. | U | 5 | 0.5 | 0.46 | NA | N.D. | U | 5 | 0.5 | 0.46 | |
| | Chloromethane | 1.8 | 50,000 | N.D. | U | 10 | 5 | 1.8 | N.D. | U | 10 | 5 | 1.8 | NA | N.D. | U | 10 | 5 | 1.8 | |
| | cis-1,2-Dichloroethylene | 70 | 50,000 | N.D. | U | 1 | 0.5 | 0.48 | N.D. | U | 1 | 0.5 | 0.48 | NA | N.D. | U | 1 | 0.5 | 0.48 | |
| | Dibromochloromethane | 0.16 | 50,000 | N.D. | U | 1 | 0.5 | 0.25 | N.D. | U | 1 | 0.5 | 0.25 | NA | N.D. | U | 1 | 0.5 | 0.25 | |
| | Ethylbenzene | 700 | 30 | 0.21 | J | 1 | 0.5 | 0.14 | 0.24 | J | 1 | 0.5 | 0.14 | 13.33 | N.D. | U | 1 | 0.5 | 0.14 | |
| | Hexachlorobutadiene | 0.86 | 6 | N.D. | U | 1 | 0.5 | 0.32 | N.D. | U | 1 | 0.5 | 0.32 | NA | N.D. | U | 1 | 0.5 | 0.32 | |
| | Methyl ethyl ketone (2-Butanone) | 7,100 | 8,400 | N.D. | U | 10 | 5.0 | 2.21 | N.D. | U | 10 | 5.0 | 2.21 | NA | N.D. | U | 10 | 5.0 | 2.21 | |
| | Methyl isobutyl ketone (4-Methyl-2-Pentanone) | 2,000 | 1,300 | N.D. | U | 10 | 5.0 | 4.4 | N.D. | U | 10 | 5.0 | 4.4 | NA | N.D. | U | 10 | 5.0 | 4.4 | |
| | Methyl tert-butyl Ether | 12 | 5 | N.D. | U | 1 | 0.5 | 0.31 | N.D. | U | 1 | 0.5 | 0.31 | NA | N.D. | U | 1 | 0.5 | 0.31 | |
| | Methylene chloride | 4.8 | 9,100 | N.D. | U | 5 | 1.0 | 0.64 | N.D. | U | 5 | 1.0 | 0.64 | NA | N.D. | U | 5 | 1.0 | 0.64 | |
| | Styrene | 100 | 10 | N.D. | U | 1 | 0.5 | 0.17 | N.D. | U | 1 | 0.5 | 0.17 | NA | N.D. | U | 1 | 0.5 | 0.17 | |
| Tetrachloroethane, 1,1,1,2- | 0.52 | 50,000 | N.D. | U | 1 | 0.5 | 0.4 | N.D. | U | 1 | 0.5 | 0.4 | NA | N.D. | U | 1 | 0.5 | 0.4 | | |
| Tetrachloroethane, 1,1,2,2- | 0.067 | 500 | N.D. | U | 1 | 0.5 | 0.41 | N.D. | U | 1 | 0.5 | 0.41 | NA | N.D. | U | 1 | 0.5 | 0.41 | | |
| Tetrachloroethylene | 5 | 170 | N.D. | U | 5 | 0.5 | 0.387 | N.D. | U | 5 | 0.5 | 0.387 | NA | N.D. | U | 5 | 0.5 | 0.39 | | |
| Toluene | 1,000 | 40 | N.D. | U | 1 | 0.5 | 0.24 | N.D. | U | 1 | 0.5 | 0.24 | NA | N.D. | U | 1 | 0.5 | 0.24 | | |
| trans-1,2-Dichloroethylene | 100 | 260 | N.D. | U | 1 | 0.5 | 0.37 | N.D. | U | 1 | 0.5 | 0.37 | NA | N.D. | U | 1 | 0.5 | 0.37 | | |
| Trichloroethylene | 5 | 310 | N.D. | U | 1 | 0.5 | 0.368 | N.D. | U | 1 | 0.5 | 0.368 | NA | N.D. | U | 1 | 0.5 | 0.37 | | |
| Vinyl chloride | 2 | 3,400 | N.D. | U | 1 | 0.5 | 0.3 | N.D. | U | 1 | 0.5 | 0.3 | NA | N.D. | U | 1 | 0.5 | 0.3 | | |
| Xylenes | 10,000 | 20 | 0.65 | J | 10 | 1 | 0.23 | 0.69 | J | 10 | 1 | 0.23 | 5.97 | N.D. | U | 10 | 1 | 0.23 | | |
| EPA 6020 | Lead | 15 | 50,000 | N.D. | U | 1 | 0.2 | 0.0898 | 0.171 | J | 1 | 0.2 | 0.0898 | 0 | - | - | - | - | - | |

The data are in micrograms per liter (µg/L). Shaded values exceeded the DOH EALs.

- Not Analyzed
 DOH EALs DOH Tier 1 Environmental Action Levels for groundwater where groundwater is a current drinking water source and surface water is greater than 150 meters from the site (DOH, Fall 2011).
 DL Detection Limit or Method Detection Limit (MDL)
 EPA Environmental Protection Agency
 ICH Initial calibration verification recovery above method control limit for this analyte.
 IJ Calibration verification recovery above method control limit for this analyte.
 J Analyte was detected at a concentration below the LOQ and above the DL. Reported value is estimated.
 LOD Limit of Detection

LOQ Limit of Quantitation
 NA Both results for duplicate pair were non-detect, no RPD calculations
 N.D. Not Detected
 Q Qualifiers
 TPH-g Total Petroleum Hydrocarbons as gasoline
 TPH-d Total Petroleum Hydrocarbons as diesel
 U Undetected at DL and is reported as less than the LOD.

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TABLE 3.2
Quality Control Results for Groundwater Sampling (February 4, 2013)
Red Hill Bulk Fuel Storage Facility
January 2013 Quarterly Monitoring Report

| Method | Chemical Constituent | DOH EALS | | RHMW01 (ES010) | | | | | ES Trip (02/04/13) | | | | |
|---|------------------------|-------------------------|---------------------|----------------|------------|-----|------|--------|--------------------|------------|-----|------|------|
| | | Drinking Water Toxicity | Gross Contamination | Result | Q | LOQ | LOD | DL | Result | Q | LOQ | LOD | DL |
| EPA 8015B | TPH-d | 190 | 100 | 79 | | 54 | 22 | 16 | - | - | - | - | - |
| EPA 8260B | TPH-g | 100 | 100 | 13 | J | 50 | 30 | 13 | 18 | J | 50 | 30 | 13 |
| EPA 8270C | Acenaphthene | 370 | 20 | N.D. | U | 0.2 | 0.05 | 0.021 | - | - | - | - | - |
| | Acenaphthylene | 240 | 2,000 | N.D. | U | 0.2 | 0.05 | 0.018 | - | - | - | - | - |
| | Anthracene | 1,800 | 22 | N.D. | U | 0.2 | 0.05 | 0.034 | - | - | - | - | - |
| | Benzo[a]anthracene | 0.092 | 4.7 | N.D. | U | 0.2 | 0.05 | 0.024 | - | - | - | - | - |
| | Benzo[g,h,i]perylene | 1,500 | 0.13 | N.D. | U | 0.2 | 0.05 | 0.022 | - | - | - | - | - |
| | Benzo[a]pyrene | 0.2 | 0.81 | N.D. | U | 0.2 | 0.05 | 0.036 | - | - | - | - | - |
| | Benzo[b]fluoranthene | 0.092 | 0.75 | N.D. | U | 0.2 | 0.05 | 0.025 | - | - | - | - | - |
| | Benzo[k]fluoranthene | 0.92 | 0.4 | N.D. | U | 0.2 | 0.05 | 0.023 | - | - | - | - | - |
| | Chrysene | 9.2 | 1 | N.D. | U | 0.2 | 0.05 | 0.019 | - | - | - | - | - |
| | Dibenzo[a,h]anthracene | 0.0092 | 0.52 | N.D. | U | 0.2 | 0.05 | 0.027 | - | - | - | - | - |
| | Fluoranthene | 1,500 | 130 | N.D. | U | 0.2 | 0.05 | 0.027 | - | - | - | - | - |
| | Fluorene | 240 | 950 | N.D. | U | 0.2 | 0.05 | 0.024 | - | - | - | - | - |
| | Indeno[1,2,3-cd]pyrene | 0.092 | 0.095 | N.D. | U | 0.2 | 0.05 | 0.022 | - | - | - | - | - |
| | 1-Methylnaphthalene | 4.7 | 10 | N.D. | U | 0.2 | 0.05 | 0.028 | - | - | - | - | - |
| | 2-Methylnaphthalene | 24 | 10 | N.D. | U | 0.2 | 0.05 | 0.026 | - | - | - | - | - |
| | Naphthalene | 17 | 21 | 0.10 | J | 0.2 | 0.05 | 0.023 | - | - | - | - | - |
| | Phenanthrene | 240 | 410 | N.D. | U | 0.2 | 0.05 | 0.031 | - | - | - | - | - |
| | Pyrene | 180 | 68 | N.D. | U | 0.2 | 0.05 | 0.025 | - | - | - | - | - |
| | EPA 8260B | 1,1,1-Trichloroethane | 200 | 970 | N.D. | U | 5 | 0.5 | 0.3 | N.D. | U | 5 | 0.5 |
| 1,1,2-Trichloroethane | | 5 | 50,000 | N.D. | U | 1 | 0.5 | 0.38 | N.D. | U | 1 | 0.5 | 0.38 |
| 1,1-Dichloroethane | | 2.4 | 50,000 | N.D. | U | 5 | 0.5 | 0.28 | N.D. | U | 5 | 0.5 | 0.28 |
| 1,1-Dichloroethylene | | 7 | 1,500 | N.D. | U | 1 | 0.5 | 0.431 | N.D. | U | 1 | 0.5 | 0.43 |
| 1,2,3-Trichloropropane | | 0.6 | 50,000 | N.D. | U | 5 | 1 | 0.64 | N.D. | U | 5 | 1 | 0.64 |
| 1,2,4-Trichlorobenzene | | 70 | 3,000 | N.D. | U | 5 | 1 | 0.5 | N.D. | U | 5 | 1 | 0.5 |
| 1,2-Dibromo-3-chloropropane | | 0.04 | 10 | N.D. | U | 10 | 5 | 1.2 | N.D. | U | 10 | 5 | 1.2 |
| 1,2-Dibromoethane | | 0.04 | 50,000 | N.D. | U | 1 | 0.5 | 0.36 | N.D. | U | 1 | 0.5 | 0.36 |
| 1,2-Dichlorobenzene | | 600 | 10 | N.D. | U | 1 | 0.5 | 0.46 | N.D. | U | 1 | 0.5 | 0.46 |
| 1,2-Dichloroethane | | 0.15 | 7,000 | N.D. | U | 1 | 0.5 | 0.24 | N.D. | U | 1 | 0.5 | 0.24 |
| 1,2-Dichloropropane | | 5 | 10 | N.D. | U | 5 | 0.5 | 0.42 | N.D. | U | 5 | 0.5 | 0.42 |
| 1,3-Dichlorobenzene | | 180 | 5 | N.D. | U | 1 | 0.5 | 0.4 | N.D. | U | 1 | 0.5 | 0.4 |
| 1,3-Dichloropropene (total of cis/trans) | | 0.43 | 50,000 | N.D. | U | 1 | 0.5 | 0.25 | N.D. | U | 1 | 0.5 | 0.25 |
| 1,4-Dichlorobenzene | | 75 | 5 | N.D. | U | 1 | 0.5 | 0.43 | N.D. | U | 1 | 0.5 | 0.43 |
| Acetone | | 22,000 | 20,000 | N.D. | IJ, ICH, U | 20 | 10 | 6 | N.D. | IJ, ICH, U | 20 | 10 | 10 |
| Benzene | | 5 | 170 | N.D. | U | 1 | 0.5 | 0.14 | N.D. | U | 1 | 0.5 | 0.14 |
| Bromodichloromethane | | 0.12 | 50,000 | N.D. | U | 5 | 0.5 | 0.21 | N.D. | U | 5 | 0.5 | 0.21 |
| Bromoform | | 80 | 510 | N.D. | U | 10 | 1 | 0.5 | N.D. | U | 10 | 1 | 0.5 |
| Bromomethane | | 8.7 | 50,000 | N.D. | U | 20 | 5 | 3.9 | N.D. | U | 20 | 5 | 3.9 |
| Carbon Tetrachloride | | 5 | 520 | N.D. | U | 1 | 0.5 | 0.23 | N.D. | U | 1 | 0.5 | 0.23 |
| Chlorobenzene | | 100 | 50 | N.D. | U | 5 | 0.5 | 0.17 | N.D. | U | 5 | 0.5 | 0.17 |
| Chloroethane | | 21,000 | 16 | N.D. | U | 10 | 5 | 2.3 | N.D. | U | 10 | 5 | 2.3 |
| Chloroform | | 70 | 2,400 | N.D. | U | 5 | 0.5 | 0.46 | N.D. | U | 5 | 0.5 | 0.46 |
| Chloromethane | | 1.8 | 50,000 | N.D. | U | 10 | 5 | 1.8 | N.D. | U | 10 | 5 | 1.8 |
| cis-1,2-Dichloroethylene | | 70 | 50,000 | N.D. | U | 1 | 0.5 | 0.48 | N.D. | U | 1 | 0.5 | 0.48 |
| Dibromochloromethane | | 0.16 | 50,000 | N.D. | U | 1 | 0.5 | 0.25 | N.D. | U | 1 | 0.5 | 0.25 |
| Ethylbenzene | | 700 | 30 | N.D. | U | 1 | 0.5 | 0.14 | N.D. | U | 1 | 0.5 | 0.14 |
| Hexachlorobutadiene | | 0.86 | 6 | N.D. | U | 1 | 0.5 | 0.32 | N.D. | U | 1 | 0.5 | 0.32 |
| Methyl ethyl ketone (2-Butanone) | | 7,100 | 8,400 | N.D. | U | 10 | 5.0 | 2.21 | N.D. | U | 10 | 5.0 | 2.21 |
| Methyl isobutyl ketone (4-Methyl-2-Pentanone) | | 2,000 | 1300 | N.D. | U | 10 | 5.0 | 4.4 | N.D. | U | 10 | 5.0 | 4.4 |
| Methyl tert-butyl Ether | | 12 | 5 | N.D. | U | 1 | 0.5 | 0.31 | N.D. | U | 1 | 0.5 | 0.31 |
| Methylene chloride | | 4.8 | 9,100 | N.D. | U | 5 | 1.0 | 0.64 | N.D. | U | 5 | 1.0 | 0.64 |
| Styrene | | 100 | 10 | N.D. | U | 1 | 0.5 | 0.17 | N.D. | U | 1 | 0.5 | 0.17 |
| Tetrachloroethane, 1,1,1,2- | | 0.52 | 50,000 | N.D. | U | 1 | 0.5 | 0.4 | N.D. | U | 1 | 0.5 | 0.4 |
| Tetrachloroethane, 1,1,2,2- | | 0.067 | 500 | N.D. | U | 1 | 0.5 | 0.41 | N.D. | U | 1 | 0.5 | 0.41 |
| Tetrachloroethylene | | 5 | 170 | N.D. | U | 5 | 0.5 | 0.387 | N.D. | U | 5 | 0.5 | 0.39 |
| Toluene | | 1,000 | 40 | N.D. | U | 1 | 0.5 | 0.24 | 2.8 | | 1 | 0.5 | 0.24 |
| trans-1,2-Dichloroethylene | | 100 | 260 | N.D. | U | 1 | 0.5 | 0.37 | N.D. | U | 1 | 0.5 | 0.37 |
| Trichloroethylene | | 5 | 310 | N.D. | U | 1 | 0.5 | 0.368 | N.D. | U | 1 | 0.5 | 0.37 |
| Vinyl chloride | | 2 | 3,400 | N.D. | U | 1 | 0.5 | 0.3 | N.D. | U | 1 | 0.5 | 0.3 |
| Xylenes | 10,000 | 20 | N.D. | U | 10 | 1 | 0.23 | N.D. | U | 10 | 1 | 0.23 | |
| EPA 6020 | Lead | 15 | 50,000 | 0.846 | J | 1 | 0.2 | 0.0898 | - | - | - | - | - |

The data are in micrograms per liter (µg/L). Shaded values exceeded the DOH EALS.

- Not Analyzed
- DOH EALS DOH Tier 1 Environmental Action Levels for groundwater where groundwater is a current drinking water source and surface water is greater than 150 meters from the site (DOH, Fall 2011).
- DL Detection Limit or Method Detection Limit (MDL)
- EPA Environmental Protection Agency
- ICH Initial calibration verification recovery above method control limit for this analyte.
- IJ Calibration verification recovery above method control limit for this analyte.
- J Analyte was detected at a concentration below the LOQ and above the DL. Reported value is estimated.

- LOD Limit of Detection
- LOQ Limit of Quantitation
- N.D. Not Detected
- Q Qualifiers
- TPH-g Total Petroleum Hydrocarbons as gasoline
- TPH-d Total Petroleum Hydrocarbons as diesel
- U Undetected at DL and is reported as less than the LOD.

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SECTION 4 – SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

From January 28 to 29 and February 4, 2013, ESI personnel collected groundwater samples from five monitoring wells at the RHSF (wells RHMW01, RHMW02, RHMW03, RHMW05, and RHMW2254-01).

The groundwater sampling was conducted as part of the long-term groundwater and soil vapor monitoring at the RHSF, under NAVFAC Contract Number N62742-12-D-1853. The sampling was conducted in accordance with the approved WP/SAP prepared by ESI. A summary of the analytical results is provided below.

- **RHMW01** – TPH-d (79 µg/L), TPH-g (13 µg/L), naphthalene (0.10 µg/L), and dissolved lead (0.846 µg/L) were detected. None of the chemical constituents analyzed for were detected at concentrations above the DOH EALs.
- **RHMW02** – TPH-d (1,700 µg/L), TPH-g (660 µg/L), acenaphthene (0.57 µg/L), fluorene (0.30 µg/L), 1-methylnaphthalene (47 µg/L), 2-methylnaphthalene (35 µg/L), naphthalene (110 µg/L), ethylbenzene (0.21 µg/L), and xylenes (0.65 µg/L) were detected. TPH-d, TPH-g, 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene were detected at concentrations above the DOH EALs for both drinking water toxicity and gross contamination.
- **RHMW03** – TPH-d (59 µg/L), 1-methylnaphthalene (0.10 µg/L), 2-methylnaphthalene (0.069 µg/L), and naphthalene (0.32 µg/L) were detected. None of the chemical constituents analyzed for were detected at concentrations above the DOH EALs.
- **RHMW05** – TPH-d (62 µg/L) and naphthalene (0.075 µg/L) were detected. None of the chemical constituents analyzed for were detected at concentrations above the DOH EALs.
- **RHMW2254-01** – TPH-g (22 µg/L), naphthalene (0.052 µg/L), and total lead (0.242 µg/L) were detected. None of the chemical constituents analyzed for were detected at concentrations above the DOH EALs.

Groundwater Contaminant Trends

- **RHMW01** – COPCs detected during this round of quarterly sampling were consistent with historical data. TPH-d has historically been detected at concentrations above the DOH EAL for both drinking water toxicity and gross contamination. TPH-d concentrations showed a decreasing trend from 1,500 µg/L in February 2005 to 79 µg/L in February 2013.
- **RHMW02** – COPCs TPH-d, TPH-g, 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene have historically been detected at concentrations above the DOH EALs. TPH-d concentrations show a decreasing trend from a high average of 5,420 µg/L in October 2008 to concentrations ranging from 1,500-2,200 µg/L during the last several rounds of sampling.

1-Methylnaphthalene, 2-methylnaphthalene, and naphthalene show a decreasing trend over the long-term. However, 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene have steadily increased since April 2012.

TPH-g concentrations show an increasing trend with a significant increase from 320 µg/L during the last round of sampling to 660 µg/L during this round of sampling.

- **RHMW03** – COPCs detected during this round of quarterly sampling were consistent with historical data. TPH-d has historically been detected at concentrations above the DOH EALs for both drinking water toxicity and gross contamination; however, it has not been detected at concentrations above the DOH EALs since October 2010.
- **RHMW05** – COPCs detected during this round of quarterly sampling were consistent with historical data. TPH-d has historically been detected at concentrations above the DOH EALs for both drinking water toxicity and gross contamination; however, it has not been detected at concentrations above the DOH EALs since January 2010.
- **RHMW2254-01** – COPCs detected during this round of quarterly sampling were consistent with historical data. None of the COPCs have been detected at concentrations above the DOH EALs.

Conclusions and Recommendations

Since the wells were last sampled (October 2012), groundwater contaminant concentrations in four wells (RHMW01, RHMW03, RHMW05, and RHMW2254-01) remained at low concentrations and did not change significantly, or were not detected. Only the groundwater samples from RHMW02 showed concentrations of COPCs exceeding the DOH EALs. TPH-d concentrations detected in the sample collected from well RHMW02 are consistent with previous analytical data. 1-Methylnaphthalene, 2-methylnaphthalene, and naphthalene concentrations have increased since the last sampling event; however, elevated concentrations have been detected in groundwater samples collected during past sampling events. TPH-g concentrations increased since the last sampling event, and is the highest concentration since routine groundwater sampling was initiated in 2005.

With the exception of TPH-g, concentrations of COPCs in well RHMW02 have not changed significantly. TPH-d, 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene concentrations have been decreasing over the long-term. However, 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene concentrations have increased since April 2012.

Based on the results of the groundwater monitoring, ESI recommends continuing the groundwater monitoring program at the RHSF. If TPH-g concentrations in Well RHMW02 continue to increase, we recommend increasing monitoring frequency to monthly in accordance with the RHSF Groundwater Protection Plan.

SECTION 5 – FUTURE WORK***GROUNDWATER SAMPLING***

Future work includes the second quarter 2013 groundwater monitoring which is scheduled for April 2013. It is anticipated that the quarterly groundwater monitoring status report will be submitted in May 2013.

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SECTION 6 – REFERENCES

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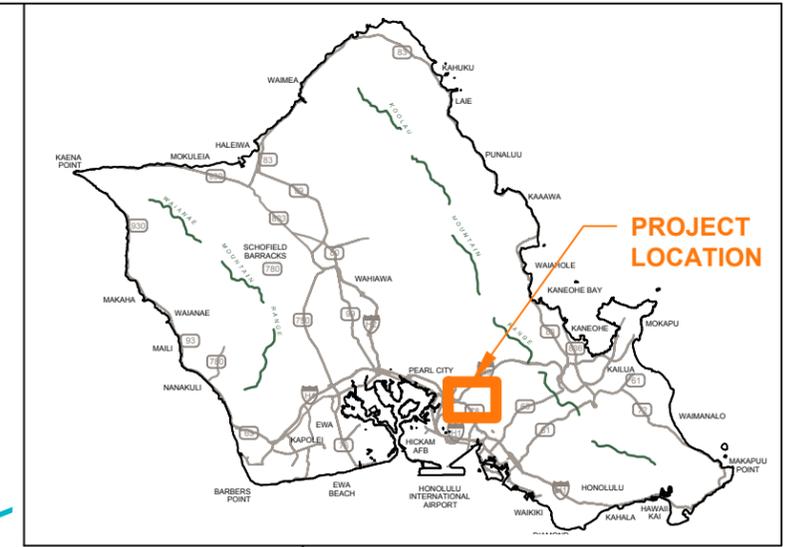
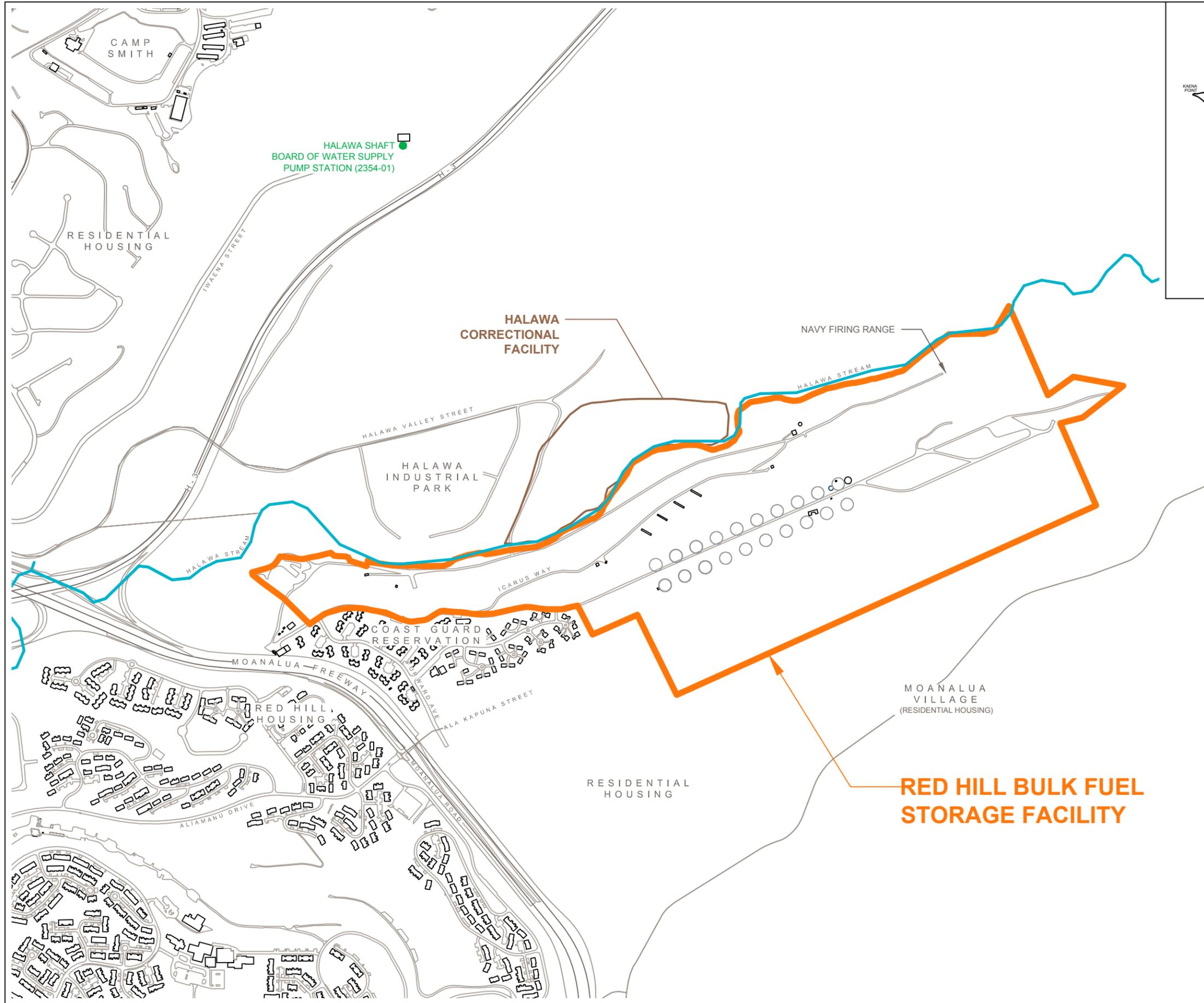
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FIGURES

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| |
|---|
| NOTES |
| The accuracy of this document is limited to the quality and scale of the source information. This document is not a legal representation of an engineered survey. |
| SOURCES |
| Pearl Harbor Base Map Navy GIS files |

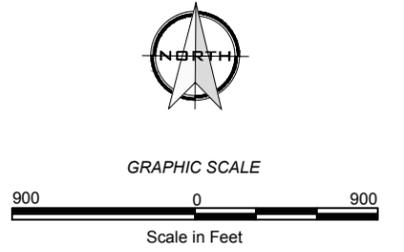
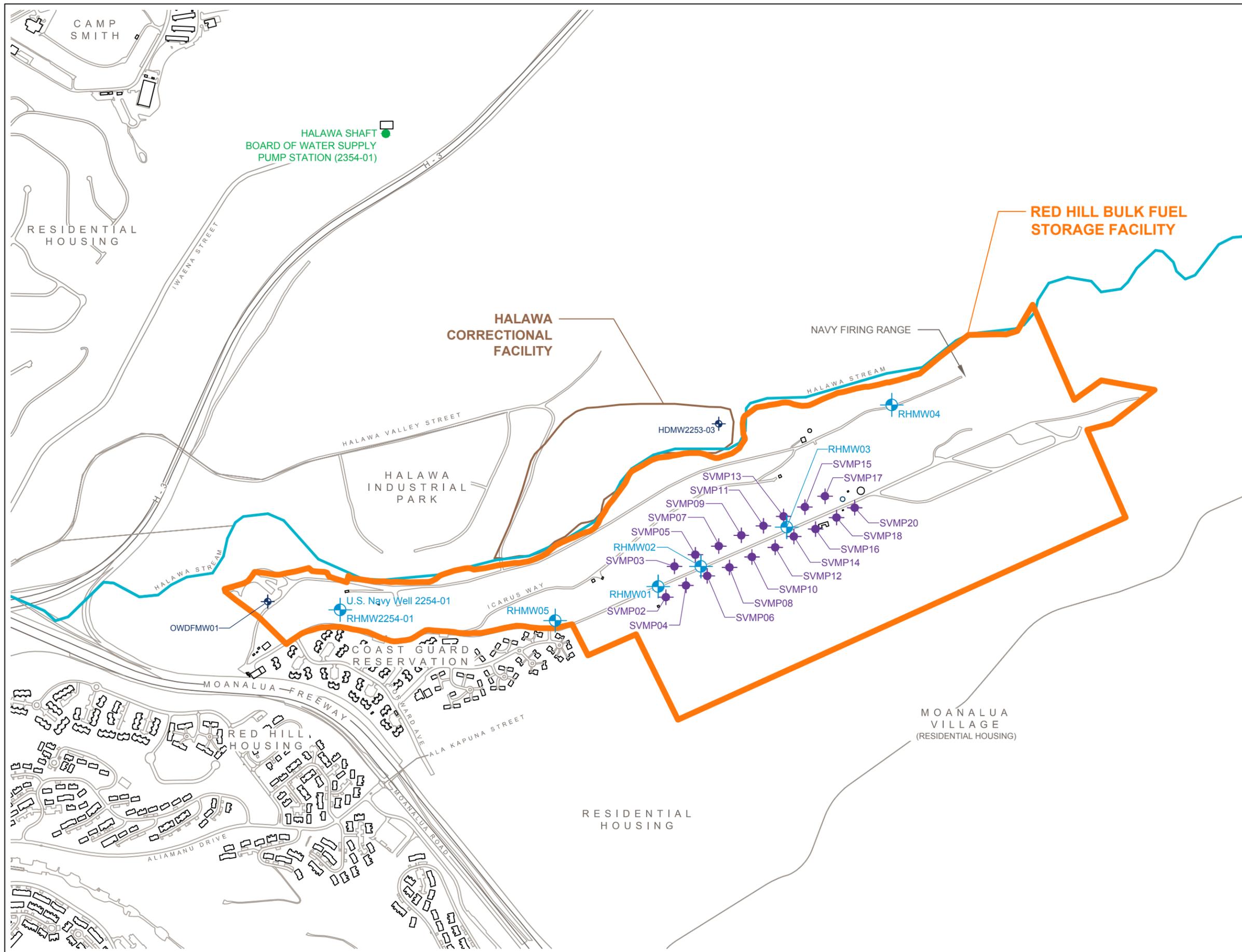


FIGURE 1
SITE LOCATION
 GROUNDWATER MONITORING
 RED HILL BULK FUEL STORAGE FACILITY
 NAVAL SUPPLY SYSTEM COMMAND (NAVSUP)
 FLEET LOGISTICS CENTER
 JBPHH, OAHU, HAWAII

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| LEGEND | |
|--------|--|
| | RED HILL BULK FUEL STORAGE FACILITY |
| | HALAWA CORRECTIONAL FACILITY |
| | HALAWA STREAM |
| | BUILDING |
| | ROAD |
| | ABOVEGROUND STORAGE TANK |
| | WATER TANK |
| | SOIL VAPOR MONITORING POINT |
| | GROUNDWATER MONITORING WELL LOCATED INSIDE TUNNEL |
| | GROUNDWATER MONITORING WELL LOCATED OUTSIDE TUNNEL |
| | BOARD OF WATER SUPPLY PUMP STATION |

NOTES

The accuracy of this document is limited to the quality and scale of the source information. This document is not a legal representation of an engineered survey.

SOURCES

Pearl Harbor Base Map
Navy GIS files

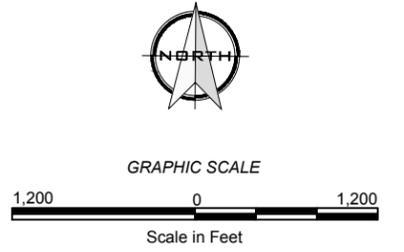


FIGURE 2
SITE LAYOUT
GROUNDWATER MONITORING
RED HILL BULK FUEL STORAGE FACILITY
NAVAL SUPPLY SYSTEM COMMAND (NAVSUP)
FLEET LOGISTICS CENTER
JBPHH, OAHU, HAWAII

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APPENDIX A

Groundwater Sampling Logs

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Groundwater Sampling Log

Well ID: RHMW05 Location: Red Hill Bulk Fuel Storage Facility Project No.: 112066

Initial Water Level: 83.61 ft Date: 1/29/2013 Time: 1015

Total Depth of Well: - Personnel Involved: Justin Lam, Branden Ibara

Length of Saturated Zone: - Weather Conditions: -

Volume of Water to be Removed: - Method of Removal: Bladder Pump

Water Level After Purging: 83.61 Pumping Rate: 0.5 L/min

Well Purge Data:

| Time | Volume Removed | pH | Conductivity (mS/cm) | DO (mg/l) | Temperature | Salinity | Redox (ORP) (mV) |
|------|----------------|------|----------------------|-----------|-------------|----------|------------------|
| 1025 | 0.0 L | 7.58 | 1.131 | 7.06 | 22.53 | 0.59 | -28.8 |
| 1027 | 1.0 L | 7.51 | 1.122 | 6.94 | 22.37 | 0.59 | -26.9 |
| 1029 | 2.0 L | 7.47 | 1.117 | 6.90 | 22.30 | 0.59 | -25.4 |
| 1031 | 3.0 L | 7.47 | 1.116 | 6.83 | 22.28 | 0.59 | -25.7 |
| 1033 | 4.0 L | 7.45 | 1.116 | 6.81 | 22.33 | 0.55 | -27.0 |
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Sample Withdrawal Method: Bladder Pump

Appearance of Sample:

Color: Clear
 Turbidity: Low
 Sediment: None
 Other:

Laboratory Analysis Parameters and Preservatives: TPH-d, - 8015; TPH-g, VOCs - 8260; PAHs - 8270C sim; lead - 6020

Number and Types of Sample Containers: 6 - VOAs, 3 - 1L amber jar, 1 - 500ml HDPE bottle

Sample Identification Numbers: ES015 [1045]

Decontamination Procedures: Triple Rinsed

Notes:

Sampled by: Justin Lam, Branden Ibara

Sampled Delivered to: Calscience Environmental Lab Transporters: FedEx

Date: 1/31/2013 Time: 10:30

Capacity of Casing (Gallons/Linear Feet)
2"-0.16 • 4"-0.65 • 8"-2.61 • 10"-4.08 • 12"-5.87

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APPENDIX B

Field Notes

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Location Red Hill

Date 1/28/13

Project / Client 112066 NAVFAC

Purpose: gw sampling

Personnel: JL, BI

~~735~~: ESI outside.750: safety meeting.805: ESI enter through adit #5.830: gauge RHMW01840: turn on compressor and control box, begin pumping.850: compressor shut off, no water being pumped out.855: compressor will not stay on.930: compressor started and stayed on. well not pumping.935: pull pump out. test pump.1000: put pump back in well.~~test~~ attempt to pump again, not pumping.1025: compressor will not start.1030: move to RHMW02.1040: gauge RHMW02

PTW: 86.75

1050: begin pumping well. RHMW02

Location Red Hill

Date 1/28/13

Project / Client 112066 NAVFAC

1210: finish sampling RHMW02
move to RHMW031215 RHMW03

PTW: 102.98

PTB: 110.12

1218: begin purging RHMW031220: no water purging.1241: water purging again1305: finish RHMW031310: walk back to RHMW01.1320: set up equipment at ~~RHMW01~~ ^{RHMW01}

1 compressor will not stay on.

The outlet by tank 1/2

not usable. So had to

connect to extension cords.

There was not enough voltage

to operate the compressor.

Compressor worked fine at

two other wells today.

1445: leave RHMW01.1500: ESI exit tunnels.

Location Red Hill

Date 1/28/13

Project / Client 112066 NAVFAC

1300: clear up for day.
1315: drop off drum at adit 3.

1325: ESI leave Red Hill.

1/28/13

A

Location Red Hill

Date 1/29/13

Project / Client 112066 NAVFAC

purpose: gw sampling
 personnel: JL, BI

730: ESI onsite

740: safety meeting.

750: ESI enter adit #5.
 elevator not working.

752: JL called RC about the
 situation

800: check adit #3.

adit #3 is clear. will
 enter lower tunnels through
 adit #3.

830: JL, BI bring equipment through
 adit #3.

830: wait for pump house to be opened.

835: pump house opened.

910: gaged RHMW2254-01

DTW: 82.78

PTB: —

920: begin purging RHMW2254-01

935: collect sample.

1000: leave ~~at~~ ^{at 1/29/13} pump station.

Location Red Hill

Date 1/29/13

Project / Client 112066

1015: gauge PAMW05
DTW: ~~86.70~~ ^{PL 1/29/13} 83.61
no depth to bottom, IP
could not get past 86.70 ~~stat~~

1045: sample well.

1100: clean up around PAMW05
move to PAMW01.

1100: gauge well. PAMW01

1115: attempt to purge well.

1145: water in tubing but not
^{PL 1/29/13} enough coming out of tubing

1215: water still not coming out
check bladder pump. get
pump back in well.

1245: stop attempt to purge well.
no water coming out of tubing
not enough time to sample the
well. pack up equipment
change time: 15s exhaust: 5s

1255: leave through adit #5

1310: leave exit funnels at adit #5

1330: clean up equipment

1330: leave Red Hill to meet
Domos at FedEx. 1/29/13

Location Red Hill.

Date 1/30/13

Project / Client 112066 NAVFAC

Purpose: gw sampling
Personnel: BT, JL

715: EST at adit #3

730: gauge OWDFAW01
DTW: 120.55
DTB: 145.10

740: begin hand bailing the well.

810: begin sampling well.

830: finish sampling well.
clean up and pack samples.

915: leave Red Hill wait for
DLNR at Halama Correctional
Facility.

930: DLNR at HCF.

938: go to HDMW 2253-03.
DLNR

950: gauge well.

955: DTW: 208.15

1058: DLNR finish w/ their work.

1105: EST begin purging well

1135: finish purging, begin sampling
HDMW 2253-03.

Location Red Hill Date 1/31/13Project / Client 112066 NAVFAC

1159 SVMP OZ needs to be resampled. the tube on the PFD was loose and pulling in outside air from the bag. ^{apparent} Red tags were high due to maintenance work being done at tank 05. (+900 ppbv)

1210 resample SVMP OZ

| | | | | |
|---------|-----|-----|-----|-----|
| shallow | 542 | 535 | 551 | 555 |
| mid | 919 | 922 | 885 | 931 |
| deep | 936 | 973 | 966 | 990 |

1225 ESI leave tunnels.1245 ESI exit adit 3.

1/31/13

R

Location Red Hill Date 2/4/13Project / Client 112066 NAVFAC

purpose: gw sampling
personnel: JL, BI

800: ESI get to RHSF
elevator still not working at adit 5.

815: ESI unpack equipment at adit 3.

safety meeting.

820: ESI enter adit 3.

845: gauge RHMW01
DTW: 84.04
M 2/4/13

900: begin ~~gauge~~ pumping from well.

1000: begin sampling RHMW01.

1215: finish sampling RHMW01
leave tunnels through adit 3.

1235: exit tunnels.1245: leave RHSF

2/4/13

R

APPENDIX C

Laboratory Reports

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CALSCIENCE

WORK ORDER NUMBER: 13-01-1776

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Environmental Science International, Inc.

Client Project Name: Red Hill LTM 112066

Attention: Robert Chong
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500

Richard Villafania

Approved for release on 02/7/2013 by:
Richard Villafania
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 litigation which may arise.



Contents

Client Project Name: Red Hill LTM 112066

Work Order Number: 13-01-1776

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Client: Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500
Attn: Robert Chong

Work Order: 13-01-1776
Project Name: Red Hill LTM 112066
Received: 01/31/13 10:30

ANALYTICAL REPORT

13-01-1776-1 Client ID: ES011 Matrix: Aqueous Units: ug/L Sampled: 01/28/13 11:10

EPA 6020 ICP/MS Metals Extraction: EPA 3020A Total

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---------|--------|-------|--------|-------|------|-----------------|-----------------------|--------------------|------------|
| Lead | <0.200 | U | 0.0898 | 0.200 | 1.00 | 1 | 01/31/13 00:00 | 02/01/13 17:44 | 130131L04D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

13-01-1776-2 Client ID: ES012 Matrix: Aqueous Units: ug/L Sampled: 01/28/13 10:00

EPA 6020 ICP/MS Metals Extraction: EPA 3020A Total

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---------|--------|-------|--------|-------|------|-----------------|-----------------------|--------------------|------------|
| Lead | 0.171 | J | 0.0898 | 0.200 | 1.00 | 1 | 01/31/13 00:00 | 02/01/13 17:47 | 130131L04D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

13-01-1776-3 Client ID: ES013 Matrix: Aqueous Units: ug/L Sampled: 01/28/13 13:00

EPA 6020 ICP/MS Metals Extraction: EPA 3020A Total

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---------|--------|-------|--------|-------|------|-----------------|-----------------------|--------------------|------------|
| Lead | <0.200 | U | 0.0898 | 0.200 | 1.00 | 1 | 01/31/13 00:00 | 02/01/13 17:50 | 130131L04D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

13-01-1776-6 Client ID: ES015 Matrix: Aqueous Units: ug/L Sampled: 01/29/13 10:45

EPA 6020 ICP/MS Metals Extraction: EPA 3020A Total

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---------|--------|-------|--------|-------|------|-----------------|-----------------------|--------------------|------------|
| Lead | <0.200 | U | 0.0898 | 0.200 | 1.00 | 1 | 01/31/13 00:00 | 02/01/13 17:56 | 130131L04D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

099-14-497-14 Client ID: Method Blank Matrix: Aqueous Units: ug/L Sampled: 02/04/13 13:45

EPA 6020 ICP/MS Metals Extraction: EPA 3020A Total

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---------|--------|-------|--------|-------|------|-----------------|-----------------------|--------------------|------------|
| Lead | <0.200 | U | 0.0898 | 0.200 | 1.00 | 1 | 01/31/13 00:00 | 02/01/13 17:05 | 130131L04D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Client: Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500
Attn: Robert Chong

Work Order: 13-01-1776
Project Name: Red Hill LTM 112066
Received: 01/31/13 10:30

ANALYTICAL REPORT

13-01-1776-1 Client ID: ES011 Matrix: Aqueous Units: ug/L Sampled: 01/28/13 11:10

EPA 8015B (M) TPH Diesel Extraction: EPA 3510C

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---------------|--------|-------|----|-----|-----|-----------------|-----------------------|--------------------|-----------|
| TPH as Diesel | 1700 | HD | 16 | 22 | 56 | 1.11 | 02/01/13 00:00 | 02/05/13 15:48 | 130201B03 |

Surr: n-Octacosane (51-141%) 97% 02/01/13 00:00 02/05/13 15:48 130201B03

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

13-01-1776-2 Client ID: ES012 Matrix: Aqueous Units: ug/L Sampled: 01/28/13 10:00

EPA 8015B (M) TPH Diesel Extraction: EPA 3510C

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---------------|--------|-------|----|-----|-----|-----------------|-----------------------|--------------------|-----------|
| TPH as Diesel | 1500 | HD | 16 | 22 | 56 | 1.11 | 02/01/13 00:00 | 02/05/13 16:06 | 130201B03 |

Surr: n-Octacosane (51-141%) 87% 02/01/13 00:00 02/05/13 16:06 130201B03

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

13-01-1776-3 Client ID: ES013 Matrix: Aqueous Units: ug/L Sampled: 01/28/13 13:00

EPA 8015B (M) TPH Diesel Extraction: EPA 3510C

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---------------|--------|-------|----|-----|-----|-----------------|-----------------------|--------------------|-----------|
| TPH as Diesel | 59 | HD | 15 | 20 | 50 | 1 | 02/01/13 00:00 | 02/05/13 16:23 | 130201B03 |

Surr: n-Octacosane (51-141%) 89% 02/01/13 00:00 02/05/13 16:23 130201B03

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

13-01-1776-4 Client ID: ES014 Matrix: Aqueous Units: ug/L Sampled: 01/29/13 09:35

EPA 8015B (M) TPH Diesel Extraction: EPA 3510C

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---------------|--------|-------|----|-----|-----|-----------------|-----------------------|--------------------|-----------|
| TPH as Diesel | 22 | HD,J | 15 | 20 | 50 | 1 | 02/01/13 00:00 | 02/05/13 16:42 | 130201B03 |

Surr: n-Octacosane (51-141%) 92% 02/01/13 00:00 02/05/13 16:42 130201B03

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.



Client: Environmental Science International, Inc.
 354 Uluniu Street, Suite 304
 Kailua, HI 96734-2500
 Attn: Robert Chong

Work Order: 13-01-1776
 Project Name: Red Hill LTM 112066
 Received: 01/31/13 10:30

ANALYTICAL REPORT

13-01-1776-6 Client ID: ES015 Matrix: Aqueous Units: ug/L Sampled: 01/29/13 10:45

EPA 8015B (M) TPH Diesel Extraction: EPA 3510C

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|-------------------------------------|-------------|-------|----|-----|-----|-----------------|-----------------------|-----------------------|------------------|
| TPH as Diesel | 62 | HD | 15 | 20 | 50 | 1 | 02/01/13 00:00 | 02/05/13 17:00 | 130201B03 |
| <i>Surr: n-Octacosane (51-141%)</i> | <i>112%</i> | | | | | | <i>02/01/13 00:00</i> | <i>02/05/13 17:00</i> | <i>130201B03</i> |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

099-15-516-27 Client ID: Method Blank Matrix: Aqueous Units: ug/L Sampled: 02/05/13 17:23

EPA 8015B (M) TPH Diesel Extraction: EPA 3510C

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|-------------------------------------|------------|-------|----|-----|-----|-----------------|-----------------------|-----------------------|------------------|
| TPH as Diesel | <20 | U | 15 | 20 | 50 | 1 | 02/01/13 00:00 | 02/05/13 14:20 | 130201B03 |
| <i>Surr: n-Octacosane (51-141%)</i> | <i>93%</i> | | | | | | <i>02/01/13 00:00</i> | <i>02/05/13 14:20</i> | <i>130201B03</i> |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents



Client: Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500

Work Order: 13-01-1776
Project Name: Red Hill LTM 112066

Attn: Robert Chong

Received: 01/31/13 10:30

ANALYTICAL REPORT

13-01-1776-1 Client ID: ES011 Matrix: Aqueous Units: ug/L Sampled: 01/28/13 11:10

EPA 8270C SIM PAHs Extraction: EPA 3510C

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|----------------------------------|--------|-------|-------|-------|------|-----------------|-----------------------|--------------------|-----------|
| Naphthalene | 110 | | 0.57 | 1.2 | 5.0 | 25 | 01/31/13 00:00 | 02/05/13 13:37 | 130131L06 |
| 2-Methylnaphthalene | 35 | | 0.66 | 1.2 | 5.0 | 25 | 01/31/13 00:00 | 02/05/13 13:37 | 130131L06 |
| 1-Methylnaphthalene | 47 | | 0.71 | 1.2 | 5.0 | 25 | 01/31/13 00:00 | 02/05/13 13:37 | 130131L06 |
| Acenaphthylene | <0.050 | U | 0.018 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 18:26 | 130131L06 |
| Acenaphthene | 0.57 | | 0.021 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 18:26 | 130131L06 |
| Fluorene | 0.30 | | 0.024 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 18:26 | 130131L06 |
| Phenanthrene | <0.050 | U | 0.031 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 18:26 | 130131L06 |
| Anthracene | <0.050 | U | 0.034 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 18:26 | 130131L06 |
| Fluoranthene | <0.050 | U | 0.027 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 18:26 | 130131L06 |
| Pyrene | <0.050 | U | 0.025 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 18:26 | 130131L06 |
| Benzo (a) Anthracene | <0.050 | U | 0.024 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 18:26 | 130131L06 |
| Chrysene | <0.050 | U | 0.019 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 18:26 | 130131L06 |
| Benzo (k) Fluoranthene | <0.050 | U | 0.023 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 18:26 | 130131L06 |
| Benzo (b) Fluoranthene | <0.050 | U | 0.025 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 18:26 | 130131L06 |
| Benzo (a) Pyrene | <0.050 | U | 0.036 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 18:26 | 130131L06 |
| Indeno (1,2,3-c,d) Pyrene | <0.050 | U | 0.022 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 18:26 | 130131L06 |
| Dibenz (a,h) Anthracene | <0.050 | U | 0.027 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 18:26 | 130131L06 |
| Benzo (g,h,i) Perylene | <0.050 | U | 0.022 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 18:26 | 130131L06 |
| Surr: Nitrobenzene-d5 (28-139%) | 100% | | | | | | 01/31/13 00:00 | 02/04/13 18:26 | 130131L06 |
| Surr: 2-Fluorobiphenyl (33-144%) | 105% | | | | | | 01/31/13 00:00 | 02/04/13 18:26 | 130131L06 |
| Surr: p-Terphenyl-d14 (23-160%) | 115% | | | | | | 01/31/13 00:00 | 02/04/13 18:26 | 130131L06 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.



Client: Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500
Attn: Robert Chong

Work Order: 13-01-1776
Project Name: Red Hill LTM 112066
Received: 01/31/13 10:30

ANALYTICAL REPORT

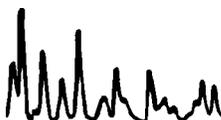
13-01-1776-2 Client ID: ES012 Matrix: Aqueous Units: ug/L Sampled: 01/28/13 10:00

EPA 8270C SIM PAHs Extraction: EPA 3510C

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---------------------------|--------|-------|-------|-------|------|-----------------|-----------------------|--------------------|-----------|
| Naphthalene | 100 | | 0.57 | 1.2 | 5.0 | 25 | 01/31/13 00:00 | 02/05/13 14:03 | 130131L06 |
| 2-Methylnaphthalene | 31 | | 0.66 | 1.2 | 5.0 | 25 | 01/31/13 00:00 | 02/05/13 14:03 | 130131L06 |
| 1-Methylnaphthalene | 41 | | 0.71 | 1.2 | 5.0 | 25 | 01/31/13 00:00 | 02/05/13 14:03 | 130131L06 |
| Acenaphthylene | <0.050 | U | 0.018 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 18:53 | 130131L06 |
| Acenaphthene | 0.54 | | 0.021 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 18:53 | 130131L06 |
| Fluorene | 0.27 | | 0.024 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 18:53 | 130131L06 |
| Phenanthrene | <0.050 | U | 0.031 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 18:53 | 130131L06 |
| Anthracene | <0.050 | U | 0.034 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 18:53 | 130131L06 |
| Fluoranthene | <0.050 | U | 0.027 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 18:53 | 130131L06 |
| Pyrene | <0.050 | U | 0.025 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 18:53 | 130131L06 |
| Benzo (a) Anthracene | <0.050 | U | 0.024 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 18:53 | 130131L06 |
| Chrysene | <0.050 | U | 0.019 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 18:53 | 130131L06 |
| Benzo (k) Fluoranthene | <0.050 | U | 0.023 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 18:53 | 130131L06 |
| Benzo (b) Fluoranthene | <0.050 | U | 0.025 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 18:53 | 130131L06 |
| Benzo (a) Pyrene | <0.050 | U | 0.036 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 18:53 | 130131L06 |
| Indeno (1,2,3-c,d) Pyrene | <0.050 | U | 0.022 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 18:53 | 130131L06 |
| Dibenz (a,h) Anthracene | <0.050 | U | 0.027 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 18:53 | 130131L06 |
| Benzo (g,h,i) Perylene | <0.050 | U | 0.022 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 18:53 | 130131L06 |

Surr: Nitrobenzene-d5 (28-139%) 92% 01/31/13 00:00 02/04/13 18:53 130131L06
 Surr: 2-Fluorobiphenyl (33-144%) 87% 01/31/13 00:00 02/04/13 18:53 130131L06
 Surr: p-Terphenyl-d14 (23-160%) 101% 01/31/13 00:00 02/04/13 18:53 130131L06

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.



Client: Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500
Attn: Robert Chong

Work Order: 13-01-1776
Project Name: Red Hill LTM 112066
Received: 01/31/13 10:30

ANALYTICAL REPORT

13-01-1776-3 Client ID: ES013 Matrix: Aqueous Units: ug/L Sampled: 01/28/13 13:00

EPA 8270C SIM PAHs Extraction: EPA 3510C

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---------------------------|--------|-------|-------|-------|------|-----------------|-----------------------|--------------------|-----------|
| Naphthalene | 0.32 | | 0.023 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:19 | 130131L06 |
| 2-Methylnaphthalene | 0.069 | J | 0.026 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:19 | 130131L06 |
| 1-Methylnaphthalene | 0.10 | J | 0.028 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:19 | 130131L06 |
| Acenaphthylene | <0.050 | U | 0.018 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:19 | 130131L06 |
| Acenaphthene | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:19 | 130131L06 |
| Fluorene | <0.050 | U | 0.024 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:19 | 130131L06 |
| Phenanthrene | <0.050 | U | 0.031 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:19 | 130131L06 |
| Anthracene | <0.050 | U | 0.034 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:19 | 130131L06 |
| Fluoranthene | <0.050 | U | 0.027 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:19 | 130131L06 |
| Pyrene | <0.050 | U | 0.025 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:19 | 130131L06 |
| Benzo (a) Anthracene | <0.050 | U | 0.024 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:19 | 130131L06 |
| Chrysene | <0.050 | U | 0.019 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:19 | 130131L06 |
| Benzo (k) Fluoranthene | <0.050 | U | 0.023 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:19 | 130131L06 |
| Benzo (b) Fluoranthene | <0.050 | U | 0.025 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:19 | 130131L06 |
| Benzo (a) Pyrene | <0.050 | U | 0.036 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:19 | 130131L06 |
| Indeno (1,2,3-c,d) Pyrene | <0.050 | U | 0.022 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:19 | 130131L06 |
| Dibenz (a,h) Anthracene | <0.050 | U | 0.027 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:19 | 130131L06 |
| Benzo (g,h,i) Perylene | <0.050 | U | 0.022 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:19 | 130131L06 |

Surr: Nitrobenzene-d5 (28-139%) 112% 01/31/13 00:00 02/04/13 19:19 130131L06
 Surr: 2-Fluorobiphenyl (33-144%) 99% 01/31/13 00:00 02/04/13 19:19 130131L06
 Surr: p-Terphenyl-d14 (23-160%) 116% 01/31/13 00:00 02/04/13 19:19 130131L06

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.



Return to Contents

Client: Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500
Attn: Robert Chong

Work Order: 13-01-1776
Project Name: Red Hill LTM 112066
Received: 01/31/13 10:30

ANALYTICAL REPORT

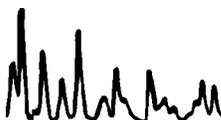
13-01-1776-4 **Client ID: ES014** **Matrix: Aqueous** **Units: ug/L** **Sampled: 01/29/13 09:35**

EPA 8270C SIM PAHs **Extraction: EPA 3510C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---------------------------|--------|-------|-------|-------|------|-----------------|-----------------------|--------------------|-----------|
| Naphthalene | 0.052 | J | 0.023 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:45 | 130131L06 |
| 2-Methylnaphthalene | <0.050 | U | 0.026 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:45 | 130131L06 |
| 1-Methylnaphthalene | <0.050 | U | 0.028 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:45 | 130131L06 |
| Acenaphthylene | <0.050 | U | 0.018 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:45 | 130131L06 |
| Acenaphthene | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:45 | 130131L06 |
| Fluorene | <0.050 | U | 0.024 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:45 | 130131L06 |
| Phenanthrene | <0.050 | U | 0.031 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:45 | 130131L06 |
| Anthracene | <0.050 | U | 0.034 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:45 | 130131L06 |
| Fluoranthene | <0.050 | U | 0.027 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:45 | 130131L06 |
| Pyrene | <0.050 | U | 0.025 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:45 | 130131L06 |
| Benzo (a) Anthracene | <0.050 | U | 0.024 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:45 | 130131L06 |
| Chrysene | <0.050 | U | 0.019 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:45 | 130131L06 |
| Benzo (k) Fluoranthene | <0.050 | U | 0.023 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:45 | 130131L06 |
| Benzo (b) Fluoranthene | <0.050 | U | 0.025 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:45 | 130131L06 |
| Benzo (a) Pyrene | <0.050 | U | 0.036 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:45 | 130131L06 |
| Indeno (1,2,3-c,d) Pyrene | <0.050 | U | 0.022 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:45 | 130131L06 |
| Dibenz (a,h) Anthracene | <0.050 | U | 0.027 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:45 | 130131L06 |
| Benzo (g,h,i) Perylene | <0.050 | U | 0.022 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 19:45 | 130131L06 |

Surr: Nitrobenzene-d5 (28-139%) 109% 01/31/13 00:00 02/04/13 19:45 130131L06
 Surr: 2-Fluorobiphenyl (33-144%) 92% 01/31/13 00:00 02/04/13 19:45 130131L06
 Surr: p-Terphenyl-d14 (23-160%) 110% 01/31/13 00:00 02/04/13 19:45 130131L06

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.



Return to Contents

Client: Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500
Attn: Robert Chong

Work Order: 13-01-1776
Project Name: Red Hill LTM 112066
Received: 01/31/13 10:30

ANALYTICAL REPORT

13-01-1776-6 Client ID: ES015 Matrix: Aqueous Units: ug/L Sampled: 01/29/13 10:45

EPA 8270C SIM PAHs Extraction: EPA 3510C

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---------------------------|--------|-------|-------|-------|------|-----------------|-----------------------|--------------------|-----------|
| Naphthalene | 0.075 | J | 0.023 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 20:11 | 130131L06 |
| 2-Methylnaphthalene | <0.050 | U | 0.026 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 20:11 | 130131L06 |
| 1-Methylnaphthalene | <0.050 | U | 0.028 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 20:11 | 130131L06 |
| Acenaphthylene | <0.050 | U | 0.018 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 20:11 | 130131L06 |
| Acenaphthene | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 20:11 | 130131L06 |
| Fluorene | <0.050 | U | 0.024 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 20:11 | 130131L06 |
| Phenanthrene | <0.050 | U | 0.031 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 20:11 | 130131L06 |
| Anthracene | <0.050 | U | 0.034 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 20:11 | 130131L06 |
| Fluoranthene | <0.050 | U | 0.027 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 20:11 | 130131L06 |
| Pyrene | <0.050 | U | 0.025 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 20:11 | 130131L06 |
| Benzo (a) Anthracene | <0.050 | U | 0.024 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 20:11 | 130131L06 |
| Chrysene | <0.050 | U | 0.019 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 20:11 | 130131L06 |
| Benzo (k) Fluoranthene | <0.050 | U | 0.023 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 20:11 | 130131L06 |
| Benzo (b) Fluoranthene | <0.050 | U | 0.025 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 20:11 | 130131L06 |
| Benzo (a) Pyrene | <0.050 | U | 0.036 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 20:11 | 130131L06 |
| Indeno (1,2,3-c,d) Pyrene | <0.050 | U | 0.022 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 20:11 | 130131L06 |
| Dibenz (a,h) Anthracene | <0.050 | U | 0.027 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 20:11 | 130131L06 |
| Benzo (g,h,i) Perylene | <0.050 | U | 0.022 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 20:11 | 130131L06 |

Surr: Nitrobenzene-d5 (28-139%) 110% 01/31/13 00:00 02/04/13 20:11 130131L06
 Surr: 2-Fluorobiphenyl (33-144%) 97% 01/31/13 00:00 02/04/13 20:11 130131L06
 Surr: p-Terphenyl-d14 (23-160%) 111% 01/31/13 00:00 02/04/13 20:11 130131L06

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.



Client: Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500
Attn: Robert Chong

Work Order: 099-15-148
Project Name: Red Hill LTM 112066
Received: 01/31/13 10:30

ANALYTICAL REPORT

099-15-148-7 **Client ID: Method Blank** **Matrix: Aqueous** **Units: ug/L** **Sampled: 02/04/13 17:55**

EPA 8270C SIM PAHs **Extraction: EPA 3510C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---------------------------|--------|-------|-------|-------|------|-----------------|-----------------------|--------------------|-----------|
| Naphthalene | <0.050 | U | 0.023 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 17:08 | 130131L06 |
| 2-Methylnaphthalene | <0.050 | U | 0.026 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 17:08 | 130131L06 |
| 1-Methylnaphthalene | <0.050 | U | 0.028 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 17:08 | 130131L06 |
| Acenaphthylene | <0.050 | U | 0.018 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 17:08 | 130131L06 |
| Acenaphthene | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 17:08 | 130131L06 |
| Fluorene | <0.050 | U | 0.024 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 17:08 | 130131L06 |
| Phenanthrene | <0.050 | U | 0.031 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 17:08 | 130131L06 |
| Anthracene | <0.050 | U | 0.034 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 17:08 | 130131L06 |
| Fluoranthene | <0.050 | U | 0.027 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 17:08 | 130131L06 |
| Pyrene | <0.050 | U | 0.025 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 17:08 | 130131L06 |
| Benzo (a) Anthracene | <0.050 | U | 0.024 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 17:08 | 130131L06 |
| Chrysene | <0.050 | U | 0.019 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 17:08 | 130131L06 |
| Benzo (k) Fluoranthene | <0.050 | U | 0.023 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 17:08 | 130131L06 |
| Benzo (b) Fluoranthene | <0.050 | U | 0.025 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 17:08 | 130131L06 |
| Benzo (a) Pyrene | <0.050 | U | 0.036 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 17:08 | 130131L06 |
| Indeno (1,2,3-c,d) Pyrene | <0.050 | U | 0.022 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 17:08 | 130131L06 |
| Dibenz (a,h) Anthracene | <0.050 | U | 0.027 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 17:08 | 130131L06 |
| Benzo (g,h,i) Perylene | <0.050 | U | 0.022 | 0.050 | 0.20 | 1 | 01/31/13 00:00 | 02/04/13 17:08 | 130131L06 |

Surr: Nitrobenzene-d5 (28-139%) 109% 01/31/13 00:00 02/04/13 17:08 130131L06
 Surr: 2-Fluorobiphenyl (33-144%) 99% 01/31/13 00:00 02/04/13 17:08 130131L06
 Surr: p-Terphenyl-d14 (23-160%) 111% 01/31/13 00:00 02/04/13 17:08 130131L06

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.



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Client: Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500

Work Order: 13-01-1776
Project Name: Red Hill LTM 112066

Attn: Robert Chong

Received: 01/31/13 10:30

ANALYTICAL REPORT

13-01-1776-1 Client ID: ES011 Matrix: Aqueous Units: ug/L Sampled: 01/28/13 11:10

GC/MS GRO/EPA 8260B Volatile Organics Extraction: EPA 5030C

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|-----------------------------|--------|----------|------|------|-----|-----------------|-----------------------|--------------------|-----------|
| Acetone | <10 | IJ,ICH,U | 10 | 10 | 20 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| Bromoform | <2.0 | U | 0.50 | 2.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| Bromomethane | <5.0 | U | 3.9 | 5.0 | 20 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| Chloromethane | <2.0 | U | 1.8 | 2.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| 1,2-Dibromo-3-Chloropropane | <2.0 | U | 1.2 | 2.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| 1,2-Dibromoethane | <0.50 | U | 0.36 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| 1,2-Dichlorobenzene | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| 1,3-Dichlorobenzene | <0.50 | U | 0.40 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| 1,4-Dichlorobenzene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| c-1,2-Dichloroethene | <0.50 | U | 0.48 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| 1,2-Dichloropropane | <0.50 | U | 0.42 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| c-1,3-Dichloropropene | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| t-1,3-Dichloropropene | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| Ethylbenzene | 0.21 | J | 0.14 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| Methylene Chloride | <2.0 | U | 0.64 | 2.0 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| Styrene | <0.50 | U | 0.17 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| 1,1,1,2-Tetrachloroethane | <0.50 | U | 0.40 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| 1,1,1,2,2-Tetrachloroethane | <0.50 | U | 0.41 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| 1,2,4-Trichlorobenzene | <0.50 | U | 0.50 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| Hexachloro-1,3-Butadiene | <0.50 | U | 0.32 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |

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Client: Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500
Attn: Robert Chong

Work Order: 13-01-1776
Project Name: Red Hill LTM 112066
Received: 01/31/13 10:30

ANALYTICAL REPORT

13-01-1776-1 Client ID: ES011 Matrix: Aqueous Units: ug/L Sampled: 01/28/13 11:10

GC/MS GRO/EPA 8260B Volatile Organics Extraction: EPA 5030C

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|--|--------|-------|------|------|-----|-----------------|-----------------------|--------------------|-----------|
| 1,2,3-Trichloropropane | <2.0 | U | 0.64 | 2.0 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| Vinyl Chloride | <0.50 | U | 0.30 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| o-Xylene | 0.65 | J | 0.23 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| Gasoline Range Organics | 660 | | 13 | 30 | 50 | 1 | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| Surr: Dibromofluoromethane (80-126%) | 99% | | | | | | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| Surr: 1,2-Dichloroethane-d4 (80-134%) | 101% | | | | | | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| Surr: Toluene-d8 (80-120%) | 100% | | | | | | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| Surr: Toluene-d8-TPPH (88-112%) | 101% | | | | | | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |
| Surr: 1,4-Bromofluorobenzene (80-120%) | 101% | | | | | | 01/31/13 00:00 | 01/31/13 18:14 | 130131L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

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Client: Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500
Attn: Robert Chong

Work Order: 13-01-1776
Project Name: Red Hill LTM 112066
Received: 01/31/13 10:30

ANALYTICAL REPORT

13-01-1776-2 Client ID: ES012 Matrix: Aqueous Units: ug/L Sampled: 01/28/13 10:00

GC/MS GRO/EPA 8260B Volatile Organics Extraction: EPA 5030C

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|-----------------------------|--------|----------|------|------|-----|-----------------|-----------------------|--------------------|-----------|
| Acetone | <10 | IJ,ICH,U | 10 | 10 | 20 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| Bromoform | <2.0 | U | 0.50 | 2.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| Bromomethane | <5.0 | U | 3.9 | 5.0 | 20 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| Chloromethane | <2.0 | U | 1.8 | 2.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| 1,2-Dibromo-3-Chloropropane | <2.0 | U | 1.2 | 2.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| 1,2-Dibromoethane | <0.50 | U | 0.36 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| 1,2-Dichlorobenzene | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| 1,3-Dichlorobenzene | <0.50 | U | 0.40 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| 1,4-Dichlorobenzene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| c-1,2-Dichloroethene | <0.50 | U | 0.48 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| 1,2-Dichloropropane | <0.50 | U | 0.42 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| c-1,3-Dichloropropene | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| t-1,3-Dichloropropene | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| Ethylbenzene | 0.24 | J | 0.14 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| Methylene Chloride | <2.0 | U | 0.64 | 2.0 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| Styrene | <0.50 | U | 0.17 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| 1,1,1,2-Tetrachloroethane | <0.50 | U | 0.40 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| 1,1,2,2-Tetrachloroethane | <0.50 | U | 0.41 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| 1,2,4-Trichlorobenzene | <0.50 | U | 0.50 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| Hexachloro-1,3-Butadiene | <0.50 | U | 0.32 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |

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Client: Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500
Attn: Robert Chong

Work Order: 13-01-1776
Project Name: Red Hill LTM 112066
Received: 01/31/13 10:30

ANALYTICAL REPORT

13-01-1776-2 Client ID: ES012 Matrix: Aqueous Units: ug/L Sampled: 01/28/13 10:00

GC/MS GRO/EPA 8260B Volatile Organics Extraction: EPA 5030C

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch | |
|--|--------|-------|------|------|-----|-----------------|-----------------------|--------------------|----------------|-----------|
| 1,2,3-Trichloropropane | <2.0 | U | 0.64 | 2.0 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 | |
| Vinyl Chloride | <0.50 | U | 0.30 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 | |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 | |
| o-Xylene | 0.69 | J | 0.23 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 | |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 | |
| Gasoline Range Organics | 650 | | 13 | 30 | 50 | 1 | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 | |
| Surr: Dibromofluoromethane (80-126%) | | | | | | | 97% | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| Surr: 1,2-Dichloroethane-d4 (80-134%) | | | | | | | 92% | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| Surr: Toluene-d8 (80-120%) | | | | | | | 99% | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| Surr: Toluene-d8-TPPH (88-112%) | | | | | | | 100% | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |
| Surr: 1,4-Bromofluorobenzene (80-120%) | | | | | | | 102% | 01/31/13 00:00 | 01/31/13 18:41 | 130131L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

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Client: Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500
Attn: Robert Chong

Work Order: 13-01-1776
Project Name: Red Hill LTM 112066
Received: 01/31/13 10:30

ANALYTICAL REPORT

13-01-1776-3 Client ID: ES013 Matrix: Aqueous Units: ug/L Sampled: 01/28/13 13:00

GC/MS GRO/EPA 8260B Volatile Organics Extraction: EPA 5030C

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|-----------------------------|--------|----------|------|------|-----|-----------------|-----------------------|--------------------|-----------|
| Acetone | <10 | IJ,ICH,U | 10 | 10 | 20 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| Bromoform | <2.0 | U | 0.50 | 2.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| Bromomethane | <5.0 | U | 3.9 | 5.0 | 20 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| Chloromethane | <2.0 | U | 1.8 | 2.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| 1,2-Dibromo-3-Chloropropane | <2.0 | U | 1.2 | 2.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| 1,2-Dibromoethane | <0.50 | U | 0.36 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| 1,2-Dichlorobenzene | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| 1,3-Dichlorobenzene | <0.50 | U | 0.40 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| 1,4-Dichlorobenzene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| c-1,2-Dichloroethene | <0.50 | U | 0.48 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| 1,2-Dichloropropane | <0.50 | U | 0.42 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| c-1,3-Dichloropropene | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| t-1,3-Dichloropropene | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| Methylene Chloride | <2.0 | U | 0.64 | 2.0 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| Styrene | <0.50 | U | 0.17 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| 1,1,1,2-Tetrachloroethane | <0.50 | U | 0.40 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| 1,1,2,2-Tetrachloroethane | <0.50 | U | 0.41 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| 1,2,4-Trichlorobenzene | <0.50 | U | 0.50 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| Hexachloro-1,3-Butadiene | <0.50 | U | 0.32 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |

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Client: Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500
Attn: Robert Chong

Work Order: 13-01-1776
Project Name: Red Hill LTM 112066
Received: 01/31/13 10:30

ANALYTICAL REPORT

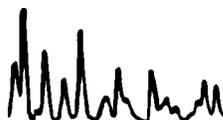
13-01-1776-3 Client ID: ES013 Matrix: Aqueous Units: ug/L Sampled: 01/28/13 13:00

GC/MS GRO/EPA 8260B Volatile Organics Extraction: EPA 5030C

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|--|--------|-------|------|------|-----|-----------------|-----------------------|--------------------|-----------|
| 1,2,3-Trichloropropane | <2.0 | U | 0.64 | 2.0 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| Vinyl Chloride | <0.50 | U | 0.30 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| Gasoline Range Organics | <30 | U | 13 | 30 | 50 | 1 | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| Surr: Dibromofluoromethane (80-126%) | 92% | | | | | | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| Surr: 1,2-Dichloroethane-d4 (80-134%) | 90% | | | | | | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| Surr: Toluene-d8 (80-120%) | 97% | | | | | | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| Surr: Toluene-d8-TPPH (88-112%) | 98% | | | | | | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |
| Surr: 1,4-Bromofluorobenzene (80-120%) | 95% | | | | | | 01/31/13 00:00 | 01/31/13 20:53 | 130131L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

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Client: Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500
Attn: Robert Chong

Work Order: 13-01-1776
Project Name: Red Hill LTM 112066
Received: 01/31/13 10:30

ANALYTICAL REPORT

13-01-1776-4 Client ID: ES014 Matrix: Aqueous Units: ug/L Sampled: 01/29/13 09:35

GC/MS GRO/EPA 8260B Volatile Organics Extraction: EPA 5030C

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|-----------------------------|--------|----------|------|------|-----|-----------------|-----------------------|--------------------|-----------|
| Acetone | <10 | IJ,ICH,U | 10 | 10 | 20 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| Bromoform | <2.0 | U | 0.50 | 2.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| Bromomethane | <5.0 | U | 3.9 | 5.0 | 20 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| Chloromethane | <2.0 | U | 1.8 | 2.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| 1,2-Dibromo-3-Chloropropane | <2.0 | U | 1.2 | 2.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| 1,2-Dibromoethane | <0.50 | U | 0.36 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| 1,2-Dichlorobenzene | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| 1,3-Dichlorobenzene | <0.50 | U | 0.40 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| 1,4-Dichlorobenzene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| c-1,2-Dichloroethene | <0.50 | U | 0.48 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| 1,2-Dichloropropane | <0.50 | U | 0.42 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| c-1,3-Dichloropropene | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| t-1,3-Dichloropropene | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| Methylene Chloride | <2.0 | U | 0.64 | 2.0 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| Styrene | <0.50 | U | 0.17 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| 1,1,1,2-Tetrachloroethane | <0.50 | U | 0.40 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| 1,1,2,2-Tetrachloroethane | <0.50 | U | 0.41 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| 1,2,4-Trichlorobenzene | <0.50 | U | 0.50 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| Hexachloro-1,3-Butadiene | <0.50 | U | 0.32 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |

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Client: Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500
Attn: Robert Chong

Work Order: 13-01-1776
Project Name: Red Hill LTM 112066
Received: 01/31/13 10:30

ANALYTICAL REPORT

13-01-1776-4 **Client ID: ES014** **Matrix: Aqueous** **Units: ug/L** **Sampled: 01/29/13 09:35**

GC/MS GRO/EPA 8260B Volatile Organics **Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|--|--------|-------|------|------|-----|-----------------|-----------------------|--------------------|-----------|
| 1,2,3-Trichloropropane | <2.0 | U | 0.64 | 2.0 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| Vinyl Chloride | <0.50 | U | 0.30 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| Gasoline Range Organics | <30 | U | 13 | 30 | 50 | 1 | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| Surr: Dibromofluoromethane (80-126%) | 93% | | | | | | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| Surr: 1,2-Dichloroethane-d4 (80-134%) | 92% | | | | | | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| Surr: Toluene-d8 (80-120%) | 97% | | | | | | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| Surr: Toluene-d8-TPPH (88-112%) | 98% | | | | | | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |
| Surr: 1,4-Bromofluorobenzene (80-120%) | 95% | | | | | | 01/31/13 00:00 | 01/31/13 21:19 | 130131L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

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Client: Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500
Attn: Robert Chong

Work Order: 13-01-1776
Project Name: Red Hill LTM 112066
Received: 01/31/13 10:30

ANALYTICAL REPORT

13-01-1776-6 Client ID: ES015 Matrix: Aqueous Units: ug/L Sampled: 01/29/13 10:45

GC/MS GRO/EPA 8260B Volatile Organics Extraction: EPA 5030C

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|-----------------------------|--------|----------|------|------|-----|-----------------|-----------------------|--------------------|-----------|
| Acetone | <10 | IJ,ICH,U | 10 | 10 | 20 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| Bromoform | <2.0 | U | 0.50 | 2.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| Bromomethane | <5.0 | U | 3.9 | 5.0 | 20 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| Chloromethane | <2.0 | U | 1.8 | 2.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| 1,2-Dibromo-3-Chloropropane | <2.0 | U | 1.2 | 2.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| 1,2-Dibromoethane | <0.50 | U | 0.36 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| 1,2-Dichlorobenzene | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| 1,3-Dichlorobenzene | <0.50 | U | 0.40 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| 1,4-Dichlorobenzene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| c-1,2-Dichloroethene | <0.50 | U | 0.48 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| 1,2-Dichloropropane | <0.50 | U | 0.42 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| c-1,3-Dichloropropene | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| t-1,3-Dichloropropene | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| Methylene Chloride | <2.0 | U | 0.64 | 2.0 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| Styrene | <0.50 | U | 0.17 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| 1,1,1,2-Tetrachloroethane | <0.50 | U | 0.40 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| 1,1,2,2-Tetrachloroethane | <0.50 | U | 0.41 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| 1,2,4-Trichlorobenzene | <0.50 | U | 0.50 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| Hexachloro-1,3-Butadiene | <0.50 | U | 0.32 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |

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Client: Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500
Attn: Robert Chong

Work Order: 13-01-1776
Project Name: Red Hill LTM 112066
Received: 01/31/13 10:30

ANALYTICAL REPORT

13-01-1776-6 Client ID: ES015 Matrix: Aqueous Units: ug/L Sampled: 01/29/13 10:45

GC/MS GRO/EPA 8260B Volatile Organics Extraction: EPA 5030C

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|--|--------|-------|------|------|-----|-----------------|-----------------------|--------------------|-----------|
| 1,2,3-Trichloropropane | <2.0 | U | 0.64 | 2.0 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| Vinyl Chloride | <0.50 | U | 0.30 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| Gasoline Range Organics | <30 | U | 13 | 30 | 50 | 1 | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| Surr: Dibromofluoromethane (80-126%) | 96% | | | | | | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| Surr: 1,2-Dichloroethane-d4 (80-134%) | 94% | | | | | | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| Surr: Toluene-d8 (80-120%) | 99% | | | | | | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| Surr: Toluene-d8-TPPH (88-112%) | 100% | | | | | | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |
| Surr: 1,4-Bromofluorobenzene (80-120%) | 94% | | | | | | 01/31/13 00:00 | 01/31/13 21:46 | 130131L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

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Client: Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500
Attn: Robert Chong

Work Order: 13-01-1776
Project Name: Red Hill LTM 112066
Received: 01/31/13 10:30

ANALYTICAL REPORT

13-01-1776-7 Client ID: ESTRIP Matrix: Aqueous Units: ug/L Sampled: 01/29/13 07:00

GC/MS GRO/EPA 8260B Volatile Organics Extraction: EPA 5030C

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|-----------------------------|--------|----------|------|------|-----|-----------------|-----------------------|--------------------|-----------|
| Acetone | <10 | IJ,ICH,U | 10 | 10 | 20 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| Bromoform | <2.0 | U | 0.50 | 2.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| Bromomethane | <5.0 | U | 3.9 | 5.0 | 20 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| Chloromethane | <2.0 | U | 1.8 | 2.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| 1,2-Dibromo-3-Chloropropane | <2.0 | U | 1.2 | 2.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| 1,2-Dibromoethane | <0.50 | U | 0.36 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| 1,2-Dichlorobenzene | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| 1,3-Dichlorobenzene | <0.50 | U | 0.40 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| 1,4-Dichlorobenzene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| c-1,2-Dichloroethene | <0.50 | U | 0.48 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| 1,2-Dichloropropane | <0.50 | U | 0.42 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| c-1,3-Dichloropropene | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| t-1,3-Dichloropropene | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| Methylene Chloride | <2.0 | U | 0.64 | 2.0 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| Styrene | <0.50 | U | 0.17 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| 1,1,1,2-Tetrachloroethane | <0.50 | U | 0.40 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| 1,1,2,2-Tetrachloroethane | <0.50 | U | 0.41 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| 1,2,4-Trichlorobenzene | <0.50 | U | 0.50 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| Hexachloro-1,3-Butadiene | <0.50 | U | 0.32 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |



Client: Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500
Attn: Robert Chong

Work Order: 13-01-1776
Project Name: Red Hill LTM 112066
Received: 01/31/13 10:30

ANALYTICAL REPORT

13-01-1776-7 Client ID: ESTRIP Matrix: Aqueous Units: ug/L Sampled: 01/29/13 07:00

GC/MS GRO/EPA 8260B Volatile Organics Extraction: EPA 5030C

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch | |
|--|--------|-------|------|------|-----|-----------------|-----------------------|--------------------|----------------|-----------|
| 1,2,3-Trichloropropane | <2.0 | U | 0.64 | 2.0 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 | |
| Vinyl Chloride | <0.50 | U | 0.30 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 | |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 | |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 | |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 | |
| Gasoline Range Organics | <30 | U | 13 | 30 | 50 | 1 | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 | |
| Surr: Dibromofluoromethane (80-126%) | | | | | | | 92% | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| Surr: 1,2-Dichloroethane-d4 (80-134%) | | | | | | | 90% | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| Surr: Toluene-d8 (80-120%) | | | | | | | 98% | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| Surr: Toluene-d8-TPPH (88-112%) | | | | | | | 99% | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |
| Surr: 1,4-Bromofluorobenzene (80-120%) | | | | | | | 97% | 01/31/13 00:00 | 01/31/13 20:26 | 130131L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

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Client: Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500
Attn: Robert Chong

Work Order: 099-13-057
Project Name: Red Hill LTM 112066
Received: 01/31/13 10:30

ANALYTICAL REPORT

099-13-057-3 **Client ID: Method Blank** **Matrix: Aqueous** **Units: ug/L** **Sampled: 01/31/13 15:23**

GC/MS GRO/EPA 8260B Volatile Organics **Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|-----------------------------|--------|-------|------|------|-----|-----------------|-----------------------|--------------------|-----------|
| Acetone | <10 | U | 10 | 10 | 20 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| Bromoform | <2.0 | U | 0.50 | 2.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| Bromomethane | <5.0 | U | 3.9 | 5.0 | 20 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| Chloromethane | <2.0 | U | 1.8 | 2.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| 1,2-Dibromo-3-Chloropropane | <2.0 | U | 1.2 | 2.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| 1,2-Dibromoethane | <0.50 | U | 0.36 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| 1,2-Dichlorobenzene | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| 1,3-Dichlorobenzene | <0.50 | U | 0.40 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| 1,4-Dichlorobenzene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| c-1,2-Dichloroethene | <0.50 | U | 0.48 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| 1,2-Dichloropropane | <0.50 | U | 0.42 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| c-1,3-Dichloropropene | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| t-1,3-Dichloropropene | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| Methylene Chloride | <2.0 | U | 0.64 | 2.0 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| Styrene | <0.50 | U | 0.17 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| 1,1,1,2-Tetrachloroethane | <0.50 | U | 0.40 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| 1,1,2,2-Tetrachloroethane | <0.50 | U | 0.41 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| 1,2,4-Trichlorobenzene | <0.50 | U | 0.50 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| Hexachloro-1,3-Butadiene | <0.50 | U | 0.32 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |

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Client: Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500
Attn: Robert Chong

Work Order: 099-13-057
Project Name: Red Hill LTM 112066
Received: 01/31/13 10:30

ANALYTICAL REPORT

099-13-057-3 **Client ID: Method Blank** **Matrix: Aqueous** **Units: ug/L** **Sampled: 01/31/13 15:23**

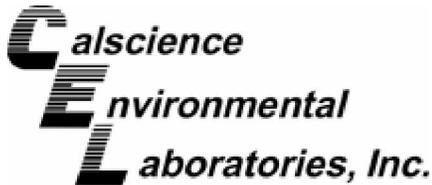
GC/MS GRO/EPA 8260B Volatile Organics **Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch | |
|--|--------|-------|------|------|-----|-----------------|-----------------------|--------------------|----------------|-----------|
| 1,2,3-Trichloropropane | <2.0 | U | 0.64 | 2.0 | 5.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 | |
| Vinyl Chloride | <0.50 | U | 0.30 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 | |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 | |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 | |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 | |
| Gasoline Range Organics | <30 | U | 13 | 30 | 50 | 1 | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 | |
| Surr: Dibromofluoromethane (80-126%) | | | | | | | 94% | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| Surr: 1,2-Dichloroethane-d4 (80-134%) | | | | | | | 94% | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| Surr: Toluene-d8 (80-120%) | | | | | | | 98% | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| Surr: Toluene-d8-TPPH (88-112%) | | | | | | | 99% | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |
| Surr: 1,4-Bromofluorobenzene (80-120%) | | | | | | | 97% | 01/31/13 00:00 | 01/31/13 13:56 | 130131L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

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Quality Control - Spike/Spike Duplicate



Environmental Science International, Inc.
 354 Uluniu Street, Suite 304
 Kailua, HI 96734-2500

Date Received: 01/31/13
 Work Order No: 13-01-1776
 Preparation: EPA 3020A Total
 Method: EPA 6020

Project Red Hill LTM 112066

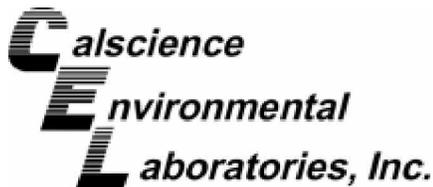
| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---------------------------|---------|------------|---------------|---------------|---------------------|
| ES011 | Aqueous | ICP/MS 03 | 01/31/13 | 02/01/13 | 130131S04 |

| <u>Parameter</u> | <u>SAMPLE CONC</u> | <u>SPIKE ADDED</u> | <u>MS CONC</u> | <u>MS %REC</u> | <u>MSD CONC</u> | <u>MSD %REC</u> | <u>%REC CL</u> | <u>RPD</u> | <u>RPD CL</u> | <u>Qualifiers</u> |
|------------------|--------------------|--------------------|----------------|----------------|-----------------|-----------------|----------------|------------|---------------|-------------------|
| Lead | ND | 100.0 | 107.8 | 108 | 108.9 | 109 | 80-120 | 1 | 0-20 | |

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RPD - Relative Percent Difference , CL - Control Limit





Quality Control - PDS / PDSD



Environmental Science International, Inc.
 354 Uluniu Street, Suite 304
 Kailua, HI 96734-2500

Date Received 01/31/13
 Work Order No: 13-01-1776
 Preparation: EPA 3020A Total
 Method: EPA 6020

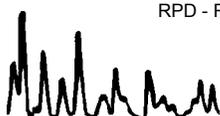
Project: Red Hill LTM 112066

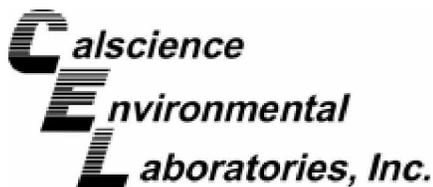
| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | PDS / PDSD Batch Number |
|---------------------------|---------|------------|---------------|---------------|-------------------------|
| ES011 | Aqueous | ICP/MS 03 | 01/31/13 | 02/01/13 | 130131S04 |

| Parameter | SAMPLE CONC | SPIKE ADDED | PDS CONC | PDS %REC | PDSD CONC | PDSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|-----------|-------------|-------------|----------|----------|-----------|-----------|---------|-----|--------|------------|
| Lead | ND | 100.0 | 110.5 | 110 | 106.6 | 107 | 75-125 | 4 | 0-20 | |

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RPD - Relative Percent Difference , CL - Control Limit





Quality Control - Spike/Spike Duplicate



Environmental Science International, Inc.
 354 Uluniu Street, Suite 304
 Kailua, HI 96734-2500

Date Received: 01/31/13
 Work Order No: 13-01-1776
 Preparation: EPA 3510C
 Method: EPA 8015B (M)

Project Red Hill LTM 112066

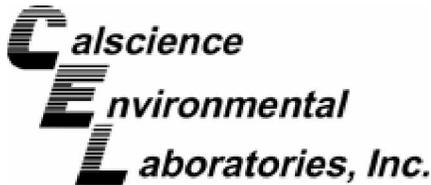
| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---------------------------|---------|------------|---------------|---------------|---------------------|
| ES011 | Aqueous | GC 45 | 02/01/13 | 02/05/13 | 130201S03 |

| Parameter | <u>SAMPLE CONC</u> | <u>SPIKE ADDED</u> | <u>MS CONC</u> | <u>MS %REC</u> | <u>MSD CONC</u> | <u>MSD %REC</u> | <u>%REC CL</u> | <u>RPD</u> | <u>RPD CL</u> | <u>Qualifiers</u> |
|---------------|--------------------|--------------------|----------------|----------------|-----------------|-----------------|----------------|------------|---------------|-------------------|
| TPH as Diesel | 1743 | 4000 | 6954 | 130 | 6987 | 131 | 55-133 | 0 | 0-30 | |

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RPD - Relative Percent Difference , CL - Control Limit





Quality Control - Spike/Spike Duplicate



Environmental Science International, Inc.
 354 Uluniu Street, Suite 304
 Kailua, HI 96734-2500

Date Received: 01/31/13
 Work Order No: 13-01-1776
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PAHs

Project Red Hill LTM 112066

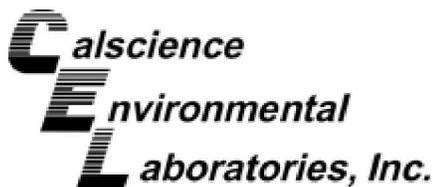
| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---------------------------|---------|------------|---------------|---------------|---------------------|
| ES011 | Aqueous | GC/MS AAA | 01/31/13 | 02/04/13 | 130131S06 |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---------------------------|-------------|-------------|---------|---------|----------|----------|---------|-----|--------|------------|
| Naphthalene | 112.6 | 2.000 | 99.16 | 0 | 91.10 | 0 | 21-133 | 8 | 0-25 | 3 |
| 2-Methylnaphthalene | 34.80 | 2.000 | 28.89 | 0 | 36.36 | 78 | 21-140 | 23 | 0-25 | 3 |
| 1-Methylnaphthalene | 47.36 | 2.000 | 43.09 | 0 | 47.01 | 0 | 20-140 | 9 | 0-25 | 3 |
| Acenaphthylene | ND | 2.000 | 2.216 | 111 | 2.119 | 106 | 33-145 | 4 | 0-25 | |
| Acenaphthene | 0.5740 | 2.000 | 2.772 | 110 | 2.648 | 104 | 49-121 | 5 | 0-25 | |
| Fluorene | 0.3020 | 2.000 | 2.608 | 115 | 2.528 | 111 | 59-121 | 3 | 0-25 | |
| Phenanthrene | ND | 2.000 | 2.251 | 113 | 2.159 | 108 | 54-120 | 4 | 0-25 | |
| Anthracene | ND | 2.000 | 1.980 | 99 | 1.908 | 95 | 27-133 | 4 | 0-25 | |
| Fluoranthene | ND | 2.000 | 2.363 | 118 | 2.281 | 114 | 26-137 | 4 | 0-25 | |
| Pyrene | ND | 2.000 | 2.559 | 128 | 2.483 | 124 | 18-168 | 3 | 0-25 | |
| Benzo (a) Anthracene | ND | 2.000 | 2.792 | 140 | 2.699 | 135 | 33-143 | 3 | 0-25 | |
| Chrysene | ND | 2.000 | 2.471 | 124 | 2.379 | 119 | 17-168 | 4 | 0-25 | |
| Benzo (k) Fluoranthene | ND | 2.000 | 2.765 | 138 | 2.651 | 133 | 24-159 | 4 | 0-25 | |
| Benzo (b) Fluoranthene | ND | 2.000 | 2.833 | 142 | 2.718 | 136 | 24-159 | 4 | 0-25 | |
| Benzo (a) Pyrene | ND | 2.000 | 2.551 | 128 | 2.458 | 123 | 17-163 | 4 | 0-25 | |
| Indeno (1,2,3-c,d) Pyrene | ND | 2.000 | 2.446 | 122 | 2.261 | 113 | 10-171 | 8 | 0-25 | |
| Dibenz (a,h) Anthracene | ND | 2.000 | 2.436 | 122 | 2.270 | 114 | 10-219 | 7 | 0-25 | |
| Benzo (g,h,i) Perylene | ND | 2.000 | 2.366 | 118 | 2.234 | 112 | 10-227 | 6 | 0-25 | |

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RPD - Relative Percent Difference , CL - Control Limit





Quality Control - Spike/Spike Duplicate



Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500

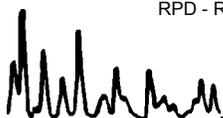
Date Received: 01/31/13
Work Order No: 13-01-1776
Preparation: EPA 5030C
Method: GC/MS / EPA 8260B

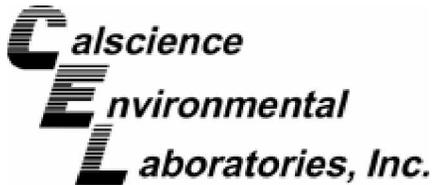
Project Red Hill LTM 112066

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---------------------------|---------|------------|---------------|---------------|---------------------|
| ES011 | Aqueous | GC/MS OO | 01/31/13 | 01/31/13 | 130131S02 |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|-----------------------------|-------------|-------------|---------|---------|----------|----------|---------|-----|--------|------------|
| Acetone | ND | 50.00 | 67.63 | 135 | 67.64 | 135 | 40-140 | 0 | 0-20 | |
| Benzene | ND | 50.00 | 45.23 | 90 | 46.65 | 93 | 80-120 | 3 | 0-20 | |
| Bromodichloromethane | ND | 50.00 | 47.31 | 95 | 48.71 | 97 | 75-120 | 3 | 0-20 | |
| Bromoform | ND | 50.00 | 51.06 | 102 | 52.59 | 105 | 70-130 | 3 | 0-20 | |
| Bromomethane | ND | 50.00 | 45.84 | 92 | 43.80 | 88 | 30-145 | 5 | 0-20 | |
| 2-Butanone | ND | 50.00 | 57.44 | 115 | 56.05 | 112 | 30-150 | 2 | 0-20 | |
| Carbon Tetrachloride | ND | 50.00 | 44.65 | 89 | 46.02 | 92 | 65-140 | 3 | 0-20 | |
| Chlorobenzene | ND | 50.00 | 47.39 | 95 | 49.16 | 98 | 80-120 | 4 | 0-20 | |
| Chloroethane | ND | 50.00 | 46.36 | 93 | 49.15 | 98 | 60-135 | 6 | 0-20 | |
| Chloroform | ND | 50.00 | 46.67 | 93 | 46.68 | 93 | 65-135 | 0 | 0-20 | |
| Chloromethane | ND | 50.00 | 35.93 | 72 | 38.59 | 77 | 40-125 | 7 | 0-20 | |
| Dibromochloromethane | ND | 50.00 | 47.73 | 95 | 49.63 | 99 | 60-135 | 4 | 0-20 | |
| 1,2-Dibromo-3-Chloropropane | ND | 50.00 | 51.00 | 102 | 52.76 | 106 | 50-130 | 3 | 0-20 | |
| 1,2-Dibromoethane | ND | 50.00 | 50.43 | 101 | 52.56 | 105 | 80-120 | 4 | 0-20 | |
| 1,2-Dichlorobenzene | ND | 50.00 | 49.52 | 99 | 50.52 | 101 | 70-120 | 2 | 0-20 | |
| 1,3-Dichlorobenzene | ND | 50.00 | 49.70 | 99 | 51.16 | 102 | 75-125 | 3 | 0-20 | |
| 1,4-Dichlorobenzene | ND | 50.00 | 48.47 | 97 | 49.89 | 100 | 75-125 | 3 | 0-20 | |
| 1,1-Dichloroethane | ND | 50.00 | 44.39 | 89 | 46.11 | 92 | 70-135 | 4 | 0-20 | |
| 1,2-Dichloroethane | ND | 50.00 | 44.70 | 89 | 45.58 | 91 | 70-130 | 2 | 0-20 | |
| 1,1-Dichloroethene | ND | 50.00 | 38.42 | 77 | 39.19 | 78 | 70-130 | 2 | 0-20 | |
| c-1,2-Dichloroethene | ND | 50.00 | 48.39 | 97 | 50.20 | 100 | 70-125 | 4 | 0-20 | |
| t-1,2-Dichloroethene | ND | 50.00 | 46.40 | 93 | 49.53 | 99 | 60-140 | 7 | 0-20 | |
| 1,2-Dichloropropane | ND | 50.00 | 48.26 | 97 | 49.55 | 99 | 75-125 | 3 | 0-20 | |
| c-1,3-Dichloropropene | ND | 50.00 | 51.85 | 104 | 52.56 | 105 | 70-130 | 1 | 0-20 | |
| t-1,3-Dichloropropene | ND | 50.00 | 45.96 | 92 | 47.60 | 95 | 55-140 | 4 | 0-20 | |
| Ethylbenzene | ND | 50.00 | 50.02 | 100 | 51.89 | 104 | 75-125 | 4 | 0-20 | |
| Methylene Chloride | ND | 50.00 | 45.28 | 91 | 45.70 | 91 | 55-140 | 1 | 0-20 | |
| 4-Methyl-2-Pentanone | ND | 50.00 | 51.85 | 104 | 52.40 | 105 | 60-135 | 1 | 0-20 | |
| Styrene | ND | 50.00 | 52.60 | 105 | 53.65 | 107 | 65-135 | 2 | 0-20 | |
| 1,1,1,2-Tetrachloroethane | ND | 50.00 | 48.98 | 98 | 50.68 | 101 | 80-130 | 3 | 0-20 | |
| 1,1,2,2-Tetrachloroethane | ND | 50.00 | 49.26 | 99 | 50.14 | 100 | 65-130 | 2 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit





Quality Control - Spike/Spike Duplicate



Environmental Science International, Inc.
 354 Uluniu Street, Suite 304
 Kailua, HI 96734-2500

Date Received: 01/31/13
 Work Order No: 13-01-1776
 Preparation: EPA 5030C
 Method: GC/MS / EPA 8260B

Project Red Hill LTM 112066

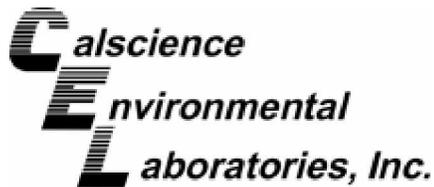
| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---------------------------|---------|------------|---------------|---------------|---------------------|
| ES011 | Aqueous | GC/MS OO | 01/31/13 | 01/31/13 | 130131S02 |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|-----------------------------|-------------|-------------|---------|---------|----------|----------|---------|-----|--------|------------|
| Tetrachloroethene | ND | 50.00 | 42.53 | 85 | 44.47 | 89 | 45-150 | 4 | 0-20 | |
| Toluene | ND | 50.00 | 47.88 | 96 | 49.31 | 99 | 75-120 | 3 | 0-20 | |
| 1,2,4-Trichlorobenzene | ND | 50.00 | 55.17 | 110 | 55.71 | 111 | 65-135 | 1 | 0-20 | |
| 1,1,1-Trichloroethane | ND | 50.00 | 46.50 | 93 | 47.80 | 96 | 65-130 | 3 | 0-20 | |
| Hexachloro-1,3-Butadiene | ND | 50.00 | 48.87 | 98 | 50.33 | 101 | 50-140 | 3 | 0-20 | |
| 1,1,2-Trichloroethane | ND | 50.00 | 47.53 | 95 | 48.66 | 97 | 75-125 | 2 | 0-20 | |
| Trichloroethene | ND | 50.00 | 46.48 | 93 | 48.16 | 96 | 70-125 | 4 | 0-20 | |
| 1,2,3-Trichloropropane | ND | 50.00 | 47.77 | 96 | 49.44 | 99 | 75-125 | 3 | 0-20 | |
| Vinyl Chloride | ND | 50.00 | 41.48 | 83 | 42.28 | 85 | 50-145 | 2 | 0-20 | |
| p/m-Xylene | ND | 100.0 | 100.4 | 100 | 103.5 | 103 | 75-130 | 3 | 0-20 | |
| o-Xylene | ND | 50.00 | 52.96 | 106 | 54.97 | 110 | 80-120 | 4 | 0-20 | |
| Methyl-t-Butyl Ether (MTBE) | ND | 50.00 | 51.50 | 103 | 53.66 | 107 | 65-125 | 4 | 0-20 | |

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RPD - Relative Percent Difference , CL - Control Limit





Quality Control - LCS/LCS Duplicate



Environmental Science International, Inc.
 354 Uluniu Street, Suite 304
 Kailua, HI 96734-2500

Date Received: N/A
 Work Order No: 13-01-1776
 Preparation: EPA 3020A Total
 Method: EPA 6020

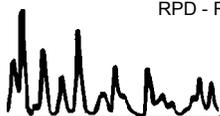
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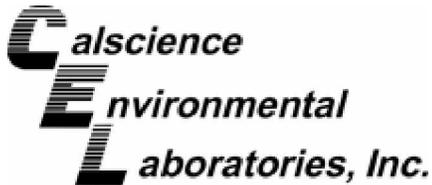
| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---------------------------|---------|------------|---------------|---------------|-----------------------|
| 099-14-497-14 | Aqueous | ICP/MS 03 | 01/31/13 | 02/01/13 | 130131L04D |

| Parameter | <u>SPIKE ADDED</u> | <u>LCS CONC</u> | <u>LCS %REC</u> | <u>LCSD CONC</u> | <u>LCSD %REC</u> | <u>%REC CL</u> | <u>RPD</u> | <u>RPD CL</u> | <u>Qualifiers</u> |
|-----------|--------------------|-----------------|-----------------|------------------|------------------|----------------|------------|---------------|-------------------|
| Lead | 100.0 | 101.2 | 101 | 100.2 | 100 | 80-120 | 1 | 0-20 | |

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RPD - Relative Percent Difference , CL - Control Limit





Quality Control - LCS/LCS Duplicate



Environmental Science International, Inc.
 354 Uluniu Street, Suite 304
 Kailua, HI 96734-2500

Date Received: N/A
 Work Order No: 13-01-1776
 Preparation: EPA 3510C
 Method: EPA 8015B (M)

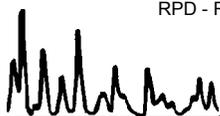
Project: Red Hill LTM 112066

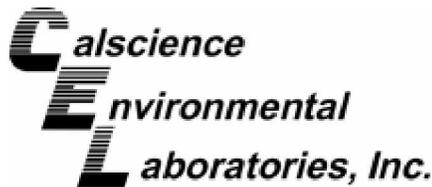
| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---------------------------|---------|------------|---------------|---------------|-----------------------|
| 099-15-516-27 | Aqueous | GC 45 | 02/01/13 | 02/05/13 | 130201B03 |

| Parameter | <u>SPIKE ADDED</u> | <u>LCS CONC</u> | <u>LCS %REC</u> | <u>LCSD CONC</u> | <u>LCSD %REC</u> | <u>%REC CL</u> | <u>RPD</u> | <u>RPD CL</u> | <u>Qualifiers</u> |
|---------------|--------------------|-----------------|-----------------|------------------|------------------|----------------|------------|---------------|-------------------|
| TPH as Diesel | 4000 | 3316 | 83 | 3508 | 88 | 60-132 | 6 | 0-11 | |

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RPD - Relative Percent Difference , CL - Control Limit





Quality Control - LCS/LCS Duplicate



Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500

Date Received: N/A
Work Order No: 13-01-1776
Preparation: EPA 3510C
Method: EPA 8270C SIM PAHs

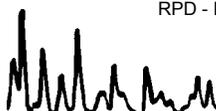
Project: Red Hill LTM 112066

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number | | | | | |
|---------------------------|-------------|------------|---------------|---------------|-----------------------|---------|--------|-----|--------|------------|
| 099-15-148-7 | Aqueous | GC/MS AAA | 01/31/13 | 02/04/13 | 130131L06 | | | | | |
| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | ME_CL | RPD | RPD CL | Qualifiers |
| Naphthalene | 2.000 | 1.993 | 100 | 1.986 | 99 | 21-133 | 2-152 | 0 | 0-25 | |
| 2-Methylnaphthalene | 2.000 | 2.149 | 107 | 2.110 | 105 | 21-140 | 1-160 | 2 | 0-25 | |
| 1-Methylnaphthalene | 2.000 | 2.126 | 106 | 2.146 | 107 | 20-140 | 0-160 | 1 | 0-25 | |
| Acenaphthylene | 2.000 | 2.024 | 101 | 2.025 | 101 | 33-145 | 14-164 | 0 | 0-25 | |
| Acenaphthene | 2.000 | 2.014 | 101 | 1.997 | 100 | 55-121 | 44-132 | 1 | 0-25 | |
| Fluorene | 2.000 | 2.153 | 108 | 2.136 | 107 | 59-121 | 49-131 | 1 | 0-25 | |
| Phenanthrene | 2.000 | 2.195 | 110 | 2.183 | 109 | 54-120 | 43-131 | 1 | 0-25 | |
| Anthracene | 2.000 | 1.991 | 100 | 1.993 | 100 | 27-133 | 9-151 | 0 | 0-25 | |
| Fluoranthene | 2.000 | 2.176 | 109 | 2.155 | 108 | 26-137 | 8-156 | 1 | 0-25 | |
| Pyrene | 2.000 | 2.448 | 122 | 2.441 | 122 | 45-129 | 31-143 | 0 | 0-25 | |
| Benzo (a) Anthracene | 2.000 | 2.608 | 130 | 2.593 | 130 | 33-143 | 15-161 | 1 | 0-25 | |
| Chrysene | 2.000 | 2.354 | 118 | 2.336 | 117 | 17-168 | 0-193 | 1 | 0-25 | |
| Benzo (k) Fluoranthene | 2.000 | 2.579 | 129 | 2.537 | 127 | 24-159 | 2-182 | 2 | 0-25 | |
| Benzo (b) Fluoranthene | 2.000 | 2.617 | 131 | 2.621 | 131 | 24-159 | 2-182 | 0 | 0-25 | |
| Benzo (a) Pyrene | 2.000 | 2.387 | 119 | 2.385 | 119 | 17-163 | 0-187 | 0 | 0-25 | |
| Indeno (1,2,3-c,d) Pyrene | 2.000 | 2.290 | 114 | 2.286 | 114 | 25-175 | 0-200 | 0 | 0-25 | |
| Dibenz (a,h) Anthracene | 2.000 | 2.233 | 112 | 2.219 | 111 | 25-175 | 0-200 | 1 | 0-25 | |
| Benzo (g,h,i) Perylene | 2.000 | 2.197 | 110 | 2.202 | 110 | 25-157 | 3-179 | 0 | 0-25 | |

Total number of LCS compounds : 18
 Total number of ME compounds : 0
 Total number of ME compounds allowed : 1
 LCS ME CL validation result : Pass

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RPD - Relative Percent Difference , CL - Control Limit



Quality Control - LCS/LCS Duplicate



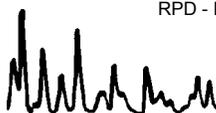
Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500

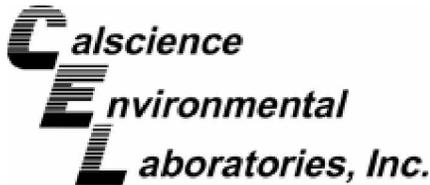
Date Received: N/A
Work Order No: 13-01-1776
Preparation: EPA 5030C
Method: GC/MS / EPA 8260B

Project: Red Hill LTM 112066

| Quality Control Sample ID | Matrix | Instrument | | Date Prepared | Date Analyzed | LCS/LCSD Batch Number | | | | |
|-----------------------------|------------------------|---------------------|---------------------|----------------------|----------------------|-----------------------|--------------|------------|---------------|-------------------|
| 099-13-057-3 | Aqueous | GC/MS OO | | 01/31/13 | 01/31/13 | 130131L01 | | | | |
| Parameter | <u>SPIKE ADDED</u> | <u>LCS CONC</u> | <u>LCS %REC</u> | <u>LCSD CONC</u> | <u>LCSD %REC</u> | <u>%REC CL</u> | <u>ME CL</u> | <u>RPD</u> | <u>RPD CL</u> | <u>Qualifiers</u> |
| Acetone | 50.00 | 52.31 | 105 | 62.75 | 125 | 40-140 | 23-157 | 18 | 0-20 | |
| Benzene | 50.00 | 44.55 | 89 | 45.58 | 91 | 80-120 | 73-127 | 2 | 0-20 | |
| Bromodichloromethane | 50.00 | 47.54 | 95 | 47.86 | 96 | 75-120 | 68-128 | 1 | 0-20 | |
| Bromoform | 50.00 | 51.69 | 103 | 53.34 | 107 | 70-130 | 60-140 | 3 | 0-20 | |
| Bromomethane | 50.00 | 41.29 | 83 | 40.29 | 81 | 30-145 | 11-164 | 2 | 0-20 | |
| 2-Butanone | 50.00 | 48.50 | 97 | 56.75 | 114 | 30-150 | 10-170 | 16 | 0-20 | |
| Carbon Tetrachloride | 50.00 | 44.78 | 90 | 46.53 | 93 | 65-140 | 52-152 | 4 | 0-20 | |
| Chlorobenzene | 50.00 | 46.71 | 93 | 47.56 | 95 | 80-120 | 73-127 | 2 | 0-20 | |
| Chloroethane | 50.00 | 49.66 | 99 | 47.78 | 96 | 60-135 | 48-148 | 4 | 0-20 | |
| Chloroform | 50.00 | 44.88 | 90 | 46.66 | 93 | 65-135 | 53-147 | 4 | 0-20 | |
| Chloromethane | 50.00 | 40.61 | 81 | 39.04 | 78 | 40-125 | 26-139 | 4 | 0-20 | |
| Dibromochloromethane | 50.00 | 47.93 | 96 | 49.19 | 98 | 60-135 | 48-148 | 3 | 0-20 | |
| 1,2-Dibromo-3-Chloropropane | 50.00 | 45.54 | 91 | 48.62 | 97 | 50-130 | 37-143 | 7 | 0-20 | |
| 1,2-Dibromoethane | 50.00 | 47.98 | 96 | 50.15 | 100 | 80-120 | 73-127 | 4 | 0-20 | |
| 1,2-Dichlorobenzene | 50.00 | 47.67 | 95 | 48.93 | 98 | 70-120 | 62-128 | 3 | 0-20 | |
| 1,3-Dichlorobenzene | 50.00 | 47.79 | 96 | 48.42 | 97 | 75-125 | 67-133 | 1 | 0-20 | |
| 1,4-Dichlorobenzene | 50.00 | 47.19 | 94 | 47.76 | 96 | 75-125 | 67-133 | 1 | 0-20 | |
| 1,1-Dichloroethane | 50.00 | 44.70 | 89 | 45.46 | 91 | 70-135 | 59-146 | 2 | 0-20 | |
| 1,2-Dichloroethane | 50.00 | 44.28 | 89 | 45.22 | 90 | 70-130 | 60-140 | 2 | 0-20 | |
| 1,1-Dichloroethene | 50.00 | 39.77 | 80 | 39.10 | 78 | 70-130 | 60-140 | 2 | 0-20 | |
| c-1,2-Dichloroethene | 50.00 | 46.56 | 93 | 48.83 | 98 | 70-125 | 61-134 | 5 | 0-20 | |
| t-1,2-Dichloroethene | 50.00 | 46.32 | 93 | 47.69 | 95 | 60-140 | 47-153 | 3 | 0-20 | |
| 1,2-Dichloropropane | 50.00 | 47.10 | 94 | 48.12 | 96 | 75-125 | 67-133 | 2 | 0-20 | |
| c-1,3-Dichloropropene | 50.00 | 50.05 | 100 | 51.62 | 103 | 70-130 | 60-140 | 3 | 0-20 | |
| t-1,3-Dichloropropene | 50.00 | 45.21 | 90 | 46.04 | 92 | 55-140 | 41-154 | 2 | 0-20 | |
| Ethylbenzene | 50.00 | 49.55 | 99 | 50.32 | 101 | 75-125 | 67-133 | 2 | 0-20 | |
| Methylene Chloride | 50.00 | 44.65 | 89 | 45.35 | 91 | 55-140 | 41-154 | 2 | 0-20 | |
| 4-Methyl-2-Pentanone | 50.00 | 44.97 | 90 | 50.81 | 102 | 60-135 | 48-148 | 12 | 0-20 | |
| Styrene | 50.00 | 50.84 | 102 | 51.70 | 103 | 65-135 | 53-147 | 2 | 0-20 | |
| 1,1,1,2-Tetrachloroethane | 50.00 | 47.72 | 95 | 49.13 | 98 | 80-130 | 72-138 | 3 | 0-20 | |
| 1,1,2,2-Tetrachloroethane | 50.00 | 45.82 | 92 | 47.71 | 95 | 65-130 | 54-141 | 4 | 0-20 | |
| Tetrachloroethene | 50.00 | 41.66 | 83 | 45.35 | 91 | 45-150 | 28-168 | 8 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit





Quality Control - LCS/LCS Duplicate



Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500

Date Received: N/A
Work Order No: 13-01-1776
Preparation: EPA 5030C
Method: GC/MS / EPA 8260B

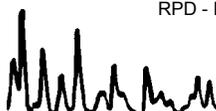
Project: Red Hill LTM 112066

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number | | | | | |
|-----------------------------|--------------------|-----------------|-----------------|------------------|-----------------------|----------------|--------------|------------|---------------|-------------------|
| 099-13-057-3 | Aqueous | GC/MS OO | 01/31/13 | 01/31/13 | 130131L01 | | | | | |
| Parameter | <u>SPIKE ADDED</u> | <u>LCS CONC</u> | <u>LCS %REC</u> | <u>LCSD CONC</u> | <u>LCSD %REC</u> | <u>%REC CL</u> | <u>ME CL</u> | <u>RPD</u> | <u>RPD CL</u> | <u>Qualifiers</u> |
| Toluene | 50.00 | 46.28 | 93 | 48.13 | 96 | 75-120 | 68-128 | 4 | 0-20 | |
| 1,2,4-Trichlorobenzene | 50.00 | 51.14 | 102 | 51.90 | 104 | 65-135 | 53-147 | 1 | 0-20 | |
| 1,1,1-Trichloroethane | 50.00 | 46.15 | 92 | 47.27 | 95 | 65-130 | 54-141 | 2 | 0-20 | |
| Hexachloro-1,3-Butadiene | 50.00 | 47.89 | 96 | 47.38 | 95 | 50-140 | 35-155 | 1 | 0-20 | |
| 1,1,2-Trichloroethane | 50.00 | 45.96 | 92 | 48.54 | 97 | 75-125 | 67-133 | 5 | 0-20 | |
| Trichloroethene | 50.00 | 45.52 | 91 | 47.11 | 94 | 70-125 | 61-134 | 3 | 0-20 | |
| 1,2,3-Trichloropropane | 50.00 | 43.71 | 87 | 46.10 | 92 | 75-125 | 67-133 | 5 | 0-20 | |
| Vinyl Chloride | 50.00 | 42.24 | 84 | 40.47 | 81 | 50-145 | 34-161 | 4 | 0-20 | |
| p/m-Xylene | 100.0 | 99.06 | 99 | 100.6 | 101 | 75-130 | 66-139 | 2 | 0-20 | |
| o-Xylene | 50.00 | 51.54 | 103 | 51.79 | 104 | 80-120 | 73-127 | 0 | 0-20 | |
| Methyl-t-Butyl Ether (MTBE) | 50.00 | 47.61 | 95 | 49.86 | 100 | 65-125 | 55-135 | 5 | 0-20 | |
| Gasoline Range Organics | 1000 | 1114 | 111 | 1122 | 112 | 80-120 | 73-127 | 1 | 0-20 | |

Total number of LCS compounds : 44
 Total number of ME compounds : 0
 Total number of ME compounds allowed : 2
 LCS ME CL validation result : Pass

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit



WORK ORDER #: 13-01-1776

| Lab Sample Number | Client Sample ID | Method | Extraction | Date/Time Analyzed | Chemist ID | Instrument | Analytical Location |
|-------------------|------------------|------------------|-------------|--------------------|------------|------------|---------------------|
| 1-K | ES011 | EPA 6020 | EPA 3020A T | 02/1/2013 17:44 | 598 | ICP/MS 03 | 1 |
| 1-S | ES011 | EPA 8270C SIM PA | EPA 3510C | 02/4/2013 18:26 | 449 | GC/MS AA | 1 |
| 1-S | ES011 | EPA 8270C SIM PA | EPA 3510C | 02/5/2013 13:37 | 449 | GC/MS AA | 1 |
| 1-L | ES011 | EPA 8015B (M) | EPA 3510C | 02/5/2013 15:48 | 628 | GC 45 | 1 |
| 1-A | ES011 | GC/MS / EPA 8260 | EPA 5030C | 01/31/2013 18:14 | 486 | GC/MS OO | 2 |
| 2-G | ES012 | EPA 6020 | EPA 3020A T | 02/1/2013 17:47 | 598 | ICP/MS 03 | 1 |
| 2-J | ES012 | EPA 8270C SIM PA | EPA 3510C | 02/4/2013 18:53 | 449 | GC/MS AA | 1 |
| 2-J | ES012 | EPA 8270C SIM PA | EPA 3510C | 02/5/2013 14:03 | 449 | GC/MS AA | 1 |
| 2-H | ES012 | EPA 8015B (M) | EPA 3510C | 02/5/2013 16:06 | 628 | GC 45 | 1 |
| 2-A | ES012 | GC/MS / EPA 8260 | EPA 5030C | 01/31/2013 18:41 | 486 | GC/MS OO | 2 |
| 3-G | ES013 | EPA 6020 | EPA 3020A T | 02/1/2013 17:50 | 598 | ICP/MS 03 | 1 |
| 3-J | ES013 | EPA 8270C SIM PA | EPA 3510C | 02/4/2013 19:19 | 449 | GC/MS AA | 1 |
| 3-H | ES013 | EPA 8015B (M) | EPA 3510C | 02/5/2013 16:23 | 628 | GC 45 | 1 |
| 3-A | ES013 | GC/MS / EPA 8260 | EPA 5030C | 01/31/2013 20:53 | 486 | GC/MS OO | 2 |
| 4-H | ES014 | EPA 8270C SIM PA | EPA 3510C | 02/4/2013 19:45 | 449 | GC/MS AA | 1 |
| 4-G | ES014 | EPA 8015B (M) | EPA 3510C | 02/5/2013 16:42 | 628 | GC 45 | 1 |
| 4-A | ES014 | GC/MS / EPA 8260 | EPA 5030C | 01/31/2013 21:19 | 486 | GC/MS OO | 2 |
| 5-A | ES014UF | EPA 200.8 | N/A | 02/1/2013 17:53 | 598 | ICP/MS 03 | 1 |
| 6-G | ES015 | EPA 6020 | EPA 3020A T | 02/1/2013 17:56 | 598 | ICP/MS 03 | 1 |
| 6-J | ES015 | EPA 8270C SIM PA | EPA 3510C | 02/4/2013 20:11 | 449 | GC/MS AA | 1 |
| 6-H | ES015 | EPA 8015B (M) | EPA 3510C | 02/5/2013 17:00 | 628 | GC 45 | 1 |
| 6-A | ES015 | GC/MS / EPA 8260 | EPA 5030C | 01/31/2013 21:46 | 486 | GC/MS OO | 2 |
| 7-A | ESTRIP | GC/MS / EPA 8260 | EPA 5030C | 01/31/2013 20:26 | 486 | GC/MS OO | 2 |

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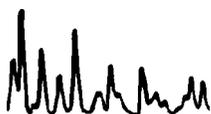
| Location | Description |
|----------|---|
| 1 | 7440 Lincoln Way, Garden Grove, CA 92841 |
| 2 | 7445 Lampson Avenue, Garden Grove, CA 92841 |

Work Order Number: 13-01-1776

| <u>Qualifier</u> | <u>Definition</u> |
|------------------|--|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | 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. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification. |
| 4 | The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| DL | The Detection Limit (DL) is the smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration at the 99% level of confidence. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| ICH | Initial calibrtn. verif. recov. above method CL for this analyte. |
| ICJ | Initial calibrtn. verif. recov. below method CL for this analyte. |
| IH | Calibrtn. verif. recov. below method CL for this analyte. |
| IJ | Calibrtn. verif. recov. above method CL for this analyte. |
| J | Analyte was detected at a concentration below the LOQ and above the DL. Reported value is estimated. |
| LOD | The Limit of Detection (LOD) is the smallest amount or concentration of a substance that must be present in a sample in order to be detected at 99% confidence level. |
| LOQ | The Limit of Quantitation (LOQ) is the lowest concentration of a substance that produces a quantitative result within specified limits of precision and bias. |
| Q | 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. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| U | Undetected at Detection Limit (DL) and is reported as less than the Limit of Detection (LOD). |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

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.

MPN - Most Probable Number





Calscience Environmental Laboratories, Inc.

7440 Lincoln Way, Garden Grove, CA 92841-1427 • (714) 895-5494

Other CA office locations: Concord and San Luis Obispo

For courier service / sample drop off information, contact sales@calscience.com or call us.

CHAIN OF CUSTODY RECORD

WO # / LAB USE ONLY

13-01-1776

Date 1/29/13

Page 1 of 1

| | | | | |
|--|---------------------|---|--|-------------------------------------|
| LABORATORY CLIENT: <u>Environmental Science International</u> | | CLIENT PROJECT NAME / NUMBER: <u>Red Hill LTM 112066</u> | | P.O. NO.: |
| ADDRESS: <u>354 Union St. # 304</u> | | PROJECT CONTACT: <u>Robert Chong</u> | | SAMPLER(S): (PRINT) <u>B1/JL</u> |
| CITY: <u>Kaunua</u> | STATE: <u>Hi</u> | ZIP: <u>96734</u> | | |

TEL: 808-261-0740 E-MAIL: RLHONG@science.com, DFEMER@science.com

TURNAROUND TIME:
 SAME DAY 24 HR 48 HR 72 HR STANDARD
 COELT EDF GLOBAL ID LOG CODE

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES

Please check box or fill in blank as needed.

| Unpreserved | Preserved | Field Filtered | TPH(g) <input type="checkbox"/> GRO <u>8260</u> | TPH(g) <input type="checkbox"/> DRO <u>8015B</u> | TPH <input type="checkbox"/> C6-C36 <input type="checkbox"/> C6-C44 | TPH | BTEX / MTBE <input type="checkbox"/> 8260 <input type="checkbox"/> | VOCs (8260) | Oxygenates (8260) | Prep (5035) <input type="checkbox"/> En Core <input type="checkbox"/> Terra Core | SVOCs (8270) | Pesticides (8081) | PCBs (8082) | PAHs <input type="checkbox"/> 8270 <input checked="" type="checkbox"/> 8270 SIM | T22 Metals <input type="checkbox"/> 6010/747X <input type="checkbox"/> 6020/747X | Cr(VI) <input type="checkbox"/> 7196 <input type="checkbox"/> 7199 <input type="checkbox"/> 218.6 | Lead <u>6020</u> | Lead <u>200.8</u> |
|-------------------------------------|-------------------------------------|-------------------------------------|---|--|---|-----|--|-------------------------------------|-------------------|--|--------------|-------------------|-------------|---|--|---|-------------------------------------|-------------------------------------|
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | | <input checked="" type="checkbox"/> | | | | | | <input checked="" type="checkbox"/> | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | | <input checked="" type="checkbox"/> | | | | | | <input checked="" type="checkbox"/> | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | | <input checked="" type="checkbox"/> | | | | | | <input checked="" type="checkbox"/> | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
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| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | | <input checked="" type="checkbox"/> | | | | | | <input checked="" type="checkbox"/> | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
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| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | | <input checked="" type="checkbox"/> | | | | | | <input checked="" type="checkbox"/> | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | | <input checked="" type="checkbox"/> | | | | | | <input checked="" type="checkbox"/> | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | | <input checked="" type="checkbox"/> | | | | | | <input checked="" type="checkbox"/> | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
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| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | | <input checked="" type="checkbox"/> | | | | | | <input checked="" type="checkbox"/> | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

| LAB USE ONLY | SAMPLE ID | SAMPLING | | MATRIX | NO. OF CONT. | Unpreserved | Preserved | Field Filtered | TPH(g) <input type="checkbox"/> GRO <u>8260</u> | TPH(g) <input type="checkbox"/> DRO <u>8015B</u> | TPH <input type="checkbox"/> C6-C36 <input type="checkbox"/> C6-C44 | TPH | BTEX / MTBE <input type="checkbox"/> 8260 <input type="checkbox"/> | VOCs (8260) | Oxygenates (8260) | Prep (5035) <input type="checkbox"/> En Core <input type="checkbox"/> Terra Core | SVOCs (8270) | Pesticides (8081) | PCBs (8082) | PAHs <input type="checkbox"/> 8270 <input checked="" type="checkbox"/> 8270 SIM | T22 Metals <input type="checkbox"/> 6010/747X <input type="checkbox"/> 6020/747X | Cr(VI) <input type="checkbox"/> 7196 <input type="checkbox"/> 7199 <input type="checkbox"/> 218.6 | Lead <u>6020</u> | Lead <u>200.8</u> |
|--------------|------------------|--------------------|------|------------------|---------------|--------------|--------------|----------------|---|--|---|-----|--|--------------|-------------------|--|--------------|-------------------|-------------|---|--|---|------------------|-------------------|
| | | DATE | TIME | | | | | | | | | | | | | | | | | | | | | |
| | ES010 | 1/28/13 | | water | 10 | X | X | X | X | X | | | | X | | | | | | X | | | X | X |
| | ES011 | 1/28/13 | 1110 | water | 10 | X | X | X | X | X | | | | X | | | | | | X | | | X | X |
| | ES011 MS/MSD | 1/28/13 | 1110 | water | 10 | X | X | X | X | X | | | | X | | | | | | X | | | X | X |
| | ES012 | 1/28/13 | 1000 | water | 10 | X | X | X | X | X | | | | X | | | | | | X | | | X | X |
| | ES013 | 1/28/13 | 1300 | water | 10 | X | X | X | X | X | | | | X | | | | | | X | | | X | X |
| | ES014 | 1/29/13 | 0935 | water | 9 | X | X | X | X | X | | | | X | | | | | | X | | | X | X |
| | ES014 UF | 1/29/13 | 0935 | water | 1 | | X | | | | | | | | | | | | | | | | | X |
| | ES015 | 1/29/13 | 1045 | water | 10 | X | X | X | X | X | | | | X | | | | | | X | | | X | X |
| | ESTrip | 1/29/13 | 0700 | water | 3 | | X | | X | | | | | X | | | | | | | | | | |
| | 1/31/13 | | | | | | | | | | | | | | | | | | | | | | | |

| | | | |
|--|--|-------------------------|-----------------------|
| Relinquished by: (Signature) <u>DOMONIKOS FERER</u> | Received by: (Signature/Affiliation) <u>_____</u> | Date: <u>1/29/13</u> | Time: <u>14:20</u> |
| Relinquished by: (Signature) | Received by: (Signature/Affiliation) | Date: | Time: |
| Relinquished by: (Signature) | Received by: (Signature/Affiliation) <u>Prey 1-02</u> | Date: <u>1/31/13</u> | Time: <u>10:30</u> |

DISTRIBUTION: White with final report, Green and Yellow to Client. Please note that pages 1 and 2 of 2 of our T/Cs are printed on the reverse side of the Green and Yellow copies respectively.

SHIP DATE: 29JAN13
ACTWGT: 47.9 LB
CAD: /POS1322
DIMS: 24x13x14 IN

BILL RECIPIENT

UNITED STATES US

TO **SAMPLE CONTROL
CALSCIENCE ENVIRON
7440 LINCOLN WAY**

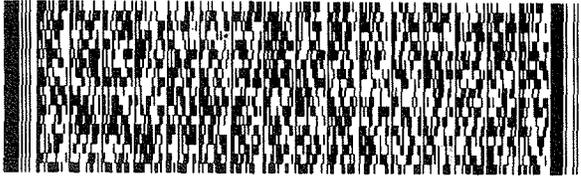
GARDEN GROVE CA 92841

(714) 895-5494

REF:

INU:

DEPT:



FedEx Express



210612121010101

2 of 2

THU - 31 JAN A1

** 2DAY **

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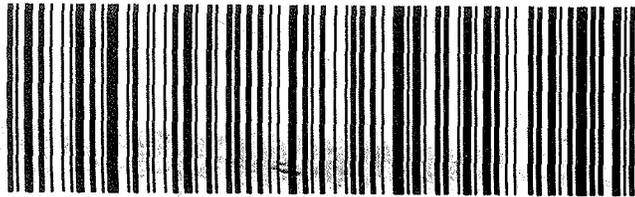
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0215

VZ APVA

92841

CA-US SNA



SHIP DATE: 29JAN13
ACTWGT: 80.2 LB
CAD: /POS1322
DIMS: 28x15x17 IN

BILL RECIPIENT

UNITED STATES US

TO **SAMPLE CONTROL
CALSCIENCE ENVIRON
7440 LINCOLN WAY**

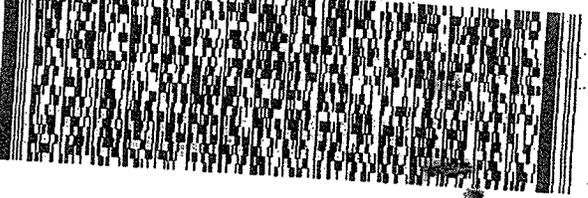
GARDEN GROVE CA 92841

(714) 895-5494

REF:

INU:

DEPT:



FedE Expre



1776

1 of 2

TRK# 0215 8704 7942 2226

MASTER

THU - 31 JAN A1

** 2DAY **

VZ APVA

92841

CA-US SNA



Signature required at recipient's address every. Fee applies.

Indirect Signature
If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. Fee applies.

Insurance?

Dry Ice
Dry Ice, 9, UN 1845 _____ kg
 Cargo Aircraft Only

Obtain Recip. Acct No. below.

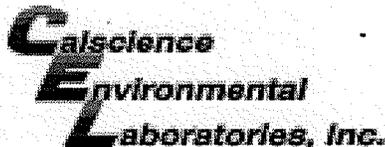
Credit Card Cash/Check

Credit Card Auth.

See FedEx Service Guide for details.

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WORK ORDER #: 13-01-1776

SAMPLE RECEIPT FORM

Cooler 1 of 2

CLIENT: ESI

DATE: 01/31/13

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

Temperature 1.9 °C - 0.2 °C (CF) = 1.7 °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 Initial: PS

CUSTODY SEALS INTACT:

Cooler _____ No (Not Intact) Not Present N/A Initial: PS

Sample _____ No (Not Intact) Not Present Initial: AC

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"/> |
| <input type="checkbox"/> Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| <input type="checkbox"/> No analysis requested. <input type="checkbox"/> Not relinquished. <input type="checkbox"/> 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"/> |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours... | <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"/> |
| <input checked="" 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® _____

Water: 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

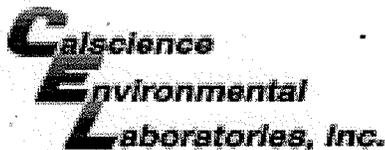
250PB 250PB_{na} 125PB 125PB_z 100PJ 100PJ_{na2} _____ _____ _____

Air: Tedlar® Canister Other: _____ Trip Blank Lot#: 12/2/08 Labeled/Checked by: AC

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

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

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WORK ORDER #: 13-01-1776

SAMPLE RECEIPT FORM

Cooler 2 of 2

CLIENT: EST

DATE: 01/31/13

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

Temperature 1.5 °C - 0.2 °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

Initial: PS

CUSTODY SEALS INTACT:

Cooler _____ No (Not Intact) Not Present N/A Initial: PS

Sample _____ No (Not Intact) Not Present Initial: AP

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"/> |
| <input type="checkbox"/> Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| <input type="checkbox"/> No analysis requested. <input type="checkbox"/> Not relinquished. <input type="checkbox"/> 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"/> |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours... | <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"/> |
| <input checked="" 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® _____

Water: 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_{na} 125PB 125PB_{z_{na}} 100PJ 100PJ_{na2} _____ _____ _____

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

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

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

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Supplemental Report 1



CALSCIENCE

WORK ORDER NUMBER: 13-01-1776

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Environmental Science International, Inc.

Client Project Name: Red Hill LTM 112066

Attention: Robert Chong
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500

Approved for release on 02/7/2013 by:
Richard Villafania
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 litigation which may arise.

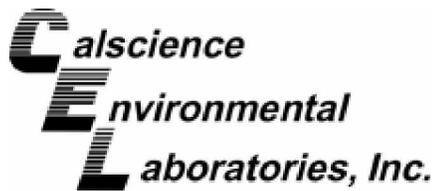


Contents

Client Project Name: Red Hill LTM 112066

Work Order Number: 13-01-1776

| | | |
|---|---|---|
| 1 | Client Sample Data | 3 |
| | 1.1 EPA 200.8 ICP/MS Metals (Aqueous) | 3 |
| 2 | Quality Control Sample Data | 4 |
| | 2.1 MS/MSD and/or Duplicate | 4 |
| | 2.2 LCS/LCSD | 5 |
| 3 | Sample Analysis Summary | 6 |
| 4 | Glossary of Terms and Qualifiers | 7 |
| 5 | Chain of Custody/Sample Receipt Form | 8 |



Analytical Report



Environmental Science International, Inc.
 354 Uluniu Street, Suite 304
 Kailua, HI 96734-2500

Date Received: 01/31/13
 Work Order No: 13-01-1776
 Preparation: N/A
 Method: EPA 200.8

Project: Red Hill LTM 112066

Page 1 of 1

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|----------------------|-------------------|---------------------|---------|------------|---------------|--------------------|-------------|
| ES014UF | 13-01-1776-5-A | 01/29/13 09:35 | Aqueous | ICP/MS 03 | 01/31/13 | 02/01/13 17:53 | 130131L02 |

Comment(s): -Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qual | Units |
|-----------|--------|------|--------|----|------|-------|
| Lead | 0.242 | 1.00 | 0.0898 | 1 | J | ug/L |

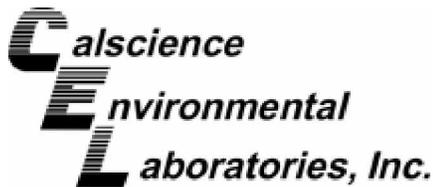
| Method Blank | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|--------------|-------------------|---------------------|---------|------------|---------------|--------------------|-------------|
| Method Blank | 099-10-008-2,180 | N/A | Aqueous | ICP/MS 03 | 01/31/13 | 01/31/13 14:47 | 130131L02 |

Comment(s): -Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qual | Units |
|-----------|---------|------|--------|----|------|-------|
| Lead | <0.0898 | 1.00 | 0.0898 | 1 | U | ug/L |

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Quality Control - Spike/Spike Duplicate



Environmental Science International, Inc.
 354 Uluniu Street, Suite 304
 Kailua, HI 96734-2500

Date Received: 01/31/13
 Work Order No: 13-01-1776
 Preparation: N/A
 Method: EPA 200.8

Project Red Hill LTM 112066

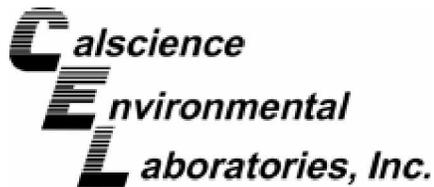
| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---------------------------|---------|------------|---------------|---------------|---------------------|
| 13-01-1769-4 | Aqueous | ICP/MS 03 | 01/31/13 | 01/31/13 | 130131S02 |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|-----------|-------------|-------------|---------|---------|----------|----------|---------|-----|--------|------------|
| Lead | ND | 100.0 | 105.6 | 106 | 107.0 | 107 | 80-120 | 1 | 0-20 | |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit





Quality Control - LCS/LCS Duplicate



Environmental Science International, Inc.
 354 Uluniu Street, Suite 304
 Kailua, HI 96734-2500

Date Received: N/A
 Work Order No: 13-01-1776
 Preparation: N/A
 Method: EPA 200.8

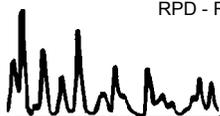
Project: Red Hill LTM 112066

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---------------------------|---------|------------|---------------|---------------|-----------------------|
| 099-10-008-2,180 | Aqueous | ICP/MS 03 | 01/31/13 | 01/31/13 | 130131L02 |

| Parameter | <u>SPIKE ADDED</u> | <u>LCS CONC</u> | <u>LCS %REC</u> | <u>LCSD CONC</u> | <u>LCSD %REC</u> | <u>%REC CL</u> | <u>RPD</u> | <u>RPD CL</u> | <u>Qualifiers</u> |
|-----------|--------------------|-----------------|-----------------|------------------|------------------|----------------|------------|---------------|-------------------|
| Lead | 100.0 | 93.43 | 93 | 97.54 | 98 | 80-120 | 4 | 0-20 | |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit



WORK ORDER #: 13-01-1776

| Lab Sample Number | Client Sample ID | Method | Extraction | Date/Time Analyzed | Chemist ID | Instrument | Analytical Location |
|-------------------|------------------|------------------|-------------|--------------------|------------|------------|---------------------|
| 1-K | ES011 | EPA 6020 | EPA 3020A T | 02/1/2013 17:44 | 598 | ICP/MS 03 | 1 |
| 1-S | ES011 | EPA 8270C SIM PA | EPA 3510C | 02/4/2013 18:26 | 449 | GC/MS AA | 1 |
| 1-S | ES011 | EPA 8270C SIM PA | EPA 3510C | 02/5/2013 13:37 | 449 | GC/MS AA | 1 |
| 1-L | ES011 | EPA 8015B (M) | EPA 3510C | 02/5/2013 15:48 | 628 | GC 45 | 1 |
| 1-A | ES011 | GC/MS / EPA 8260 | EPA 5030C | 01/31/2013 18:14 | 486 | GC/MS OO | 2 |
| 2-G | ES012 | EPA 6020 | EPA 3020A T | 02/1/2013 17:47 | 598 | ICP/MS 03 | 1 |
| 2-J | ES012 | EPA 8270C SIM PA | EPA 3510C | 02/4/2013 18:53 | 449 | GC/MS AA | 1 |
| 2-J | ES012 | EPA 8270C SIM PA | EPA 3510C | 02/5/2013 14:03 | 449 | GC/MS AA | 1 |
| 2-H | ES012 | EPA 8015B (M) | EPA 3510C | 02/5/2013 16:06 | 628 | GC 45 | 1 |
| 2-A | ES012 | GC/MS / EPA 8260 | EPA 5030C | 01/31/2013 18:41 | 486 | GC/MS OO | 2 |
| 3-G | ES013 | EPA 6020 | EPA 3020A T | 02/1/2013 17:50 | 598 | ICP/MS 03 | 1 |
| 3-J | ES013 | EPA 8270C SIM PA | EPA 3510C | 02/4/2013 19:19 | 449 | GC/MS AA | 1 |
| 3-H | ES013 | EPA 8015B (M) | EPA 3510C | 02/5/2013 16:23 | 628 | GC 45 | 1 |
| 3-A | ES013 | GC/MS / EPA 8260 | EPA 5030C | 01/31/2013 20:53 | 486 | GC/MS OO | 2 |
| 4-H | ES014 | EPA 8270C SIM PA | EPA 3510C | 02/4/2013 19:45 | 449 | GC/MS AA | 1 |
| 4-G | ES014 | EPA 8015B (M) | EPA 3510C | 02/5/2013 16:42 | 628 | GC 45 | 1 |
| 4-A | ES014 | GC/MS / EPA 8260 | EPA 5030C | 01/31/2013 21:19 | 486 | GC/MS OO | 2 |
| 5-A | ES014UF | EPA 200.8 | N/A | 02/1/2013 17:53 | 598 | ICP/MS 03 | 1 |
| 6-G | ES015 | EPA 6020 | EPA 3020A T | 02/1/2013 17:56 | 598 | ICP/MS 03 | 1 |
| 6-J | ES015 | EPA 8270C SIM PA | EPA 3510C | 02/4/2013 20:11 | 449 | GC/MS AA | 1 |
| 6-H | ES015 | EPA 8015B (M) | EPA 3510C | 02/5/2013 17:00 | 628 | GC 45 | 1 |
| 6-A | ES015 | GC/MS / EPA 8260 | EPA 5030C | 01/31/2013 21:46 | 486 | GC/MS OO | 2 |
| 7-A | ESTRIP | GC/MS / EPA 8260 | EPA 5030C | 01/31/2013 20:26 | 486 | GC/MS OO | 2 |

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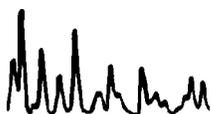
| Location | Description |
|----------|---|
| 1 | 7440 Lincoln Way, Garden Grove, CA 92841 |
| 2 | 7445 Lampson Avenue, Garden Grove, CA 92841 |

Work Order Number: 13-01-1776

| <u>Qualifier</u> | <u>Definition</u> |
|------------------|--|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | 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. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification. |
| 4 | The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| DL | The Detection Limit (DL) is the smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration at the 99% level of confidence. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| ICH | Initial calibrtn. verif. recov. above method CL for this analyte. |
| ICJ | Initial calibrtn. verif. recov. below method CL for this analyte. |
| IH | Calibrtn. verif. recov. below method CL for this analyte. |
| IJ | Calibrtn. verif. recov. above method CL for this analyte. |
| J | Analyte was detected at a concentration below the LOQ and above the DL. Reported value is estimated. |
| LOD | The Limit of Detection (LOD) is the smallest amount or concentration of a substance that must be present in a sample in order to be detected at 99% confidence level. |
| LOQ | The Limit of Quantitation (LOQ) is the lowest concentration of a substance that produces a quantitative result within specified limits of precision and bias. |
| Q | 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. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| U | Undetected at Detection Limit (DL) and is reported as less than the Limit of Detection (LOD). |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

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.

MPN - Most Probable Number





Calscience Environmental Laboratories, Inc.

7440 Lincoln Way, Garden Grove, CA 92841-1427 • (714) 895-5494

Other CA office locations: Concord and San Luis Obispo

For courier service / sample drop off information, contact sales@calscience.com or call us.

CHAIN OF CUSTODY RECORD

WO # / LAB USE ONLY

13-01-1776

Date 1/29/13

Page 1 of 1

LABORATORY CLIENT: Environmental Science International

ADDRESS: 354 Union St. # 304

CITY: Kaunua STATE: Hi ZIP: 96734

CLIENT PROJECT NAME / NUMBER: Red Hill LTM 112066

P.O. NO.:

PROJECT CONTACT: Robert Chong

SAMPLER(S): (PRINT) B1/JL

TEL: 808-261-0740 E-MAIL: RLHONG@science.com, DFEMER@science.com

REQUESTED ANALYSES

TURNAROUND TIME: SAME DAY 24 HR 48 HR 72 HR STANDARD

COELT EDF GLOBAL ID LOG CODE

Please check box or fill in blank as needed.

SPECIAL INSTRUCTIONS:

TPH(g) GRO 8260

TPH(g) DRO 8015B

TPH C6-C36 C6-C44

TPH

BTEX / MTBE 8260

VOCs (8260)

Oxygenates (8260)

Prep (5035) En Core Terra Core

SVOCs (8270)

Pesticides (8081)

PCBs (8082)

PAHs 8270 8270 SIM

T22 Metals 6010/747X 6020/747X

Cr(VI) 7196 7199 218.6

lead 6020

lead 200.8

| LAB USE ONLY | SAMPLE ID | SAMPLING | | MATRIX | NO. OF CONT. | Unpreserved | Preserved | Field Filtered | <input checked="" type="checkbox"/> TPH(g) <input type="checkbox"/> GRO | <input checked="" type="checkbox"/> TPH(g) <input type="checkbox"/> DRO | TPH <input type="checkbox"/> C6-C36 <input type="checkbox"/> C6-C44 | TPH | BTEX / MTBE <input type="checkbox"/> 8260 <input type="checkbox"/> | VOCs (8260) | Oxygenates (8260) | Prep (5035) <input type="checkbox"/> En Core <input type="checkbox"/> Terra Core | SVOCs (8270) | Pesticides (8081) | PCBs (8082) | PAHs <input type="checkbox"/> 8270 <input checked="" type="checkbox"/> 8270 SIM | T22 Metals <input type="checkbox"/> 6010/747X <input type="checkbox"/> 6020/747X | Cr(VI) <input type="checkbox"/> 7196 <input type="checkbox"/> 7199 <input type="checkbox"/> 218.6 | <u>lead 6020</u> | <u>lead 200.8</u> |
|--------------|------------------|--------------------|------|------------------|---------------|--------------|--------------|----------------|---|---|---|-----|--|--------------|-------------------|--|--------------|-------------------|-------------|---|--|---|------------------|-------------------|
| | | DATE | TIME | | | | | | | | | | | | | | | | | | | | | |
| | ES010 | 1/28/13 | | water | 10 | X | X | X | X | X | | | | X | | | | | | X | | | X | |
| | ES011 | 1/28/13 | 1110 | water | 10 | X | X | X | X | X | | | | X | | | | | | X | | | X | |
| | ES011 MS/MSD | 1/28/13 | 1110 | water | 10 | X | X | X | X | X | | | | X | | | | | | X | | | X | |
| | ES012 | 1/28/13 | 1000 | water | 10 | X | X | X | X | X | | | | X | | | | | | X | | | X | |
| | ES013 | 1/28/13 | 1300 | water | 10 | X | X | X | X | X | | | | X | | | | | | X | | | X | |
| | ES014 | 1/29/13 | 0935 | water | 9 | X | X | X | X | X | | | | X | | | | | | X | | | X | |
| | ES014 UF | 1/29/13 | 0935 | water | 1 | | X | | | | | | | | | | | | | | | | X | |
| | ES015 | 1/29/13 | 1045 | water | 10 | X | X | X | X | X | | | | X | | | | | | X | | | X | |
| | ESTrip | 1/29/13 | 0700 | water | 3 | | X | | X | | | | | X | | | | | | | | | | |
| | 1/31/13 | | | | | | | | | | | | | | | | | | | | | | | |

| | | | |
|--|--|-------------------------|-----------------------|
| Relinquished by: (Signature) <u>DOMONIKOS FERER</u> | Received by: (Signature/Affiliation) <u>_____</u> | Date: <u>1/29/13</u> | Time: <u>14:20</u> |
| Relinquished by: (Signature) | Received by: (Signature/Affiliation) | Date: | Time: |
| Relinquished by: (Signature) | Received by: (Signature/Affiliation) <u>_____</u> | Date: <u>1/31/13</u> | Time: <u>10:30</u> |

DISTRIBUTION: White with final report, Green and Yellow to Client. Please note that pages 1 and 2 of 2 of our T/Cs are printed on the reverse side of the Green and Yellow copies respectively.

SHIP DATE: 29JAN13
ACTWGT: 47.9 LB
CAD: /POS1322
DIMS: 24x13x14 IN

BILL RECIPIENT

UNITED STATES US

TO **SAMPLE CONTROL
CALSCIENCE ENVIRON
7440 LINCOLN WAY**

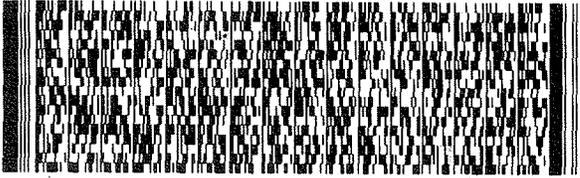
GARDEN GROVE CA 92841

(714) 895-5494

REF:

INU:

DEPT:



2 of 2

THU - 31 JAN A1

**** 2DAY ****

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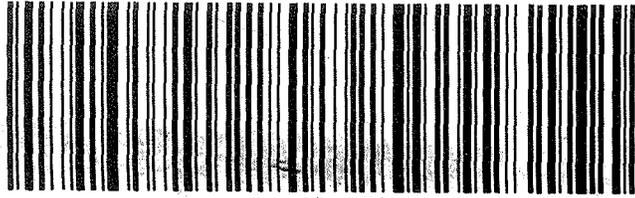
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0215

VZ APVA

92841

CA-US **SNA**



Page 9 of 11
SHIP DATE: 29JAN13
ACTWGT: 80.2 LB
CAD: /POS1322
DIMS: 28x15x17 IN

BILL RECIPIENT

UNITED STATES US

TO **SAMPLE CONTROL
CALSCIENCE ENVIRON
7440 LINCOLN WAY**

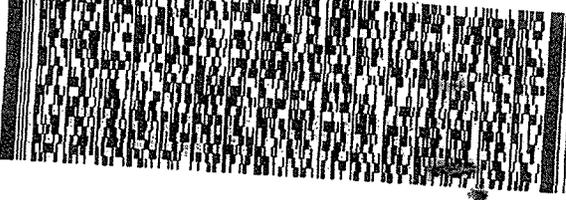
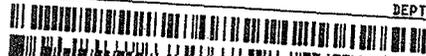
GARDEN GROVE CA 92841

(714) 895-5494

REF:

INU:

DEPT:



1776

1 of 2

THU - 31 JAN A1

**** 2DAY ****

TRK# 0215 **8704 7942 2226**

MASTER

VZ APVA

92841

CA-US **SNA**



Signature
Required address
every. Fee applies.

Indirect Signature
If no one is available at recipient's
address, someone at a neighboring
address may sign for delivery. For
residential deliveries only. Fee applies.

Signature?

Signature

Dry Ice
Dry Ice, 9, UN 1845 _____ kg

Cargo Aircraft Only

Signature
Credit Card No. below.

Obtain Recip.
Acct No.

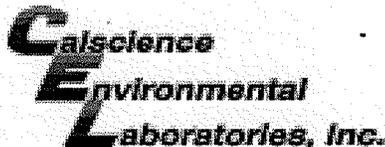
Signature
Third Party Credit Card Cash/Check

Signature
Credit Card Auth.

Signature
Visit FedEx Service Guide for details.

553

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WORK ORDER #: 13-01-1776

SAMPLE RECEIPT FORM

Cooler 1 of 2

CLIENT: ESI

DATE: 01/31/13

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

Temperature 1.9 °C - 0.2 °C (CF) = 1.7 °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 Initial: PS

CUSTODY SEALS INTACT:

Cooler _____ No (Not Intact) Not Present N/A Initial: PS

Sample _____ No (Not Intact) Not Present Initial: AC

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"/> |
| <input type="checkbox"/> Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| <input type="checkbox"/> No analysis requested. <input type="checkbox"/> Not relinquished. <input type="checkbox"/> 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"/> |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours... | <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"/> |
| <input checked="" 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® _____

Water: 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

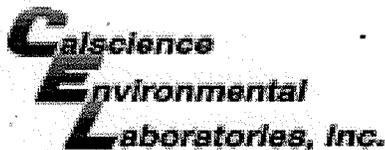
250PB 250PB_{na} 125PB 125PB_z 100PJ 100PJ_{na2} _____ _____ _____

Air: Tedlar® Canister Other: _____ Trip Blank Lot#: 12/2/08 Labeled/Checked by: AC

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

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

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WORK ORDER #: 13-01-1776

SAMPLE RECEIPT FORM

Cooler 2 of 2

CLIENT: EST

DATE: 01/31/13

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

Temperature 1.5 °C - 0.2 °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 Initial: PS

CUSTODY SEALS INTACT:

Cooler _____ No (Not Intact) Not Present N/A Initial: PS

Sample _____ No (Not Intact) Not Present Initial: AP

| 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"/> |
| <input type="checkbox"/> Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| <input type="checkbox"/> No analysis requested. <input type="checkbox"/> Not relinquished. <input type="checkbox"/> 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"/> |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours... | <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"/> |
| <input checked="" 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® _____

Water: 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_{na} 125PB 125PB_{z_{na}} 100PJ 100PJ_{na2} _____ _____ _____

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

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

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





CALSCIENCE

WORK ORDER NUMBER: 13-02-0277

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Environmental Science International, Inc.

Client Project Name: Red Hill LTM 112066

Attention: Robert Chong
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500

Approved for release on 02/14/2013 by:
Richard Villafania
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 litigation which may arise.



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Client Project Name: Red Hill LTM 112066

Work Order Number: 13-02-0277

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Client: Environmental Science International, Inc.
 354 Uluniu Street, Suite 304
 Kailua, HI 96734-2500
 Attn: Robert Chong

Work Order: 13-02-0277
 Project Name: Red Hill LTM 112066
 Received: 02/06/13 10:00

ANALYTICAL REPORT

13-02-0277-1 Client ID: ES010 Matrix: Aqueous Units: ug/L Sampled: 02/04/13 10:45

EPA 6020 ICP/MS Metals Extraction: EPA 3020A Total

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---------|--------|-------|--------|-------|------|-----------------|-----------------------|--------------------|------------|
| Lead | 0.846 | J | 0.0898 | 0.200 | 1.00 | 1 | 02/07/13 00:00 | 02/07/13 20:49 | 130207L04D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

099-14-497-17 Client ID: Method Blank Matrix: Aqueous Units: ug/L Sampled: 02/08/13 13:01

EPA 6020 ICP/MS Metals Extraction: EPA 3020A Total

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---------|--------|-------|--------|-------|------|-----------------|-----------------------|--------------------|------------|
| Lead | <0.200 | U | 0.0898 | 0.200 | 1.00 | 1 | 02/07/13 00:00 | 02/07/13 20:08 | 130207L04D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

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Client: Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500
Attn: Robert Chong

Work Order: 13-02-0277
Project Name: Red Hill LTM 112066
Received: 02/06/13 10:00

ANALYTICAL REPORT

13-02-0277-1 Client ID: ES010 Matrix: Aqueous Units: ug/L Sampled: 02/04/13 10:45

EPA 8015B (M) TPH Diesel Extraction: EPA 3510C

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---------------|--------|-------|----|-----|-----|-----------------|-----------------------|--------------------|-----------|
| TPH as Diesel | 79 | | 16 | 22 | 54 | 1.09 | 02/08/13 00:00 | 02/08/13 21:34 | 130208B07 |

Surr: n-Octacosane (51-141%) 73% 02/08/13 00:00 02/08/13 21:34 130208B07

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

099-15-516-28 Client ID: Method Blank Matrix: Aqueous Units: ug/L Sampled: 02/11/13 11:36

EPA 8015B (M) TPH Diesel Extraction: EPA 3510C

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---------------|--------|-------|----|-----|-----|-----------------|-----------------------|--------------------|-----------|
| TPH as Diesel | <20 | U | 15 | 20 | 50 | 1 | 02/08/13 00:00 | 02/08/13 20:08 | 130208B07 |

Surr: n-Octacosane (51-141%) 75% 02/08/13 00:00 02/08/13 20:08 130208B07

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

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Client: Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500
Attn: Robert Chong

Work Order: 13-02-0277
Project Name: Red Hill LTM 112066
Received: 02/06/13 10:00

ANALYTICAL REPORT

13-02-0277-1 Client ID: ES010 Matrix: Aqueous Units: ug/L Sampled: 02/04/13 10:45

EPA 8270C SIM PAHs Extraction: EPA 3510C

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|----------------------------------|--------|-------|-------|-------|------|-----------------|-----------------------|--------------------|-----------|
| Naphthalene | 0.10 | J | 0.023 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 18:06 | 130207L02 |
| 2-Methylnaphthalene | <0.050 | U | 0.026 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 18:06 | 130207L02 |
| 1-Methylnaphthalene | <0.050 | U | 0.028 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 18:06 | 130207L02 |
| Acenaphthylene | <0.050 | U | 0.018 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 18:06 | 130207L02 |
| Acenaphthene | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 18:06 | 130207L02 |
| Fluorene | <0.050 | U | 0.024 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 18:06 | 130207L02 |
| Phenanthrene | <0.050 | U | 0.031 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 18:06 | 130207L02 |
| Anthracene | <0.050 | U | 0.034 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 18:06 | 130207L02 |
| Fluoranthene | <0.050 | U | 0.027 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 18:06 | 130207L02 |
| Pyrene | <0.050 | U | 0.025 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 18:06 | 130207L02 |
| Benzo (a) Anthracene | <0.050 | U | 0.024 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 18:06 | 130207L02 |
| Chrysene | <0.050 | U | 0.019 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 18:06 | 130207L02 |
| Benzo (k) Fluoranthene | <0.050 | U | 0.023 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 18:06 | 130207L02 |
| Benzo (b) Fluoranthene | <0.050 | U | 0.025 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 18:06 | 130207L02 |
| Benzo (a) Pyrene | <0.050 | U | 0.036 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 18:06 | 130207L02 |
| Indeno (1,2,3-c,d) Pyrene | <0.050 | U | 0.022 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 18:06 | 130207L02 |
| Dibenz (a,h) Anthracene | <0.050 | U | 0.027 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 18:06 | 130207L02 |
| Benzo (g,h,i) Perylene | <0.050 | U | 0.022 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 18:06 | 130207L02 |
| Surr: Nitrobenzene-d5 (28-139%) | 106% | | | | | | 02/07/13 00:00 | 02/08/13 18:06 | 130207L02 |
| Surr: 2-Fluorobiphenyl (33-144%) | 97% | | | | | | 02/07/13 00:00 | 02/08/13 18:06 | 130207L02 |
| Surr: p-Terphenyl-d14 (23-160%) | 108% | | | | | | 02/07/13 00:00 | 02/08/13 18:06 | 130207L02 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.



Client: Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500
Attn: Robert Chong

Work Order: 099-15-148
Project Name: Red Hill LTM 112066
Received: 02/06/13 10:00

ANALYTICAL REPORT

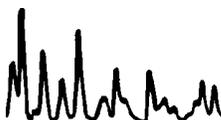
099-15-148-9 **Client ID: Method Blank** **Matrix: Aqueous** **Units: ug/L** **Sampled: 02/08/13 17:37**

EPA 8270C SIM PAHs **Extraction: EPA 3510C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---------------------------|--------|-------|-------|-------|------|-----------------|-----------------------|--------------------|-----------|
| Naphthalene | <0.050 | U | 0.023 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 16:48 | 130207L02 |
| 2-Methylnaphthalene | <0.050 | U | 0.026 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 16:48 | 130207L02 |
| 1-Methylnaphthalene | <0.050 | U | 0.028 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 16:48 | 130207L02 |
| Acenaphthylene | <0.050 | U | 0.018 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 16:48 | 130207L02 |
| Acenaphthene | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 16:48 | 130207L02 |
| Fluorene | <0.050 | U | 0.024 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 16:48 | 130207L02 |
| Phenanthrene | <0.050 | U | 0.031 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 16:48 | 130207L02 |
| Anthracene | <0.050 | U | 0.034 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 16:48 | 130207L02 |
| Fluoranthene | <0.050 | U | 0.027 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 16:48 | 130207L02 |
| Pyrene | <0.050 | U | 0.025 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 16:48 | 130207L02 |
| Benzo (a) Anthracene | <0.050 | U | 0.024 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 16:48 | 130207L02 |
| Chrysene | <0.050 | U | 0.019 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 16:48 | 130207L02 |
| Benzo (k) Fluoranthene | <0.050 | U | 0.023 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 16:48 | 130207L02 |
| Benzo (b) Fluoranthene | <0.050 | U | 0.025 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 16:48 | 130207L02 |
| Benzo (a) Pyrene | <0.050 | U | 0.036 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 16:48 | 130207L02 |
| Indeno (1,2,3-c,d) Pyrene | <0.050 | U | 0.022 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 16:48 | 130207L02 |
| Dibenz (a,h) Anthracene | <0.050 | U | 0.027 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 16:48 | 130207L02 |
| Benzo (g,h,i) Perylene | <0.050 | U | 0.022 | 0.050 | 0.20 | 1 | 02/07/13 00:00 | 02/08/13 16:48 | 130207L02 |

Surr: Nitrobenzene-d5 (28-139%) 105% 02/07/13 00:00 02/08/13 16:48 130207L02
 Surr: 2-Fluorobiphenyl (33-144%) 93% 02/07/13 00:00 02/08/13 16:48 130207L02
 Surr: p-Terphenyl-d14 (23-160%) 109% 02/07/13 00:00 02/08/13 16:48 130207L02

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.



Client: Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500
Attn: Robert Chong

Work Order: 13-02-0277
Project Name: Red Hill LTM 112066
Received: 02/06/13 10:00

ANALYTICAL REPORT

13-02-0277-1 Client ID: ES010 Matrix: Aqueous Units: ug/L Sampled: 02/04/13 10:45

GC/MS GRO/EPA 8260B Volatile Organics Extraction: EPA 5030C

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|-----------------------------|--------|----------|------|------|-----|-----------------|-----------------------|--------------------|-----------|
| Acetone | <10 | IJ,ICH,U | 6.0 | 10 | 20 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| Bromoform | <2.0 | U | 0.50 | 2.0 | 10 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| Bromomethane | <5.0 | U | 3.9 | 5.0 | 20 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| Chloromethane | <2.0 | U | 1.8 | 2.0 | 10 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| 1,2-Dibromo-3-Chloropropane | <2.0 | U | 1.2 | 2.0 | 10 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| 1,2-Dibromoethane | <0.50 | U | 0.36 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| 1,2-Dichlorobenzene | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| 1,3-Dichlorobenzene | <0.50 | U | 0.40 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| 1,4-Dichlorobenzene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| c-1,2-Dichloroethene | <0.50 | U | 0.48 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| 1,2-Dichloropropane | <0.50 | U | 0.42 | 0.50 | 5.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| c-1,3-Dichloropropene | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| t-1,3-Dichloropropene | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| Methylene Chloride | <2.0 | U | 0.64 | 2.0 | 5.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| Styrene | <0.50 | U | 0.17 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| 1,1,1,2-Tetrachloroethane | <0.50 | U | 0.40 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| 1,1,2,2-Tetrachloroethane | <0.50 | U | 0.41 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| 1,2,4-Trichlorobenzene | <0.50 | U | 0.50 | 0.50 | 5.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| Hexachloro-1,3-Butadiene | <0.50 | U | 0.32 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |

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Client: Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500
Attn: Robert Chong

Work Order: 13-02-0277
Project Name: Red Hill LTM 112066
Received: 02/06/13 10:00

ANALYTICAL REPORT

13-02-0277-1 Client ID: ES010 Matrix: Aqueous Units: ug/L Sampled: 02/04/13 10:45

GC/MS GRO/EPA 8260B Volatile Organics Extraction: EPA 5030C

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|--|--------|-------|------|------|-----|-----------------|-----------------------|--------------------|-----------|
| 1,2,3-Trichloropropane | <2.0 | U | 0.64 | 2.0 | 5.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| Vinyl Chloride | <0.50 | U | 0.30 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| Gasoline Range Organics | 13 | J | 13 | 30 | 50 | 1 | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| Surr: Dibromofluoromethane (80-126%) | 94% | | | | | | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| Surr: 1,2-Dichloroethane-d4 (80-134%) | 101% | | | | | | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| Surr: Toluene-d8 (80-120%) | 99% | | | | | | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| Surr: Toluene-d8-TPPH (88-112%) | 100% | | | | | | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |
| Surr: 1,4-Bromofluorobenzene (80-120%) | 95% | | | | | | 02/06/13 00:00 | 02/07/13 02:11 | 130206L03 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

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Client: Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500
Attn: Robert Chong

Work Order: 13-02-0277
Project Name: Red Hill LTM 112066
Received: 02/06/13 10:00

ANALYTICAL REPORT

13-02-0277-2 Client ID: ES Trip Matrix: Aqueous Units: ug/L Sampled: 02/04/13 07:00

GC/MS GRO/EPA 8260B Volatile Organics Extraction: EPA 5030C

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|-----------------------------|--------|----------|------|------|-----|-----------------|-----------------------|--------------------|-----------|
| Acetone | <10 | IJ,ICH,U | 6.0 | 10 | 20 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| Bromoform | <2.0 | U | 0.50 | 2.0 | 10 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| Bromomethane | <5.0 | U | 3.9 | 5.0 | 20 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| Chloromethane | <2.0 | U | 1.8 | 2.0 | 10 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| 1,2-Dibromo-3-Chloropropane | <2.0 | U | 1.2 | 2.0 | 10 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| 1,2-Dibromoethane | <0.50 | U | 0.36 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| 1,2-Dichlorobenzene | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| 1,3-Dichlorobenzene | <0.50 | U | 0.40 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| 1,4-Dichlorobenzene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| c-1,2-Dichloroethene | <0.50 | U | 0.48 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| 1,2-Dichloropropane | <0.50 | U | 0.42 | 0.50 | 5.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| c-1,3-Dichloropropene | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| t-1,3-Dichloropropene | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| Methylene Chloride | <2.0 | U | 0.64 | 2.0 | 5.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| Styrene | <0.50 | U | 0.17 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| 1,1,1,2-Tetrachloroethane | <0.50 | U | 0.40 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| 1,1,2,2-Tetrachloroethane | <0.50 | U | 0.41 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| Toluene | 2.8 | | 0.24 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| 1,2,4-Trichlorobenzene | <0.50 | U | 0.50 | 0.50 | 5.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| Hexachloro-1,3-Butadiene | <0.50 | U | 0.32 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |

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Client: Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500
Attn: Robert Chong

Work Order: 13-02-0277
Project Name: Red Hill LTM 112066
Received: 02/06/13 10:00

ANALYTICAL REPORT

13-02-0277-2 **Client ID: ES Trip** **Matrix: Aqueous** **Units: ug/L** **Sampled: 02/04/13 07:00**

GC/MS GRO/EPA 8260B Volatile Organics **Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|--|--------|-------|------|------|-----|-----------------|-----------------------|--------------------|-----------|
| 1,2,3-Trichloropropane | <2.0 | U | 0.64 | 2.0 | 5.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| Vinyl Chloride | <0.50 | U | 0.30 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| Gasoline Range Organics | 18 | J | 13 | 30 | 50 | 1 | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| Surr: Dibromofluoromethane (80-126%) | 92% | | | | | | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| Surr: 1,2-Dichloroethane-d4 (80-134%) | 100% | | | | | | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| Surr: Toluene-d8 (80-120%) | 99% | | | | | | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| Surr: Toluene-d8-TPPH (88-112%) | 99% | | | | | | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |
| Surr: 1,4-Bromofluorobenzene (80-120%) | 97% | | | | | | 02/06/13 00:00 | 02/07/13 01:44 | 130206L03 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

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Client: Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500
Attn: Robert Chong

Work Order: 099-13-057
Project Name: Red Hill LTM 112066
Received: 02/06/13 10:00

ANALYTICAL REPORT

099-13-057-7 **Client ID: Method Blank** **Matrix: Aqueous** **Units: ug/L** **Sampled: 02/07/13 09:57**

GC/MS GRO/EPA 8260B Volatile Organics **Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|-----------------------------|--------|-------|------|------|-----|-----------------|-----------------------|--------------------|-----------|
| Acetone | <10 | U | 6.0 | 10 | 20 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| Bromoform | <2.0 | U | 0.50 | 2.0 | 10 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| Bromomethane | <5.0 | U | 3.9 | 5.0 | 20 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| Chloromethane | <2.0 | U | 1.8 | 2.0 | 10 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| 1,2-Dibromo-3-Chloropropane | <2.0 | U | 1.2 | 2.0 | 10 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| 1,2-Dibromoethane | <0.50 | U | 0.36 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| 1,2-Dichlorobenzene | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| 1,3-Dichlorobenzene | <0.50 | U | 0.40 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| 1,4-Dichlorobenzene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| c-1,2-Dichloroethene | <0.50 | U | 0.48 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| 1,2-Dichloropropane | <0.50 | U | 0.42 | 0.50 | 5.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| c-1,3-Dichloropropene | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| t-1,3-Dichloropropene | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| Methylene Chloride | <2.0 | U | 0.64 | 2.0 | 5.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| Styrene | <0.50 | U | 0.17 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| 1,1,1,2-Tetrachloroethane | <0.50 | U | 0.40 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| 1,1,2,2-Tetrachloroethane | <0.50 | U | 0.41 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| 1,2,4-Trichlorobenzene | <0.50 | U | 0.50 | 0.50 | 5.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| Hexachloro-1,3-Butadiene | <0.50 | U | 0.32 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |

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Client: Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500
Attn: Robert Chong

Work Order: 099-13-057
Project Name: Red Hill LTM 112066
Received: 02/06/13 10:00

ANALYTICAL REPORT

099-13-057-7 **Client ID: Method Blank** **Matrix: Aqueous** **Units: ug/L** **Sampled: 02/07/13 09:57**

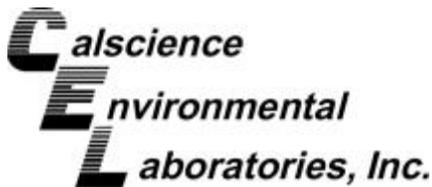
GC/MS GRO/EPA 8260B Volatile Organics **Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|--|--------|-------|------|------|-----|-----------------|-----------------------|--------------------|-----------|
| 1,2,3-Trichloropropane | <2.0 | U | 0.64 | 2.0 | 5.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| Vinyl Chloride | <0.50 | U | 0.30 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| Gasoline Range Organics | <30 | U | 13 | 30 | 50 | 1 | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| Surr: Dibromofluoromethane (80-126%) | 94% | | | | | | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| Surr: 1,2-Dichloroethane-d4 (80-134%) | 100% | | | | | | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| Surr: Toluene-d8 (80-120%) | 98% | | | | | | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| Surr: Toluene-d8-TPPH (88-112%) | 100% | | | | | | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |
| Surr: 1,4-Bromofluorobenzene (80-120%) | 96% | | | | | | 02/06/13 00:00 | 02/07/13 01:18 | 130206L03 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

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Quality Control - Spike/Spike Duplicate



Environmental Science International, Inc.
 354 Uluniu Street, Suite 304
 Kailua, HI 96734-2500

Date Received: 02/06/13
 Work Order No: 13-02-0277
 Preparation: EPA 3005A Filt.
 Method: EPA 6020

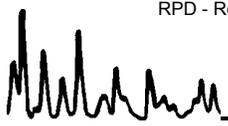
Project Red Hill LTM 112066

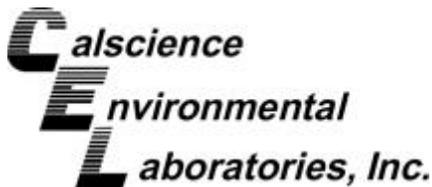
| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---------------------------|---------|------------|---------------|---------------|---------------------|
| 13-02-0282-1 | Aqueous | ICP/MS 03 | 02/07/13 | 02/07/13 | 130207S04 |

| Parameter | <u>SAMPLE CONC</u> | <u>SPIKE ADDED</u> | <u>MS CONC</u> | <u>MS %REC</u> | <u>MSD CONC</u> | <u>MSD %REC</u> | <u>%REC CL</u> | <u>RPD</u> | <u>RPD CL</u> | <u>Qualifiers</u> |
|-----------|--------------------|--------------------|----------------|----------------|-----------------|-----------------|----------------|------------|---------------|-------------------|
| Lead | 45.37 | 100.0 | 149.3 | 104 | 150.3 | 105 | 80-120 | 1 | 0-20 | |

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RPD - Relative Percent Difference , CL - Control Limit





Quality Control - PDS / PDSD



Environmental Science International, Inc.
 354 Uluniu Street, Suite 304
 Kailua, HI 96734-2500

Date Received 02/06/13
 Work Order No: 13-02-0277
 Preparation: EPA 3005A Filt.
 Method: EPA 6020

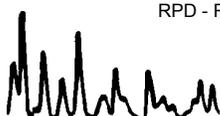
Project: Red Hill LTM 112066

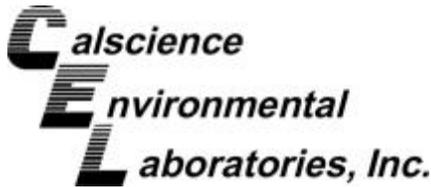
| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | PDS / PDSD Batch Number |
|---------------------------|---------|------------|---------------|---------------|-------------------------|
| 13-02-0282-1 | Aqueous | ICP/MS 03 | 02/07/13 | 02/07/13 | 130207S04 |

| Parameter | SAMPLE CONC | SPIKE ADDED | PDS CONC | PDS %REC | PDSD CONC | PDSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|-----------|-------------|-------------|----------|----------|-----------|-----------|---------|-----|--------|------------|
| Lead | 45.37 | 100.0 | 145.1 | 100 | 145.5 | 100 | 75-125 | 0 | 0-20 | |

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RPD - Relative Percent Difference , CL - Control Limit





Quality Control - Spike/Spike Duplicate



Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500

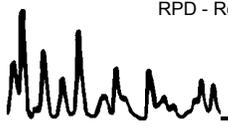
Date Received: 02/06/13
Work Order No: 13-02-0277
Preparation: EPA 5030C
Method: GC/MS / EPA 8260B

Project Red Hill LTM 112066

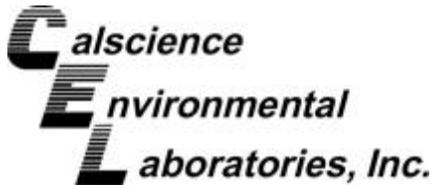
| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---------------------------|---------|------------|---------------|---------------|---------------------|
| ES010 | Aqueous | GC/MS OO | 02/06/13 | 02/07/13 | 130206S02 |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|-----------------------------|-------------|-------------|---------|---------|----------|----------|---------|-----|--------|------------|
| Acetone | ND | 50.00 | 100.6 | 201 | 124.9 | 250 | 40-140 | 22 | 0-20 | 3,4 |
| Benzene | ND | 50.00 | 45.76 | 92 | 45.66 | 91 | 80-120 | 0 | 0-20 | |
| Bromodichloromethane | ND | 50.00 | 48.15 | 96 | 49.85 | 100 | 75-120 | 3 | 0-20 | |
| Bromoform | ND | 50.00 | 49.26 | 99 | 52.03 | 104 | 70-130 | 5 | 0-20 | |
| Bromomethane | ND | 50.00 | 47.97 | 96 | 44.09 | 88 | 30-145 | 8 | 0-20 | |
| 2-Butanone | ND | 50.00 | 56.15 | 112 | 53.22 | 106 | 30-150 | 5 | 0-20 | |
| Carbon Tetrachloride | ND | 50.00 | 44.34 | 89 | 45.63 | 91 | 65-140 | 3 | 0-20 | |
| Chlorobenzene | ND | 50.00 | 47.96 | 96 | 47.84 | 96 | 80-120 | 0 | 0-20 | |
| Chloroethane | ND | 50.00 | 54.22 | 108 | 54.75 | 109 | 60-135 | 1 | 0-20 | |
| Chloroform | ND | 50.00 | 46.63 | 93 | 48.11 | 96 | 65-135 | 3 | 0-20 | |
| Chloromethane | ND | 50.00 | 42.28 | 85 | 45.26 | 91 | 40-125 | 7 | 0-20 | |
| Dibromochloromethane | ND | 50.00 | 48.36 | 97 | 49.17 | 98 | 60-135 | 2 | 0-20 | |
| 1,2-Dibromo-3-Chloropropane | ND | 50.00 | 45.21 | 90 | 46.56 | 93 | 50-130 | 3 | 0-20 | |
| 1,2-Dibromoethane | ND | 50.00 | 50.28 | 101 | 50.92 | 102 | 80-120 | 1 | 0-20 | |
| 1,2-Dichlorobenzene | ND | 50.00 | 49.25 | 98 | 48.33 | 97 | 70-120 | 2 | 0-20 | |
| 1,3-Dichlorobenzene | ND | 50.00 | 48.13 | 96 | 46.67 | 93 | 75-125 | 3 | 0-20 | |
| 1,4-Dichlorobenzene | ND | 50.00 | 47.10 | 94 | 46.01 | 92 | 75-125 | 2 | 0-20 | |
| 1,1-Dichloroethane | ND | 50.00 | 49.06 | 98 | 50.72 | 101 | 70-135 | 3 | 0-20 | |
| 1,2-Dichloroethane | ND | 50.00 | 50.13 | 100 | 51.85 | 104 | 70-130 | 3 | 0-20 | |
| 1,1-Dichloroethene | ND | 50.00 | 45.61 | 91 | 45.84 | 92 | 70-130 | 1 | 0-20 | |
| c-1,2-Dichloroethene | ND | 50.00 | 47.81 | 96 | 49.23 | 98 | 70-125 | 3 | 0-20 | |
| t-1,2-Dichloroethene | ND | 50.00 | 46.36 | 93 | 47.64 | 95 | 60-140 | 3 | 0-20 | |
| 1,2-Dichloropropane | ND | 50.00 | 53.61 | 107 | 54.45 | 109 | 75-125 | 2 | 0-20 | |
| c-1,3-Dichloropropene | ND | 50.00 | 49.44 | 99 | 50.43 | 101 | 70-130 | 2 | 0-20 | |
| t-1,3-Dichloropropene | ND | 50.00 | 43.32 | 87 | 44.04 | 88 | 55-140 | 2 | 0-20 | |
| Ethylbenzene | ND | 50.00 | 49.93 | 100 | 48.73 | 97 | 75-125 | 2 | 0-20 | |
| Methylene Chloride | ND | 50.00 | 45.08 | 90 | 46.33 | 93 | 55-140 | 3 | 0-20 | |
| 4-Methyl-2-Pentanone | ND | 50.00 | 57.59 | 115 | 60.82 | 122 | 60-135 | 5 | 0-20 | |
| Styrene | ND | 50.00 | 52.22 | 104 | 51.69 | 103 | 65-135 | 1 | 0-20 | |
| 1,1,1,2-Tetrachloroethane | ND | 50.00 | 50.22 | 100 | 49.95 | 100 | 80-130 | 1 | 0-20 | |
| 1,1,2,2-Tetrachloroethane | ND | 50.00 | 45.49 | 91 | 46.73 | 93 | 65-130 | 3 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit



Return to Contents



Quality Control - Spike/Spike Duplicate



Environmental Science International, Inc.
 354 Uluniu Street, Suite 304
 Kailua, HI 96734-2500

Date Received: 02/06/13
 Work Order No: 13-02-0277
 Preparation: EPA 5030C
 Method: GC/MS / EPA 8260B

Project Red Hill LTM 112066

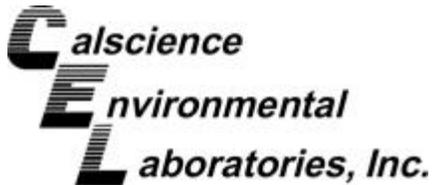
| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---------------------------|---------|------------|---------------|---------------|---------------------|
| ES010 | Aqueous | GC/MS OO | 02/06/13 | 02/07/13 | 130206S02 |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|-----------------------------|-------------|-------------|---------|---------|----------|----------|---------|-----|--------|------------|
| Tetrachloroethene | ND | 50.00 | 59.54 | 119 | 58.08 | 116 | 45-150 | 2 | 0-20 | |
| Toluene | ND | 50.00 | 47.81 | 96 | 48.09 | 96 | 75-120 | 1 | 0-20 | |
| 1,2,4-Trichlorobenzene | ND | 50.00 | 46.96 | 94 | 45.48 | 91 | 65-135 | 3 | 0-20 | |
| 1,1,1-Trichloroethane | ND | 50.00 | 45.70 | 91 | 46.67 | 93 | 65-130 | 2 | 0-20 | |
| Hexachloro-1,3-Butadiene | ND | 50.00 | 44.97 | 90 | 43.65 | 87 | 50-140 | 3 | 0-20 | |
| 1,1,2-Trichloroethane | ND | 50.00 | 47.57 | 95 | 48.39 | 97 | 75-125 | 2 | 0-20 | |
| Trichloroethene | ND | 50.00 | 47.69 | 95 | 47.25 | 94 | 70-125 | 1 | 0-20 | |
| 1,2,3-Trichloropropane | ND | 50.00 | 46.76 | 94 | 49.55 | 99 | 75-125 | 6 | 0-20 | |
| Vinyl Chloride | ND | 50.00 | 48.88 | 98 | 51.05 | 102 | 50-145 | 4 | 0-20 | |
| p/m-Xylene | ND | 100.0 | 100.5 | 100 | 98.32 | 98 | 75-130 | 2 | 0-20 | |
| o-Xylene | ND | 50.00 | 52.04 | 104 | 51.18 | 102 | 80-120 | 2 | 0-20 | |
| Methyl-t-Butyl Ether (MTBE) | ND | 50.00 | 49.32 | 99 | 51.80 | 104 | 65-125 | 5 | 0-20 | |

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RPD - Relative Percent Difference , CL - Control Limit





Quality Control - LCS/LCS Duplicate



Environmental Science International, Inc.
 354 Uluniu Street, Suite 304
 Kailua, HI 96734-2500

Date Received: N/A
 Work Order No: 13-02-0277
 Preparation: EPA 3020A Total
 Method: EPA 6020

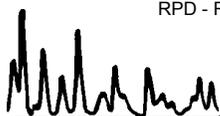
Project: Red Hill LTM 112066

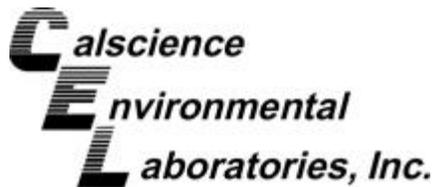
| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---------------------------|---------|------------|---------------|---------------|-----------------------|
| 099-14-497-17 | Aqueous | ICP/MS 03 | 02/07/13 | 02/07/13 | 130207L04D |

| Parameter | <u>SPIKE ADDED</u> | <u>LCS CONC</u> | <u>LCS %REC</u> | <u>LCSD CONC</u> | <u>LCSD %REC</u> | <u>%REC CL</u> | <u>RPD</u> | <u>RPD CL</u> | <u>Qualifiers</u> |
|-----------|--------------------|-----------------|-----------------|------------------|------------------|----------------|------------|---------------|-------------------|
| Lead | 100.0 | 100.2 | 100 | 101.6 | 102 | 80-120 | 1 | 0-20 | |

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RPD - Relative Percent Difference , CL - Control Limit





Quality Control - LCS/LCS Duplicate



Environmental Science International, Inc.
 354 Uluniu Street, Suite 304
 Kailua, HI 96734-2500

Date Received: N/A
 Work Order No: 13-02-0277
 Preparation: EPA 3510C
 Method: EPA 8015B (M)

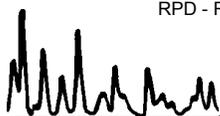
Project: Red Hill LTM 112066

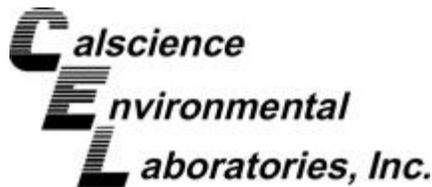
| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---------------------------|---------|------------|---------------|---------------|-----------------------|
| 099-15-516-28 | Aqueous | GC 45 | 02/08/13 | 02/08/13 | 130208B07 |

| Parameter | <u>SPIKE ADDED</u> | <u>LCS CONC</u> | <u>LCS %REC</u> | <u>LCSD CONC</u> | <u>LCSD %REC</u> | <u>%REC CL</u> | <u>RPD</u> | <u>RPD CL</u> | <u>Qualifiers</u> |
|---------------|--------------------|-----------------|-----------------|------------------|------------------|----------------|------------|---------------|-------------------|
| TPH as Diesel | 4000 | 3030 | 76 | 3102 | 78 | 60-132 | 2 | 0-11 | |

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RPD - Relative Percent Difference , CL - Control Limit





Quality Control - LCS/LCS Duplicate



Environmental Science International, Inc.
 354 Uluniu Street, Suite 304
 Kailua, HI 96734-2500

Date Received: N/A
 Work Order No: 13-02-0277
 Preparation: EPA 3510C
 Method: EPA 8270C SIM PAHs

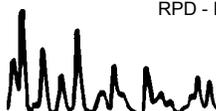
Project: Red Hill LTM 112066

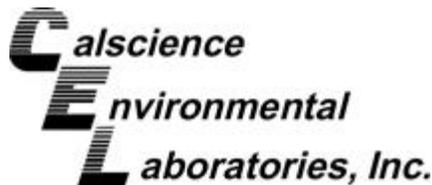
| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number | | | | | |
|---------------------------|--------------------|-----------------|-----------------|------------------|-----------------------|----------------|--------------|------------|---------------|-------------------|
| 099-15-148-9 | Aqueous | GC/MS AAA | 02/07/13 | 02/08/13 | 130207L02 | | | | | |
| Parameter | <u>SPIKE ADDED</u> | <u>LCS CONC</u> | <u>LCS %REC</u> | <u>LCSD CONC</u> | <u>LCSD %REC</u> | <u>%REC CL</u> | <u>ME CL</u> | <u>RPD</u> | <u>RPD CL</u> | <u>Qualifiers</u> |
| Naphthalene | 2.000 | 1.976 | 99 | 1.969 | 98 | 21-133 | 2-152 | 0 | 0-25 | |
| 2-Methylnaphthalene | 2.000 | 2.126 | 106 | 2.129 | 106 | 21-140 | 1-160 | 0 | 0-25 | |
| 1-Methylnaphthalene | 2.000 | 2.121 | 106 | 2.108 | 105 | 20-140 | 0-160 | 1 | 0-25 | |
| Acenaphthylene | 2.000 | 1.975 | 99 | 1.973 | 99 | 33-145 | 14-164 | 0 | 0-25 | |
| Acenaphthene | 2.000 | 1.972 | 99 | 1.997 | 100 | 55-121 | 44-132 | 1 | 0-25 | |
| Fluorene | 2.000 | 2.140 | 107 | 2.155 | 108 | 59-121 | 49-131 | 1 | 0-25 | |
| Phenanthrene | 2.000 | 2.177 | 109 | 2.162 | 108 | 54-120 | 43-131 | 1 | 0-25 | |
| Anthracene | 2.000 | 1.933 | 97 | 1.934 | 97 | 27-133 | 9-151 | 0 | 0-25 | |
| Fluoranthene | 2.000 | 2.148 | 107 | 2.137 | 107 | 26-137 | 8-156 | 1 | 0-25 | |
| Pyrene | 2.000 | 2.421 | 121 | 2.401 | 120 | 45-129 | 31-143 | 1 | 0-25 | |
| Benzo (a) Anthracene | 2.000 | 2.601 | 130 | 2.583 | 129 | 33-143 | 15-161 | 1 | 0-25 | |
| Chrysene | 2.000 | 2.339 | 117 | 2.334 | 117 | 17-168 | 0-193 | 0 | 0-25 | |
| Benzo (k) Fluoranthene | 2.000 | 2.628 | 131 | 2.649 | 132 | 24-159 | 2-182 | 1 | 0-25 | |
| Benzo (b) Fluoranthene | 2.000 | 2.620 | 131 | 2.693 | 135 | 24-159 | 2-182 | 3 | 0-25 | |
| Benzo (a) Pyrene | 2.000 | 2.434 | 122 | 2.418 | 121 | 17-163 | 0-187 | 1 | 0-25 | |
| Indeno (1,2,3-c,d) Pyrene | 2.000 | 2.394 | 120 | 2.370 | 119 | 25-175 | 0-200 | 1 | 0-25 | |
| Dibenz (a,h) Anthracene | 2.000 | 2.331 | 117 | 2.321 | 116 | 25-175 | 0-200 | 0 | 0-25 | |
| Benzo (g,h,i) Perylene | 2.000 | 2.275 | 114 | 2.265 | 113 | 25-157 | 3-179 | 0 | 0-25 | |

Total number of LCS compounds : 18
 Total number of ME compounds : 0
 Total number of ME compounds allowed : 1
 LCS ME CL validation result : Pass

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RPD - Relative Percent Difference , CL - Control Limit





Quality Control - LCS/LCS Duplicate



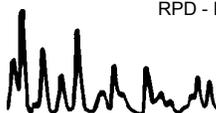
Environmental Science International, Inc.
354 Uluniu Street, Suite 304
Kailua, HI 96734-2500

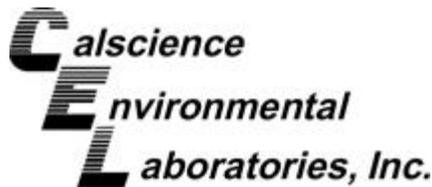
Date Received: N/A
Work Order No: 13-02-0277
Preparation: EPA 5030C
Method: GC/MS / EPA 8260B

Project: Red Hill LTM 112066

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number | | | | | |
|-----------------------------|--------------------|-----------------|-----------------|------------------|-----------------------|----------------|--------------|------------|---------------|-------------------|
| 099-13-057-7 | Aqueous | GC/MS OO | 02/06/13 | 02/07/13 | 130206L03 | | | | | |
| Parameter | <u>SPIKE ADDED</u> | <u>LCS CONC</u> | <u>LCS %REC</u> | <u>LCSD CONC</u> | <u>LCSD %REC</u> | <u>%REC CL</u> | <u>ME CL</u> | <u>RPD</u> | <u>RPD CL</u> | <u>Qualifiers</u> |
| Acetone | 50.00 | 82.38 | 165 | 83.92 | 168 | 40-140 | 23-157 | 2 | 0-20 | X |
| Benzene | 50.00 | 47.26 | 95 | 48.16 | 96 | 80-120 | 73-127 | 2 | 0-20 | |
| Bromodichloromethane | 50.00 | 50.31 | 101 | 51.00 | 102 | 75-120 | 68-128 | 1 | 0-20 | |
| Bromoform | 50.00 | 51.68 | 103 | 54.39 | 109 | 70-130 | 60-140 | 5 | 0-20 | |
| Bromomethane | 50.00 | 46.07 | 92 | 45.08 | 90 | 30-145 | 11-164 | 2 | 0-20 | |
| 2-Butanone | 50.00 | 49.45 | 99 | 50.39 | 101 | 30-150 | 10-170 | 2 | 0-20 | |
| Carbon Tetrachloride | 50.00 | 46.34 | 93 | 45.73 | 91 | 65-140 | 52-152 | 1 | 0-20 | |
| Chlorobenzene | 50.00 | 49.32 | 99 | 50.30 | 101 | 80-120 | 73-127 | 2 | 0-20 | |
| Chloroethane | 50.00 | 55.75 | 112 | 56.30 | 113 | 60-135 | 48-148 | 1 | 0-20 | |
| Chloroform | 50.00 | 48.86 | 98 | 48.34 | 97 | 65-135 | 53-147 | 1 | 0-20 | |
| Chloromethane | 50.00 | 46.23 | 92 | 45.91 | 92 | 40-125 | 26-139 | 1 | 0-20 | |
| Dibromochloromethane | 50.00 | 49.92 | 100 | 51.72 | 103 | 60-135 | 48-148 | 4 | 0-20 | |
| 1,2-Dibromo-3-Chloropropane | 50.00 | 46.14 | 92 | 48.12 | 96 | 50-130 | 37-143 | 4 | 0-20 | |
| 1,2-Dibromoethane | 50.00 | 53.90 | 108 | 53.48 | 107 | 80-120 | 73-127 | 1 | 0-20 | |
| 1,2-Dichlorobenzene | 50.00 | 49.52 | 99 | 51.72 | 103 | 70-120 | 62-128 | 4 | 0-20 | |
| 1,3-Dichlorobenzene | 50.00 | 47.94 | 96 | 49.88 | 100 | 75-125 | 67-133 | 4 | 0-20 | |
| 1,4-Dichlorobenzene | 50.00 | 47.49 | 95 | 49.32 | 99 | 75-125 | 67-133 | 4 | 0-20 | |
| 1,1-Dichloroethane | 50.00 | 51.83 | 104 | 51.59 | 103 | 70-135 | 59-146 | 0 | 0-20 | |
| 1,2-Dichloroethane | 50.00 | 52.05 | 104 | 53.09 | 106 | 70-130 | 60-140 | 2 | 0-20 | |
| 1,1-Dichloroethene | 50.00 | 47.62 | 95 | 46.57 | 93 | 70-130 | 60-140 | 2 | 0-20 | |
| c-1,2-Dichloroethene | 50.00 | 50.38 | 101 | 49.45 | 99 | 70-125 | 61-134 | 2 | 0-20 | |
| t-1,2-Dichloroethene | 50.00 | 48.00 | 96 | 47.66 | 95 | 60-140 | 47-153 | 1 | 0-20 | |
| 1,2-Dichloropropane | 50.00 | 56.64 | 113 | 57.49 | 115 | 75-125 | 67-133 | 1 | 0-20 | |
| c-1,3-Dichloropropene | 50.00 | 52.77 | 106 | 53.61 | 107 | 70-130 | 60-140 | 2 | 0-20 | |
| t-1,3-Dichloropropene | 50.00 | 46.58 | 93 | 47.94 | 96 | 55-140 | 41-154 | 3 | 0-20 | |
| Ethylbenzene | 50.00 | 51.16 | 102 | 52.31 | 105 | 75-125 | 67-133 | 2 | 0-20 | |
| Methylene Chloride | 50.00 | 47.11 | 94 | 47.03 | 94 | 55-140 | 41-154 | 0 | 0-20 | |
| 4-Methyl-2-Pentanone | 50.00 | 62.36 | 125 | 63.65 | 127 | 60-135 | 48-148 | 2 | 0-20 | |
| Styrene | 50.00 | 53.86 | 108 | 54.73 | 109 | 65-135 | 53-147 | 2 | 0-20 | |
| 1,1,1,2-Tetrachloroethane | 50.00 | 51.10 | 102 | 52.58 | 105 | 80-130 | 72-138 | 3 | 0-20 | |
| 1,1,2,2-Tetrachloroethane | 50.00 | 48.25 | 96 | 50.54 | 101 | 65-130 | 54-141 | 5 | 0-20 | |
| Tetrachloroethene | 50.00 | 44.92 | 90 | 46.11 | 92 | 45-150 | 28-168 | 3 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit





Quality Control - LCS/LCS Duplicate



Environmental Science International, Inc.
 354 Uluniu Street, Suite 304
 Kailua, HI 96734-2500

Date Received: N/A
 Work Order No: 13-02-0277
 Preparation: EPA 5030C
 Method: GC/MS / EPA 8260B

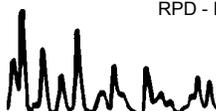
Project: Red Hill LTM 112066

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number | | | | | |
|-----------------------------|--------------------|-----------------|-----------------|------------------|-----------------------|----------------|--------------|------------|---------------|-------------------|
| 099-13-057-7 | Aqueous | GC/MS OO | 02/06/13 | 02/07/13 | 130206L03 | | | | | |
| Parameter | <u>SPIKE ADDED</u> | <u>LCS CONC</u> | <u>LCS %REC</u> | <u>LCSD CONC</u> | <u>LCSD %REC</u> | <u>%REC CL</u> | <u>ME CL</u> | <u>RPD</u> | <u>RPD CL</u> | <u>Qualifiers</u> |
| Toluene | 50.00 | 50.17 | 100 | 50.72 | 101 | 75-120 | 68-128 | 1 | 0-20 | |
| 1,2,4-Trichlorobenzene | 50.00 | 49.31 | 99 | 50.38 | 101 | 65-135 | 53-147 | 2 | 0-20 | |
| 1,1,1-Trichloroethane | 50.00 | 48.33 | 97 | 47.39 | 95 | 65-130 | 54-141 | 2 | 0-20 | |
| Hexachloro-1,3-Butadiene | 50.00 | 46.28 | 93 | 47.15 | 94 | 50-140 | 35-155 | 2 | 0-20 | |
| 1,1,2-Trichloroethane | 50.00 | 50.80 | 102 | 52.81 | 106 | 75-125 | 67-133 | 4 | 0-20 | |
| Trichloroethene | 50.00 | 47.83 | 96 | 49.29 | 99 | 70-125 | 61-134 | 3 | 0-20 | |
| 1,2,3-Trichloropropane | 50.00 | 51.40 | 103 | 51.35 | 103 | 75-125 | 67-133 | 0 | 0-20 | |
| Vinyl Chloride | 50.00 | 51.47 | 103 | 51.55 | 103 | 50-145 | 34-161 | 0 | 0-20 | |
| p/m-Xylene | 100.0 | 102.3 | 102 | 104.2 | 104 | 75-130 | 66-139 | 2 | 0-20 | |
| o-Xylene | 50.00 | 53.68 | 107 | 54.54 | 109 | 80-120 | 73-127 | 2 | 0-20 | |
| Methyl-t-Butyl Ether (MTBE) | 50.00 | 52.87 | 106 | 53.08 | 106 | 65-125 | 55-135 | 0 | 0-20 | |
| Gasoline Range Organics | 1000 | 1064 | 106 | 1088 | 109 | 80-120 | 73-127 | 2 | 0-20 | |

Total number of LCS compounds : 44
 Total number of ME compounds : 0
 Total number of ME compounds allowed : 2
 LCS ME CL validation result : Pass

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RPD - Relative Percent Difference , CL - Control Limit



WORK ORDER #: 13-02-0277

| <i>Lab Sample Number</i> | <i>Client Sample ID</i> | <i>Method</i> | <i>Extraction</i> | <i>Date/Time Analyzed</i> | <i>Chemist ID</i> | <i>Instrument</i> | <i>Analytical Location</i> |
|--------------------------|-------------------------|------------------|-------------------|---------------------------|-------------------|-------------------|----------------------------|
| 1-G | ES010 | EPA 6020 | EPA 3020A T | 02/7/2013 20:49 | 598 | ICP/MS 03 | 1 |
| 1-I | ES010 | EPA 8270C SIM PA | EPA 3510C | 02/8/2013 18:06 | 449 | GC/MS AA | 1 |
| 1-H | ES010 | EPA 8015B (M) | EPA 3510C | 02/8/2013 21:34 | 682 | GC 45 | 1 |
| 1-A | ES010 | GC/MS / EPA 8260 | EPA 5030C | 02/7/2013 2:11 | 486 | GC/MS OO | 2 |
| 2-A | ES Trip | GC/MS / EPA 8260 | EPA 5030C | 02/7/2013 1:44 | 486 | GC/MS OO | 2 |

Return to Contents

| <i>Location</i> | <i>Description</i> |
|-----------------|---|
| 1 | 7440 Lincoln Way, Garden Grove, CA 92841 |
| 2 | 7445 Lampson Avenue, Garden Grove, CA 92841 |

Work Order Number: 13-02-0277

| <u>Qualifier</u> | <u>Definition</u> |
|------------------|--|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | 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. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification. |
| 4 | The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| DL | The Detection Limit (DL) is the smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration at the 99% level of confidence. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| ICH | Initial calibrtn. verif. recov. above method CL for this analyte. |
| ICJ | Initial calibrtn. verif. recov. below method CL for this analyte. |
| IH | Calibrtn. verif. recov. below method CL for this analyte. |
| IJ | Calibrtn. verif. recov. above method CL for this analyte. |
| J | Analyte was detected at a concentration below the LOQ and above the DL. Reported value is estimated. |
| LOD | The Limit of Detection (LOD) is the smallest amount or concentration of a substance that must be present in a sample in order to be detected at 99% confidence level. |
| LOQ | The Limit of Quantitation (LOQ) is the lowest concentration of a substance that produces a quantitative result within specified limits of precision and bias. |
| Q | 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. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| U | Undetected at Detection Limit (DL) and is reported as less than the Limit of Detection (LOD). |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

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.

MPN - Most Probable Number





Calscience Environmental Laboratories, Inc.

7440 Lincoln Way, Garden Grove, CA 92841-1427 • (714) 895-5494

Other CA office locations: Concord and San Luis Obispo

For courier service / sample drop off information, contact sales@calscience.com or call us.

CHAIN OF CUSTODY RECORD

WO # / LAB USE ONLY

13-02-0277

Date 2/4/13

Page 1 of 1

| | | | |
|--|-------------------------|---|--------------------------------------|
| LABORATORY CLIENT: <u>Environmental Science International</u> | | CLIENT PROJECT NAME / NUMBER: <u>Red Hill LTM/112066</u> | P.O. NO.: |
| ADDRESS: <u>354 Ulunia St, #304</u> | | PROJECT CONTACT: <u>Robert Chong</u> | SAMPLER(S): (PRINT) <u>BJ, JL</u> |
| CITY: <u>Kailua</u> | STATE: <u>Hawaii</u> | ZIP: <u>96734</u> | |

TEL: 808-281-0740 E-MAIL: rchong@calscience.com, DFEHER@calscience.com

TURNAROUND TIME:
 SAME DAY 24 HR 48 HR 72 HR STANDARD

COELT EDF GLOBAL ID LOG CODE

SPECIAL INSTRUCTIONS:

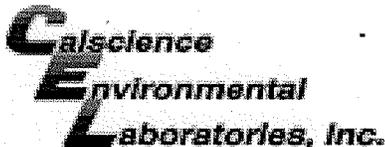
REQUESTED ANALYSES
Please check box or fill in blank as needed.

| | | | | | | | | | | | | | | |
|---|--|---|-----|---|-------------|-------------------|--|--------------|-------------------|-------------|---|--|---|--------------------|
| TPH(g) <input checked="" type="checkbox"/> 8260 | TPH(d) <input checked="" type="checkbox"/> 8015B | TPH <input type="checkbox"/> C6-C36 <input type="checkbox"/> C6-C44 | TPH | BTEX / MTBE <input type="checkbox"/> 8260 | VOCs (8260) | Oxygenates (8260) | Prep (5035) <input type="checkbox"/> En Core <input type="checkbox"/> Terra Core | SVOCs (8270) | Pesticides (8081) | PCBs (8082) | PAHs <input checked="" type="checkbox"/> 8270 SIM | T22 Metals <input type="checkbox"/> 6010/747X <input type="checkbox"/> 6020/747X | Cr(VI) <input type="checkbox"/> 7196 <input type="checkbox"/> 7199 <input type="checkbox"/> 218.6 | <u>Lead (6020)</u> |
|---|--|---|-----|---|-------------|-------------------|--|--------------|-------------------|-------------|---|--|---|--------------------|

| LAB USE ONLY | SAMPLE ID | SAMPLING | | MATRIX | NO. OF CONT. | Unpreserved | Preserved | Field Filtered | TPH(g) <input checked="" type="checkbox"/> 8260 | TPH(d) <input checked="" type="checkbox"/> 8015B | TPH <input type="checkbox"/> C6-C36 <input type="checkbox"/> C6-C44 | TPH | BTEX / MTBE <input type="checkbox"/> 8260 | VOCs (8260) | Oxygenates (8260) | Prep (5035) <input type="checkbox"/> En Core <input type="checkbox"/> Terra Core | SVOCs (8270) | Pesticides (8081) | PCBs (8082) | PAHs <input checked="" type="checkbox"/> 8270 SIM | T22 Metals <input type="checkbox"/> 6010/747X <input type="checkbox"/> 6020/747X | Cr(VI) <input type="checkbox"/> 7196 <input type="checkbox"/> 7199 <input type="checkbox"/> 218.6 | <u>Lead (6020)</u> | |
|--------------|-----------|----------|------|--------|--------------|-------------|-----------|----------------|---|--|---|-----|---|-------------|-------------------|--|--------------|-------------------|-------------|---|--|---|--------------------|--|
| | | DATE | TIME | | | | | | | | | | | | | | | | | | | | | |
| 1 | ES010 | 2/4/13 | 1045 | soil | 10 | X | X | X | X | X | | | | X | | | | | | | X | | | |
| 2 | ES Trip | 2/4/13 | 0700 | water | 3 | | X | | | | | | | X | | | | | | | | | | |

| | | | |
|--|--|------------------------|-----------------------|
| Relinquished by: (Signature) <u>[Signature]</u> | Received by: (Signature/Affiliation) <u>[Signature]</u> | Date: <u>2/4/13</u> | Time: |
| Relinquished by: (Signature) | Received by: (Signature/Affiliation) | Date: | Time: |
| Relinquished by: (Signature) | Received by: (Signature/Affiliation) <u>[Signature]</u> | Date: <u>2/6/13</u> | Time: <u>10:00</u> |

DISTRIBUTION: White with final report, Green and Yellow to Client. Please note that pages 1 and 2 of 2 of our T/Cs are printed on the reverse side of the Green and Yellow copies respectively.



WORK ORDER #: 13-02-0277

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: ESI

DATE: 02/06/13

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

Temperature 2.9 °C - 0.2°C (CF) = 2.7 °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 Initial: PS

CUSTODY SEALS INTACT:

Cooler _____ No (Not Intact) Not Present N/A Initial: PS

Sample _____ No (Not Intact) Not Present Initial: JH

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 type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| <input type="checkbox"/> No analysis requested. <input type="checkbox"/> Not relinquished. <input checked="" type="checkbox"/> 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"/> |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours... | <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"/> |
| <input checked="" 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® _____

Water: VO⁶A VO³Ah VOAna₂ 125AGB 125AGBh 125AGBp 1²AGB 1AGBna₂ 1AGBs

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

250PB 250PBnw 125PB 125PBzanna 100PJ 100PJna₂ _____ _____ _____

Air: Tedlar® Canister Other: _____ Trip Blank Lot#: N/A Labeled/Checked by: JH

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

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

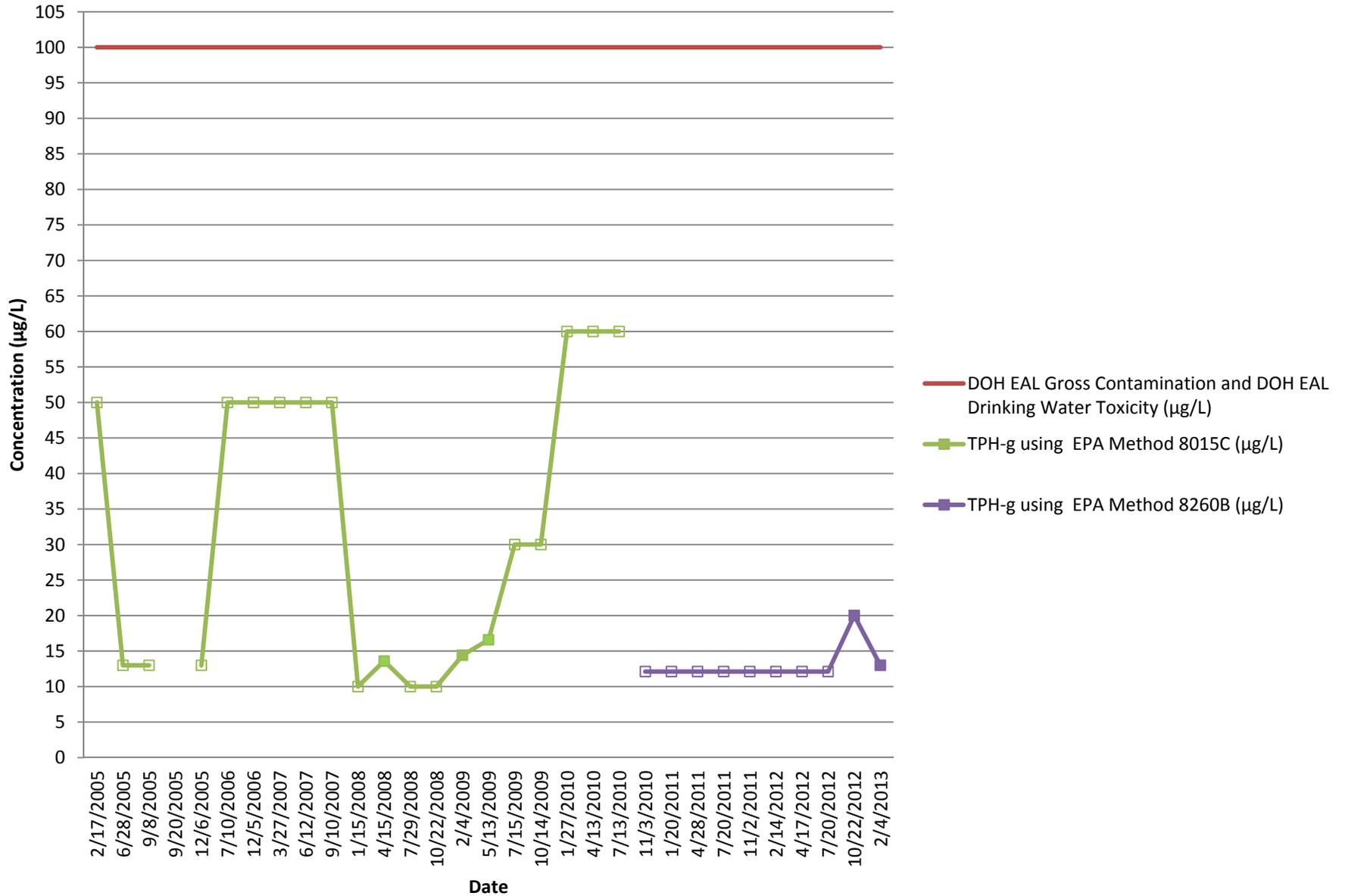


APPENDIX D

Historical Groundwater Exceedance Trends

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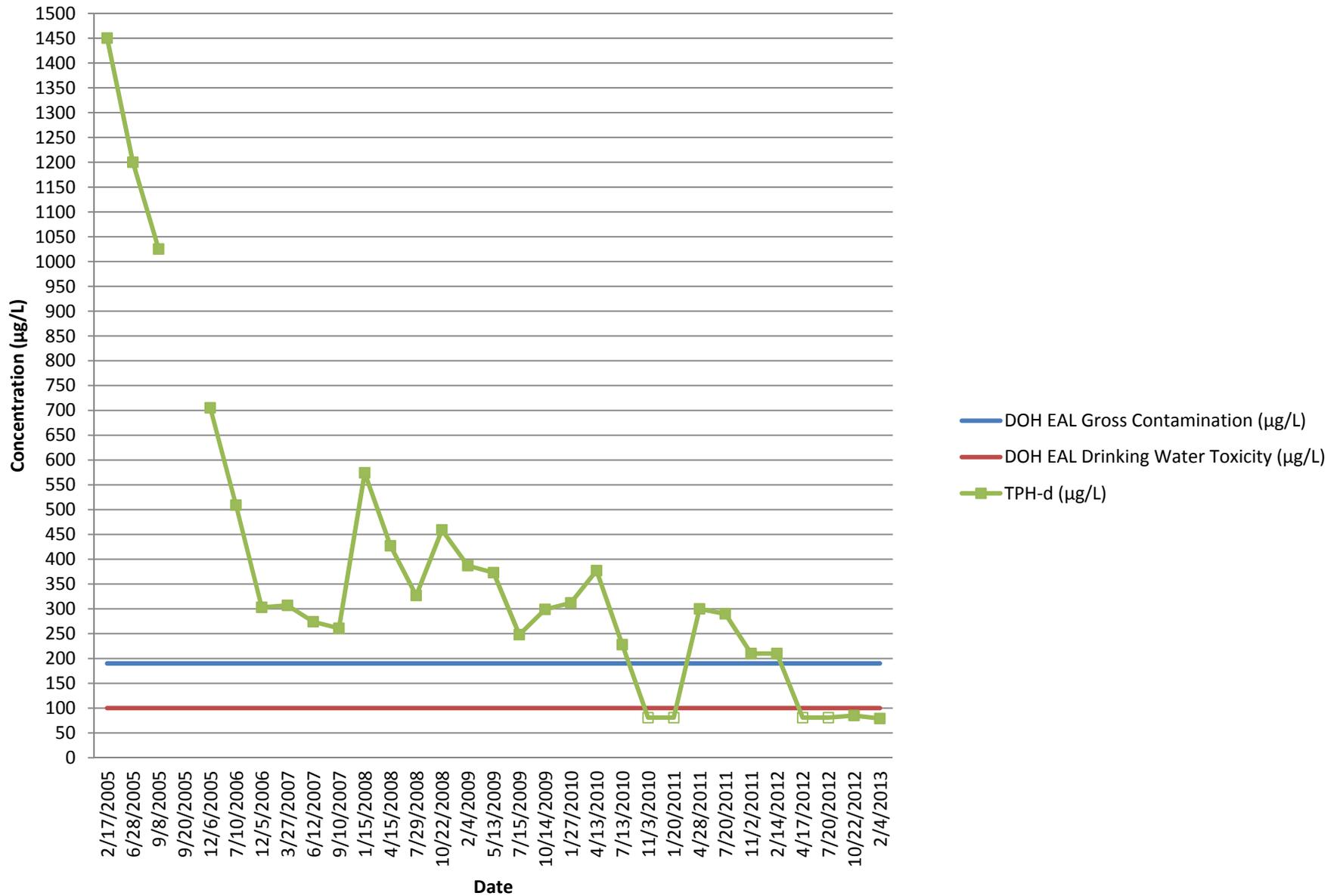
TPH-g Concentrations for RHMW01



Data points for 2/17/2005 through 9/8/2005 and 12/6/2005 are the average of the primary and duplicate samples. Unfilled boxes indicate non-detections. Method detection limits are shown.

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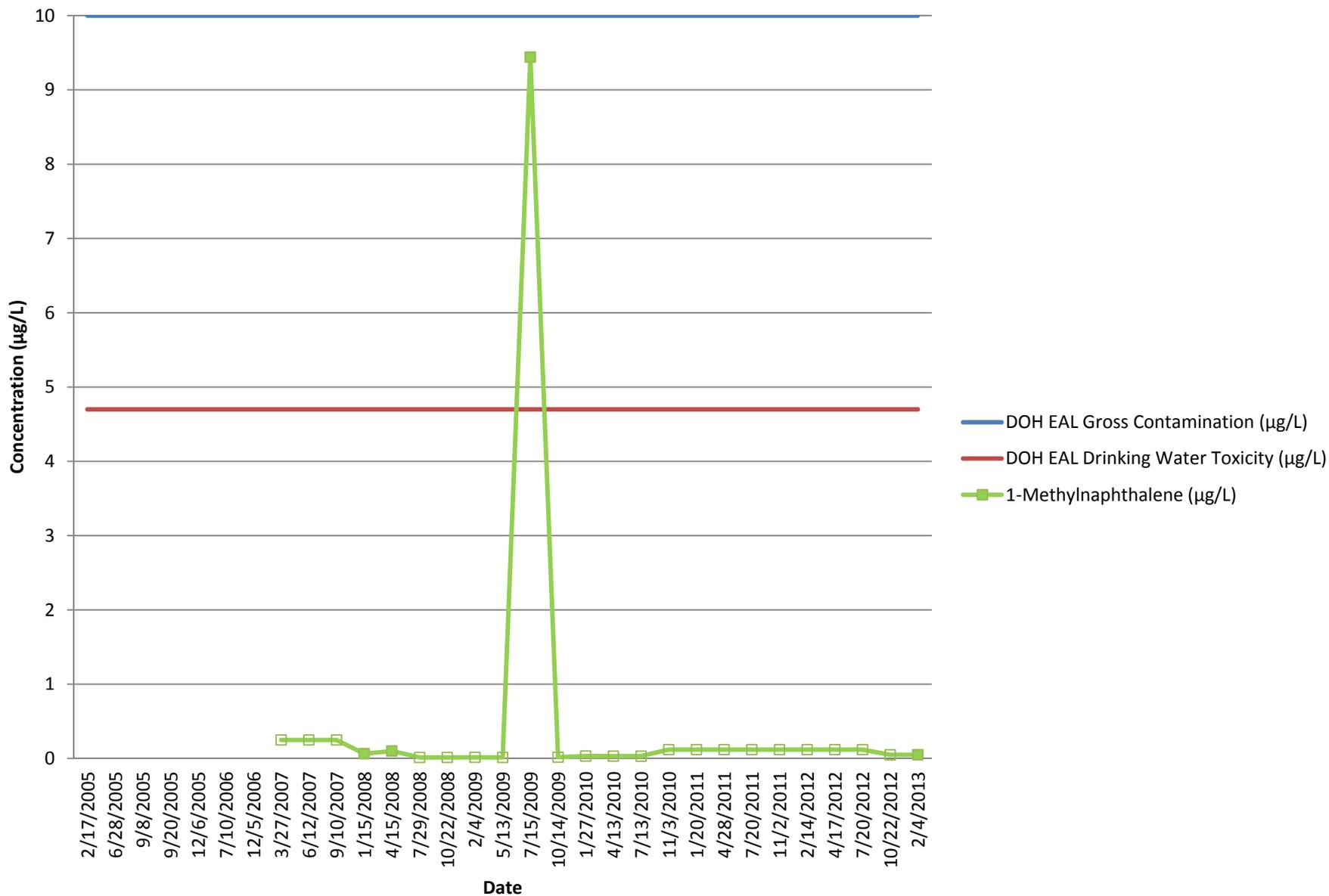
TPH-d Concentrations for RHMW01



Data points for 2/17/2005 through 9/8/2005 and 12/6/2005 are the average of the primary and duplicate samples. Unfilled boxes indicate non-detections. Method detection limits are shown.

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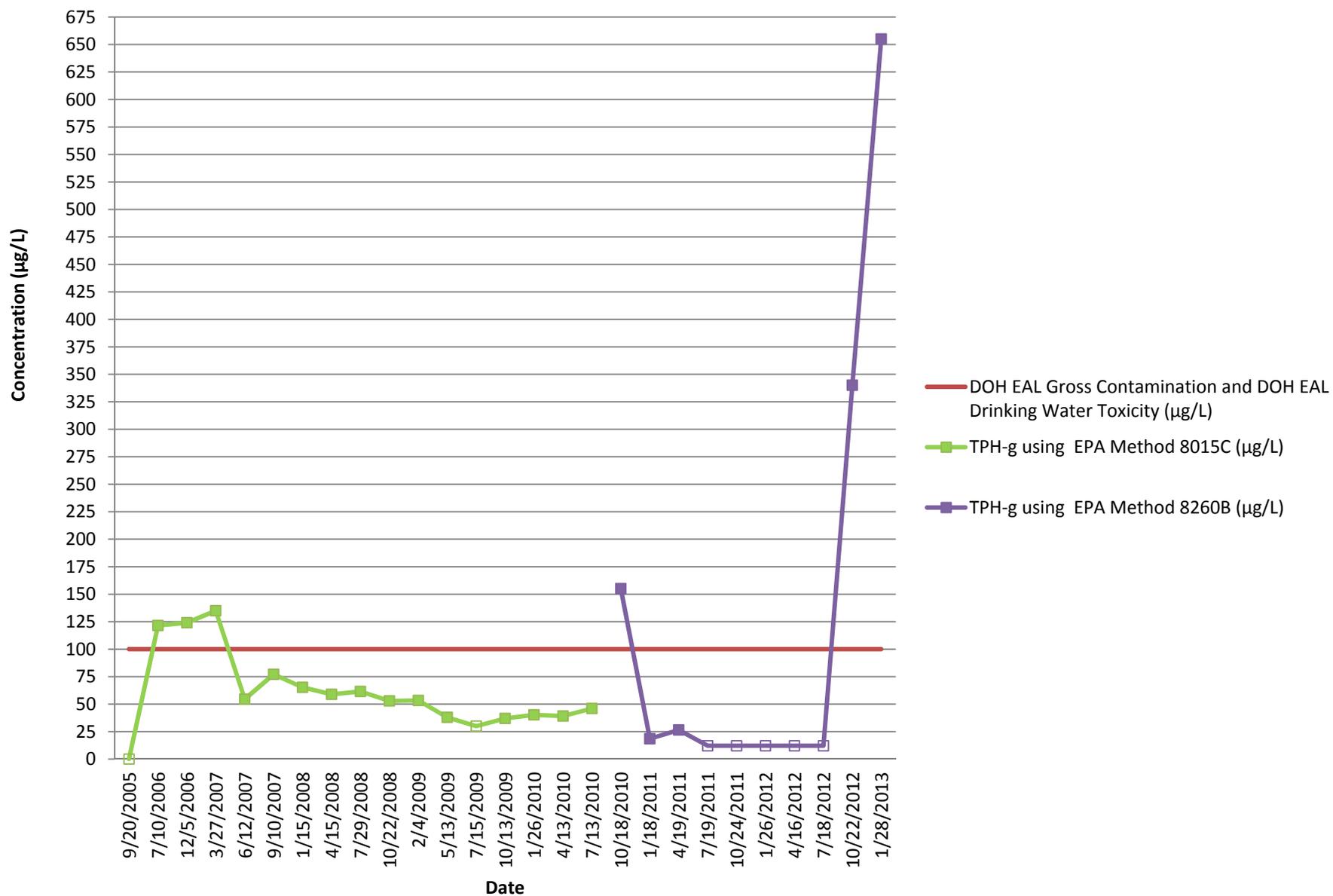
1-Methylnaphthalene Concentrations for RHMW01



Unfilled boxes indicate non-detections. Method detection limits are shown.

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TPH-g Concentrations for RHMW02



Data points for 9/20/2005 through 1/28/2013 are the average of the primary and duplicate samples.

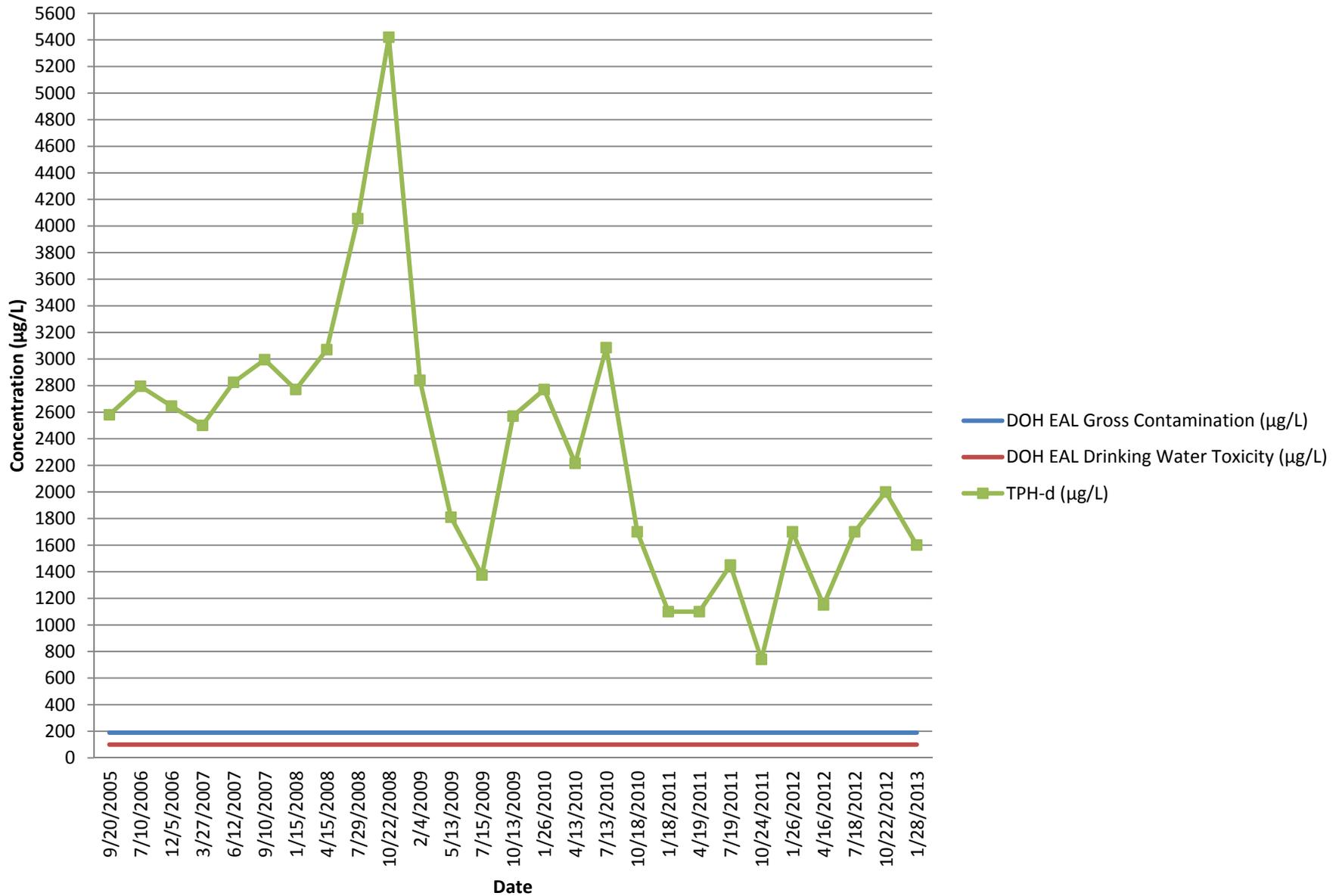
Unfilled boxes indicate non-detections. Method detection limits are shown.

Primary sample results are shown for 1/26/2012 and 7/18/2012; all other concentrations are the average of the primary and duplicate sample results.

Unfilled boxes indicate non-detections. Method detection limits are shown.

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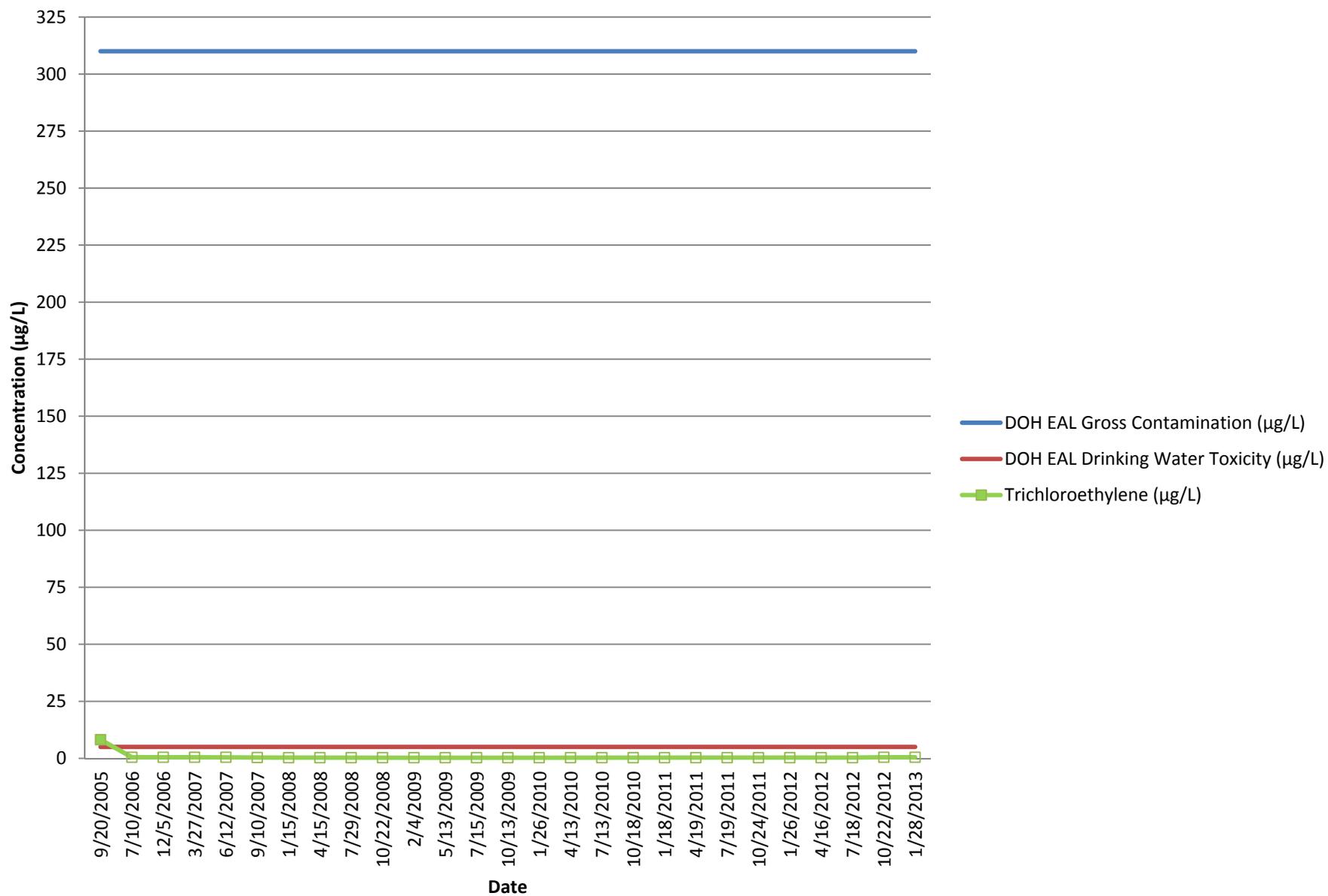
TPH-d Concentrations for RHMW02



Data points for 9/20/2005 through 1/28/2013 are the average of the primary and duplicate samples.
 Unfilled boxes indicate non-detections. Method detection limits are shown.

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Trichloroethylene Concentrations for RHMW02

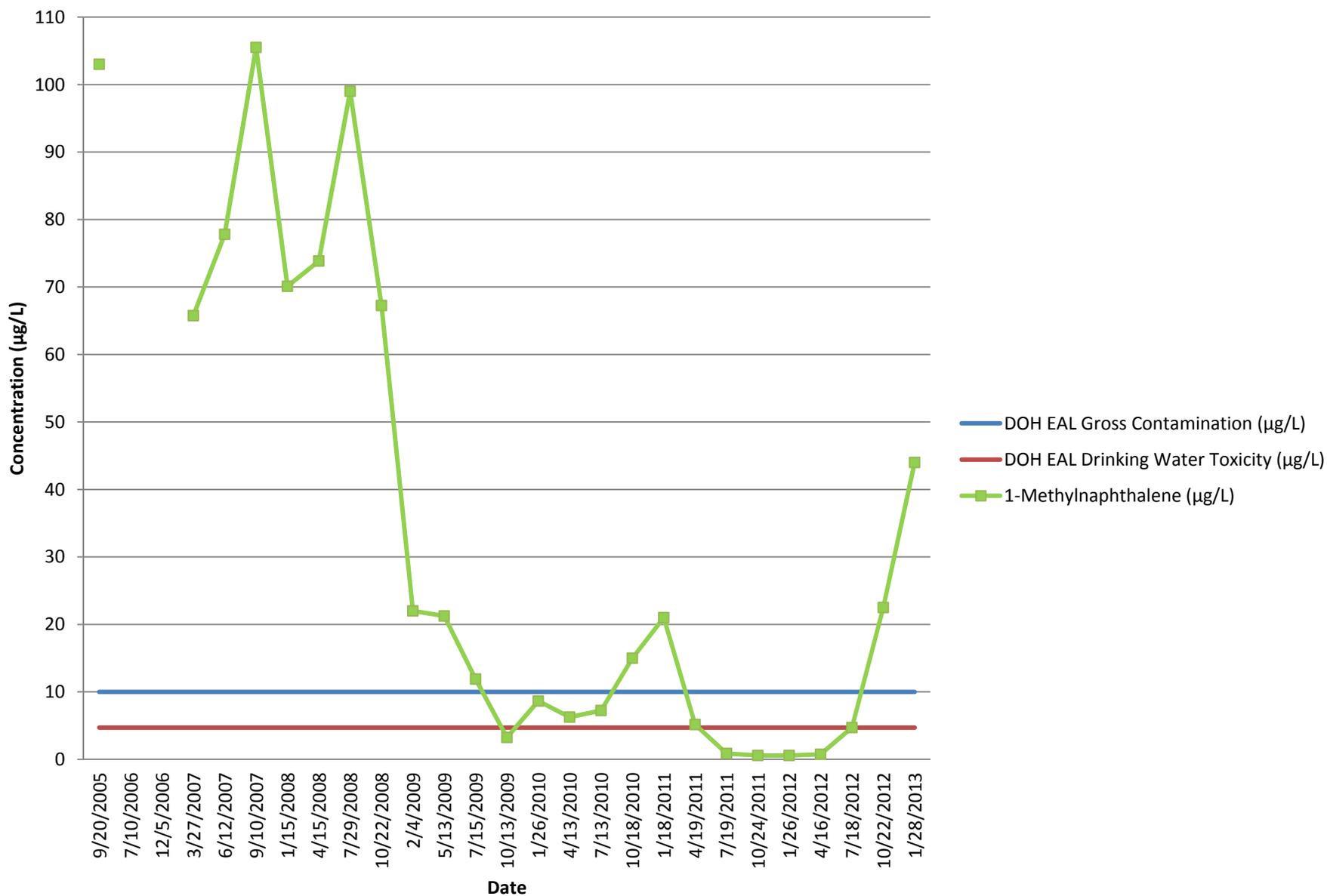


Data points for 9/20/2005 through 1/28/2013 are the average of the primary and duplicate samples.

Unfilled boxes indicate non-detections. Method detection limits are shown.

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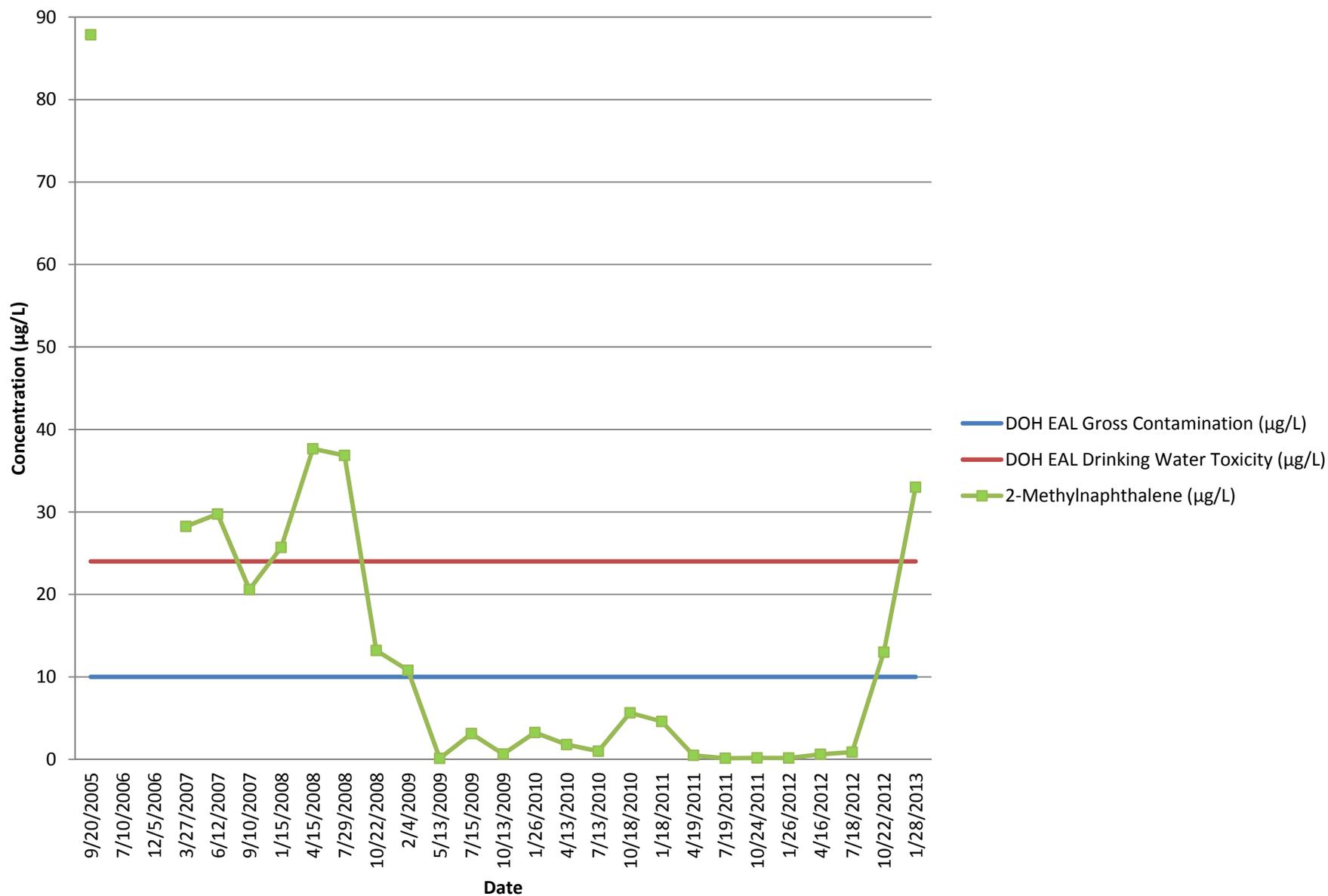
1-Methylnaphthalene Concentrations for RHMW02



Data points for 9/20/2005 and 3/27/2007 through 1/28/2013 are the average of the primary and duplicate samples. Unfilled boxes indicate non-detections. Method detection limits are shown.

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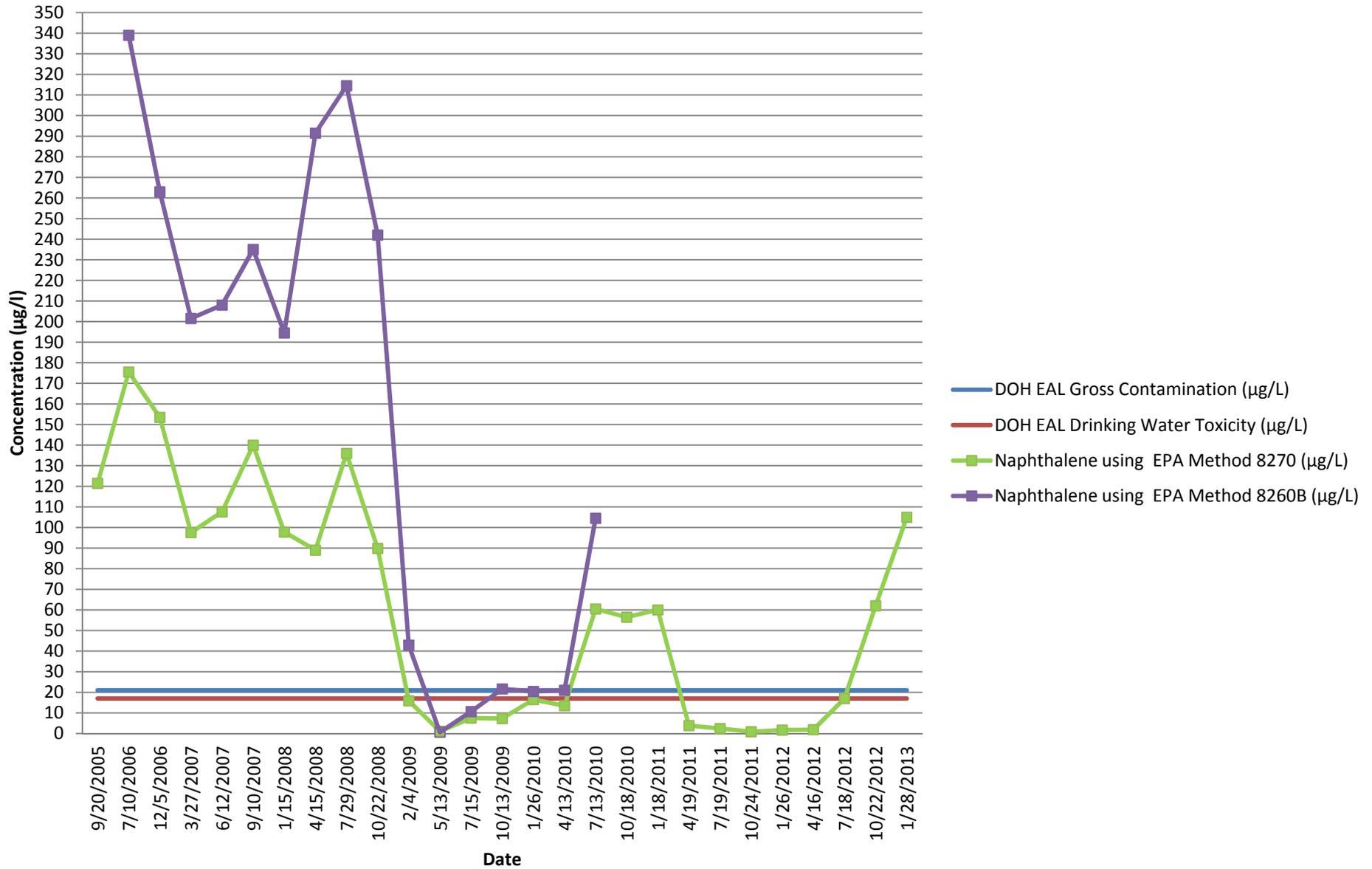
2-Methylnaphthalene Concentrations for RHMW02



Data points for 9/20/2005 and 3/27/2007 through 1/28/2013 are the average of the primary and duplicate samples. Unfilled boxes indicate non-detections. Method detection limits are shown.

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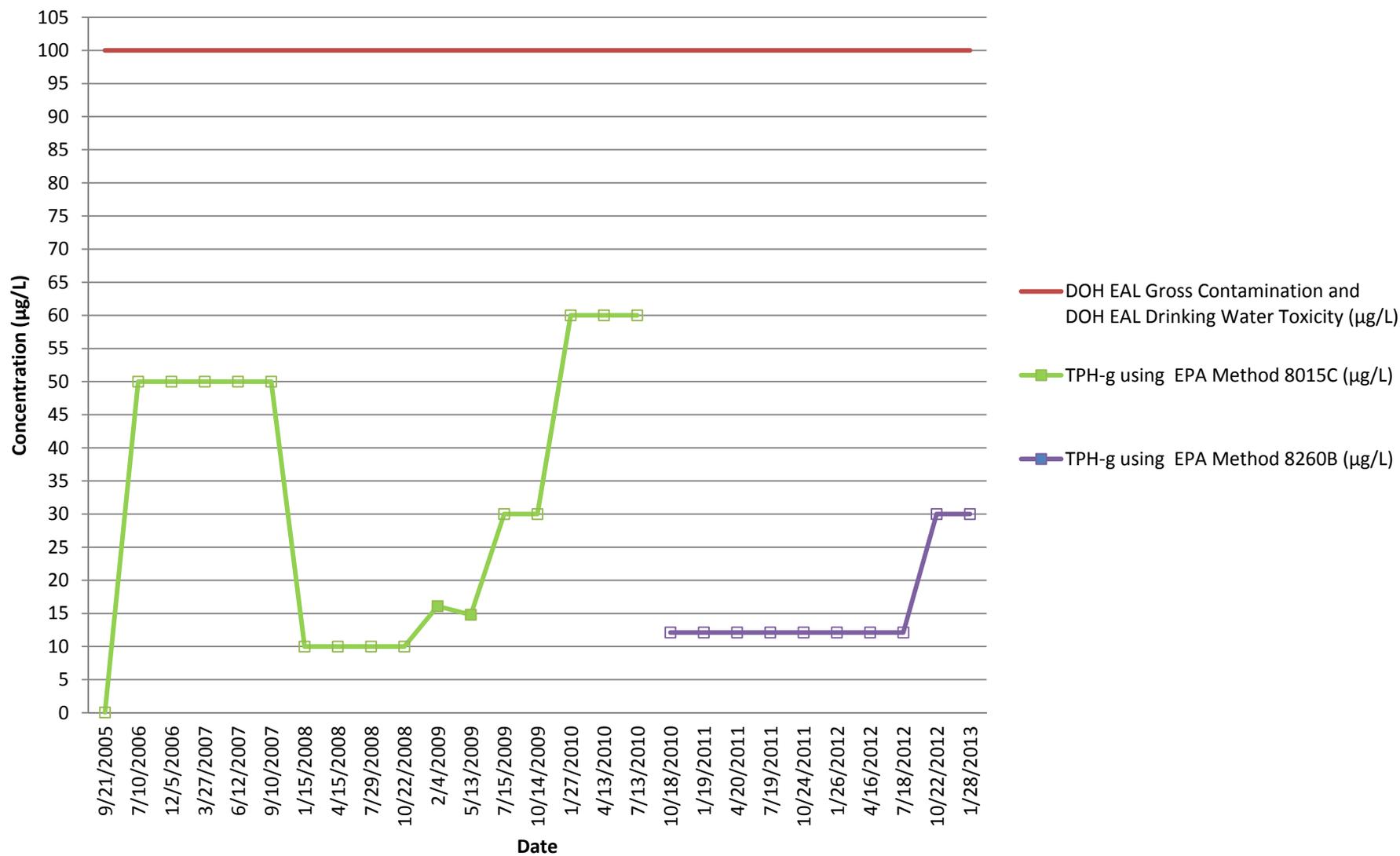
Naphthalene Concentrations for RHMW02



Primary sample results are shown for 1/26/2012 and 7/18/2012; all other concentrations are the average of the primary and duplicate sample results. Unfilled boxes indicate non-detections. Method detection limits are shown.

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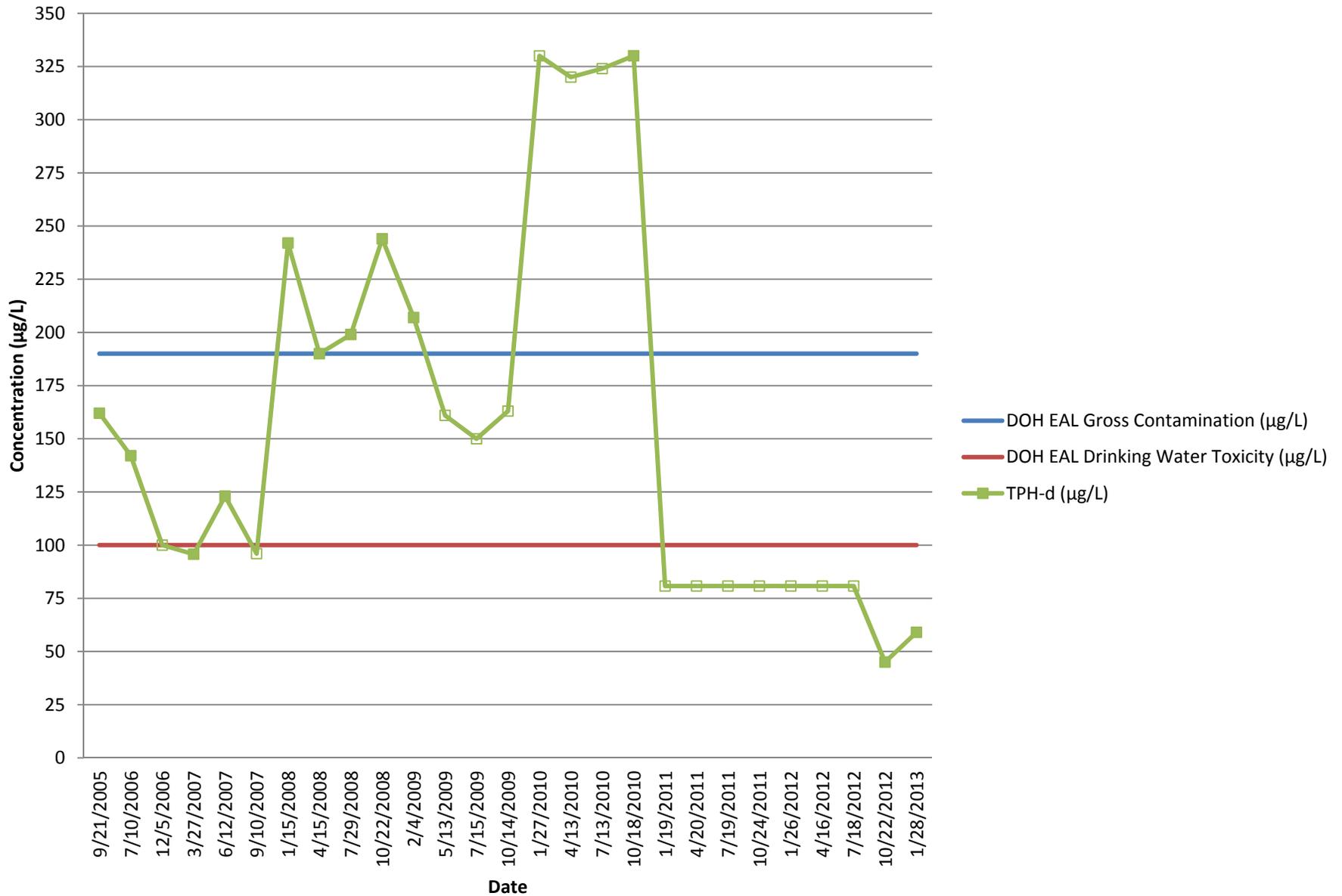
TPH-g Concentrations for RHMW03



Unfilled boxes indicate non-detections. Method detection limits are shown.

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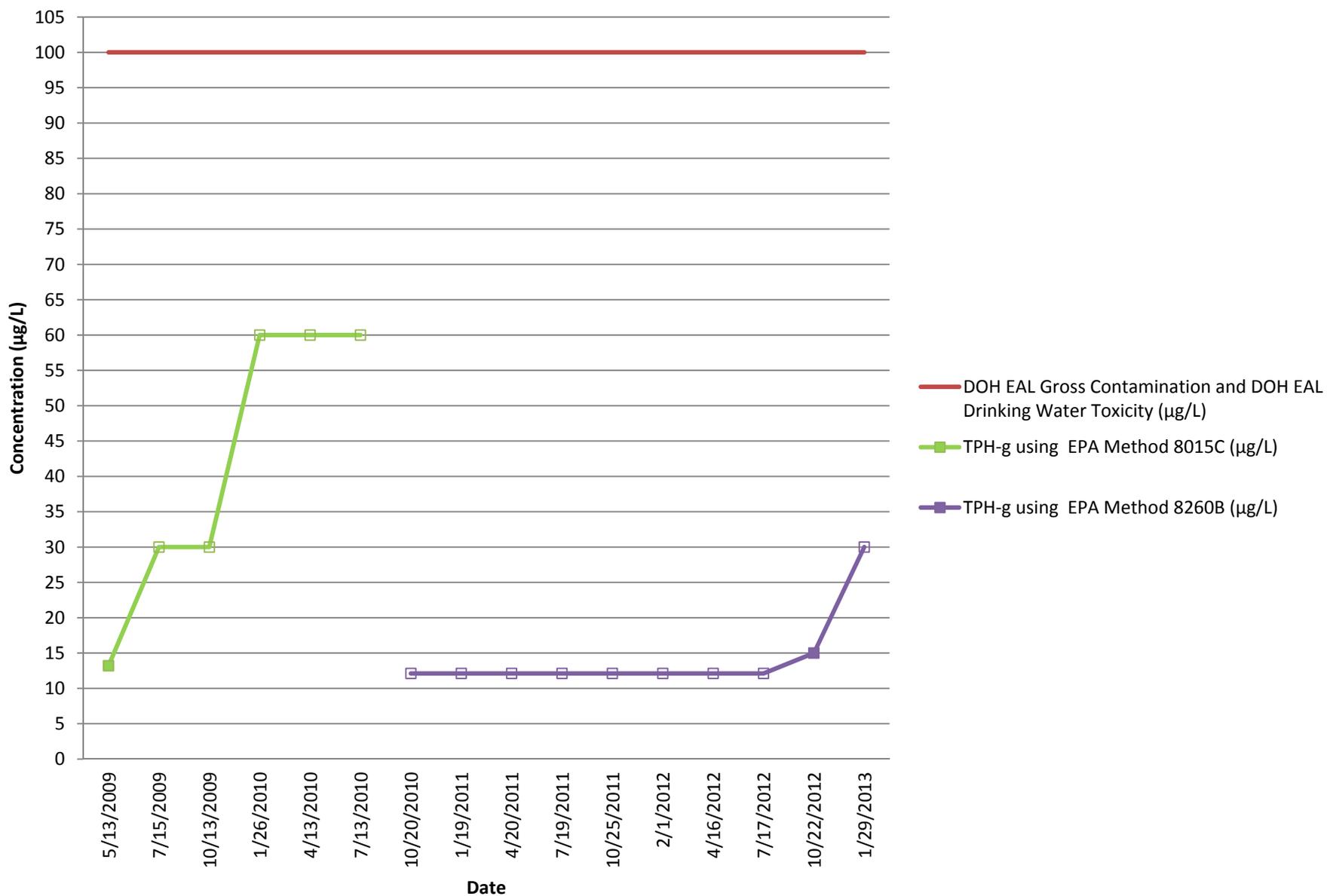
TPH-d Concentrations for RHMW03



Unfilled boxes indicate non-detections. Method detection limits are shown.

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TPH-g Concentrations for RHMW05



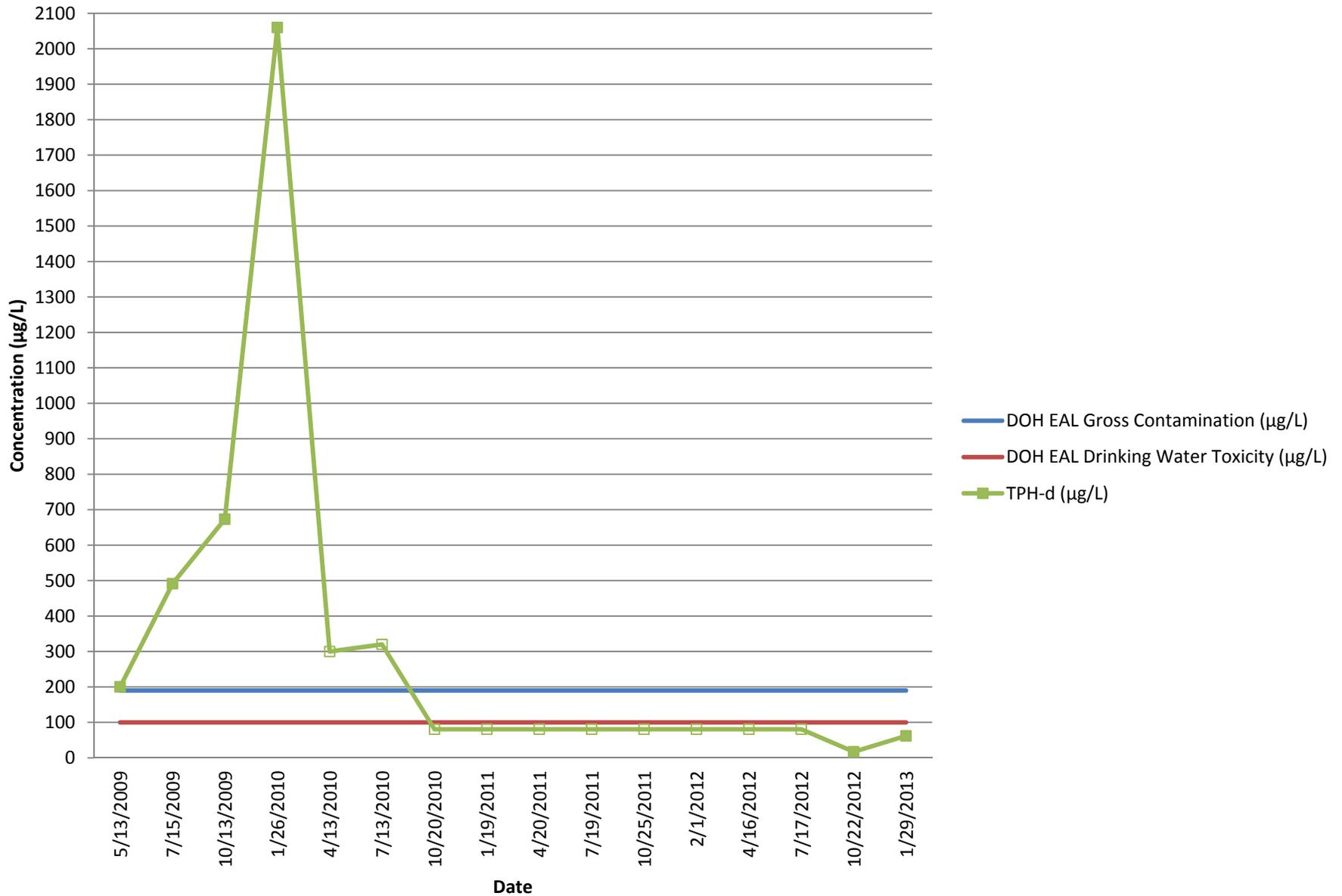
Data point for 7/17/2012 is the average of the primary and duplicate samples.

Unfilled boxes indicate non-detections. Method detection limits are shown.

Possible laboratory contamination for 10/23/2012 sampling event.

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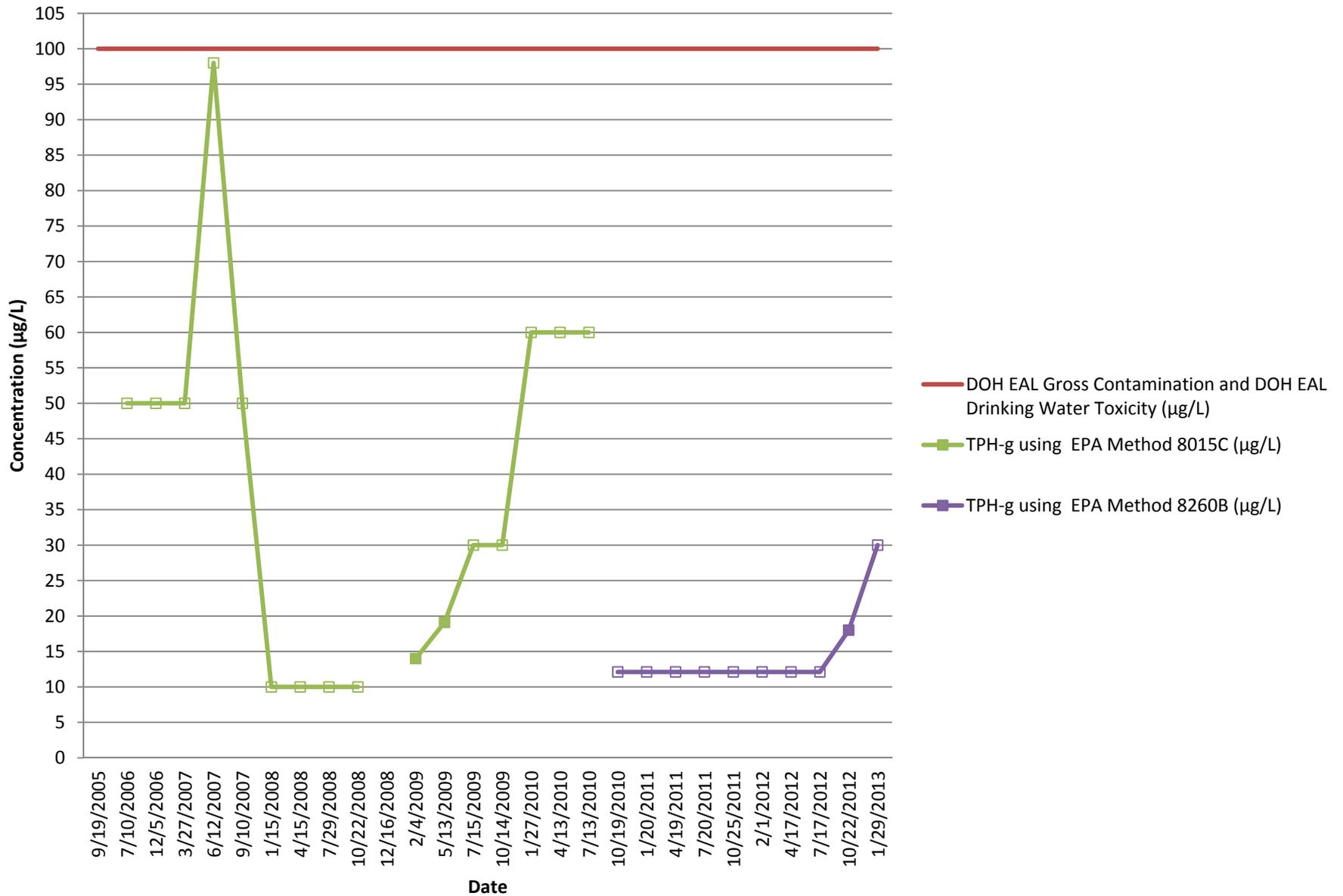
TPH-d Concentrations for RHMW05



Data point for 7/17/2012 is the average of the primary and duplicate samples.
 Unfilled boxes indicate non-detections. Method detection limits are shown.

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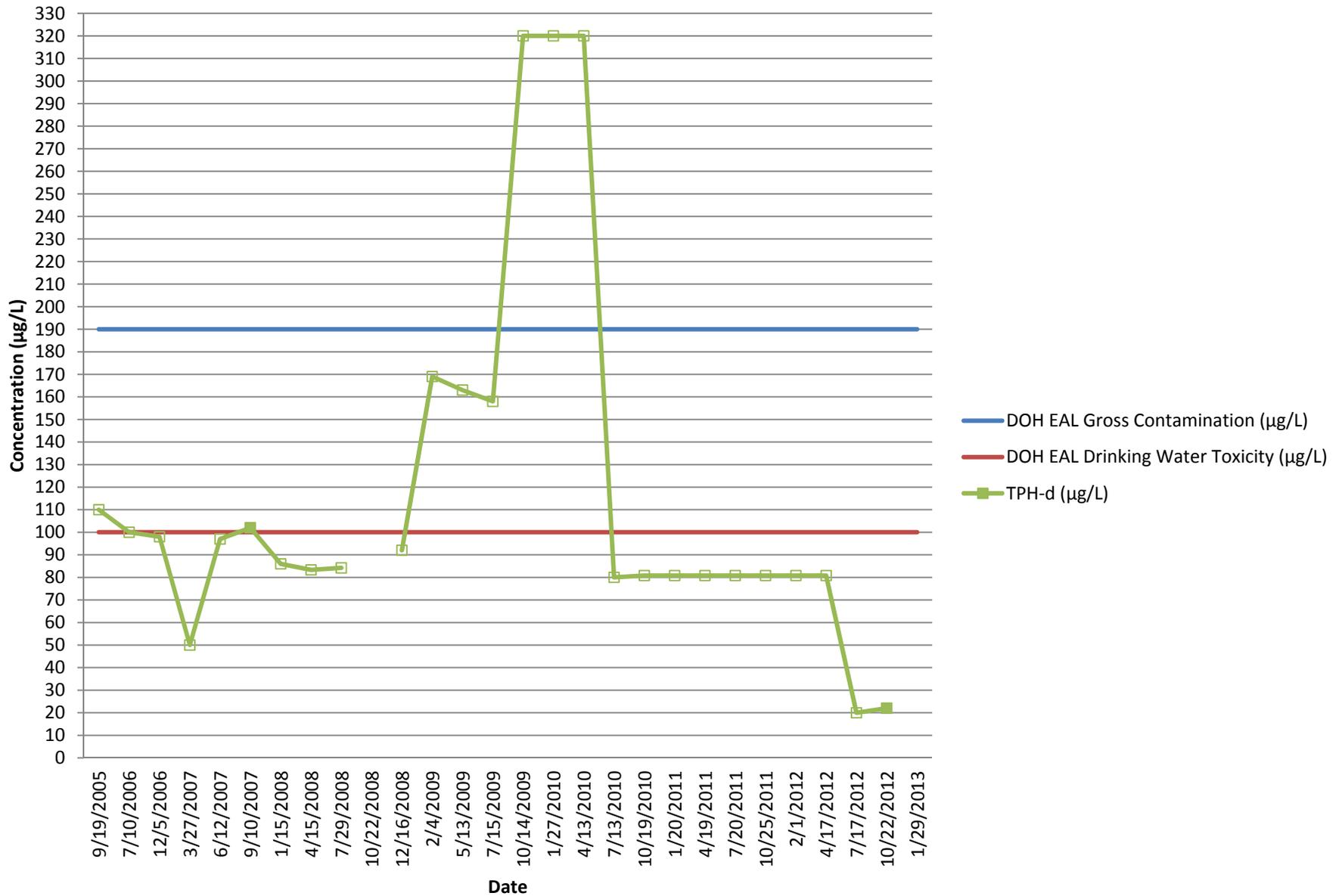
TPH-g Concentrations for RHMW2254-01



Unfilled boxes indicate non-detections. Method detection limits are shown.
Possible laboratory contamination for 10/23/2012 sampling event.

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TPH-d Concentrations for RHMW2254-01



Unfilled boxes indicate non-detections. Method detection limits are shown.
 Laboratory data rejected for 1/15/2008 sampling event.

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APPENDIX E

Waste Disposal Manifest

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NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number: HIR 000 050 401
 2. Page 1 of 1
 3. Emergency Response Phone: 808-206-9989
 4. Waste Tracking Number: 000019546

5. Generator's Name and Mailing Address: COMNAVREG HAWAII, C/O NAVFAC HAWAII, CODE PRJ42
 400 MARSHALL ROAD, ATTN: ESTRELITA HIGA
 JBPBH, HI 96860-3139
 Generator's Site Address (if different than mailing address): RED HILL BULK FUEL STORAGE FACILITY
 AIEA, HI 96701
 Generator's Phone: 808-471-4216
 HIC8553-02

6. Transporter 1 Company Name: PACIFIC COMMERCIAL SERVICES, LLC. U.S. EPA ID Number: HIR 000 097 824
 808-545-4599

7. Transporter 2 Company Name: UNITEK SOLVENT SERVICES, INC.-OAHU U.S. EPA ID Number: HID 982 443 715
 808-682-8284

8. Designated Facility Name and Site Address: UNITEK SOLVENT SERVICES, INC.
 91-125 KAOMI LOOP
 KAPOLEI, HI 96707 U.S. EPA ID Number: HID 982 443 715
 Facility's Phone: 808-682-8284

| 9. Waste Shipping Name and Description | 10. Containers | | 11. Total Quantity | 12. Unit Wt./Vol. | |
|---|----------------|------|--------------------|-------------------|----------|
| | No. | Type | | | |
| 1. MATERIAL NOT REGULATED BY DOT (WELL PURGE AND DECONTAMINATION WATER) | 001 | DM | 00025 | G | NON-RCRA |
| 2. | | | | | |
| 3. | | | | | |
| 4. HQ < 300 ppm PH=7 | | | | | |

13. Special Handling Instructions and Additional Information: 2008 9b1: TOTAL HALOGEN: < 400pp HQ
 GENERATOR'S CERTIFICATION: I HEREBY DECLARE THAT THE CONTENTS OF THIS CONSIGNMENT ARE FULLY AND ACCURATELY DESCRIBED ABOVE BY PROPER SHIPPING NAME (WHERE APPLICABLE) AND ARE CLASSIFIED, PACKED, MARKED, AND LABELED AND ARE IN ALL RESPECTS IN PROPER CONDITION FOR TRANSPORT BY HIGHWAY ACCORDING TO APPLICABLE GOVERNMENT REGULATIONS. I FURTHER CERTIFY THAT IF THIS IS USED OIL IT IS SUBJECT TO REGULATION UNDER 40 CFR PART 279; THAT IT DOES NOT CONTAIN PCBs GREATER THAN OR EQUAL TO 2 PPM; AND THAT IT HAS NOT BEEN CONTAMINATED WITH CARBURATOR CLEANERS, BRAKE SPRAY, FREON, HALOGENATED SOLVENTS, OR OTHER HAZARDOUS MATERIALS AND/OR HAZARDOUS WASTES.

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: Estrelita Higa Signature: Estrelita Higa Month: 02 Day: 26 Year: 13

15. International Shipments: Import to U.S. Export from U.S. Port of entry/exit: Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: JAMES W WASHINGTON Signature: James W Washington Month: 02 Day: 26 Year: 13

Transporter 2 Printed/Typed Name: Claude Agad Signature: Claude Agad Month: 03 Day: 05 Year: 13

17. Discrepancy
 17a. Discrepancy Indication Space: Quantity Type Residue Partial Rejection 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:

HQ test given to uniter by STE CONSOLIDATED MANIFEST Nw123g

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
 Printed/Typed Name: P. ACAMBRA Signature: P. Acambra Month: 03 Day: 06 Year: 2013

GENERATOR

INT'L

TRANSPORTER

DESIGNATED FACILITY

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