Quarterly Groundwater Monitoring Report – Outside (Non-Tunnel) Wells

Red Hill Fuel Storage Facility

Pearl Harbor, Oahu, Hawaii
Latitude: 21°22'15" N
Longitude: 157°53'33" W

HDOH Facility ID No. 9-102271
HDOH Release ID No. 99051, 010011, 020028

August 2010

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Executive Summary

There are 18 active and 2 inactive, 12.5 million gallon, field-constructed underground storage tanks (USTs) located at the Red Hill Fuel Storage Facility (the Facility). Previous environmental site investigations indicated a release had occurred and contaminated the groundwater underlying the Facility.

The United States (US) Navy implemented a groundwater monitoring program, which includes collecting groundwater samples quarterly from US Navy Well 2254-01 (RHMW2254-01) and four wells installed in the Facility lower access tunnel (RHMW01, RHMW02, RHMW03, and RHMW05). The US Navy Well 2254-01 is located approximately 3,000 feet downgradient from the Facility and provides approximately 24 percent of the potable water to the Pearl Harbor Water System (PHWS). The groundwater samples are analyzed for petroleum constituents and compared against State of Hawaii Department of Health (HDOH) Drinking Water Environmental Action Levels (EALs) (HDOH, 2008).

In response to increasing concentrations of contaminants of potential concern in the groundwater monitoring wells within the facility (specifically RHMW02) during 2008, plans were made to conduct four rounds of quarterly sampling at the following outside monitoring well locations:

- RHMW04;
- Oily Waste Disposal Facility monitoring well 01 (OWDFMW01); and
- Halawa Deep Well 2253-03 (referred to as HDMW2253-03 in this report).

Since four quarterly sampling events at RHMW04 and OWDFMW01 have already been completed (during August 2009 through April 2010), this groundwater monitoring report presents the analytical results for samples collected on July 8, 2010 at HDMW2253-03. Laboratory analytical results indicate that only naphthalene was detected above the laboratory method detection limit (MDL) via United Stated Environmental Protection Agency (USEPA) Method 8279C SIM at 0.0596F µg/L [F indicates that the compound was identified, with the concentration above the laboratory MDL, but below the reporting limit (RL), therefore it is considered an estimate] in HDMW2253-03. No other compounds were detected above the MDL during July 2010.

1.0 Introduction

This report presents the results of the fourth groundwater sampling event at HDMW2253-03, conducted in July 2010. The first, second, and third sampling events at HDMW2253-03 were conducted in October 2009, January 2010, and April 2010, respectively. Four quarterly sampling events at two other monitoring wells (RHMW04 and OWDFMW01) were completed during August 2009, October 2009, January 2010, and April 2010. An August 2009 sampling event for HDMW2253-03 was not conducted due to access issues.

These three wells surround the Red Hill Fuel Storage Facility, Oahu, Hawaii (hereafter referred to as "the Facility"). This groundwater sampling and analysis is considered supplemental to the quarterly groundwater monitoring program conducted within the Facility. This supplemental sampling was conducted in response to increasing concentrations of contaminants of potential concern in a groundwater monitoring well within the Facility, specifically RHMW02 during 2008.

1.1 Project Objective

This groundwater sampling project was performed to evaluate the presence of chemicals of potential concern in groundwater surrounding the Facility. The project was conducted to ensure the Navy remains in compliance with Hawaii Department of Health (HDOH) UST release response requirements. The groundwater sampling program followed the procedures described in *Red Hill Bulk Fuel Storage Facility Groundwater Protection Plan* [TEC Inc. (TEC), 2008 updated in 2009], also referred to as "the Plan".

This groundwater sampling event was conducted by TEC under United States (US) Navy Contract Number N47408-04-D-8514, Task Order No. 54, Modification No. 01.

1.2 Previous Reports

As indicated earlier, this outside well sampling supplements the quarterly groundwater monitoring of wells within the Facility, which began in 2005. The following groundwater monitoring reports were previously submitted to the HDOH, for groundwater monitoring wells within the Facility:

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 Results, January 2008 (submitted March 2008);
11. Groundwater Monitoring Results, April 2008 (submitted May 2008);
12. Groundwater Monitoring Results, July 2008 (submitted October 2008);
13. Groundwater Monitoring Results, October and December 2008 (submitted February 2009);
14. Groundwater Monitoring Results, February 2009 (submitted May 2009);
15. Groundwater Monitoring Results, May 2009 (submitted July 2009);
16. Groundwater Monitoring Results, July 2009 (submitted September 2009);
17. Groundwater Monitoring Results, October 2009 (submitted December 2009);
18. Groundwater Monitoring Results, January, February, and March 2010 (submitted April 2010);
19. Groundwater Monitoring Results, April 2010 (submitted May 2010); and
20. Groundwater Monitoring Results, July 2010 (submitted August 2010).

The following groundwater monitoring reports were previously submitted to the HDOH for groundwater monitoring wells outside the Facility:

1. Groundwater Monitoring Results, August 2009 (submitted September 2009);
2. Groundwater Monitoring Results, October 2009 (submitted December 2009);
3. Groundwater Monitoring Results, January 2010 (submitted April 2010); and
4. Groundwater Monitoring Results, April 2010 (submitted May 2010).

1.3 Background

The following sections provide a description of the site and information on the Facility and USTs.

1.3.1 Site Description

The Facility is located in Red Hill, Oahu, Hawaii. Land adjacent to the north of the Facility is occupied by the Halawa Correctional Facility and private businesses. Land to the south and west of the Facility includes the Coast Guard Reservation. Moanalua Valley is located east of the Facility (Dawson, 2006).

The Navy Public Works Department operates a potable water infiltration tunnel approximately 1,550 feet from the Facility (Dawson, 2006). The US Navy Well 2254-01 is located approximately 3,000 feet west of the Facility and provides approximately 24% of the potable water to the Pearl Harbor Water System, which serves approximately 52,200 military consumers (TEC, 2008).

1.3.2 Facility Information

The Facility consists of 18 active and two inactive USTs operated by Navy Fleet and Industrial Supply Center (FISC) Pearl Harbor. Each UST has a capacity of 12.5 million gallons. The Facility is located approximately 100 feet above the basal aquifer (Dawson, 2006).

In 2002, the US Navy installed a groundwater monitoring well (currently named RHMW01) into the basal aquifer, directly down-gradient from the Facility, within the lower access tunnel. Groundwater samples from this well indicated that petroleum from the Facility has migrated to the basal aquifer (AMEC, 2002). In 2005, the US Navy began quarterly monitoring of the aquifer to protect their down-gradient drinking water resource associated with the US Navy Well 2254-01.

By September 2005, the US Navy had installed two more groundwater monitoring wells (RHMW02 and RHMW03) within the Facility UST system, a groundwater monitoring well (RHMW04) north of the Facility adjacent to the US Navy Firing Range, and a groundwater monitoring well within the US Navy Well 2254-01 infiltration gallery (RHMW2254-01). Since 2005, RHMW01, RHMW02, RHMW03, and RHMW2254-01 have been sampled quarterly for TPH-DRO, TPH-GRO, VOCs, PAHs, and dissolved lead.

Due to increasing concentrations of contaminants of potential concern at the groundwater monitoring wells within the Facility (specifically RHMW02) during 2008, response measures were warranted. In April 2009, another groundwater monitoring well (RHMW05) was installed within the lower access tunnel between RHMW01 and RHMW2254-01. It was installed to identify the extent of contaminant migration before it reaches the infiltration gallery at RHMW2254-01.

Additionally, plans were made to sample three monitoring wells surrounding and outside of the Facility, RHMW04, OWDFMW01, and HDMW2253-03. RHMW04 was installed to provide contaminant chemistry data for water moving through the basal aquifer beneath the Facility. OWDFMW01 (originally known as MW08) was installed into the basal aquifer in 1998 for a Phase II Remedial Investigation/ Feasibility Study for the Red Hill Oily Waste Disposal Facility (Earth Tech Inc., 2000). It is located geographically down-gradient of the USTs and US Navy Well 2254-01. HDMW2253-03 is controlled by the State of Hawaii Commission on Water Resource Management. It is located between the Facility and the municipal drinking water supply well run by the City and County of Honolulu Board of Water Supply (Halawa Shaft pumping station 2354-01).

Table 1 summarizes basic groundwater monitoring well information, Figure 1 shows groundwater monitoring well locations and Appendix A provides the laboratory data.

Table 1. Monitoring Well Information

Groundwater Well	TOC Elevation (ft msl)	DTW (ft)	TD (ft)
RHMW04	313.03	293	320
OWDFMW01	138.94	120	142.8
HDMW2253-03	225	210	1,575

Notes:
DTW - Distance to water
TD - Total depth of well
TOC - Top of casing
ft – Feet
ft msl - Feet from mean sea level

1.3.3 UST Information

The USTs were constructed in the early 1940s. The tanks were constructed of steel and currently contain Jet Propulsion (JP)–5 fuel, JP-8, and F-76 (diesel marine fuel). Previously, several tanks stored Navy Special Fuel Oil, Navy Distillate, aviation gasoline, and motor gasoline. Each tank measures approximately 245 feet in height and 100 feet in diameter. The upper domes of the tanks lie at depths varying between approximately 100 feet and 200 feet below the existing ground surface (TEC, 2006).

1.4 Regulatory Updates

During the summer and fall of 2008, HDOH updated their EALs, which resulted in significant changes to the action levels associated with methylnaphthalenes. The drinking water toxicity EAL for these compounds was 240 μg/L. This concentration presumed that methylnaphthalenes were non-carcinogenic. Evidence that they are human carcinogens has now been accepted by the US Environmental Protection Agency (USEPA). As a result, HDOH adopted more rigorous EALs of 4.7 μg/L for 1-methylnaphthalene and 24 μg/L for 2-methylnaphthalene, corresponding to a residential tap water scenario, and a 1 in a million cancer risk (HDOH, 2008).

Also, the drinking water EAL for naphthalene was increased from 6.2 μg/L to 17 μg/L (HDOH, 2008). Finally, the HDOH Drinking Water EAL for TPH-DRO was increased from 100 μg/L to 210 μg/L, although the HDOH Groundwater Gross Contamination EAL for TPH-DRO remains 100 μg/L.

2.0 Sample Collection and Analyses

Field activities relating to groundwater sample collection were conducted on July 8, 2010. Groundwater samples were collected from one monitoring well, HDMW2253-03. Sampling and analysis were conducted according to *Red Hill Bulk Fuel Storage Facility Groundwater Protection Plan* (TEC, 2008).

2.1 Monitoring Well Purging

Due to the well construction characteristics of HDMW2253-03, the well was not purged prior to sampling, but field parameters were recorded. Rather than purging, a grab sample was collected at a depth below the solid casing (which extends about 50 feet below the water table) and within the open-holed portion of the well. Field parameters included pH, temperature, specific conductivity, dissolved oxygen, and turbidity.

2.2 Groundwater Sample Collection

HDMW2253-03 was sampled using a disposable bailer designed to collect samples at desired depths. Samples were placed into sampling containers with appropriate preservatives [i.e., hydrochloric acid (HCl) for volatile organic analysis, nitric acid (HNO_3) for dissolved lead]. The dissolved lead sample was filtered in the field and placed in a preserved bottle. Sample containers were labeled with the date, sample identification number, type of analysis, and sampler's name. The containers were placed on ice in a sample cooler and transported under chain-of-custody procedures to the certified laboratory for analysis.

2.3 Groundwater Sample Analyses

Groundwater samples were analyzed by SGS Environmental Service, Inc. in Anchorage, Alaska for TPH-DRO and TPH-GRO by EPA Method 8015B, VOCs by EPA Method 8260B, PAHs by EPA Method 8270C SIM, and dissolved lead by EPA Method 6020.

3.0 Groundwater Sample Analytical Results

This section provides a summary of analytical results for groundwater samples collected from HDMW2253-03. A summary of groundwater analytical results for TPH-DRO and TPH-GRO, VOCs, PAHs, and dissolved lead is included in Table 2. Complete analytical laboratory reports are provided in Appendix A.

3.1 July 2010 Sample Analytical Results

Groundwater samples were analyzed for TPH-DRO, TPH-GRO, VOCs, PAHs, and dissolved lead. The results are discussed below.

HDMW2253-03

Naphthalene was analyzed by USEPA Method 8270C SIM and USEPA Method 8260B. Trace concentrations of naphthalene was detected at 0.0596F µg/L [F indicates that the compound was identified, with the concentration above the laboratory method detection limit (MDL), but below the reporting limit (RL), therefore it is considered an estimate] in HDMW2253-03, via USEPA Method 8270C SIM. This concentration is significantly below the HDOH Drinking Water EAL for this constituent (i.e., 17 µg/L). No other potential chemical of concern was detected above the laboratory MDL in HDMW2253-03 (Table 2).

Table 2. Analytical Results for Quarterly Groundwater Monitoring Release Response Report (July 8, 2010)
Red Hill Fuel Storage Facility, Pearl Harbor, Hawaii

Method	Chemical	HDOH Drinking Water EALs[1] for Human Toxicity UG/L	HDOH Groundwater Gross Contamination EALs[2] UG/L	HDMW2253-03 UG/L July 8, 2010 Result	Q	MDL	RL
8015B (Petroleum)	TPH as DIESEL RANGE ORGANICS	210	100	ND	U	160	426
	TPH as GASOLINE RANGE ORGANICS	100	100	ND	U	30	100
8270C SIM (PAHs)	1-METHYLNAPHTHALENE	4.7	10	ND	U	0.0174	0.0581
	2-METHYLNAPHTHALENE	24	10	ND	U	0.0174	0.0581
	ACENAPHTHENE	370	20	ND	U	0.0174	0.0581
	ACENAPHTHYLENE	240	2000	ND	U	0.0174	0.0581
	ANTHRACENE	1800	22	ND	U	0.0174	0.0581
	BENZO(a)ANTHRACENE	0.092	4.7	ND	U	0.0174	0.0581
	BENZO(a)PYRENE	0.2	0.81	ND	U	0.0174	0.0581
	BENZO(b)FLUORANTHENE	0.092	0.75	ND	U	0.0174	0.0581
	BENZO(g,h,i)PERYLENE	1500	0.13	ND	U	0.0174	0.0581
	BENZO(k)FLUORANTHENE	0.92	0.4	ND	U	0.0174	0.0581
	CHRYSENE	9.2	1	ND	U	0.0174	0.0581
	DIBENZ(a,h)ANTHRACENE	0.0092	0.52	ND	U	0.0174	0.0581
	FLUORANTHENE	1500	130	ND	U	0.0174	0.0581
	FLUORENE	240	950	ND	U	0.0174	0.0581
	INDENO(1,2,3-c,d)PYRENE	0.092	0.095	ND	U	0.0174	0.0581
	NAPHTHALENE	17	21	0.0596	F	0.036	0.116
	PHENANTHRENE	240	410	ND	U	0.0174	0.0581
	PYRENE	180	68	ND	U	0.0174	0.0581
8260B (VOCs)	1,1,1,2-TETRACHLOROETHANE	0.52	50000	ND	U	0.15	0.5
	1,1,1-TRICHLOROETHANE	200	970	ND	U	0.31	1
	1,1,2,2-TETRACHLOROETHANE	0.067	500	ND	U	0.15	0.5
	1,1,2-TRICHLOROETHANE	5	50000	ND	U	0.31	1
	1,1-DICHLOROETHANE	2.4	50000	ND	U	0.31	1
	1,2,3-TRICHLOROPROPANE (TCP)	0.6	50000	ND	U	0.31	1
	1,2,4-TRICHLOROBENZENE	70	3000	ND	U	0.31	1
	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	0.04	10	ND	U	0.62	2
	1,2-DIBROMOETHANE (EDB)	0.0065	50000	ND	U	0.31	1
	1,2-DICHLOROBENZENE	600	10	ND	U	0.31	1
	1,2-DICHLOROETHANE	0.15	7000	ND	U	0.15	0.5
	1,2-DICHLOROPROPANE	5	10	ND	U	0.31	1
	1,3-DICHLOROBENZENE	180	50000	ND	U	0.31	1
	1,4-DICHLOROBENZENE	75	5	ND	U	0.15	0.5
	ACETONE	22000	20000	ND	U	3.1	10
	BENZENE	5	170	ND	U	0.12	0.4
	BROMODICHLOROMETHANE	0.22	50000	ND	U	0.15	0.5
	BROMOFORM	100	510	ND	U	0.31	1
	BROMOMETHANE	8.7	50000	ND	U	0.94	3
	CARBON TETRACHLORIDE	5	520	ND	U	0.31	1
	CHLOROBENZENE	100	50	ND	U	0.15	0.5
	CHLOROETHANE	8600	16	ND	U	0.31	1
	CHLOROFORM	70	2400	ND	U	0.3	1
	CHLOROMETHANE	1.8	50000	ND	U	0.31	1
	cis-1,2-DICHLOROETHYLENE	70	50000	ND	U	0.31	1
	cis-1,3-DICHLOROPROPENE	0.43	50000	ND	U	0.15	0.5
	DIBROMOCHLOROMETHANE	0.16	50000	ND	U	0.15	0.5
	ETHYLBENZENE	700	30	ND	U	0.31	1
	HEXACHLOROBUTADIENE	0.86	6	ND	U	0.31	1
	M,P-XYLENE (SUM OF ISOMERS)	10000	20	ND	U	0.62	2
	METHYL ETHYL KETONE (2-BUTANONE)	7100	8400	ND	U	3.1	10
	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	2000	1300	ND	U	3.1	10
	METHYLENE CHLORIDE	4.8	9100	ND	U	1	5
	NAPHTHALENE	17	21	ND	U	0.62	2
	STYRENE	100	10	ND	U	0.31	1
	TETRACHLOROETHYLENE(PCE)	5	170	ND	U	0.31	1
	TOLUENE	1000	40	ND	U	0.31	1
	trans-1,2-DICHLOROETHENE	100	260	ND	U	0.31	1
	TRICHLOROETHYLENE (TCE)	5	310	ND	U	0.31	1
	VINYL CHLORIDE	2	3400	ND	U	0.31	1
	XYLENES, TOTAL	10000	20	ND	U	0.94	3
6020	LEAD	15	50000	ND	U	0.31	1

PAHs - Polynuclear aromatic hydrocarbons
VOCs - Volatile organic compounds
UG/L - Micrograms per Liter
Q - Data qualifier
U - Indicates that the compound was analyzed for but not detected at or above the stated limit
MDL - Method detection limit
RL - Reporting limit
TPH - Total petroleum hydrocarbons
ND - Indicates that the compound was not detected above the stated method detection limit
F - Indicates that the compound was identified but the concentration was above the MDL and below the RL
200 - Result exceeds one or both HDOH EALs

[1] Final Drinking Water Action Levels for Human Toxicity, Table D-3a, *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater*, HDOH, 2009

[2] Groundwater Gross Contamination Action Levels, Table G-1, *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater*, HDOH, 2009

4.0 Summary and Conclusions

Summary

In HDMW2253-03, trace naphthalene was detected at 0.0596F µg/L. This concentration is below the HDOH Drinking Water EAL, and the HDOH Gross Contamination EAL. No other potential chemicals of concern were detected above the laboratory MDLs in HDMW2253-03 during the July 2010 sampling event.

This is the first time naphthalene was detected at HDMW2253-03 during the four quarterly sampling events. Previously, only TPH-DRO has been detected at HDMW2253-03 and OWDFMW01. TPH-DRO has not been detected above the laboratory MDL in HDMW2253-03 since January 2010. Figure 2 summarizes TPH results for three wells outside of the Facility during all four quarterly sampling events.

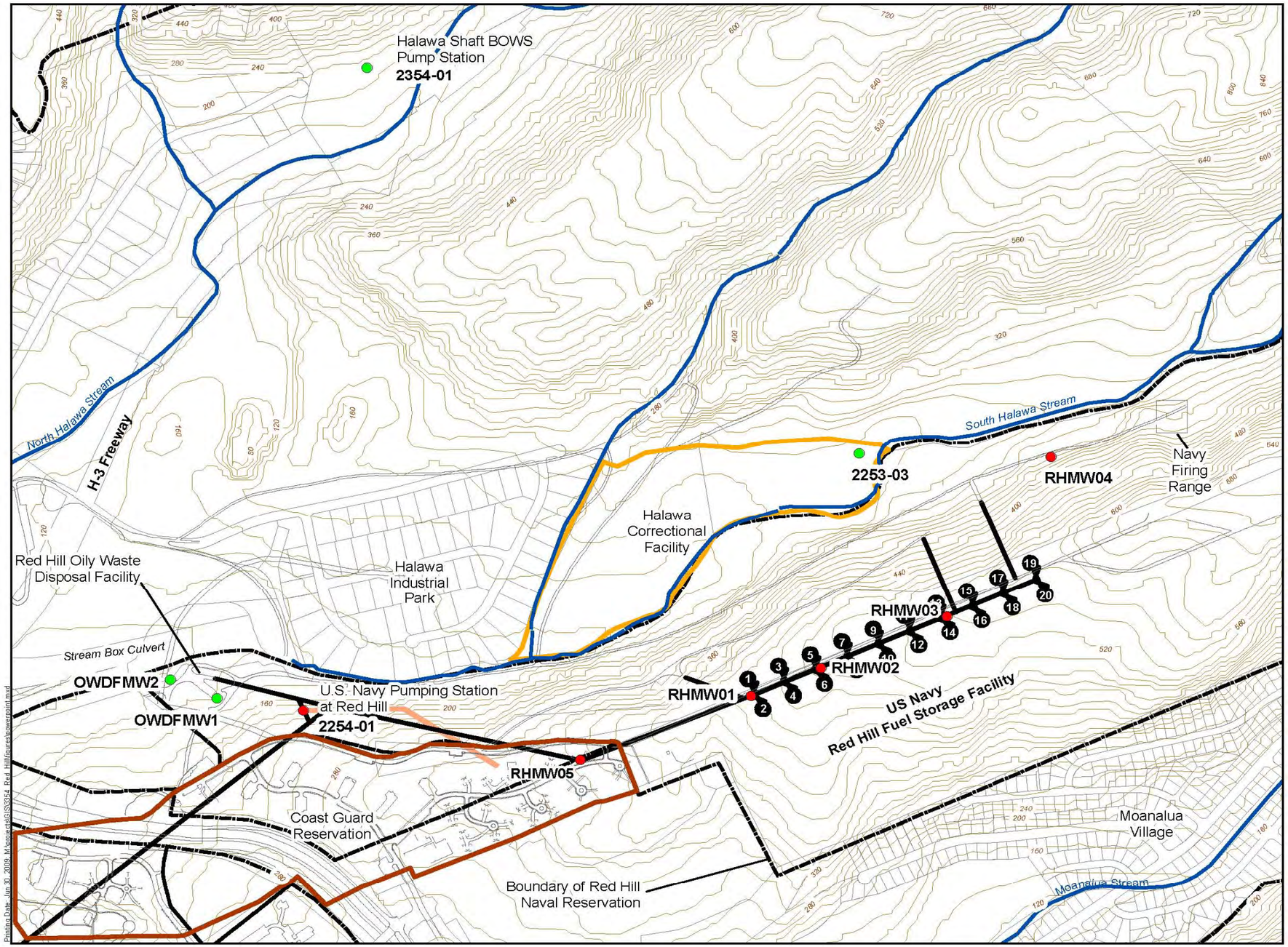
Conclusions/Recommendations

No compounds were detected above the MDLs during the August 2009 sampling event at OWDFMW01 and RHMW04 (HDMW2253-03 was not sampled in August 2009 due to access issues); or during the October 2009 sampling event at OWDFMW01, RHMW04, or HDMW2253-03.

Despite the detection of TPH-DRO at HDMW2253-03 during January 2010, TPH-DRO was not detected above the laboratory MDL during the April 2010 and July 2010 sampling events. Since two or more consecutive sampling events of increasing (or decreasing) concentrations of TPH-DRO at HDMW2253-03 have not occurred, no trend for TPH-DRO has been established at this location.

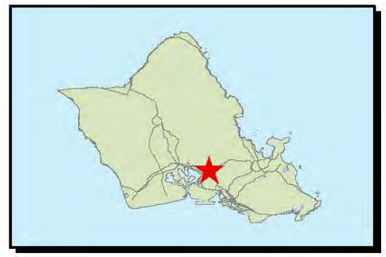
TPH-DRO detected at OWDFMW01 during January 2010 significantly decreased in April 2010 (i.e., from 1,490 µg/L in January 2010 to 288F µg/L in April 2010).

TPH-DRO (detected at both HDMW2253-03 and OWDFMW01 in January 2010 and only at OWDFMW01 in April 2010) has been the only parameter detected above HDOH Drinking Water EALs during all four outside well sampling rounds. For the three wells surrounding the Facility (i.e., RHMW04, OWDFMW01, and HDMW2253-03), no more sampling event remains tasked under Contract Number N47408-04-D-8514, Task Order No. 54, Modification No. 01. Consequently, consideration should be given to conducting follow-on, periodic (perhaps semi-annually), targeted monitoring of these outside wells for TPH-DRO.



Legend

- Red Hill UST ID Number
- Parcel
- 40-foot Interval Contour Line
- Road
- Stream
- Red Hill Navy Installation Boundary
- Red Hill Tunnels
- 2254-01 Infiltration Gallery
- Halawa Correctional Facility Boundary
- Coast Guard Reservation



N

Meters
0 185 370
0 340 680 1,360
Feet

Figure 1
Groundwater Monitoring Well Locations
Red Hill Fuel Storage Facility
Oahu, Hawaii

Halawa Shaft BOWS Pump Station
2354-01

HDMW2253-03 (ug/L)																
	October 13, 2009				January 26, 2010				April 26, 2010				July 8, 2010			
Compound	Result	Q	MDL	RL	Result	Q	MDL	RL	Result	Q	MDL	RL	Result	Q	MDL	RL
TPH-DRO	ND	U	185	494	***322***	F	172	460	ND	U	176	471	ND	U	160	426
TPH-GRO	ND	U	30	100	ND	U	30	100	ND	U	30	100	ND	U	30	100

OWDFMW01 (ug/L)																
	August 4, 2009				October 13, 2009				January 26, 2010				April 26, 2010			
Compound	Result	Q	MDL	RL	Result	Q	MDL	RL	Result	Q	MDL	RL	Result	Q	MDL	RL
TPH-DRO	ND	U	171	457	ND	U	167	444	***1490***		165	440	***288***	F	176	471
TPH-GRO	ND	U	30	100	ND	U	30	100	ND	U	30	100	ND	U	30	100

RHMW04 (ug/L)																
	August 4, 2009				October 13, 2009				January 26, 2010				April 26, 2010			
Compound	Result	Q	MDL	RL	Result	Q	MDL	RL	Result	Q	MDL	RL	Result	Q	MDL	RL
TPH-DRO	ND	U	157	419	ND	U	169	452	ND	U	167	444	ND	U	174	465
TPH-GRO	ND	U	30	100	ND	U	30	100	ND	U	30	100	ND	U	30	100

RHMW04D (ug/L)																
	August 4, 2009				October 13, 2009				January 26, 2010				April 26, 2010			
Compound	Result	Q	MDL	RL	Result	Q	MDL	RL	Result	Q	MDL	RL	Result	Q	MDL	RL
TPH-DRO	ND	U	161	430	ND	U	174	465	ND	U	165	440	ND	U	176	471
TPH-GRO	ND	U	30	100	ND	U	30	100	ND	U	30	100	ND	U	30	100

North Halawa Stream
H-3 Freeway
South Halawa Stream
Navy Firing Range
2253-03
RHMW04
Halawa Correctional Facility
Halawa Industrial Park
Red Hill Oily Waste Disposal Facility
RHMW03
RHMW02
RHMW01
Stream Box Culvert
OWDFMW2
OWDFMW1
U.S. Navy Pumping Station at Red Hill
2254-01
US Navy Red Hill Fuel Storage Facility
RHMW05
Coast Guard Reservation
Boundary of Red Hill Naval Reservation

Notes:
F - Estimated result between the RL and MDL
DRO - Diesel Range Organics
GRO - Gasoline Range Organics
MDL - Method Detection Limit
ND - Not Detected
Q - Data Qualifier
RL - Reporting Limit
TPH - Total Petroleum Hydrocarbons
U - Result not detected
ug/L - Micrograms per liter
200 - Result exceeded one or both HDOH EALs
- •TPH-DRO Residential Tap Water EAL is 210 ug/L; and
- •TPH-GRO Residential Tap Water EAL is 100 ug/L; (HDOH, 2008).

Legend

- 20 — Red Hill UST ID Number
- Parcel
- 40-foot Interval Contour Line
- Road
- Stream
- Red Hill Navy Installation Boundary
- Red Hill Tunnels
- 2254-01 Infiltration Gallery
- Halawa Correctional Facility Boundary
- Coast Guard Reservation

N

Meters
0 185 370
0 340 680 1,360
Feet

Figure 2
TPH Detected In Groundwater Outside (Non-Tunnel) Wells
Red Hill Fuel Storage Facility
Oahu, Hawaii

Printing Date: Jun 30, 2009 M:\projects\GIS\3354_Red_Hill\figures\tphgwpoint.mxd

5.0 References

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Appendix A

Laboratory Analytical Reports

SGS North America Inc.
Alaska Division
Level II Laboratory Data Report

Project:	3354-003 Red Hill BFSF
Client:	The Environmental Company, Inc. (TEC)
SGS Work Order:	1103364

Released by:

Contents:

Note:
Unless otherwise noted, all quality assurance/quality control criteria is in compliance with the standards set forth by the proper regulatory authority, the SGS Quality Assurance Program Plan, and the National Environmental Accreditation Conference.

Client Name: The Environmental Company, Inc. (TEC)
Project Name: 3354-003 Red Hill BFSF
Workorder No.: 1103364

Sample Comments

Refer to the sample receipt form for information on sample condition.

Lab Sample ID	Sample Type	Client Sample ID
1103364001	PS	HDMW2253-03-WG-05

8270D SIM – The corrected CCV recovery for naphthalene does not meet QC criteria (biased high). The results for this analyte may be estimated in the associated samples.
8270D SIM Corrected Report - Results for this analysis are being resubmitted based on a correction to the initial calibration.

972723	* LCSD	LCSD for HBN 515780 [XXX/23016

8270D SIM - LCSD recovery for napthalene is outside of QC criteria (biased high). The results for this analyte may be estimated in the associated samples.
8270D SIM - LCS/LCSD RPD for napthalene is outside of QC criteria (biased high). The results for this analyte may be estimated in the associated samples.

973529	* LCS	LCS for HBN 533980 [VXX/20930]

8260B - LCS recovery for acetone does not meet QC criteria (biased high). This analyte was not detected above the LOQ in the associated samples.

973530	* LCSD	LCSD for HBN 533980 [VXX/20930

8260B - LCSD recovery for acetone and 2-hexanone does not meet QC criteria (biased high). These analytes were not detected above the LOQ in the associated samples.
8260B - LCS/LCSD RPD for acetone does not meet QC criteria. This analyte was not detected above the LOQ in the associated samples.

973543	* CCV	CCV for HBN 534280 [VMS/11383]

8260B - CCV recovery for several analytes does not meet QC criteria (biased high). These analytes were not detected above the LOQ in the associated samples.

976463	* CCV	CCV for HBN 599080 [XMS/5543]

8270D SIM – The corrected CCV recovery for naphthalene does not meet QC criteria (biased high). The results for this analyte may be estimated in the associated samples.

* QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

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Report of Manual Integrations

Print Date: 7/30/2010 4:34 pm

Laboratory ID	Client Sample ID	Analytical Batch	Method	Analyte	Reason
972722	LCS for HBN 515780 [XXX/23016]	XMS5511	8270D SIMS	Benzo[k]fluoranthene	RP
972723	LCSD for HBN 515780 [XXX/23016	XMS5511	8270D SIMS	Benzo[k]fluoranthene	RP

Manual Integration Reason Code Descriptions

Code	Description
O	Original Chromatogram
M	Modified Chromatogram
SS	Skimmed surrogate
BLG	Closed baseline gap
RP	Reassign peak name
PIR	Pattern integration required
IT	Included tail
SP	Split peak
RSP	Removed split peak
FPS	Forced peak start/stop
BLC	Baseline correction
PNF	Peak not found by software

All DRO/RRO analysis are integrated per SOP.

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Laboratory Analytical Report

Client: **The Environmental Company, Inc.**
1003 Bishop Street,
Pauahi Tower Suite 1550
Honolulu, HI 96813

Attn: **Rick Adkisson**
T: (808)528-1445 F:(808)528-0768

Project: **3354-003 Red Hill BFSF**

Workorder No.: **1103364**

Certification:

This data package is in compliance with the terms and conditions of the contract, both technically and for completeness, unless otherwise noted on the sample data sheet(s) and/or case narrative. This certification applies only to the tested parameters and the specific sample(s) received at the laboratory. If you have any questions regarding this report, or if we can be of further assistance, please contact your SGS Project Manager.

Jennifer Serna

jennifer.serna@sgs.com
Project Manager

Contents (Bookmarked in PDF):

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. If you have any questions regarding this report, or if we can be of any other assistance, please contact your SGS Project Manager at 907-562-2343. All work is provided under SGS general terms and conditions (<http://www.sgs.com/terms_and_conditions.htm>), unless other written agreements have been accepted by both parties.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and AK100001 for NELAP (RCRA methods: 1020A, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035B, 6010B, 6020, 7470A, 7471B, 8021B, 8081B, 8082A, 8260B, 8270D, 8270D-SIM, 9040B, 9045C, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, the National Environmental Laboratory Accreditation Program and other regulatory authorities. The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV	Continuing Calibration Verification
CL	Control Limit
D	The analyte concentration is the result of a dilution.
DF	Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
F	Indicates value that is greater than or equal to the DL
GT	Greater Than
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
JL	The analyte was positively identified, but the quantitation is a low estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LOD	Limit of Detection (i.e., 2xDL)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
M	A matrix effect was present.
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
Q	QC parameter out of acceptance range.
R	Rejected
RL	Reporting Limit
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content.
All DRO/RRO analyses are integrated per SOP.

Client Name: The Environmental Company, Inc. (TEC)
Project Name: 3354-003 Red Hill BFSF
Workorder No.: 1103364

Analytical Methods

Method Description	Analytical Method
8270 PAH SIM Semi-Vol GC/MS Liq/Liq ext.	8270D SIMS
AFCEE 3.1 8260 (W)	SW8260B
Dissolved Metals by ICP-MS	SW6020
DRO by 8015C (W)	SW8015C
GRO (W)	SW8015C

Sample ID Cross Reference

Lab Sample ID	Client Sample ID
1103364001	HDMW2253-03-WG-05
1103364002	TB01-WG-05

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Client Sample ID: **HDMW2253-03-WG-05**
SGS Ref. #: 1103364001
Project ID: 3354-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 07/08/10 10:05
Receipt Date/Time: 07/09/10 11:30

Dissolved Metals by ICP/MS

Parameter	Result	LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Lead	0.620 U	1.00	0.310	ug/L	5	MMS6543	MXX23243	

Batch Information

Analytical Batch: MMS6543
Analytical Method: SW6020
Analysis Date/Time: 07/21/10 19:48
Dilution Factor: 5

Prep Batch: MXX23243
Prep Method: SW3010A
Prep Date/Time: 07/16/10 18:10

Initial Prep Wt./Vol.: 50 mL
Prep Extract Vol.: 50 mL
Container ID:1103364001-G
Analyst: KDC

Client Sample ID: **HDMW2253-03-WG-05**
SGS Ref. #: 1103364001
Project ID: 3354-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 07/08/10 10:05
Receipt Date/Time: 07/09/10 11:30

Volatile Fuels Department

Parameter	Result	LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Gasoline Range Organics	60.0 U	100	30.0	ug/L	1	VFC10031	VXX20961	
4-Bromofluorobenzene <surr>	105	50-150		%	1	VFC10031	VXX20961	

Batch Information

Analytical Batch: VFC10031
Analytical Method: SW8015C
Analysis Date/Time: 07/20/10 15:09
Dilution Factor: 1

Prep Batch: VXX20961
Prep Method: SW5030B
Prep Date/Time: 07/20/10 12:00

Initial Prep Wt./Vol.: 5 mL
Prep Extract Vol.: 5 mL
Container ID:1103364001-B
Analyst: EAB

Client Sample ID: **HDMW2253-03-WG-05**
SGS Ref. #: 1103364001
Project ID: 3354-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 07/08/10 10:05
Receipt Date/Time: 07/09/10 11:30

Semivolatile Organic Fuels Department

Parameter	Result	LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Diesel Range Organics	0.320 U	0.426	0.160	mg/L	1	XFC9357	XXX23023	
5a Androstane <surr>	83.7	50-150		%	1	XFC9357	XXX23023	

Batch Information

Analytical Batch: XFC9357
Analytical Method: SW8015C
Analysis Date/Time: 07/20/10 05:12
Dilution Factor: 1

Prep Batch: XXX23023
Prep Method: SW3520C
Prep Date/Time: 07/13/10 10:10

Initial Prep Wt./Vol.: 940 mL
Prep Extract Vol.: 1 mL
Container ID:1103364001-K
Analyst: LCE

Client Sample ID: **HDMW2253-03-WG-05**
SGS Ref. #: 1103364001
Project ID: 3354-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 07/08/10 10:05
Receipt Date/Time: 07/09/10 11:30

Volatile Gas Chromatography/Mass Spectroscopy

Parameter	Result	LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
1,1,1,2-Tetrachloroethane	0.300 U	0.500	0.150	ug/L	1	VMS11383	VXX20930	
1,1,1-Trichloroethane	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
1,1,2,2-Tetrachloroethane	0.300 U	0.500	0.150	ug/L	1	VMS11383	VXX20930	
1,1,2-Trichloroethane	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
1,1-Dichloroethane	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
1,1-Dichloroethene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
1,1-Dichloropropene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
1,2,3-Trichlorobenzene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
1,2,3-Trichloropropane	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
1,2,4-Trichlorobenzene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
1,2,4-Trimethylbenzene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
1,2-Dibromo-3-chloropropane	1.24 U	2.00	0.620	ug/L	1	VMS11383	VXX20930	
1,2-Dibromoethane	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
1,2-Dichlorobenzene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
1,2-Dichloroethane	0.300 U	0.500	0.150	ug/L	1	VMS11383	VXX20930	
1,2-Dichloropropane	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
1,3,5-Trimethylbenzene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
1,3-Dichlorobenzene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
1,3-Dichloropropane	0.240 U	0.400	0.120	ug/L	1	VMS11383	VXX20930	
1,4-Dichlorobenzene	0.300 U	0.500	0.150	ug/L	1	VMS11383	VXX20930	
1-Chlorohexane	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
2,2-Dichloropropane	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
2-Butanone (MEK)	6.20 U	10.0	3.10	ug/L	1	VMS11383	VXX20930	
2-Chlorotoluene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
4-Chlorotoluene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
4-Isopropyltoluene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
4-Methyl-2-pentanone (MIBK)	6.20 U	10.0	3.10	ug/L	1	VMS11383	VXX20930	
Acetone	6.20 U	10.0	3.10	ug/L	1	VMS11383	VXX20930	
Benzene	0.240 U	0.400	0.120	ug/L	1	VMS11383	VXX20930	
Bromobenzene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Bromochloromethane	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Bromodichloromethane	0.300 U	0.500	0.150	ug/L	1	VMS11383	VXX20930	
Bromoform	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Bromomethane	1.88 U	3.00	0.940	ug/L	1	VMS11383	VXX20930	
Carbon tetrachloride	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Chlorobenzene	0.300 U	0.500	0.150	ug/L	1	VMS11383	VXX20930	

Client Sample ID: **HDMW2253-03-WG-05**
SGS Ref. #: 1103364001
Project ID: 3354-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 07/08/10 10:05
Receipt Date/Time: 07/09/10 11:30

Volatile Gas Chromatography/Mass Spectroscopy

Parameter	Result	LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Chloroethane	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Chloroform	0.600 U	1.00	0.300	ug/L	1	VMS11383	VXX20930	
Chloromethane	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
cis-1,2-Dichloroethene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
cis-1,3-Dichloropropene	0.300 U	0.500	0.150	ug/L	1	VMS11383	VXX20930	
Dibromochloromethane	0.300 U	0.500	0.150	ug/L	1	VMS11383	VXX20930	
Dibromomethane	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Dichlorodifluoromethane	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Ethylbenzene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Hexachlorobutadiene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Isopropylbenzene (Cumene)	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Methylene chloride	2.00 U	5.00	1.00	ug/L	1	VMS11383	VXX20930	
Methyl-t-butyl ether	3.00 U	5.00	1.50	ug/L	1	VMS11383	VXX20930	
Naphthalene	1.24 U	2.00	0.620	ug/L	1	VMS11383	VXX20930	
n-Butylbenzene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
n-Propylbenzene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
o-Xylene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
P & M -Xylene	1.24 U	2.00	0.620	ug/L	1	VMS11383	VXX20930	
sec-Butylbenzene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Styrene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
tert-Butylbenzene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Tetrachloroethene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Toluene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
trans-1,2-Dichloroethene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
trans-1,3-Dichloropropene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Trichloroethene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Trichlorofluoromethane	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Vinyl chloride	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Xylenes (total)	1.88 U	3.00	0.940	ug/L	1	VMS11383	VXX20930	
1,2-Dichloroethane-D4 <surr>	104	73-120		%	1	VMS11383	VXX20930	
4-Bromofluorobenzene <surr>	109	76-120		%	1	VMS11383	VXX20930	
Toluene-d8 <surr>	97	80-120		%	1	VMS11383	VXX20930	

Client Sample ID: **HDMW2253-03-WG-05**
SGS Ref. #: 1103364001
Project ID: 3354-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 07/08/10 10:05
Receipt Date/Time: 07/09/10 11:30

Volatile Gas Chromatography/Mass Spectroscopy

Parameter	Result	LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers

Batch Information

Analytical Batch: VMS11383
Analytical Method: SW8260B
Analysis Date/Time: 07/14/10 14:40
Dilution Factor: 1

Prep Batch: VXX20930
Prep Method: SW5030B
Prep Date/Time: 07/13/10 11:31

Initial Prep Wt./Vol.: 5 mL
Prep Extract Vol.: 5 mL
Container ID:1103364001-A
Analyst: SCL

Client Sample ID: **HDMW2253-03-WG-05**
SGS Ref. #: 1103364001
Project ID: 3354-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 07/08/10 10:05
Receipt Date/Time: 07/09/10 11:30

Polynuclear Aromatics GC/MS

Parameter	Result	LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
1-Methylnaphthalene	0.0348 U	0.0581	0.0174	ug/L	1	XMS5543	XXX23016	
2-Methylnaphthalene	0.0348 U	0.0581	0.0174	ug/L	1	XMS5543	XXX23016	
Acenaphthene	0.0348 U	0.0581	0.0174	ug/L	1	XMS5543	XXX23016	
Acenaphthylene	0.0348 U	0.0581	0.0174	ug/L	1	XMS5543	XXX23016	
Anthracene	0.0348 U	0.0581	0.0174	ug/L	1	XMS5543	XXX23016	
Benzo(a)Anthracene	0.0348 U	0.0581	0.0174	ug/L	1	XMS5543	XXX23016	
Benzo[a]pyrene	0.0348 U	0.0581	0.0174	ug/L	1	XMS5543	XXX23016	
Benzo[b]Fluoranthene	0.0348 U	0.0581	0.0174	ug/L	1	XMS5543	XXX23016	
Benzo[g,h,i]perylene	0.0348 U	0.0581	0.0174	ug/L	1	XMS5543	XXX23016	
Benzo[k]fluoranthene	0.0348 U	0.0581	0.0174	ug/L	1	XMS5543	XXX23016	
Chrysene	0.0348 U	0.0581	0.0174	ug/L	1	XMS5543	XXX23016	
Dibenzo[a,h]anthracene	0.0348 U	0.0581	0.0174	ug/L	1	XMS5543	XXX23016	
Fluoranthene	0.0348 U	0.0581	0.0174	ug/L	1	XMS5543	XXX23016	
Fluorene	0.0348 U	0.0581	0.0174	ug/L	1	XMS5543	XXX23016	
Indeno[1,2,3-c,d] pyrene	0.0348 U	0.0581	0.0174	ug/L	1	XMS5543	XXX23016	
Naphthalene	0.0596J	0.116	0.0360	ug/L	1	XMS5543	XXX23016	
Phenanthrene	0.0348 U	0.0581	0.0174	ug/L	1	XMS5543	XXX23016	
Pyrene	0.0348 U	0.0581	0.0174	ug/L	1	XMS5543	XXX23016	
Terphenyl-d14 <surr>	118	50-135		%	1	XMS5543	XXX23016	

Batch Information

Analytical Batch: XMS5543
Analytical Method: 8270D SIMS
Analysis Date/Time: 07/13/10 15:37
Dilution Factor: 1

Prep Batch: XXX23016
Prep Method: SW3520C
Prep Date/Time: 07/12/10 11:00

Initial Prep Wt./Vol.: 860 mL
Prep Extract Vol.: 1 mL
Container ID:1103364001-H
Analyst: CDE

Client Sample ID: **TB01-WG-05**
SGS Ref. #: 1103364002
Project ID: 3354-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 07/08/10 08:05
Receipt Date/Time: 07/09/10 11:30

Volatile Fuels Department

Parameter	Result	LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Gasoline Range Organics	60.0 U	100	30.0	ug/L	1	VFC10031	VXX20961	
4-Bromofluorobenzene <surr>	103	50-150		%	1	VFC10031	VXX20961	

Batch Information

Analytical Batch: VFC10031
Analytical Method: SW8015C
Analysis Date/Time: 07/20/10 15:48
Dilution Factor: 1

Prep Batch: VXX20961
Prep Method: SW5030B
Prep Date/Time: 07/20/10 12:00

Initial Prep Wt./Vol.: 5 mL
Prep Extract Vol.: 5 mL
Container ID:1103364002-B
Analyst: EAB

Client Sample ID: **TB01-WG-05**
SGS Ref. #: 1103364002
Project ID: 3354-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 07/08/10 08:05
Receipt Date/Time: 07/09/10 11:30

Volatile Gas Chromatography/Mass Spectroscopy

Parameter	Result	LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
1,1,1,2-Tetrachloroethane	0.300 U	0.500	0.150	ug/L	1	VMS11383	VXX20930	
1,1,1-Trichloroethane	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
1,1,2,2-Tetrachloroethane	0.300 U	0.500	0.150	ug/L	1	VMS11383	VXX20930	
1,1,2-Trichloroethane	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
1,1-Dichloroethane	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
1,1-Dichloroethene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
1,1-Dichloropropene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
1,2,3-Trichlorobenzene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
1,2,3-Trichloropropane	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
1,2,4-Trichlorobenzene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
1,2,4-Trimethylbenzene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
1,2-Dibromo-3-chloropropane	1.24 U	2.00	0.620	ug/L	1	VMS11383	VXX20930	
1,2-Dibromoethane	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
1,2-Dichlorobenzene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
1,2-Dichloroethane	0.300 U	0.500	0.150	ug/L	1	VMS11383	VXX20930	
1,2-Dichloropropane	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
1,3,5-Trimethylbenzene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
1,3-Dichlorobenzene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
1,3-Dichloropropane	0.240 U	0.400	0.120	ug/L	1	VMS11383	VXX20930	
1,4-Dichlorobenzene	0.300 U	0.500	0.150	ug/L	1	VMS11383	VXX20930	
1-Chlorohexane	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
2,2-Dichloropropane	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
2-Butanone (MEK)	6.20 U	10.0	3.10	ug/L	1	VMS11383	VXX20930	
2-Chlorotoluene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
4-Chlorotoluene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
4-Isopropyltoluene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
4-Methyl-2-pentanone (MIBK)	6.20 U	10.0	3.10	ug/L	1	VMS11383	VXX20930	
Acetone	3.43J	10.0	3.10	ug/L	1	VMS11383	VXX20930	
Benzene	0.240 U	0.400	0.120	ug/L	1	VMS11383	VXX20930	
Bromobenzene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Bromochloromethane	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Bromodichloromethane	0.300 U	0.500	0.150	ug/L	1	VMS11383	VXX20930	
Bromoform	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Bromomethane	1.88 U	3.00	0.940	ug/L	1	VMS11383	VXX20930	
Carbon tetrachloride	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Chlorobenzene	0.300 U	0.500	0.150	ug/L	1	VMS11383	VXX20930	

Client Sample ID: **TB01-WG-05**
SGS Ref. #: 1103364002
Project ID: 3354-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 07/08/10 08:05
Receipt Date/Time: 07/09/10 11:30

Volatile Gas Chromatography/Mass Spectroscopy

Parameter	Result	LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Chloroethane	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Chloroform	0.600 U	1.00	0.300	ug/L	1	VMS11383	VXX20930	
Chloromethane	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
cis-1,2-Dichloroethene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
cis-1,3-Dichloropropene	0.300 U	0.500	0.150	ug/L	1	VMS11383	VXX20930	
Dibromochloromethane	0.300 U	0.500	0.150	ug/L	1	VMS11383	VXX20930	
Dibromomethane	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Dichlorodifluoromethane	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Ethylbenzene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Hexachlorobutadiene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Isopropylbenzene (Cumene)	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Methylene chloride	2.00 U	5.00	1.00	ug/L	1	VMS11383	VXX20930	
Methyl-t-butyl ether	3.00 U	5.00	1.50	ug/L	1	VMS11383	VXX20930	
Naphthalene	1.24 U	2.00	0.620	ug/L	1	VMS11383	VXX20930	
n-Butylbenzene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
n-Propylbenzene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
o-Xylene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
P & M -Xylene	1.24 U	2.00	0.620	ug/L	1	VMS11383	VXX20930	
sec-Butylbenzene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Styrene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
tert-Butylbenzene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Tetrachloroethene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Toluene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
trans-1,2-Dichloroethene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
trans-1,3-Dichloropropene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Trichloroethene	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Trichlorofluoromethane	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Vinyl chloride	0.620 U	1.00	0.310	ug/L	1	VMS11383	VXX20930	
Xylenes (total)	1.88 U	3.00	0.940	ug/L	1	VMS11383	VXX20930	
1,2-Dichloroethane-D4 <surr>	101	73-120		%	1	VMS11383	VXX20930	
4-Bromofluorobenzene <surr>	107	76-120		%	1	VMS11383	VXX20930	
Toluene-d8 <surr>	98.6	80-120		%	1	VMS11383	VXX20930	

Client Sample ID: **TB01-WG-05**
SGS Ref. #: 1103364002
Project ID: 3354-003 Red Hill BFSF
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 07/08/10 08:05
Receipt Date/Time: 07/09/10 11:30

Volatile Gas Chromatography/Mass Spectroscopy

Parameter	Result	LOQ/CL	DL	Units	DF	Analytical Batch	Prep Batch	Qualifiers

Batch Information

Analytical Batch: VMS11383
Analytical Method: SW8260B
Analysis Date/Time: 07/14/10 13:47
Dilution Factor: 1

Prep Batch: VXX20930
Prep Method: SW5030B
Prep Date/Time: 07/13/10 11:31

Initial Prep Wt./Vol.: 5 mL
Prep Extract Vol.: 5 mL
Container ID:1103364002-A
Analyst: SCL

SGS Ref.#	972721 Method Blank	**Printed Date/Time**	07/30/2010 16:34
Client Name	The Environmental Company, Inc. (TEC)	**Prep Batch**	XXX23016
Project Name/#	3354-003 Red Hill BFSF	**Method**	SW3520C
Matrix	Water (Surface, Eff., Ground)	**Date**	07/12/2010

QC results affect the following production samples:

1103364001

Parameter	Results	LOQ/CL	DL	Units	Analysis Date
Polynuclear Aromatics GC/MS					
1-Methylnaphthalene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
1-Methylnaphthalene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
2-Methylnaphthalene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
2-Methylnaphthalene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
Acenaphthene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
Acenaphthene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
Acenaphthylene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
Acenaphthylene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
Anthracene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
Anthracene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
Benzo(a)Anthracene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
Benzo(a)Anthracene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
Benzo[a]pyrene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
Benzo[a]pyrene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
Benzo[b]Fluoranthene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
Benzo[b]Fluoranthene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
Benzo[g,h,i]perylene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
Benzo[g,h,i]perylene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
Benzo[k]fluoranthene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
Benzo[k]fluoranthene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
Chrysene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
Chrysene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
Dibenzo[a,h]anthracene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
Dibenzo[a,h]anthracene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
Fluoranthene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
Fluoranthene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
Fluorene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
Fluorene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
Indeno[1,2,3-c,d] pyrene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
Indeno[1,2,3-c,d] pyrene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
Naphthalene	0.0620 U	0.100	0.0310	ug/L	07/13/10
Naphthalene	0.0620 U	0.100	0.0310	ug/L	07/13/10
Phenanthrene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
Phenanthrene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
Pyrene	0.0300 U	0.0500	0.0150	ug/L	07/13/10
Pyrene	0.0300 U	0.0500	0.0150	ug/L	07/13/10

SGS Ref.#	972721 Method Blank	**Printed Date/Time**	07/30/2010 16:34
Client Name	The Environmental Company, Inc. (TEC)	**Prep Batch**	XXX23016
Project Name/#	3354-003 Red Hill BFSF	**Method**	SW3520C
Matrix	Water (Surface, Eff., Ground)	**Date**	07/12/2010

Parameter	Results	LOQ/CL	DL	Units	Analysis Date
Polynuclear Aromatics GC/MS					
Surrogates					
Terphenyl-d14 <surr>	120	50-135		%	07/13/10
Terphenyl-d14 <surr>	114	50-135		%	07/13/10

Batch XMS5543
Method 8270D SIMS
Instrument HP 6890/5973 MS SVQA

SGS Ref.#	972948	Method Blank	**Printed Date/Time**	07/30/2010	16:34
Client Name	The Environmental Company, Inc. (TEC)		**Prep Batch**	XXX23023	
Project Name/#	3354-003 Red Hill BFSF		**Method**	SW3520C	
Matrix	Water (Surface, Eff., Ground)		**Date**	07/13/2010	

QC results affect the following production samples:

1103364001

Parameter	Results	LOQ/CL	DL	Units	Analysis Date
Semivolatile Organic Fuels Department					
Diesel Range Organics	0.300 U	0.400	0.150	mg/L	07/20/10
Surrogates					
5a Androstane <surr>	83.6	60-120		%	07/20/10
Batch XFC9357					
Method SW8015C					
Instrument HP 7890A FID SV E R					

SGS Ref.#	973528	Method Blank	**Printed Date/Time**		07/30/2010 16:34
Client Name	The Environmental Company, Inc. (TEC)		**Prep**	**Batch**	VXX20930
Project Name/#	3354-003 Red Hill BFSF			**Method**	SW5030B
Matrix	Water (Surface, Eff., Ground)			**Date**	07/13/2010

QC results affect the following production samples:

1103364001, 1103364002

Parameter	Results	LOQ/CL	DL	Units	Analysis Date

Volatile Gas Chromatography/Mass Spectroscopy

SGS Ref.#	973528 Method Blank	**Printed Date/Time**	07/30/2010 16:34
Client Name	The Environmental Company, Inc. (TEC)	**Prep Batch**	VXX20930
Project Name/#	3354-003 Red Hill BFSF	**Method**	SW5030B
Matrix	Water (Surface, Eff., Ground)	**Date**	07/13/2010

Volatile Gas Chromatography/Mass Spectroscopy

Parameter	Results	LOQ/CL	DL	Units	Analysis Date
1,1,1,2-Tetrachloroethane	0.300 U	0.500	0.150	ug/L	07/14/10
1,1,1-Trichloroethane	0.620 U	1.00	0.310	ug/L	07/14/10
1,1,2,2-Tetrachloroethane	0.300 U	0.500	0.150	ug/L	07/14/10
1,1,2-Trichloroethane	0.620 U	1.00	0.310	ug/L	07/14/10
1,1-Dichloroethane	0.620 U	1.00	0.310	ug/L	07/14/10
1,1-Dichloroethene	0.620 U	1.00	0.310	ug/L	07/14/10
1,1-Dichloropropene	0.620 U	1.00	0.310	ug/L	07/14/10
1,2,3-Trichlorobenzene	0.620 U	1.00	0.310	ug/L	07/14/10
1,2,3-Trichloropropane	0.620 U	1.00	0.310	ug/L	07/14/10
1,2,4-Trichlorobenzene	0.620 U	1.00	0.310	ug/L	07/14/10
1,2,4-Trimethylbenzene	0.620 U	1.00	0.310	ug/L	07/14/10
1,2-Dibromo-3-chloropropane	1.24 U	2.00	0.620	ug/L	07/14/10
1,2-Dibromoethane	0.620 U	1.00	0.310	ug/L	07/14/10
1,2-Dichlorobenzene	0.620 U	1.00	0.310	ug/L	07/14/10
1,2-Dichloroethane	0.300 U	0.500	0.150	ug/L	07/14/10
1,2-Dichloropropane	0.620 U	1.00	0.310	ug/L	07/14/10
1,3,5-Trimethylbenzene	0.620 U	1.00	0.310	ug/L	07/14/10
1,3-Dichlorobenzene	0.620 U	1.00	0.310	ug/L	07/14/10
1,3-Dichloropropane	0.240 U	0.400	0.120	ug/L	07/14/10
1,4-Dichlorobenzene	0.300 U	0.500	0.150	ug/L	07/14/10
1-Chlorohexane	0.620 U	1.00	0.310	ug/L	07/14/10
2,2-Dichloropropane	0.620 U	1.00	0.310	ug/L	07/14/10
2-Butanone (MEK)	6.20 U	10.0	3.10	ug/L	07/14/10
2-Chlorotoluene	0.620 U	1.00	0.310	ug/L	07/14/10
4-Chlorotoluene	0.620 U	1.00	0.310	ug/L	07/14/10
4-Isopropyltoluene	0.620 U	1.00	0.310	ug/L	07/14/10
4-Methyl-2-pentanone (MIBK)	6.20 U	10.0	3.10	ug/L	07/14/10
Acetone	6.20 U	10.0	3.10	ug/L	07/14/10
Benzene	0.240 U	0.400	0.120	ug/L	07/14/10
Bromobenzene	0.620 U	1.00	0.310	ug/L	07/14/10
Bromochloromethane	0.620 U	1.00	0.310	ug/L	07/14/10
Bromodichloromethane	0.300 U	0.500	0.150	ug/L	07/14/10
Bromoform	0.620 U	1.00	0.310	ug/L	07/14/10
Bromomethane	1.88 U	3.00	0.940	ug/L	07/14/10
Carbon tetrachloride	0.620 U	1.00	0.310	ug/L	07/14/10
Chlorobenzene	0.300 U	0.500	0.150	ug/L	07/14/10
Chloroethane	0.620 U	1.00	0.310	ug/L	07/14/10
Chloroform	0.600 U	1.00	0.300	ug/L	07/14/10
Chloromethane	0.620 U	1.00	0.310	ug/L	07/14/10

SGS Ref.#	973528 Method Blank	**Printed Date/Time**	07/30/2010 16:34
Client Name	The Environmental Company, Inc. (TEC)	**Prep Batch**	VXX20930
Project Name/#	3354-003 Red Hill BFSF	**Method**	SW5030B
Matrix	Water (Surface, Eff., Ground)	**Date**	07/13/2010

Parameter	Results	LOQ/CL	DL	Units	Analysis Date
Volatile Gas Chromatography/Mass Spectroscopy					
cis-1,2-Dichloroethene	0.620 U	1.00	0.310	ug/L	07/14/10
cis-1,3-Dichloropropene	0.300 U	0.500	0.150	ug/L	07/14/10
Dibromochloromethane	0.300 U	0.500	0.150	ug/L	07/14/10
Dibromomethane	0.620 U	1.00	0.310	ug/L	07/14/10
Dichlorodifluoromethane	0.620 U	1.00	0.310	ug/L	07/14/10
Ethylbenzene	0.620 U	1.00	0.310	ug/L	07/14/10
Hexachlorobutadiene	0.620 U	1.00	0.310	ug/L	07/14/10
Isopropylbenzene (Cumene)	0.620 U	1.00	0.310	ug/L	07/14/10
Methylene chloride	2.00 U	5.00	1.00	ug/L	07/14/10
Methyl-t-butyl ether	3.00 U	5.00	1.50	ug/L	07/14/10
Naphthalene	1.24 U	2.00	0.620	ug/L	07/14/10
n-Butylbenzene	0.620 U	1.00	0.310	ug/L	07/14/10
n-Propylbenzene	0.620 U	1.00	0.310	ug/L	07/14/10
o-Xylene	0.620 U	1.00	0.310	ug/L	07/14/10
P & M -Xylene	1.24 U	2.00	0.620	ug/L	07/14/10
sec-Butylbenzene	0.620 U	1.00	0.310	ug/L	07/14/10
Styrene	0.620 U	1.00	0.310	ug/L	07/14/10
tert-Butylbenzene	0.620 U	1.00	0.310	ug/L	07/14/10
Tetrachloroethene	0.620 U	1.00	0.310	ug/L	07/14/10
Toluene	0.620 U	1.00	0.310	ug/L	07/14/10
trans-1,2-Dichloroethene	0.620 U	1.00	0.310	ug/L	07/14/10
trans-1,3-Dichloropropene	0.620 U	1.00	0.310	ug/L	07/14/10
Trichloroethene	0.620 U	1.00	0.310	ug/L	07/14/10
Trichlorofluoromethane	0.620 U	1.00	0.310	ug/L	07/14/10
Vinyl chloride	0.620 U	1.00	0.310	ug/L	07/14/10
Xylenes (total)	1.88 U	3.00	0.940	ug/L	07/14/10
Surrogates					
1,2-Dichloroethane-D4 <surr>	101	73-120		%	07/14/10
4-Bromofluorobenzene <surr>	109	76-120		%	07/14/10
Toluene-d8 <surr>	99.7	80-120		%	07/14/10

Batch VMS11383
Method SW8260B
Instrument HP 5890 Series II MS1 VJA

SGS Ref.#	974420	Method Blank	**Printed Date/Time**	07/30/2010	16:34
Client Name	The Environmental Company, Inc. (TEC)		**Prep Batch**	MXX23243	
Project Name/#	3354-003 Red Hill BFSF		**Method**	SW3010A	
Matrix	Water (Surface, Eff., Ground)		**Date**	07/16/2010	

QC results affect the following production samples:

1103364001

Parameter	Results	LOQ/CL	DL	Units	Analysis Date
Metals by ICP/MS					
Lead	0.620 U	1.00	0.310	ug/L	07/21/10
Batch	MMS6543				
Method	SW6020				
Instrument	Perkin Elmer Sciex ICP-MS P3				

SGS Ref.#	975014	Method Blank	**Printed Date/Time**	07/30/2010	16:34
Client Name	The Environmental Company, Inc. (TEC)		**Prep Batch**	VXX20961	
Project Name/#	3354-003 Red Hill BFSF		**Method**	SW5030B	
Matrix	Water (Surface, Eff., Ground)		**Date**	07/20/2010	

QC results affect the following production samples:

1103364001, 1103364002

Parameter	Results	LOQ/CL	DL	Units	Analysis Date
Volatile Fuels Department					
Gasoline Range Organics	60.0 U	100	30.0	ug/L	07/20/10
Surrogates					
4-Bromofluorobenzene <surr>	106	50-150		%	07/20/10

Batch VFC10031
Method SW8015C
Instrument HP 5890 Series II PID+FID VCA

SGS Ref.#	972722	Lab Control Sample	**Printed Date/Time**	07/30/2010	16:34
	972723	Lab Control Sample Duplicate	**Prep Batch**	XXX23016	
Client Name	The Environmental Company, Inc. (TEC)		**Method**	SW3520C	
Project Name/#	3354-003 Red Hill BFSF		**Date**	07/12/2010	
Matrix	Water (Surface, Eff., Ground)				

QC results affect the following production samples:

1103364001

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Polynuclear Aromatics GC/MS								
1-Methylnaphthalene	LCS	0.372	74	(58-114)			0.5 ug/L	07/13/2010
	LCSD	0.475	95		24	(< 30)	0.5 ug/L	07/13/2010
1-Methylnaphthalene	LCS	0.433	87	(58-114)			0.5 ug/L	07/13/2010
	LCSD							
2-Methylnaphthalene	LCS	0.348	70	(54-105)			0.5 ug/L	07/13/2010
	LCSD	0.408	82		16	(< 30)	0.5 ug/L	07/13/2010
2-Methylnaphthalene	LCS	0.395	79	(54-105)			0.5 ug/L	07/13/2010
	LCSD							
Acenaphthene	LCS	0.373	75	(57-110)			0.5 ug/L	07/13/2010
	LCSD							
Acenaphthene	LCS	0.373	75	(57-110)			0.5 ug/L	07/13/2010
	LCSD	0.395	79		6	(< 30)	0.5 ug/L	07/13/2010
Acenaphthylene	LCS	0.398	80	(58-105)			0.5 ug/L	07/13/2010
	LCSD							
Acenaphthylene	LCS	0.385	77	(58-105)			0.5 ug/L	07/13/2010
	LCSD	0.411	82		6	(< 30)	0.5 ug/L	07/13/2010
Anthracene	LCS	0.375	75	(63-120)			0.5 ug/L	07/13/2010
	LCSD							
Anthracene	LCS	0.369	74	(63-120)			0.5 ug/L	07/13/2010
	LCSD	0.399	80		8	(< 30)	0.5 ug/L	07/13/2010
Benzo(a)Anthracene	LCS	0.405	81	(61-120)			0.5 ug/L	07/13/2010
	LCSD	0.455	91		12	(< 30)	0.5 ug/L	07/13/2010
Benzo(a)Anthracene	LCS	0.456	91	(61-120)			0.5 ug/L	07/13/2010
	LCSD							
Benzo[a]pyrene	LCS	0.350	70	(57-120)			0.5 ug/L	07/13/2010
	LCSD	0.380	76		8	(< 30)	0.5 ug/L	07/13/2010

SGS Ref.#	972722	Lab Control Sample	**Printed Date/Time**	07/30/2010	16:34
	972723	Lab Control Sample Duplicate	**Prep Batch**	XXX23016	
Client Name	The Environmental Company, Inc. (TEC)		**Method**	SW3520C	
Project Name/#	3354-003 Red Hill BFSF		**Date**	07/12/2010	
Matrix	Water (Surface, Eff., Ground)				

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Polynuclear Aromatics GC/MS								
Benzo[a]pyrene	LCS	0.378	76	(57-120)			0.5 ug/L	07/13/2010
	LCSD							
Benzo[b]Fluoranthene	LCS	0.404	81	(66-130)			0.5 ug/L	07/13/2010
	LCSD	0.454	91		12	(< 30)	0.5 ug/L	07/13/2010
Benzo[b]Fluoranthene	LCS	0.447	89	(66-130)			0.5 ug/L	07/13/2010
	LCSD							
Benzo[g,h,i]perylene	LCS	0.393	79	(60-125)			0.5 ug/L	07/13/2010
	LCSD	0.442	89		12	(< 30)	0.5 ug/L	07/13/2010
Benzo[g,h,i]perylene	LCS	0.443	89	(60-125)			0.5 ug/L	07/13/2010
	LCSD							
Benzo[k]fluoranthene	LCS	0.404	81	(67-125)			0.5 ug/L	07/13/2010
	LCSD							
Benzo[k]fluoranthene	LCS	0.396	79	(67-125)			0.5 ug/L	07/13/2010
	LCSD	0.380	76		4	(< 30)	0.5 ug/L	07/13/2010
Chrysene	LCS	0.397	79	(71-120)			0.5 ug/L	07/13/2010
	LCSD	0.414	83		4	(< 30)	0.5 ug/L	07/13/2010
Chrysene	LCS	0.415	83	(71-120)			0.5 ug/L	07/13/2010
	LCSD							
Dibenzo[a,h]anthracene	LCS	0.387	78	(56-125)			0.5 ug/L	07/13/2010
	LCSD	0.419	84		8	(< 30)	0.5 ug/L	07/13/2010
Dibenzo[a,h]anthracene	LCS	0.424	85	(56-125)			0.5 ug/L	07/13/2010
	LCSD							
Fluoranthene	LCS	0.416	83	(63-125)			0.5 ug/L	07/13/2010
	LCSD	0.465	93		11	(< 30)	0.5 ug/L	07/13/2010
Fluoranthene	LCS	0.454	91	(63-125)			0.5 ug/L	07/13/2010
	LCSD							
Fluorene	LCS	0.415	83	(59-120)			0.5 ug/L	07/13/2010
	LCSD							

SGS Ref.#	972722	Lab Control Sample	**Printed Date/Time**	07/30/2010	16:34
	972723	Lab Control Sample Duplicate	**Prep Batch**	XXX23016	
Client Name	The Environmental Company, Inc. (TEC)		**Method**	SW3520C	
Project Name/#	3354-003 Red Hill BFSF		**Date**	07/12/2010	
Matrix	Water (Surface, Eff., Ground)				

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Polynuclear Aromatics GC/MS								
Fluorene	LCS	0.408	82	(59-120)			0.5 ug/L	07/13/2010
	LCSD	0.422	84		4	(< 30)	0.5 ug/L	07/13/2010
Indeno[1,2,3-c,d] pyrene	LCS	0.393	79	(59-125)			0.5 ug/L	07/13/2010
	LCSD	0.435	87		10	(< 30)	0.5 ug/L	07/13/2010
Indeno[1,2,3-c,d] pyrene	LCS	0.431	86	(59-125)			0.5 ug/L	07/13/2010
	LCSD							
Naphthalene	LCS	0.376	75	(56-108)			0.5 ug/L	07/13/2010
	LCSD	0.546	109 *		37 *	(< 30)	0.5 ug/L	07/13/2010
Naphthalene	LCS	0.502	100	(56-108)			0.5 ug/L	07/13/2010
	LCSD							
Phenanthrene	LCS	0.412	83	(60-115)			0.5 ug/L	07/13/2010
	LCSD	0.457	91		10	(< 30)	0.5 ug/L	07/13/2010
Phenanthrene	LCS	0.427	85	(60-115)			0.5 ug/L	07/13/2010
	LCSD							
Pyrene	LCS	0.380	76	(62-130)			0.5 ug/L	07/13/2010
	LCSD	0.400	80		5	(< 30)	0.5 ug/L	07/13/2010
Pyrene	LCS	0.391	78	(62-130)			0.5 ug/L	07/13/2010
	LCSD							
Surrogates								
Terphenyl-d14 <surr>	LCS		115	(50-135)				07/13/2010
	LCSD		105		9			07/13/2010
Terphenyl-d14 <surr>	LCS		109	(50-135)				07/13/2010
	LCSD							

Batch	XMS5543
Method	8270D SIMS
Instrument	HP 6890/5973 MS SVQA

SGS Ref.#	972950	Lab Control Sample	**Printed Date/Time**	07/30/2010	16:34
	972952	Lab Control Sample Duplicate	**Prep Batch**	XXX23023	
Client Name	The Environmental Company, Inc. (TEC)		**Method**	SW3520C	
Project Name/#	3354-003 Red Hill BFSF		**Date**	07/13/2010	
Matrix	Water (Surface, Eff., Ground)				

QC results affect the following production samples:

1103364001

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Semivolatile Organic Fuels Department								
Diesel Range Organics	LCS	4.60	92	(75-125)			5 mg/L	07/20/2010
	LCSD	4.80	96		4	(< 20)	5 mg/L	07/20/2010
Surrogates								
5a Androstane <surr>	LCS		86	(60-120)				07/20/2010
	LCSD		88		3			07/20/2010

Batch	XFC9357	
Method	SW8015C	
Instrument	HP 7890A	FID SV E R

SGS Ref.#	973529	Lab Control Sample	**Printed Date/Time**	07/30/2010	16:34
	973530	Lab Control Sample Duplicate	**Prep Batch**	VXX20930	
Client Name	The Environmental Company, Inc. (TEC)		**Method**	SW5030B	
Project Name/#	3354-003 Red Hill BFSF		**Date**	07/13/2010	
Matrix	Water (Surface, Eff., Ground)				

QC results affect the following production samples:

1103364001, 1103364002

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date

Volatile Gas Chromatography/Mass Spectroscopy

SGS Ref.#	973529	Lab Control Sample	**Printed Date/Time**	07/30/2010	16:34
	973530	Lab Control Sample Duplicate	**Prep Batch**	VXX20930	
Client Name	The Environmental Company, Inc. (TEC)		**Method**	SW5030B	
Project Name/#	3354-003 Red Hill BFSF		**Date**	07/13/2010	
Matrix	Water (Surface, Eff., Ground)				

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Gas Chromatography/Mass Spectroscopy								
1,1,1,2-Tetrachloroethane	LCS	30.1	100	(80-120)			30 ug/L	07/14/2010
	LCSD	29.2	97		3	(< 20)	30 ug/L	07/14/2010
1,1,1-Trichloroethane	LCS	30.7	102	(80-122)			30 ug/L	07/14/2010
	LCSD	31.3	104		2	(< 20)	30 ug/L	07/14/2010
1,1,2,2-Tetrachloroethane	LCS	31.7	106	(76-123)			30 ug/L	07/14/2010
	LCSD	31.3	104		1	(< 20)	30 ug/L	07/14/2010
1,1,2-Trichloroethane	LCS	33.5	112	(77-120)			30 ug/L	07/14/2010
	LCSD	31.2	104		7	(< 20)	30 ug/L	07/14/2010
1,1-Dichloroethane	LCS	29.6	99	(80-120)			30 ug/L	07/14/2010
	LCSD	30.5	102		3	(< 20)	30 ug/L	07/14/2010
1,1-Dichloroethene	LCS	27.8	93	(76-130)			30 ug/L	07/14/2010
	LCSD	28.6	96		3	(< 20)	30 ug/L	07/14/2010
1,1-Dichloropropene	LCS	30.4	101	(80-122)			30 ug/L	07/14/2010
	LCSD	30.5	102		0	(< 20)	30 ug/L	07/14/2010
1,2,3-Trichlorobenzene	LCS	30.9	103	(77-120)			30 ug/L	07/14/2010
	LCSD	31.1	104		1	(< 20)	30 ug/L	07/14/2010
1,2,3-Trichloropropane	LCS	31.9	106	(80-120)			30 ug/L	07/14/2010
	LCSD	32.1	107		1	(< 20)	30 ug/L	07/14/2010
1,2,4-Trichlorobenzene	LCS	33.6	112	(80-120)			30 ug/L	07/14/2010
	LCSD	34.0	113		1	(< 20)	30 ug/L	07/14/2010
1,2,4-Trimethylbenzene	LCS	31.6	105	(80-125)			30 ug/L	07/14/2010
	LCSD	31.5	105		0	(< 20)	30 ug/L	07/14/2010
1,2-Dibromo-3-chloropropane	LCS	32.9	110	(73-130)			30 ug/L	07/14/2010
	LCSD	34.0	113		3	(< 20)	30 ug/L	07/14/2010
1,2-Dibromoethane	LCS	32.3	108	(80-120)			30 ug/L	07/14/2010
	LCSD	31.6	105		2	(< 20)	30 ug/L	07/14/2010
1,2-Dichlorobenzene	LCS	30.8	103	(80-120)			30 ug/L	07/14/2010
	LCSD	30.4	101		1	(< 20)	30 ug/L	07/14/2010

SGS Ref.#	973529	Lab Control Sample	**Printed Date/Time**	07/30/2010	16:34
	973530	Lab Control Sample Duplicate	**Prep Batch**	VXX20930	
Client Name	The Environmental Company, Inc. (TEC)		**Method**	SW5030B	
Project Name/#	3354-003 Red Hill BFSF		**Date**	07/13/2010	
Matrix	Water (Surface, Eff., Ground)				

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Gas Chromatography/Mass Spectroscopy								
1,2-Dichloroethane	LCS	29.8	99	(80-129)			30 ug/L	07/14/2010
	LCSD	30.6	102		3	(< 20)	30 ug/L	07/14/2010
1,2-Dichloropropane	LCS	30.7	102	(80-121)			30 ug/L	07/14/2010
	LCSD	31.7	106		3	(< 20)	30 ug/L	07/14/2010
1,3,5-Trimethylbenzene	LCS	31.7	106	(80-128)			30 ug/L	07/14/2010
	LCSD	31.1	104		2	(< 20)	30 ug/L	07/14/2010
1,3-Dichlorobenzene	LCS	30.7	102	(80-120)			30 ug/L	07/14/2010
	LCSD	30.2	101		2	(< 20)	30 ug/L	07/14/2010
1,3-Dichloropropane	LCS	32.4	108	(80-121)			30 ug/L	07/14/2010
	LCSD	31.1	104		4	(< 20)	30 ug/L	07/14/2010
1,4-Dichlorobenzene	LCS	31.0	103	(80-120)			30 ug/L	07/14/2010
	LCSD	31.0	103		0	(< 20)	30 ug/L	07/14/2010
1-Chlorohexane	LCS	50.4	112	(70-125)			45 ug/L	07/14/2010
	LCSD	47.0	104		7	(< 20)	45 ug/L	07/14/2010
2,2-Dichloropropane	LCS	34.0	113	(80-132)			30 ug/L	07/14/2010
	LCSD	34.5	115		1	(< 20)	30 ug/L	07/14/2010
2-Butanone (MEK)	LCS	108	120	(66-136)			90 ug/L	07/14/2010
	LCSD	121	135		12	(< 20)	90 ug/L	07/14/2010
2-Chlorotoluene	LCS	30.6	102	(80-125)			30 ug/L	07/14/2010
	LCSD	30.5	102		0	(< 20)	30 ug/L	07/14/2010
4-Chlorotoluene	LCS	31.2	104	(79-128)			30 ug/L	07/14/2010
	LCSD	30.9	103		1	(< 20)	30 ug/L	07/14/2010
4-Isopropyltoluene	LCS	31.5	105	(80-125)			30 ug/L	07/14/2010
	LCSD	31.3	104		1	(< 20)	30 ug/L	07/14/2010
4-Methyl-2-pentanone (MIBK)	LCS	92.1	102	(69-134)			90 ug/L	07/14/2010
	LCSD	95.8	106		4	(< 20)	90 ug/L	07/14/2010
Acetone	LCS	136	151 *	(50-135)			90 ug/L	07/14/2010

SGS Ref.#	973529	Lab Control Sample	**Printed Date/Time**	07/30/2010	16:34
	973530	Lab Control Sample Duplicate	**Prep Batch**	VXX20930	
Client Name	The Environmental Company, Inc. (TEC)		**Method**	SW5030B	
Project Name/#	3354-003 Red Hill BFSF		**Date**	07/13/2010	
Matrix	Water (Surface, Eff., Ground)				

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Gas Chromatography/Mass Spectroscopy								
	LCSD	167	186 *		21 *	(< 20)	90 ug/L	07/14/2010
Benzene	LCS	29.3	98	(80-120)			30 ug/L	07/14/2010
	LCSD	29.7	99		1	(< 20)	30 ug/L	07/14/2010
Bromobenzene	LCS	30.7	102	(80-120)			30 ug/L	07/14/2010
	LCSD	29.6	99		4	(< 20)	30 ug/L	07/14/2010
Bromochloromethane	LCS	28.7	96	(77-129)			30 ug/L	07/14/2010
	LCSD	30.2	101		5	(< 20)	30 ug/L	07/14/2010
Bromodichloromethane	LCS	29.7	99	(80-120)			30 ug/L	07/14/2010
	LCSD	30.6	102		3	(< 20)	30 ug/L	07/14/2010
Bromoform	LCS	30.9	103	(80-120)			30 ug/L	07/14/2010
	LCSD	29.8	99		4	(< 20)	30 ug/L	07/14/2010
Bromomethane	LCS	27.1	90	(30-140)			30 ug/L	07/14/2010
	LCSD	29.7	99		9	(< 20)	30 ug/L	07/14/2010
Carbon tetrachloride	LCS	30.1	100	(80-126)			30 ug/L	07/14/2010
	LCSD	30.2	101		0	(< 20)	30 ug/L	07/14/2010
Chlorobenzene	LCS	31.0	103	(80-120)			30 ug/L	07/14/2010
	LCSD	29.5	98		5	(< 20)	30 ug/L	07/14/2010
Chloroethane	LCS	33.3	111	(67-133)			30 ug/L	07/14/2010
	LCSD	32.0	107		4	(< 20)	30 ug/L	07/14/2010
Chloroform	LCS	29.0	97	(80-124)			30 ug/L	07/14/2010
	LCSD	29.7	99		2	(< 20)	30 ug/L	07/14/2010
Chloromethane	LCS	30.6	102	(67-125)			30 ug/L	07/14/2010
	LCSD	32.4	108		6	(< 20)	30 ug/L	07/14/2010
cis-1,2-Dichloroethene	LCS	28.2	94	(80-125)			30 ug/L	07/14/2010
	LCSD	29.4	98		4	(< 20)	30 ug/L	07/14/2010
cis-1,3-Dichloropropene	LCS	31.2	104	(80-120)			30 ug/L	07/14/2010
	LCSD	32.2	107		3	(< 20)	30 ug/L	07/14/2010

SGS Ref.#	973529	Lab Control Sample	**Printed Date/Time**	07/30/2010	16:34
	973530	Lab Control Sample Duplicate	**Prep Batch**	VXX20930	
Client Name	The Environmental Company, Inc. (TEC)		**Method**	SW5030B	
Project Name/#	3354-003 Red Hill BFSF		**Date**	07/13/2010	
Matrix	Water (Surface, Eff., Ground)				

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Gas Chromatography/Mass Spectroscopy								
Dibromochloromethane	LCS	31.0	103	(80-120)			30 ug/L	07/14/2010
	LCSD	30.2	101		3	(< 20)	30 ug/L	07/14/2010
Dibromomethane	LCS	28.7	96	(80-120)			30 ug/L	07/14/2010
	LCSD	29.8	99		4	(< 20)	30 ug/L	07/14/2010
Dichlorodifluoromethane	LCS	30.4	101	(62-153)			30 ug/L	07/14/2010
	LCSD	30.9	103		2	(< 20)	30 ug/L	07/14/2010
Ethylbenzene	LCS	31.8	106	(80-120)			30 ug/L	07/14/2010
	LCSD	30.0	100		6	(< 20)	30 ug/L	07/14/2010
Hexachlorobutadiene	LCS	32.2	107	(77-125)			30 ug/L	07/14/2010
	LCSD	31.9	106		1	(< 20)	30 ug/L	07/14/2010
Isopropylbenzene (Cumene)	LCS	32.1	107	(80-121)			30 ug/L	07/14/2010
	LCSD	30.5	102		5	(< 20)	30 ug/L	07/14/2010
Methylene chloride	LCS	29.2	97	(63-131)			30 ug/L	07/14/2010
	LCSD	30.6	102		5	(< 20)	30 ug/L	07/14/2010
Methyl-t-butyl ether	LCS	45.0	100	(80-120)			45 ug/L	07/14/2010
	LCSD	46.9	104		4	(< 20)	45 ug/L	07/14/2010
Naphthalene	LCS	31.5	105	(75-120)			30 ug/L	07/14/2010
	LCSD	31.2	104		1	(< 20)	30 ug/L	07/14/2010
n-Butylbenzene	LCS	33.1	110	(80-124)			30 ug/L	07/14/2010
	LCSD	32.7	109		1	(< 20)	30 ug/L	07/14/2010
n-Propylbenzene	LCS	31.6	105	(80-129)			30 ug/L	07/14/2010
	LCSD	31.2	104		1	(< 20)	30 ug/L	07/14/2010
o-Xylene	LCS	31.6	105	(80-120)			30 ug/L	07/14/2010
	LCSD	30.1	100		5	(< 20)	30 ug/L	07/14/2010
P & M -Xylene	LCS	62.9	105	(80-120)			60 ug/L	07/14/2010
	LCSD	60.1	100		5	(< 20)	60 ug/L	07/14/2010
sec-Butylbenzene	LCS	31.7	106	(80-120)			30 ug/L	07/14/2010
	LCSD	31.3	104		1	(< 20)	30 ug/L	07/14/2010

SGS Ref.#	973529	Lab Control Sample	**Printed Date/Time**	07/30/2010	16:34
	973530	Lab Control Sample Duplicate	**Prep Batch**	VXX20930	
Client Name	The Environmental Company, Inc. (TEC)		**Method**	SW5030B	
Project Name/#	3354-003 Red Hill BFSF		**Date**	07/13/2010	
Matrix	Water (Surface, Eff., Ground)				

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Gas Chromatography/Mass Spectroscopy								
Styrene	LCS	32.7	109	(80-120)			30 ug/L	07/14/2010
	LCSD	30.9	103		6	(< 20)	30 ug/L	07/14/2010
tert-Butylbenzene	LCS	31.3	104	(80-122)			30 ug/L	07/14/2010
	LCSD	30.7	102		2	(< 20)	30 ug/L	07/14/2010
Tetrachloroethene	LCS	30.8	103	(79-122)			30 ug/L	07/14/2010
	LCSD	29.2	98		5	(< 20)	30 ug/L	07/14/2010
Toluene	LCS	30.4	101	(77-120)			30 ug/L	07/14/2010
	LCSD	29.2	97		4	(< 20)	30 ug/L	07/14/2010
trans-1,2-Dichloroethene	LCS	28.1	94	(79-132)			30 ug/L	07/14/2010
	LCSD	28.6	95		2	(< 20)	30 ug/L	07/14/2010
trans-1,3-Dichloropropene	LCS	33.8	113	(80-124)			30 ug/L	07/14/2010
	LCSD	33.2	111		2	(< 20)	30 ug/L	07/14/2010
Trichloroethene	LCS	30.2	101	(80-125)			30 ug/L	07/14/2010
	LCSD	30.8	103		2	(< 20)	30 ug/L	07/14/2010
Trichlorofluoromethane	LCS	30.1	100	(68-145)			30 ug/L	07/14/2010
	LCSD	30.9	103		3	(< 20)	30 ug/L	07/14/2010
Vinyl chloride	LCS	28.5	95	(72-145)			30 ug/L	07/14/2010
	LCSD	30.5	102		7	(< 20)	30 ug/L	07/14/2010
Xylenes (total)	LCS	94.5	105	(80-120)			90 ug/L	07/14/2010
	LCSD	90.1	100		5	(< 20)	90 ug/L	07/14/2010
Surrogates								
1,2-Dichloroethane-D4 <surr>	LCS		98	(73-120)				07/14/2010
	LCSD		102		3			07/14/2010
4-Bromofluorobenzene <surr>	LCS		101	(76-120)				07/14/2010
	LCSD		102		0			07/14/2010
Toluene-d8 <surr>	LCS		101	(80-120)				07/14/2010
	LCSD		98		3			07/14/2010

SGS Ref.#	973529	Lab Control Sample	**Printed Date/Time**	07/30/2010	16:34
	973530	Lab Control Sample Duplicate	**Prep Batch**	VXX20930	
Client Name	The Environmental Company, Inc. (TEC)		**Method**	SW5030B	
Project Name/#	3354-003 Red Hill BFSF		**Date**	07/13/2010	
Matrix	Water (Surface, Eff., Ground)				

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date

Volatile Gas Chromatography/Mass Spectroscopy

Batch VMS11383
Method SW8260B
Instrument HP 5890 Series II MS1 VJA

SGS Ref.#	974421	Lab Control Sample	**Printed Date/Time**	07/30/2010 16:34
			Prep Batch	MXX23243
Client Name	The Environmental Company, Inc. (TEC)		**Method**	SW3010A
Project Name/#	3354-003 Red Hill BFSF		**Date**	07/16/2010
Matrix	Water (Surface, Eff., Ground)			

QC results affect the following production samples:

1103364001

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Metals by ICP/MS								
Lead	LCS	1030	103	(80-120)			1000 ug/L	07/21/2010

Batch MMS6543
Method SW6020
Instrument Perkin Elmer Sciex ICP-MS P3

SGS Ref.#	975015	Lab Control Sample	**Printed Date/Time**	07/30/2010	16:34
	975016	Lab Control Sample Duplicate	**Prep Batch**	VXX20961	
Client Name	The Environmental Company, Inc. (TEC)		**Method**	SW5030B	
Project Name/#	3354-003 Red Hill BFSF		**Date**	07/20/2010	
Matrix	Water (Surface, Eff., Ground)				

QC results affect the following production samples:

1103364001, 1103364002

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Fuels Department								
Gasoline Range Organics	LCS	200	100	(80-116)			200 ug/L	07/20/2010
	LCSD	193	96		4	(< 20)	200 ug/L	07/20/2010
Surrogates								
4-Bromofluorobenzene <surr>	LCS		110	(50-150)				07/20/2010
	LCSD		105		5			07/20/2010

Batch VFC10031
Method SW8015C
Instrument HP 5890 Series II PID+FID VCA

SGS Ref.#	974422	Matrix Spike	**Printed Date/Time**	07/30/2010 16:34
	974423	Matrix Spike Duplicate	**Prep Batch**	MXX23243
			Method	3010 H20 Digest for Metals ICI
			Date	07/16/2010
Original	1103478004			
Matrix	Water (Surface, Eff., Ground)			

QC results affect the following production samples:

1103364001

Parameter	Qualifiers		Original Result	QC Result	Pct Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount		Analysis Date
Metals by ICP/MS											
Lead		MS	(0.620) U	1040	104	(80-120)			1000	ug/L	07/21/2010
		MSD		1020	102		1	(< 15)	1000	ug/L	07/21/2010

Batch	MMS6543
Method	SW6020
Instrument	Perkin Elmer Sciex ICP-MS P3

SGS

CHAIN OF CUSTODY RECORD
SGS Environmental Services Inc.

Locations Nationwide
Alaska Hawaii
Maryland Louisiana
New Jersey West Virginia
North Carolina
www.us.sgs.com

40 of 43

CLIENT: TEC INC.

CONTACT: **Rick Adkisson** PHONE NO: 808.528.1445

PROJECT: **3354-003** SITE/PWSID#: Red Hill BFSF

REPORTS TO: Rick Adkisson email rkadkisson@tecinc.com
cc wmcwhitman@tecinc.com

INVOICE TO: TEC INC QUOTE #:
P.O. NUMBER:

SGS Reference #:

page _____ of _____

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	# CONTAINERS	Preserv. Used	SAMPLE TYPE C = COMP G = GRAB	HCL TPH-GRO (8015B)	HCL TPH-DRO (8015B)	HCl VOC's (8260B)	HNO3 PAH's (8270C-SIMS)	HNO3 Diss Pb (6020)	REMARKS
(1) AHJ	HDMW2253-03-WG-05	7/8/2010	1005	Water	11			X	X	X	X	X	
(2) AHJ	TB01-WG-05	7/8/2010	0805	Water	3			X		X			

1103364

Collected/Relinquished By: (1)	Date 7/8/10	Time 1415	Received By:
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date July 9, 2010	Time 11:30	Received For Laboratory By: AHJ

Shipping Carrier:
Shipping Ticket No:
Special Deliverable Requirements: **See Contract**

Samples Received Cold? YES NO
Temperature °C: 3.1 #203
Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Requested Turnaround Time and-or Special Instructions:
See Contract

☐ 200 W. Potter Drive **Anchorage, AK 99518** Tel: (907) 562-2343 Fax: (907) 561-5301
☐ 3180 Peger Road **Fairbanks, AK 99701** Tel: (907) 474-8656 Fax: (907) 474-9685
☐ 255 Sand Island Access Rd., Unit 1B **Honolulu, HI 96819** Tel: (808) 224-6217 Fax: (808) 845-2287
☐ 151 James Drive West **St Rose, LA 70087** Tel: (504) 469-6401 Fax: (504) 463-3304
☐ 1258 Greenbrier Street **Charleston, WV 25311** Tel: (304) 346-0725 Fax: (304) 346-0761
☐ 5500 Business Drive **Wilmington, NC 28405** Tel: (910) 350-1903 Fax: (910) 350-1557

SGS

1103364

SAMPLE RECEIPT FORM

Review Criteria:	Condition:	Comments/Action Taken:
Were **custody seals** intact? Note # & location if applicable. COC accompanied samples?	(Yes) No N/A (Yes) No N/A	
Temperature blank compliant (i.e., 0-6°C after correction factor)? Cooler ID: 1 @ 3.1 w/ Therm.ID: 203 Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ ***Note: If non-compliant, use form FS-0029 to document affected samples/analyses.*** If samples are received without a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "**COOLER TEMP**" will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled." If temperature(s) <0°C, were all containers ice free?	(Yes) No N/A Yes No (N/A)	
Delivery method (specify all that apply): Client USPS Alert Courier Road Runner AK Air Lynden Carlile ERA (FedEx) UPS NAC PenAir Other:	Note airbill/tracking # (See Attached) or N/A	

* For samples received with payment, note amount ($) and cash / check / CC (circle one). (N/A)

* For samples received in FBKS, ANCH staff will verify all criteria are reviewed. SRF Initiated by: (N/A)

Do samples **match COC** (i.e., sample IDs, dates/times collected)? Are analyses requested unambiguous?	Yes (No) N/A (Yes) No N/A	Time on all jars from sample ① state collected at 10:10, but COC states collection time as 10:05
Were samples in **good condition** (no leaks/cracks/breakage)? Packing material used (specify all that apply): (Bubble wrap) Separate plastic bags Vermiculite Other:	Yes (No) N/A	Jar ①I was broken and empty ∴ cannot be used
Were all VOA vials **free of headspace** (i.e., bubbles ≤6 mm)? Were all soil VOAs **field extracted** with MeOH+BFB?	Yes (No) N/A Yes No (N/A)	Trip Blanks (jars-②A→C)
Were **proper containers** (type/mass/volume/preservative) used? Were the bottles provided by SGS? (Note apparent exceptions.) Were **Trip Blanks** (VOAs, LL-Hg) in cooler with samples?	(Yes) No N/A (Yes) No N/A (Yes) No N/A	
For preserved waters (other than VOA vials, LL-Mercury or microbiological analyses), was **pH verified and compliant**? If pH was adjusted, were bottles flagged (i.e., stickers)? ***Refer to attached bottle sheet (form F066) for documentation.***	(Yes) No N/A Yes No (N/A)	
For **RUSH** or **SHORT HOLD TIME** samples, were the COC & this SRF flagged, bottles flagged (e.g., stickers) and lab notified?	Yes No (N/A)	
For client requested, **site-specific QC** (e.g., MS/MSD/DUP), were bottles flagged (e.g., stickers) and numbered accordingly?	Yes No (N/A)	
For **special handling** (e.g., "MI" or foreign soils, lab filter, limited volume, Ref Lab), were bottles/paperwork flagged (e.g., sticker)?	(Yes) No N/A	
Was **PEER REVIEW** of sample numbering completed (i.e., compare WO# on containers to COC, container ID on containers to COC, each container had a unique container ID)? Was the WO# recorded in Front Counter/Sample Receiving log?	(Yes) No N/A (Yes) No N/A	SRF Completed by: ✓ Bottle Sheet by: ✓ Peer Reviewed by: JAC
For any questions answered "NO," was the PM notified?	(Yes) No N/A	PM = Jennifer N/A

Additional notes (if applicable):

WO# (7 digits)	Sample # - Sample #	Container ID - Container ID	Matrix	QC	Preservative (CHECKED)	TEST GROUP	PRINT LABELS	Notes: ANOMALIES - *e.g., preservative added* or SPECIAL HANDLING - *e.g., Multi-Incremental (MI), Field Filter (FF), Lab Filter (LF), use "same jar as" (SJA) for QC, 2xMeOH, bubbles, etc.*
SAMPLE ID			TYPE		CONTAINERS	ANALYSIS		Type comments below:
1103364	001	001 A F	1 Water		HCl * VOA or LL-Hg *	W_GRO/VOA		
1103364	001	001 G G	1 Water		HNO3 (pH <2)	W_Metals_Total/Diss.		
1103364	001	001 H I	1 Water		N/A	W_PAH/TAqH		
1103364	001	001 J K	1 Water		HCl (pH <2)	W_DRO_1L		
1103364	002	002 A C	1 Water	Trip Blank	HCl * VOA or LL-Hg *	W_GRO/VOA		

1103364

From: Origin ID: HIKA (808) 528-1445
BILL WHITMAN
TEC INC.
1003 BISHOP STREET, PAUAHI TOWER
SUITE 1550
HONOLULU, HI 96813

FedEx Express

J10201005250225

Ship Date: 08JUL10
ActWgt: 30.0 LB
CAD: 1774997/INET3060
Dims: 24 X 14 X 14 IN

Delivery Address Bar Code

Ref # P# 3354
Invoice #
PO #
Dept #

SHIP TO: (907) 562-2343 BILL THIRD PARTY

SAMPLE RECEIVING
SGS Environmental Services
200 W POTTER DR

ANCHORAGE, AK 99518

TRK# 0201 7937 0861 1033

FRI - 09 JUL AM
PRIORITY OVERNIGHT

99518
AK-US
ANC

WU ANCA

588G1/8807/8A24

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2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

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