Rolls-Royce

Rolls-Royce Engine Services-Oakland Inc.
7200 Earhart Road
Oakland, California 94621-4504
(510) 613-1000

August 20, 2014

Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Subject: **Rolls-Royce Engine Services Test Facility**
6701 Old Earhart Road
Oakland, California
Alameda County Site #RO0002606

I have reviewed the attached routine groundwater monitoring report dated September 22, 2014.

I agree with the conclusions and recommendation presented in the referenced report. The information is this report is accurate to the best of my knowledge. This report was prepared by Gettler-Ryan Incorporated, whose assistance and advice I have relied upon.

I declare under penalty of perjury that the foregoing is true and correct.

Sincerely,

Dave Goldberg
Facilities HS&E Specialist

140193.11

GETTLER-RYAN INC.

September 22, 2014

Mr. Keith Nowell
Alameda County Environmental Health Department
1131 Harbor Bay Parkway, Ste. 250
Alameda, California 94502

Subject: **First Semi-Annual 2014 Event**
Groundwater Monitoring and Sampling Report
Rolls-Royce Engine Services Test Facility
6701 Old Earhart Road, Oakland, California
Alameda County Site #RO0002606

Mr. Nowell,

On behalf of Rolls-Royce Engine Services-Oakland Inc. (R-R), Gettler-Ryan Inc. (GR) has prepared this First Semi-Annual 2014 Event, Groundwater Monitoring and Sampling Report for the site referenced above. This report describes the field and analytical methods, provides a summary of groundwater monitoring results, and presents conclusions and recommendations regarding groundwater conditions at the site.

SITE LOCATION AND DESCRIPTION

The subject site is located at 6701 Old Earhart Road, adjacent to the Metropolitan Oakland International Airport (MOIA)-North Field, Oakland, California (Figure 1). Topography in the vicinity of the subject site is relatively flat at an average elevation of approximately 7.5 feet above mean sea level. The closest surface water is within the tidal wetlands bordering the site to the east.

Pertinent site features consist of six engine test cells with auxiliary structures (sheds, pumphouse, waste water sumps, aboveground oil/water separator, control buildings, gas conditioning facility, air receivers, cooling towers, flare stack, etc), one 30,000-gallon aboveground liquefied petroleum fuel tank, one 10,000-gallon jet A fuel underground storage tank (UST) and two paired 8,000-gallon jet A fuel USTs. Pertinent site features and the location of the USTs are shown on Figure 2.

For site background and previous environmental investigation, please refer to GR report No. 25-948218.07, *Well Installation Report*, dated January 11, 2008.

GROUNDWATER MONITORING

On June 26, 2014, GR personnel conducted semi-annual groundwater monitoring of nineteen wells (MW-1 through MW-15, MW-17, MW-18, NPORD MW-3 and NPORD MW-4). Work at the site included measuring static groundwater levels, evaluating groundwater in the wells for the presence of petroleum hydrocarbons, and purging and sampling the wells for laboratory analysis. Groundwater monitoring and sampling were performed in accordance with GR Field Methods and Procedures, Groundwater Sampling (attached).

On June 26, 2014, GR collected depth to groundwater measurements in nineteen wells (MW-1 through MW-15, MW-17, MW-18, NPORD MW-3 and NPORD MW-4) and checked groundwater for the presence of Separate-Phase Hydrocarbons (SPH). No SPH were detected in any wells during this event. Water level data, groundwater elevations, and SPH thicknesses are presented in attached Table 1. SPH thicknesses and approximate SPH volumes purged are summarized in Table 3. Field data sheets for this event are attached.

Rolls-Royce personnel have been periodically removing SPH present in well MW-18 through the use of absorbent socks. SPH removal logs for the most recent and historic events are attached to this report.

Groundwater monitoring wells MW-1 through MW-15, MW-17, MW-18, NPORD MW-3 and NPORD MW-4 were purged and sampled on the same date they were monitored. Groundwater samples were submitted under chain-of-custody protocol to Kiff Analytical (NELAP #08263CA) of Davis, California. A copy of the laboratory analytical reports and chain-of-custody documents are attached. Purge water generated from the sampling activities was stored onsite in 55-gallon DOT approved drums pending disposal. GR understands that the disposal of water generated will be handled by R-R.

ANALYTICAL METHODS

Groundwater samples were analyzed for Total Petroleum Hydrocarbons as gasoline (TPHg), Benzene, Toluene, Ethylbenzene, and total Xylenes (BTEX), Methyl-tert Butyl Ether (MtBE), and naphthalene by EPA Method 8260B, and for Total Petroleum Hydrocarbons as diesel (TPHd), Total Petroleum Hydrocarbons as motor oil (TPHmo), and Total Petroleum Hydrocarbons as jet fuel (TPHjf) by modified EPA Method 8015. Current and historic groundwater analytical results are presented in Tables 1 and 2.

RESULTS

Groundwater Gradient

On June 26, 2014, the groundwater flow direction was to the southeast at hydraulic gradients of 0.02 to 0.03 ft/ft. A Potentiometric Map is presented as Figure 3.

Analytical Results

TPHd was detected in groundwater samples collected from eleven wells at concentrations ranging from 53 parts per billion (ppb) in well MW-2 to 100,000 ppb in well MW-18. Concentrations of TPHmo were detected in fifteen wells at levels ranging from 150 ppb in well MW-13 to 150,000 ppb in well MW-18. TPHjf was detected in sixteen wells at concentrations ranging from 67 ppb in well MW-2 to 110,000 ppb in well MW-18.

TPHg was detected in wells MW-13 and MW-18 at concentrations of 340 ppb and 600 ppb, respectively. Concentrations of TPHg were reported below the laboratory method detection limits in water samples collected from the remaining wells.

BTEX constituents were reported as below the laboratory method detection limits in all of the wells except for 0.73 ppb of Benzene detected in well MW-13 and 1.0 ppb total Xylenes detected in MW-18. MtBE was detected in wells MW-13, MW-14 and MW-18 at concentrations of 2.4 ppb, 0.98 ppb and 1.8 ppb, respectively. Naphthalene was detected in well MW-13 at a concentration of 0.6 ppb. Concentrations of Naphthalene were reported below the laboratory method detection limits in water samples collected from the remaining wells.

TPHg, TPHd, TPHmo, TPHjf, BTEX, MtBE and naphthalene were reported below the laboratory method detection limits in wells MW-1, MW-12, and NPORD MW-3. TPHg, TPHd, TPHmo and TPHjf concentrations are presented on Figure 4.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of this groundwater monitoring and sampling event, GR concludes and recommends the following:

- Concentrations of TPHd, TPHmo and TPHjf in groundwater samples were generally consistent with those observed during the previous monitoring and sampling events;
- Concentrations of TPHg were limited to the vicinity of wells MW-13 and MW-18;
- No measurable thickness of Separate-Phase Hydrocarbons was detected in MW-18;
- GR recommends the continuation of the current semi-annual monitoring and sampling program for the site. SPH will continue to be removed from well MW-18 on a periodic basis.

If you have any questions about this report, please feel free to contact our Dublin office at (925) 551-7555.

Sincerely,
Gettler-Ryan Inc.

Deanna L. Harding
Project Manager

Hagop Kevork
P.E. No. C55734

Attachments:
Table 1, Groundwater Monitoring Results
Table 2, Field Measurements and Groundwater Analytical Results
Table 3, SPH Thickness and Volumes Purged - MW-18
Figure 1, Vicinity Map
Figure 2, Site Plan
Figure 3, Potentiometric Map
Figure 4, Concentration Map
GR Field Methods and Procedures
Field Data Sheets
SPH Removal Logs
Laboratory Analytical Report and Chain of Custody

CC: Mr. Dave Goldberg, Rolls-Royce Engine Services-Oakland Inc
Ms. Colleen Liang, Port of Oakland

Table 1

Groundwater Monitoring Data and Analytical Results

Rolls-Royce Engine Services Test Facility
6701 Old Earhart Road
Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	SPHT (ft.)	GWE (msl)	TPH-G (µg/L)	TPH-D[1] (µg/L)	TPH-MO (µg/L)	TPH-JF (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Napthalene (µg/L)	SVOC (µg/L)
MW-1															
10/03/07	7.17	3.04	0.00	4.13	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/14/08	7.17	3.02	0.00	4.15	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/08	7.17	3.38	0.00	3.79	<50	<50	<100	51[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/25/08	7.17	3.03	0.00	4.14	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
12/19/08	7.17	2.82	0.00	4.35	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	7.17	3.30	0.00	3.87	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	7.17	2.57	0.00	4.60	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	7.17	3.08	0.00	4.09	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
01/15/10	7.17	2.21	0.00	4.96	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/09/10	7.17	2.95	0.00	4.22	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	7.17	2.31	0.00	4.86	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	7.17	2.94	0.00	4.23	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	7.17	3.00	0.00	4.17	<50	<50	280[23]	72[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	7.17	3.15	0.00	4.02	<50	<50	160	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	7.17	3.30	0.00	3.87	<50	<50	<100	59	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	7.17	3.17	0.00	4.00	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	**7.17**	**2.85**	**0.00**	**4.32**	**<50**	**<50**	**<100**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**
MW-2															
10/03/07	7.03	2.80	0.00	4.23	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/14/08	7.03	2.94	0.00	4.09	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/08	7.03	3.32	0.00	3.71	<50	<50	<100	97[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/25/08	7.03	2.75	0.00	4.28	<50	<50	<100	410[16]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
12/19/08	7.03	2.54	0.00	4.49	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	7.03	3.15	0.00	3.88	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	7.03	2.52	0.00	4.51	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	7.03	2.87	0.00	4.16	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
01/15/10	7.03	2.15	0.00	4.88	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/09/10	7.03	2.79	0.00	4.24	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	7.03	1.92	0.00	5.11	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	7.03	2.70	0.00	4.33	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	7.03	2.41	0.00	4.62	<50	62[6]	340	170[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	7.03	3.03	0.00	4.00	<50	<50	190	51[9]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	7.03	3.21	0.00	3.82	<50	<50	<100	60	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA

Table 1

Groundwater Monitoring Data and Analytical Results

Rolls-Royce Engine Services Test Facility
6701 Old Earhart Road
Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	SPHT (ft.)	GWE (msl)	TPH-G (µg/L)	TPH-D[1] (µg/L)	TPH-MO (µg/L)	TPH-JF (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Napthalene (µg/L)	SVOC (µg/L)
MW-2 (cont)															
09/16/13	7.03	2.85	0.00	4.18	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	**7.03**	**2.47**	**0.00**	**4.56**	**<50**	**53[6]**	**490**	**67[18]**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**
MW-3															
10/02/07	6.73	4.56	0.00	2.17	<50	<50	<100	410	<0.50	<0.50	<0.50	<0.50	1.6[4]	<0.50	NA
03/14/08	6.73	3.98	0.00	2.75	<50	<50	<100	120[9]	<0.50	<0.50	<0.50	<0.50	0.99	<0.50	NA
06/26/08	6.73	4.21	0.00	2.52	<50	<50	<100	610[7]	<0.50	1.7	<0.50	<0.50	0.93	<0.50	NA
09/25/08	6.73	4.25	0.00	2.48	<50	<50	<100	650[16]	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	NA
12/19/08	6.73	4.25	0.00	2.48	<50	<50	<100	520[18]	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	NA
03/26/09	6.73	3.82	0.00	2.91	<50	<50	<100	400[18]	<0.50	<0.50	<0.50	<0.50	0.69	<0.50	NA
06/24/09	6.73	4.21	0.00	2.52	<50	<50	<100	460	<0.50	<0.50	<0.50	<0.50	0.80	<0.50	NA
09/24/09	6.73	4.33	0.00	2.40	<50	<50	<100	400	<0.50	<0.50	<0.50	<0.50	0.70	<0.50	NA
01/15/10	6.73	3.92	0.00	2.81	<50	<50	110	420[18]	<0.50	<0.50	<0.50	<0.50	0.70	<0.50	NA
09/09/10	6.73	4.52	0.00	2.21	<50	<50	<100	450	<0.50	<0.50	<0.50	<0.50	0.62	<0.50	NA
03/21/11	6.73	3.20	0.00	3.53	<50	<50	500	400	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	6.73	4.48	0.00	2.25	<50	70	340	590[18]	<0.50	<0.50	<0.50	<0.50	0.68	<0.50	NA
04/17/12	6.73	3.66	0.00	3.07	<50	56[6]	870	680[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	6.73	4.54	0.00	2.19	<50	<50	120	470	<0.50	<0.50	<0.50	<0.50	0.62	<0.50	NA
03/25/13	6.73	4.35	0.00	2.38	<50	<50	<100	760	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	6.73	4.48	0.00	2.25	<50	62	210	520	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	**6.73**	**4.30**	**0.00**	**2.43**	**<50**	**<50**	**460**	**500[18]**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**
MW-4															
10/2/07[4]	9.79	5.81	0.00	3.98	<50	86	<100	280	<0.50	0.63	<0.50	<0.50	<0.50	<0.50	NA
03/14/08	9.79	5.82	0.00	3.97	<50	3,300	2,400	3,400[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/08	9.79	6.08	0.00	3.71	<50	2,300	1,900	2,700[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/25/08	9.79	5.98	0.00	3.81	<50	1,600	1,400	2,100[16]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
12/19/08	9.79	5.93	0.00	3.86	<50	<50[19]	<100[19]	440[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	9.79	5.65	0.00	4.14	<50	720	550	1,000[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	9.79	5.72	0.00	4.07	<50	<50	<100	480[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	9.79	5.85	0.00	3.94	<50	1,300	1,100	1,700[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
01/15/10	9.79	4.86	0.00	4.93	<50	210	280	580[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<10 - <50[21,22]
09/09/10	9.79	5.75	0.00	4.04	<50	380[6]	510	680[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	9.79	4.95	0.00	4.84	<50	<50	<100	220	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA

Table 1

Groundwater Monitoring Data and Analytical Results

Rolls-Royce Engine Services Test Facility
6701 Old Earhart Road
Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	SPHT (ft.)	GWE (msl)	TPH-G (µg/L)	TPH-D[1] (µg/L)	TPH-MO (µg/L)	TPH-JF (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Napthalene (µg/L)	SVOC (µg/L)
MW-4 (cont)															
09/02/11	9.79	5.76	0.00	4.03	<50	60	<100	490[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	9.79	4.98	0.00	4.81	<50	240[6]	920	1,000[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	9.79	5.92	0.00	3.87	<50	200[6]	600	780[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	9.79	5.90	0.00	3.89	<50	180	170	640	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	9.79	5.78	0.00	4.01	<50	<50	150[13]	490[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	**9.79**	**5.58**	**0.00**	**4.21**	**<50**	**73**	**250**	**330[18]**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**
MW-5															
10/02/07	8.35	4.75	0.00	3.60	<50	5,600	11,000	5,300	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/14/08	8.35	4.40	0.00	3.95	<50	1,200[6]	1,700	1,100[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/08	8.35	4.68	0.00	3.67	<50	1,400[6]	3,200	2,000[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/25/08	8.35	4.52	0.00	3.83	<50	670[6]	1,200	940[16]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
12/19/08	8.35	4.43	0.00	3.92	<50	2,100[6]	4,100	1,900[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	8.35	4.25	0.00	4.10	<50	2,400[6]	5,500	2,600[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	8.35	4.38	0.00	3.97	<50	1,300[6]	2,700	990[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	8.35	4.47	0.00	3.88	<50	1,400[6]	3,000	1,400[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
01/15/10	8.35	3.47	0.00	4.88	<50	450[6]	1,800	870[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/09/10	8.35	4.34	0.00	4.01	<50	890[6]	2,200	600[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	8.35	3.59	0.00	4.76	<50	670[6]	1,600	460[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	8.35	4.39	0.00	3.96	<50	310[6]	760	450[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	8.35	3.88	0.00	4.47	<50	450[6]	960	1,500[18]	<0.50	0.57	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	8.35	4.54	0.00	3.81	<50	190[6]	470	470[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	8.35	4.58	0.00	3.77	<50	510[6]	1,200	680	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	8.35	4.43	0.00	3.92	<50	2,000[6]	4,500	1,700[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	**8.35**	**4.21**	**0.00**	**4.14**	**<50**	**180[6]**	**690**	**330[18]**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**
MW-6															
10/02/07	9.51	5.90	0.00	3.61	<50	3,000[6]	7,700	2,500[7]	<0.50	<0.50	0.86	1.1	<0.50	0.53	NA
03/14/08	9.51	5.55	0.00	3.96	<50	3,600[10]	7,600	2,800[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/08	9.51	5.80	0.00	3.71	<50	3,200[10]	9,400	3,200[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/25/08	9.51	5.69	0.00	3.82	<50	3,500[10]	8,800	3,800[16]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
12/19/08	9.51	5.43	0.00	4.08	<50	1,500[10]	5,500	1,200[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	9.51	5.38	0.00	4.13	<50	2,400[6]	6,800	1,800[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	9.51	5.46	0.00	4.05	<50	490[6]	1,600	450[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA

Table 1

Groundwater Monitoring Data and Analytical Results

Rolls-Royce Engine Services Test Facility
6701 Old Earhart Road
Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	SPHT (ft.)	GWE (msl)	TPH-G (µg/L)	TPH-D[1] (µg/L)	TPH-MO (µg/L)	TPH-JF (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Napthalene (µg/L)	SVOC (µg/L)
MW-6 (cont)															
09/24/09	9.51	5.60	0.00	3.91	<50	1,100[10]	3,400	860[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
01/15/10	9.51	4.57	0.00	4.94	<50	450[6]	2,700	790[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<10 - <50[21,22]
09/09/10	9.51	5.45	0.00	4.06	<50	620[6]	2,800	370[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	9.51	4.68	0.00	4.83	<50	<50	200	100[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	9.51	5.50	0.00	4.01	<50	310[6]	970	260[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	9.51	5.25	0.00	4.26	<50	62[1]	130[23]	650[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	9.51	5.64	0.00	3.87	<50	400[6]	1,300	500[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	9.51	5.64	0.00	3.87	<50	290[6]	870	620	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	9.51	5.51	0.00	4.00	<50	<50	<100[13]	200[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	**9.51**	**5.30**	**0.00**	**4.21**	**<50**	**400[6]**	**2,600**	**490[18]**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**
MW-7															
10/02/07	9.23	5.68	0.00	3.55	<50	12,000[6]	34,000	9,100[7]	<0.50	<0.50	<0.50	<0.50	<0.50	0.76	NA
03/14/08	9.23	5.32	0.00	3.91	<50	7,900[6]	20,000	5,500[11]	<0.50	<0.50	<0.50	<0.50	<0.50	3.5	NA
06/26/08	9.23	5.56	0.00	3.67	<50	3,300[6]	10,000	3,300[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/25/08	9.23	5.46	0.00	3.77	<50	5,300[10]	13,000	6,000[16]	<0.50	<0.50	<0.50	<0.50	<0.50	0.98	NA
12/19/08	9.23	5.38	0.00	3.85	<50	<50[19]	<100[19]	350[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	9.23	5.11	0.00	4.12	<50	710[6]	2,300	790[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	9.23	5.22	0.00	4.01	<50	<50	<100	390	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	9.23	5.38	0.00	3.85	<50	950[6]	2,600	980[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
01/15/10	9.23	4.38	0.00	4.85	<50	910[6]	4,900	1,200[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<10 - <50[21,22]
09/09/10	9.23	5.25	0.00	3.98	<50	1,800[6]	6,800	850[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	9.23	4.49	0.00	4.74	<50	<50	160	240[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	9.23	5.28	0.00	3.95	<50	2,100[6]	6,200	1,200[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	9.23	4.78	0.00	4.45	<50	810[6]	2,600	2,200[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	9.23	5.31	0.00	3.92	<50	510[6]	1,700	700[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	9.23	5.48	0.00	3.75	<50	1,100[6]	3,900	1,800	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	9.23	5.31	0.00	3.92	<50	<50	<100	380[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	**9.23**	**5.09**	**0.00**	**4.14**	**<50**	**660[6]**	**4,100**	**830[18]**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**
MW-8															
09/14/07	8.25	4.65	0.00	3.60	<50	790[3]	2,700	1,000[2]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/14/08	Not able to sample well-no access agreement between Rolls-Royce and Port of Oakland														
07/03/04	8.25	4.49	0.00	3.76	<50	1,200[6]	4,400	1,800[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA

Table 1

Groundwater Monitoring Data and Analytical Results

Rolls-Royce Engine Services Test Facility

6701 Old Earhart Road

Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	SPHT (ft.)	GWE (msl)	TPH-G (µg/L)	TPH-D[1] (µg/L)	TPH-MO (µg/L)	TPH-JF (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Napthalene (µg/L)	SVOC (µg/L)
(MW-8 (cont)															
09/25/08	8.25	4.41	0.00	3.84	<50	<50	130	140[16]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
12/19/08	8.25	4.31	0.00	3.94	<50	160[6]	840	340[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	8.25	4.05	0.00	4.20	<50	470[3]	1,500	570[2]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	8.25	4.21	0.00	4.04	<50	<50	<100	650[2]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	8.25	4.32	0.00	3.93	<50	130[10]	330	340[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
01/15/10	8.25	3.57	0.00	4.68	<50	120[6]	640	410[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/09/10	8.25	4.17	0.00	4.08	<50	82[6]	430	260[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	8.25	3.38	0.00	4.87	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	8.25	4.22	0.00	4.03	<50	63[6]	<100	240[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	8.25	3.70	0.00	4.55	<50	69[6]	340	370[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	8.25	4.33	0.00	3.92	<50	62[6]	210	490[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	8.25	4.31	0.00	3.94	<50	<50	<100	300	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	8.25	4.25	0.00	4.00	<50	96[6]	250	410[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	**8.25**	**4.04**	**0.00**	**4.21**	**<50**	**72[6]**	**850**	**330[18]**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**
MW-9															
10/03/07	9.44	5.81	0.00	3.63	<50	7,700	10,000	6,700	<0.50	<0.50	<0.50	<0.50	<0.50[4]	<0.50	NA
03/14/08	9.44	5.51	0.00	3.93	<50	6,400	8,000	4,000[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/08	9.44	5.72	0.00	3.72	<50	1,600[10]	1,800	1,800[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/25/08	9.44	5.59	0.00	3.85	<50	5,900[10]	9,300	6,300[16]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
12/19/08	9.44	5.43	0.00	4.01	<50	4,100[6]	8,500	4,000[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	9.44	5.26	0.00	4.18	<50	6,900[6]	9,700	5,600[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	9.44	5.42	0.00	4.02	<50	2,900[6]	5,200	1,800[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	9.44	5.53	0.00	3.91	<50	600[10]	1,100	720[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
01/15/10	9.44	4.69	0.00	4.75	<50	1,300[6]	3,100	1,600[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<10 - <50[21,22]
09/09/10	9.44	5.43	0.00	4.01	<50	1,900[6]	4,500	960[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	9.44	4.58	0.00	4.86	<50	280[6]	780	460[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	9.44	5.39	0.00	4.05	<50	250[6]	500	700[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	9.44	4.85	0.00	4.59	<50	1,200[6]	2,500	2,700[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	9.44	5.57	0.00	3.87	<50	750[6]	1,700	940[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	9.44	5.48	0.00	3.96	<50	870[6]	2,600	1,200	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	9.44	5.50	0.00	3.94	<50	420[6]	1,200	520[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	**9.44**	**5.27**	**0.00**	**4.17**	**<50**	**610[6]**	**3,000**	**710[18]**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**

Table 1

Groundwater Monitoring Data and Analytical Results

Rolls-Royce Engine Services Test Facility
6701 Old Earhart Road
Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	SPHT (ft.)	GWE (msl)	TPH-G (µg/L)	TPH-D[1] (µg/L)	TPH-MO (µg/L)	TPH-JF (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Napthalene (µg/L)	SVOC (µg/L)
MW-10															
10/03/07	7.51	3.89	0.00	3.62	110	4,200	1,300	4,500	<0.50	<0.50	<0.50	<0.50	<0.50[4]	<0.50	NA
03/14/08	7.51	3.68	0.00	3.83	53	420	270	420[7]	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	NA
06/26/08	7.51	3.80	0.00	3.71	120	1,200	1,000	2,000	<0.50	<0.50	<0.50	<0.50	<0.50	5.0	NA
09/25/08	7.51	3.68	0.00	3.83	<50	3,100[10]	2,200	3,600	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
12/19/08	7.51	3.54	0.00	3.97	<50	1,700	1,200	1,900[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	7.51	3.36	0.00	4.15	53	1,500[8]	1,300	2,900	<0.50	<0.50	<0.50	<0.50	<0.50	1.8	NA
06/24/09	7.51	3.54	0.00	3.97	<50	710[8]	750	1,400	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	7.51	3.61	0.00	3.90	<50	480[10]	600	1,100[18]	<0.50	<0.50	<0.50	0.69	<0.50	<0.50	NA
01/15/10	7.51	2.81	0.00	4.70	<50	180	210	500[18]	<0.50	<0.50	0.66	3.5	<0.50	3.4	<10 - <50[21,22]
09/09/10	7.51	3.48	0.00	4.03	<50	66[8]	<100	380[18]	<0.50	<0.50	<0.50	<0.50	<0.50	1.6	NA
03/21/11	7.51	2.70	0.00	4.81	<50	<50	<100	610[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	7.51	3.51	0.00	4.00	<50	93	260[23]	890[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	7.51	2.97	0.00	4.54	<50	<50	<100	670[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	7.51	3.64	0.00	3.87	<50	77	180	600[18]	<0.50	<0.50	<0.50	<0.50	<0.50	0.51	NA
03/25/13	7.51	3.98	0.00	3.53	<50	120[24]	<100	750	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	7.51	3.60	0.00	3.91	<50	53	<100	270[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	**7.51**	**3.40**	**0.00**	**4.11**	**<50**	**<50**	**210**	**330[18]**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**
MW-11															
10/03/07	7.60	4.01	0.00	3.59	80	250	490	610	<0.50	<0.50	<0.50	<0.50	<0.50[4]	<0.50	NA
03/14/08	7.60	3.71	0.00	3.89	61	410[6]	1,200	520[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/08	7.60	3.92	0.00	3.68	<50	2,700[10]	7,300	3,600[15]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/25/08	7.60	3.82	0.00	3.78	<50	2,800[10]	5,900	3,800[16]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
12/19/08	7.60	3.71	0.00	3.89	<50	1,500[6]	3,700	1,800[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	7.60	3.49	0.00	4.11	<50	2,300[6]	4,200	2,800[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	7.60	3.70	0.00	3.90	<50	1,100[6]	2,600	1,200[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	7.60	3.37	0.00	4.23	<50	1,400[10]	3,800	1,800[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
01/15/10	7.60	3.02	0.00	4.58	<50	260[6]	860	620[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<10 - <50[21,22]
09/09/10	7.60	3.63	0.00	3.97	<50	510[10]	1,200	520[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	7.60	2.85	0.00	4.75	<50	83[6]	280	410[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	7.60	3.70	0.00	3.90	<50	470[6]	990	720[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	7.60	3.13	0.00	4.47	<50	95[6]	220	1,300[18]	<0.50	<0.50	<0.50	<0.50	0.50	<0.50	NA
09/18/12	7.60	3.83	0.00	3.77	<50	230	600	660[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	7.60	3.80	0.00	3.80	<50	230	450	1,200	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	7.60	3.87	0.00	3.73	<50	130[6]	280	350[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA

Table 1

Groundwater Monitoring Data and Analytical Results

Rolls-Royce Engine Services Test Facility
6701 Old Earhart Road
Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	SPHT (ft.)	GWE (msl)	TPH-G (µg/L)	TPH-D[1] (µg/L)	TPH-MO (µg/L)	TPH-JF (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Napthalene (µg/L)	SVOC (µg/L)
MW-11 (cont)															
06/26/14	**7.60**	**3.55**	**0.00**	**4.05**	**<50**	**220[6]**	**1,000**	**560[18]**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**
MW-12															
10/03/07	7.32	3.61	0.00	3.71	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50[4]	<0.50	NA
03/14/08	7.32	3.35	0.00	3.97	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/08	7.32	3.60	0.00	3.72	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/25/08	7.32	3.50	0.00	3.82	<50	<50	<100	51[16]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
12/19/08	7.32	3.09	0.00	4.23	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	7.32	3.13	0.00	4.19	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	7.32	3.21	0.00	4.11	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	7.32	3.38	0.00	3.94	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
01/15/10	7.32	2.80	0.00	4.52	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/09/10	7.32	3.39	0.00	3.93	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	7.32	2.30	0.00	5.02	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	7.32	3.36	0.00	3.96	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	7.32	2.72	0.00	4.60	<50	<50	<100	99[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	7.32	3.56	0.00	3.76	<50	<50	<100	97[9]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	7.32	3.53	0.00	3.79	<50	<50	<100	73	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	7.32	3.44	0.00	3.88	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	**7.32**	**3.08**	**0.00**	**4.24**	**<50**	**<50**	**<100**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**
MW-13															
10/03/07	6.10	2.86	0.00	3.24	160	70[8]	<100	660	<0.50	<0.50	<0.50	<0.50	1.2[4]	1.7	NA
03/14/08	6.10	1.96	0.00	4.14	350[12]	490	130[13]	1,200	0.89	<0.50	<0.50	<0.50	2.0	8.9	NA
06/26/08	6.10	2.57	0.00	3.53	720	200[8]	<100	4,100[15]	2.0	<0.50	<0.50	0.60	3.3	3.3	NA
09/25/08	6.10	2.48	0.00	3.62	600	<200[17]	130[13]	1,900[16]	1.2	<0.50	<0.50	<0.50	2.9	11	NA
12/19/08	6.10	2.68	0.00	3.42	280	130[8]	<100	1,300[18]	0.89	<0.50	<0.50	<0.50	1.7	4.8	NA
03/26/09	6.10	2.44	0.00	3.66	310	86	120[13]	1,800[18]	0.81	<0.50	<0.50	<0.50	1.7	2.2	NA
06/24/09	6.10	2.91	0.00	3.19	330	170[8]	<100	2,000[19]	1.0	<0.50	<0.50	<0.50	1.9	5.2	NA
09/24/09	6.10	2.81	0.00	3.29	380	180	130[13]	5,400[18]	1.5	<0.50	<0.50	<0.50	2.5	6.8	NA
01/15/10	6.10	1.58	0.00	4.52	230	140	<100	1,600[18]	0.58	<0.50	<0.50	<0.50	1.4	3.1	NA
09/09/10	6.10	2.20	0.00	3.90	230	180[8]	<100	1,400[18]	0.95	<0.50	<0.50	<0.50	2.3	3.6	NA
03/21/11	6.10	1.10	0.00	5.00	260	76[8]	<100	2,400[18]	1.0	<0.50	<0.50	<0.50	1.7	3.1	NA
09/02/11	6.10	2.23	0.00	3.87	380[12]	500	260	1,400[18]	<0.50	<0.50	<0.50	<0.50	1.4	1.4	NA

Table 1

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Rolls-Royce Engine Services Test Facility
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Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	SPHT (ft.)	GWE (msl)	TPH-G (µg/L)	TPH-D[1] (µg/L)	TPH-MO (µg/L)	TPH-JF (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Napthalene (µg/L)	SVOC (µg/L)
MW-13 (cont)															
04/17/12	6.10	1.50	0.00	4.60	310	190	110	3,400[18]	1.0	<0.50	<0.50	<0.50	2.6	1.4	NA
09/18/12	6.10	2.25	0.00	3.85	280	190	140	1,800[18]	0.68	<0.50	<0.50	<0.50	2.3	0.89	NA
03/25/13	6.10	2.52	0.00	3.58	170[12]	<50	<100	610	<0.50	<0.50	<0.50	<0.50	1.4	<0.50	NA
09/16/13	6.10	2.28	0.00	3.82	190[12]	110	<100	1,400[18]	<0.50	<0.50	<0.50	<0.50	1.7	<0.50	NA
06/26/14	**6.10**	**2.17**	**0.00**	**3.93**	**340**	**110**	**150[13]**	**1,900[18]**	**0.73**	**<0.50**	**<0.50**	**<0.50**	**2.4**	**0.6**	**NA**
MW-14															
10/02/07	6.42	2.40	0.00	4.02	67	300	870	1,400	<0.50	<0.50	<0.50	<0.50	1.4[4]	6.1	NA
03/14/08	6.42	2.44	0.00	3.98	50	250[6]	350	500[7]	<0.50	<0.50	<0.50	<0.50	1.7	5.0	NA
06/26/08	6.42	2.62	0.00	3.80	<50	570[10]	2,700	2,000[15]	<0.50	<0.50	<0.50	<0.50	1.4	3.1	NA
09/25/08	6.42	2.58	0.00	3.84	<50	510[10]	1,700	1,800[16]	<0.50	<0.50	<0.50	<0.50	1.0	<0.50	NA
12/19/08	6.42	2.14	0.00	4.28	<50	480[6]	2,100	1,200[18]	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	NA
03/26/09	6.42	2.23	0.00	4.19	<50	79[6]	540	1,000[18]	<0.50	<0.50	<0.50	<0.50	0.89	<0.50	NA
06/24/09	6.42	2.33	0.00	4.09	<50	<50	290	1,100[18]	<0.50	<0.50	<0.50	<0.50	1.2	0.52	NA
09/24/09	6.42	2.47	0.00	3.95	<50	88[10]	350	1,200[18]	<0.50	<0.50	<0.50	<0.50	0.83	<0.50	NA
01/15/10	6.42	1.95	0.00	4.47	<50	60[6]	490	1,100[18]	<0.50	<0.50	<0.50	<0.50	1.0	<0.50	NA
09/09/10	6.42	2.52	0.00	3.90	<50	150[10]	500	890[18]	<0.50	<0.50	<0.50	<0.50	1.2	<0.50	NA
03/21/11	6.42	1.40	0.00	5.02	<50	<50	230	730[18]	<0.50	<0.50	<0.50	<0.50	1.3	<0.50	NA
09/02/11	6.42	2.49	0.00	3.93	<50	140[6]	550	900[18]	<0.50	<0.50	<0.50	<0.50	0.98	<0.50	NA
04/17/12	6.42	1.83	0.00	4.59	<50	140[6]	800	2,400[18]	<0.50	0.69	<0.50	<0.50	1.2	<0.50	NA
09/18/12	6.42	2.65	0.00	3.77	51	130[6]	680	1,300[18]	<0.50	<0.50	<0.50	<0.50	1.0	<0.50	NA
03/25/13	6.42	2.63	0.00	3.79	<50	160	640	2,000	<0.50	<0.50	<0.50	<0.50	1.1	<0.50	NA
09/16/13	6.42	2.53	0.00	3.89	<50	86[6]	360	920[18]	<0.50	<0.50	<0.50	<0.50	0.74	<0.50	NA
06/26/14	**6.42**	**2.15**	**0.00**	**4.27**	**<50**	**100[6]**	**650**	**950[18]**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**0.98**	**<0.50**	**NA**
MW-15															
10/02/07	7.51	4.85	0.00	2.66	<50	99	<100	120	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/14/08	7.51	4.62	0.00	2.89	<50	<50	<100	88[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/08	7.51	4.81	0.00	2.70	<50	<50	<100	84[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/25/08	7.51	4.81	0.00	2.70	<50	<50	<100	53	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
12/19/08	7.51	4.67	0.00	2.84	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	7.51	4.45	0.00	3.06	<50	<50	<100	110[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	7.51	4.68	0.00	2.83	<50	<50	<100	59	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	7.51	4.75	0.00	2.76	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA

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Groundwater Monitoring Data and Analytical Results

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WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	SPHT (ft.)	GWE (msl)	TPH-G (µg/L)	TPH-D[1] (µg/L)	TPH-MO (µg/L)	TPH-JF (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Napthalene (µg/L)	SVOC (µg/L)
MW-15 (cont)															
01/15/10	7.51	4.29	0.00	3.22	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/09/10	7.51	4.78	0.00	2.73	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	7.51	2.71	0.00	4.80	<50	<50	<100	200[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	7.51	4.77	0.00	2.74	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	7.51	3.65	0.00	3.86	<50	<50	120[23]	170[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	7.51	4.89	0.00	2.62	<50	<50	<100	50[9]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	7.51	4.78	0.00	2.73	<50	<50	<100	76	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	7.51	4.80	0.00	2.71	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	**7.51**	**4.58**	**0.00**	**2.93**	**<50**	**<50**	**100**	**71[18]**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**
MW-17															
09/14/07	0.04	4.10	0.00	-4.06	<50	<50	220	150[2]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/14/08	Not able to sample well-no access agreement between Rolls-Royce and Port of Oakland														
07/03/08	0.04	1.98	0.00	-1.94	<50	<50	<100	84[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
9/25/08[14]	0.04	4.77	0.00	-4.73	<50	<50	120	110[16]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
12/19/08	0.04	2.24	0.00	-2.20	<50	<50	<100	54	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	0.04	1.85	0.00	-1.81	<50	<50	<100	71[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	Not able to sample well-Oakland Airport security failed to provide access to well														
09/24/09	0.04	2.97	0.00	-2.93	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
1/15/10[14]	0.04	2.49	0.00	-2.45	<50	<50	<100	59[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/09/10	0.04	2.79	0.00	-2.75	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	0.04	2.25	0.00	-2.21	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	0.04	2.69	0.00	-2.65	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	0.04	2.49	0.00	-2.45	<50	<50	<100	240[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	0.04	2.96	0.00	-2.92	<50	<50	140[23]	84[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	0.04	2.51	0.00	-2.47	<50	<50	<100	93	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	0.04	2.88	0.00	-2.84	<50	<50	<100	69[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	**0.04**	**2.73**	**0.00**	**-2.69**	**<50**	**<50**	**<100**	**70[18]**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**
MW-18															
10/02/07	7.05	4.15	0.55	3.34**	Not developed or sampled due to presence of SPH										
03/14/08	7.05	3.62	0.63	3.93**	Not sampled due to presence of SPH				--	--	--	--	--	--	--
06/26/08	7.05	4.11	1.14	3.85**	Not sampled due to presence of SPH				--	--	--	--	--	--	--
09/25/08	7.05	3.77	0.56	3.73**	Not sampled due to presence of SPH				--	--	--	--	--	--	--

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Groundwater Monitoring Data and Analytical Results

Rolls-Royce Engine Services Test Facility

6701 Old Earhart Road

Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	SPHT (ft.)	GWE (msl)	TPH-G (µg/L)	TPH-D[1] (µg/L)	TPH-MO (µg/L)	TPH-JF (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Napthalene (µg/L)	SVOC (µg/L)
MW-18 (cont)															
12/19/08	7.05	3.30	0.36	4.04**	Not sampled due to presence of SPH				--	--	--	--	--	--	--
03/26/09	7.05	3.28	0.55	4.21**	Not sampled due to presence of SPH				--	--	--	--	--	--	--
06/24/09	7.05	3.53	0.48	3.90**	Not sampled due to presence of SPH				--	--	--	--	--	--	--
09/24/09	7.05	3.57	0.46	3.85**	Not sampled due to presence of SPH				--	--	--	--	--	--	--
01/15/10	7.05	3.02	0.66	4.56**	Not sampled due to presence of SPH				--	--	--	--	--	--	--
09/09/10	7.05	3.18	0.10	3.95**	Not sampled due to presence of SPH				--	--	--	--	--	--	--
03/21/11	7.05	1.99	0.15	5.18**	Not sampled due to presence of SPH				--	--	--	--	--	--	--
09/02/11	7.05	3.49	0.51	3.97**	Not sampled due to presence of SPH				--	--	--	--	--	--	--
04/17/12	7.05	2.52	0.15	4.65**	Not sampled due to presence of SPH				--	--	--	--	--	--	--
09/18/12	7.05	3.14	0.00	3.91	2,100	210,000[10]	190,000	290,000	<0.50	<0.50	<0.50	2.4	2.0	<2.0	NA
03/25/13	7.05	3.27	0.15	3.90**	740	35,000	39,000	61,000	<0.50	<0.50	<0.50	1.7	2.2	<0.80	NA
09/16/13	7.05	3.15	0.00	3.90	570	35,000[10]	37,000	48,000	<0.50	<0.50	<0.50	1.2	1.8	<0.80	NA
06/26/14	**7.05**	**2.91**	**0.00**	**4.14**	**600**	**100,000[8]**	**150,000**	**110,000**	**<0.50**	**<0.50**	**<0.50**	**1.0**	**1.8**	**<0.80**	**NA**
NPORD MW-3															
09/14/07	8.11	4.43	0.00	3.68	<50	<50	<100	64[2]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/14/08	Not able to sample well-no access agreement between Rolls-Royce and Port of Oakland														
07/03/08	8.11	3.96	0.00	4.15	<50	<50	<100	99[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/25/08	8.11	4.06	0.00	4.05	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
12/19/08	8.11	3.78	0.00	4.33	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	8.11	4.22	0.00	3.89	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	8.11	4.02	0.00	4.09	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	8.11	4.19	0.00	3.92	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
01/15/10	8.11	3.51	0.00	4.60	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/09/10	8.11	3.96	0.00	4.15	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	8.11	3.28	0.00	4.83	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	8.11	4.10	0.00	4.01	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	8.11	4.00	0.00	4.11	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	8.11	4.18	0.00	3.93	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	8.11	4.35	0.00	3.76	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	8.11	4.23	0.00	3.88	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	**8.11**	**3.91**	**0.00**	**4.20**	**<50**	**<50**	**<100**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**

Table 1

Groundwater Monitoring Data and Analytical Results

Rolls-Royce Engine Services Test Facility
6701 Old Earhart Road
Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	SPHT (ft.)	GWE (msl)	TPH-G (µg/L)	TPH-D[1] (µg/L)	TPH-MO (µg/L)	TPH-JF (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Napthalene (µg/L)	SVOC (µg/L)
NPORD MW-4															
09/14/07	10.06	6.48	0.00	3.58	50	1,000[3]	1,400	2,000[2]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/14/08	Not able to sample well-no access agreement between Rolls-Royce and Port of Oakland														
07/03/08	10.06	6.26	0.00	3.80	<50	360[6]	700	960[7]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/25/08	10.06	6.28	0.00	3.78	<50	150[6]	240	820[16]	<0.50	<0.50	<0.50	<0.50	<0.50[4]	<0.50	NA
12/19/08	10.06	6.15	0.00	3.91	<50	320[10]	640	1,400[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	10.06	5.91	0.00	4.15	<50	95	160	520[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	10.06	6.10	0.00	3.96	<50	200[6]	100	1,000	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	10.06	6.20	0.00	3.86	<50	200[10,20]	180[20]	500[18,20]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
01/15/10	10.06	5.45	0.00	4.61	<50	93	<100	770[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/09/10	10.06	6.06	0.00	4.00	<50	<50	<100	290[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	10.06	5.31	0.00	4.75	<50	<50	<100	270	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	10.06	6.11	0.00	3.95	<50	95	<100	320[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
04/17/12	10.06	5.58	0.00	4.48	<50	64	130[23]	940[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	10.06	6.27	0.00	3.79	<50	150	250	800[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	10.06	6.23	0.00	3.83	<50	57	<100	820	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	10.06	6.25	0.00	3.81	<50	72	120[13]	560[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	**10.06**	**6.01**	**0.00**	**4.05**	**<50**	**90[6]**	**260**	**520[18]**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**
QA															
09/14/07	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
10/02/07	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/14/08	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
6/26/08[14]	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
07/03/08	--	--	--	--	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/25/08	--	--	--	--	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
12/19/08	--	--	--	--	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/09	--	--	--	--	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/24/09	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/24/09	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
01/15/10	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/09/10	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/21/11	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/02/11	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA

Table 1

Groundwater Monitoring Data and Analytical Results

Rolls-Royce Engine Services Test Facility

6701 Old Earhart Road

Oakland, California

WELL ID/ DATE	TOC* (ft.)	DTW (ft.)	SPHT (ft.)	GWE (msl)	TPH-G (µg/L)	TPH-D[1] (µg/L)	TPH-MO (µg/L)	TPH-JF (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Napthalene (µg/L)	SVOC (µg/L)
QA (cont)															
04/17/12	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/18/12	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/25/13	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
09/16/13	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
06/26/14	--	--	--	--	**<50**	**NA**	**NA**	**NA**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**

Table 1

Groundwater Monitoring Data and Analytical Results

Rolls-Royce Engine Services Test Facility
6701 Old Earhart Road
Oakland, California

EXPLANATIONS:

TOC = Top of Casing Elevation
DTW = Depth to Water
GWE = Groundwater Elevation
ft = feet
SPHT = Separate Phase Hydrocarbon Thickness
TPH-G= Total Petroleum Hydrocarbons as Gasoline
TPH-D = Total Petroleum Hydrocarbons as Diesel
TPH-MO = Total Petroleum Hydrocarbons as Motor Oil
TPH-JF = Total Petroleum Hydrocarbons as Jet Fuel
B = Benzene
T = Toluene
E = Ethylbenzene
X = Total Xylenes
MTBE = Methyl Tertiary Butyl Ether
SVOC = Semi-Volatile Organic Compounds
(µg/L) = Micrograms per liter
NA = Not Analyzed
-- = Not Measured
QA = Trip Blank

ANALYTICAL METHODS:

Kiff Analytical LLC (NELAP #08263CA)
TPH-G, BTEX, MTBE, and Napthalene by EPA Method 8260B
TPH-D, TPH-MO, and TPH-JF by modified EPA Method 8015
SVOC by EPA Method 8270C

* TOC elevations surveyed relative to mean sea level by Morrow Surveying (PLS #5161) on October 8, 2007
** = GWE corrected for the presence of SPH [(TOC-DTW) + (SPH thickness x SPH specific gravity)]. Specific gravity of SPH is assumed to be 0.8.

1 Analyzed with Silica Gel Cleanup
2 Discrete peaks, higher boiling hydrocarbons present in sample that are atypical for Jet Fuel
3 Discrete peaks, higher boiling hydrocarbons present in sample that are atypical for Diesel Fuel
4 Matrix spike/matrix spike duplicate results associated with these samples for the analyte Methyl-t-butyl ether were affected by the analyte concentrations already present in the un-spiked sample.
5 Due to the formation of an emulsion in this sample, the sample was centrifruged and decanted prior to extraction.
6 Hydrocarbons present in this sample are higher-boiling than typical Diesel Fuel.
7 Hydrocarbons present in this sample are higher-boiling than typical Jet Fuel.
8 Lower boiling hydrocarbons are present in this sample that are atypical for Diesel Fuel.
9 Discrete peaks present in this sample that are atypical for Jet Fuel.
10 Some lower-boiling hydrocarbons than Diesel and some higher-boiling hydrocarbons than Diesel are present in this sample.
11 Both lower-boiling and higher-boiling hydrocarbons than Jet Fuel are present in this sample.
12 Sample contained primarily compounds not found in typical Gasoline.
13 Hydrocarbons present in this sample are lower-boiling than typical Motor Oil
14 Sample was analyzed by EPA Method 8260B using bottles that contained headspace bubbles greater than 1/4-inch in diameter.
15 Lower boiling hydrocarbons are present in this sample that are atypical for Jet Fuel.
16 Chromatographic pattern not typical for Jet Fuel.
17 Diesel method reporting limit for this sample was increased due to interference from Gasoline range hydrocarbons.
18 Higher-boiling hydrocarbons are present in this sample that are atypical for Jet Fuel.
19 Laboratory confirmed results

EXPLANATIONS:

[20] Repeat analysis by Modified EPA Method 8015 yielded inconsistent results for sample NPORD MW-4. The concentrations appear to vary between bottles. The highest concentration results are reported.

[21] All analytes were ND or less than their respective reporting limits

[22] Analysis for SVOC requested by Client.

[23] Discrete peaks in Motor Oil range, atypical for Motor Oil.

[24] Discrete peaks in Diesel Range, atypical for Diesel Fuel.

Table 2

Field Measurements and Groundwater Analytical Results

Rolls-Royce Engine Services Test Facility
6701 Old Earhart Road
Oakland, California

WELL ID/ DATE	D.O. Pre-Purge (mg/L)	D.O. Post-Purge (mg/L)	ORP Pre-Purge (mV)	ORP Post-Purge (mV)	Ferric Iron (mg/L)	Ferrous Iron (mg/L)	Nitrate as NO_3 (mg/L)	Sulfate as SO_4 (mg/L)	Methane (µg/L)
MW-1									
09/09/10	0.00	0.74	-462.4	-124.7	3.2	0.81	<10	2,000	117
MW-2									
09/09/10	0.03	0.29	-261.9	-233.5	--	--	--	--	--
MW-3									
09/09/10	0.38	0.24	-149.2	-123.5	--	--	--	--	--
MW-4									
09/09/10	0.09	0.06	-295.2	-299.4	91	2.4	<2.5	8.6	6,590
MW-5									
09/09/10	0.84	0.05	-374	-459	68	12	<2.5	<2.5	4,760
MW-6									
09/09/10	0.22	0.20	-271.8	-273.5	40	<0.10	<2.5	540	3,280
MW-7									
09/09/10	0.07	0.09	-260.7	-257.4	340	18	<2.5	<2.5	6,350
MW-8									
09/09/10	0.14	0.11	-276	-281	23	2.1	<2.5	3.9	8,500
MW-9									
09/09/10	0.00	0.65	-548.1	-501.4	13	<0.10	<2.5	23	8,310
MW-10									
09/09/10	0.11	0.58	-333.3	-391.2	--	--	--	--	--
MW-11									
09/09/10	0.84	0.96	-399.4	-370.1	--	--	--	--	--
MW-12									
09/09/10	0.15	0.49	-340.1	-348.2	--	--	--	--	--
MW-13									
09/09/10	0.45	0.82	-142.9	-130.5	--	--	--	--	--
MW-14									
09/09/10	0.20	0.14	-264.6	-223.9	--	--	--	--	--

Table 2

Field Measurements and Groundwater Analytical Results

Rolls-Royce Engine Services Test Facility

6701 Old Earhart Road

Oakland, California

WELL ID/ DATE	D.O. Pre-Purge (mg/L)	D.O. Post-Purge (mg/L)	ORP Pre-Purge (mV)	ORP Post-Purge (mV)	Ferric Iron (mg/L)	Ferrous Iron (mg/L)	Nitrate as NO_3 (mg/L)	Sulfate as SO_4 (mg/L)	Methane (µg/L)
MW-15									
09/09/10	0.51	0.63	196.1	180.2	--	--	--	--	--
MW-17									
09/09/10	0.40	0.51	168.4	149.1	--	--	--	--	--
NPORD MW-3									
09/09/10	0.46	0.50	-208.2	-211.6	3.2	3.2	<10	1,200	27.8

Table 2

Field Measurements and Groundwater Analytical Results

Rolls-Royce Engine Services Test Facility
6701 Old Earhart Road
Oakland, California

EXPLANATIONS:

ORP = Oxidation Reduction Potential
D.O. = Dissolved Oxygen
(mV) = Millivolts
(µg/L) = Micrograms per liter
(mg/L) = Milligrams per liter
-- = Not Measured

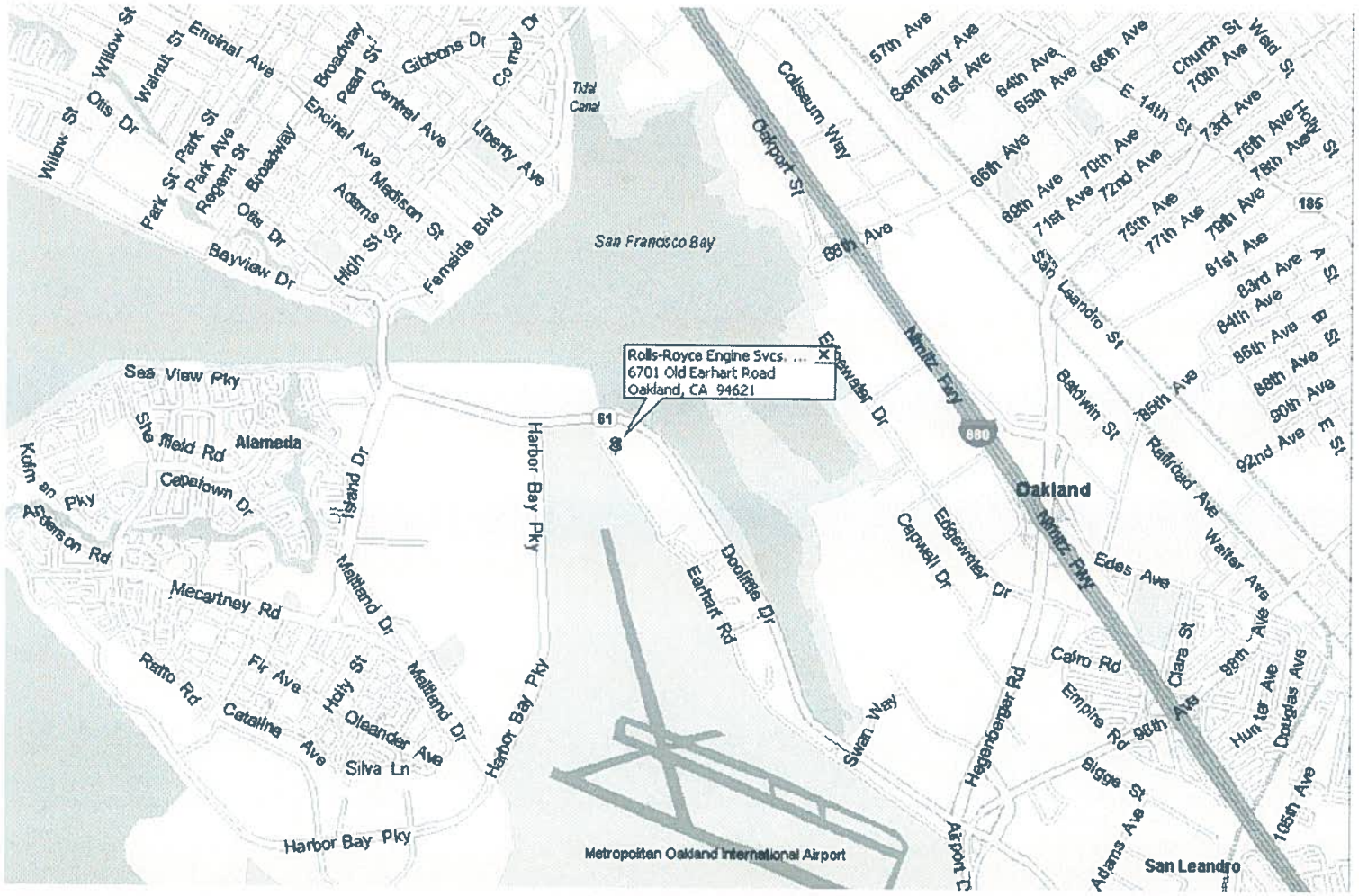
ANALYTICAL METHODS:

Nitratre as NO_3 and Sulfate as SO_3 by EPA Method 300.0
Ferric Iron by 200.7/SM 3500 Fe D
Ferrous Iron by SM 3500 Fe D
Methane by Method RSK-175M

Table 3
SPH Thickness and Volumes Purged - MW-18
Rolls-Royce Engine Services Test Facility
6701 Old Earhart Road
Oakland, California

Date	SPH Thickness (feet)	Depth To SPH From Top of Casing (feet)	Approximate Volume of Water Purged (gallons)	Approximate Volume of SPH Purged (gallons)
9/14/07	0.55	3.60	2.00	2.50
3/14/08	0.63	2.99	0.80	0.30
6/26/08	1.14	2.97	1.00	0.13
9/25/08	0.56	3.21	2.00	0.07
12/19/08	0.36	2.94	0.13	0.16
3/26/09	0.55	2.73	0.08	0.08
6/24/09	0.48	3.05	0.05	0.06
9/24/09	0.46	3.11	0.00	0.07
1/15/10	0.66	2.36	2.00	0.14
9/9/10	0.10	3.08	0.13	0.01
3/21/11	0.15	1.84	0.26	0.03
9/2/11	0.51	2.98	0.16	0.26
4/17/12	0.15	2.37	0.05	0.26
9/18/12	0.00	NA	3.50	0.00
3/25/13	0.15	3.12	4.50	0.15
9/16/13	0.00	NA	3.00	0.00
6/26/14	**0.00**	**NA**	**4.00**	**0.00**
		Totals:	**23.66**	**4.21**

NA = Not Applicable



SITE LOCATION MAP
ROLLS-ROYCE ENGINE SERVICES TEST FACILITY
6701 OLD EARHART RD.
OAKLAND, CA

FIGURE
1

PROJECT NUMBER	REVIEWED BY	DATE	REVISED DATE
25-948218.7		11/13/07	

FILE NAME: P:\Enviro\Rolls Royce\1-Site Location Map.dwg | Layout Tab: Vicinity Map

Source: Figure modified from drawing provided by Morrow Surveying, Dated: 10/8/07.

FIGURE 2

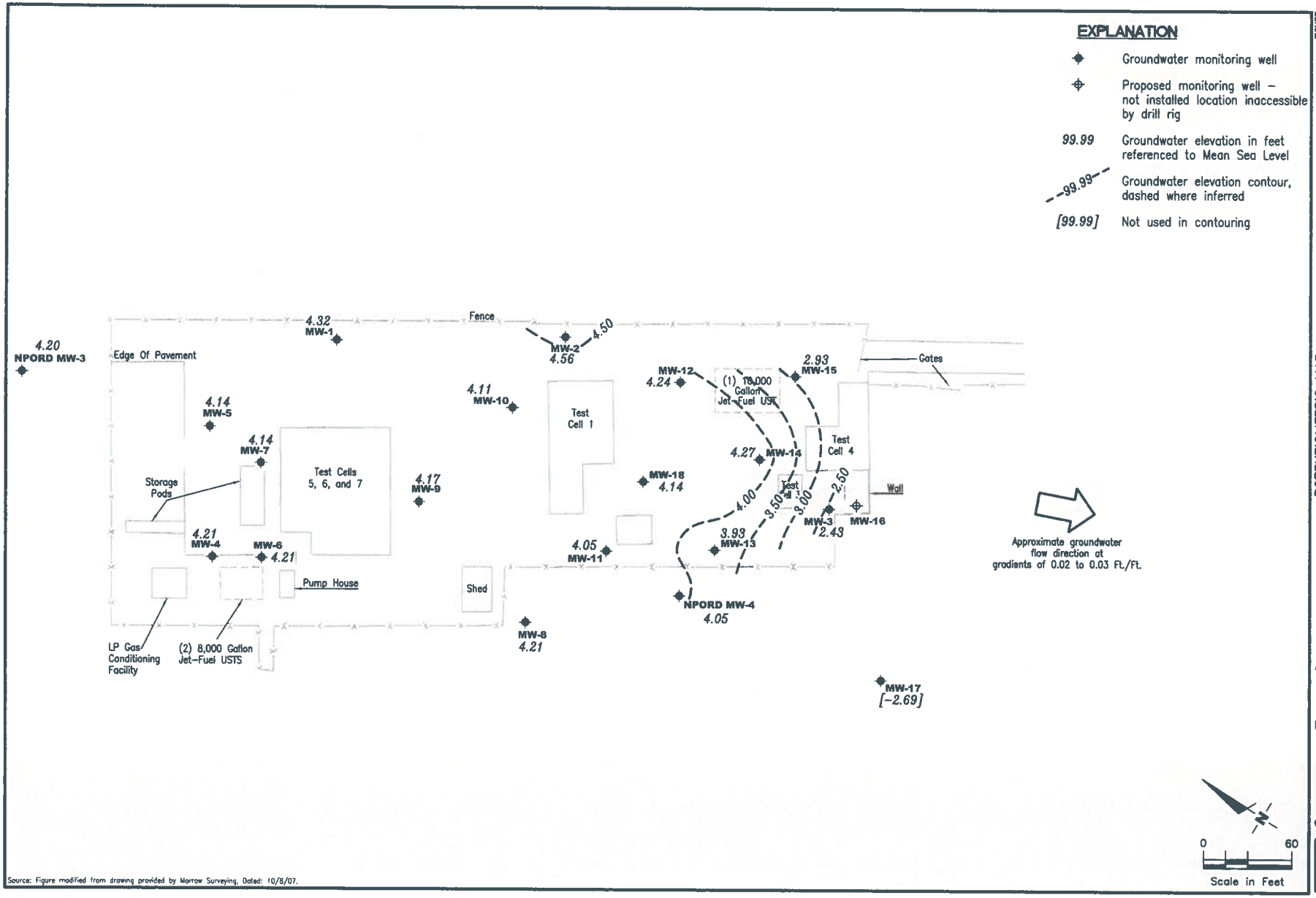
SITE PLAN
Rolls-Royce Engine Services Test Facility
6701 Old Earhart Road
Oakland, CA

DATE 11/07
REVISED DATE

GETTLER-RYAN INC.
6747 Sierra Court, Suite J
Dublin, CA 94568
(925) 551-7555

PROJECT NUMBER 948218.2
REVIEWED BY

FILE PATH: P:\Enviro\Rolls Royce\Q10-Rolls Royce.dwg | Layout Tab: Site Plan



Source: Figure modified from drawing provided by Morrow Surveying, Dated: 10/8/07.

FIGURE 3

POTENTIOMETRIC MAP
Rolls-Royce Engine Services Test Facility
6701 Old Earhart Road
Oakland, CA

DATE June 26, 2014

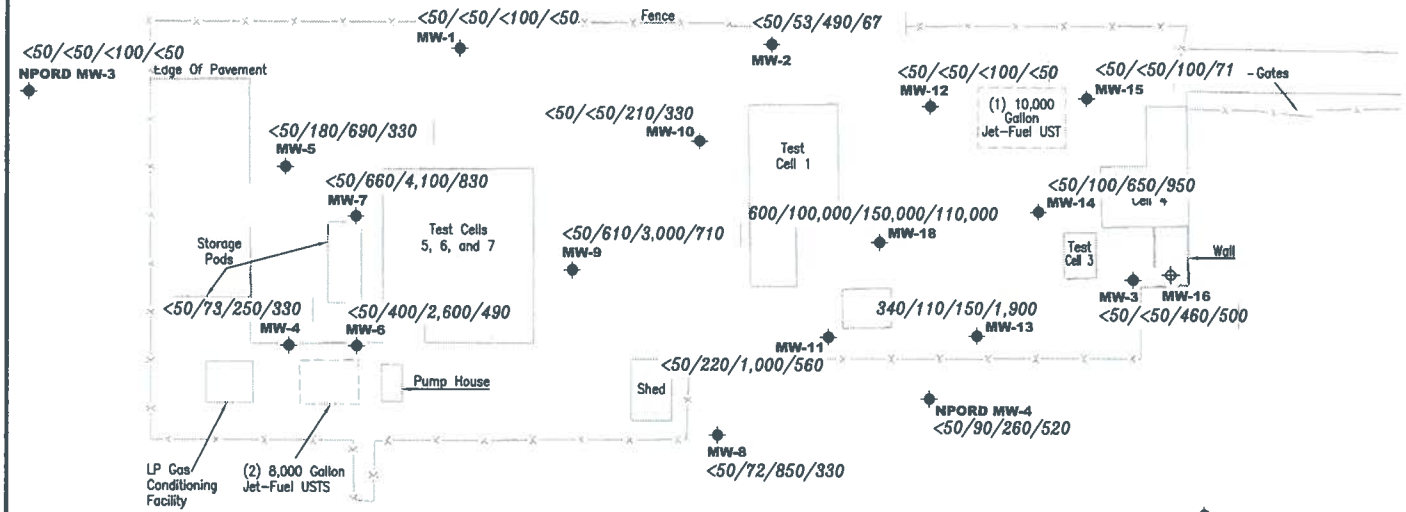
REVISED DATE

GETTLER-RYAN INC.
6805 Sierra Court, Suite G
Dublin, CA 94568
(925) 551-7555

PROJECT NUMBER 948218.2

REVIEWED BY

FILE NAME: P:\Lenora\Rolls Royce\2014-Rolls Royce.dwg | Layout Tab: Plot2



EXPLANATION

- Groundwater monitoring well
- Proposed monitoring well – not installed location inaccessible by drill rig
- *A/B/C/D* Total Petroleum Hydrocarbons TPH as Gasoline/TPH as Diesel/ TPH as Motor Oil/TPH as Jet Fuel concentrations in ppb
- *NS* Not Sampled
- *SPH* Separate Phase Hydrocarbons

0 60

Scale in Feet

Source: Figure modified from drawing provided by Morrow Surveying, Dated: 10/8/07.

FIGURE 4

CONCENTRATION MAP
Rolls-Royce Engine Services Test Facility
6701 Old Earhart Road
Oakland, CA

DATE June 26, 2014
REVISED DATE

GETTLER - RYAN INC.
6805 Sierra Court, Suite G
Dublin, CA 94568
(925) 551-7555

PROJECT NUMBER 948218.2
REVIEWED BY

FILE NAME: P:\Enviro\Rolls Royce\Q14-Rolls Royce.dwg | Layout Tab: Con2

GR FIELD METHODS AND PROCEDURES - GROUNDWATER SAMPLING

Gettler-Ryan Inc. (GR) field personnel adhere to the following procedures for the collection and handling of groundwater samples prior to analysis by the analytical laboratory. All work is performed in accordance with the GR Health & Safety Plan and all client-specific programs. The scope of work and type of analysis to be performed is determined prior to commencing field work.

Prior to sampling, the presence or absence of free-phase hydrocarbons is determined using an interface probe. Product thickness, if present, is measured to the nearest 0.01 foot and is noted in the field notes. In addition, all depth to water level measurements are collected with a static water level indicator and are also recorded in the field notes, prior to purging and sampling any wells.

After water levels are collected and prior to sampling, if purging is to occur, each well is purged a minimum of three well casing volumes of water using pre-cleaned pumps (stack, peristaltic or Grundfos), or disposable bailers. Temperature, pH and electrical conductivity are measured a minimum of three times during the purging (additional parameters such as dissolved oxygen, oxidation reduction potential, turbidity may also be measured, depending on specific scope of work.). Purging continues until these parameters stabilize.

Groundwater samples are collected using disposable bailers. The water samples are transferred from the bailer into appropriate containers. Pre-preserved containers, supplied by analytical laboratories, are used. When pre-preserved containers are not available, the laboratory is instructed to preserve the sample as appropriate. Duplicate samples are collected for the laboratory to use in maintaining quality assurance/quality control standards, as directed by the scope of work. The samples are labeled to include the job number, sample identification, collection date and time, analysis, preservation (if any), and the sample collector's initials. The water samples are placed in a cooler, maintained at 4°C for transport to the laboratory. Once collected in the field, all samples are maintained under chain of custody until delivered to the laboratory.

The chain of custody document includes the job number, type of preservation, if any, analysis requested, sample identification, date and time collected, and the sample collector's name. The chain of custody is signed and dated (including time of transfer) by each person who receives or surrenders the samples, beginning with the field personnel and ending with the laboratory personnel.

A laboratory supplied trip blank accompanies each sampling set. The trip blank is analyzed for some or all of the same compounds as the groundwater samples.

WELL CONDITION STATUS SHEET

Client/ Facility #: Rolls Royce Engine Test
Site Address: 6701 Old Earhart Road
City: Oakland, CA

Job #: 25-948218.1
Event Date: 6.26.14
Sampler: FT

WELL ID	Vault Frame Condition	Gasket/ O-Ring (M) Missing (R) Replaced	Bolts (M) Missing (R) Replaced	Bolt Flanges B=Broken S=Stripped R=Retap	Apron Condition C=Cracked B=Broken G=Gone	Grout Seal (Deficient) Inches from TOC	Casing (Condition prevents tight cap seal)	REPLACE LOCK Y/(N)	REPLACE CAP Y(N)	WELL VAULT Manufacture/Size/ # of Bolts	Pictures Taken Y(N)
MW-3	OK	→	→	S=1/32 BROKEN BOLTS IN FLANGE	OK	→	→			BOART L. | 8" | 3	
MW-13	OK	→					→			MORRISON | 12" | 2	
MW-14	OK	→	→	S=1	OK	→	→			MORRISON | 8" | 2	
MW-15	OK	→					→			MORRISON | 8" | 2	
MW-17	OK	→	→	B=1 S=1	OK	→	→			MORRISON | 8" | 2	
MW-18	OK	→	→	B=2	OK	→	→	↓	↓	MORRISON | 8" | 2	

Comments

WELL CONDITION STATUS SHEET

Client/
Facility #: **Rolls Royce Engine Test**

Site Address: **6701 Old Earhart Road**

City: **Oakland, CA**

Job #: **25-948218.1**

Event Date: 6-26-14

Sampler: AW

WELL ID	Vault Frame Condition	Gasket/ O-Ring (M) Missing (R) Replaced	Bolts (M) Missing (R) Replaced	Bolt Flanges B=Broken S=Stripped R=Retap	Apron Condition C=Cracked B=Broken G=Gone	Grout Seal (Deficient) Inches from TOC	Casing (Condition prevents tight cap seal)	REPLACE LOCK Y/N	REPLACE CAP Y/N	WELL VAULT Manufacture/Size/ # of Bolts	Pictures Taken Y/N
MW-5	OK	→	→	1S	OK	→	→	N	N	Morrison / 8"/2	N
MW-1	OK	→	→	3S	OK	→	→	↓	↓	BL/8"/3	↓
MW-9	OK	→	→	→	→	→	→	↓	↓	Morrison / 8"/2	↓
MW-11	OK	→	→	2S	OK	→	→	↓	↓	↓	↓
MW-10	~~OK~~	→	→	1S	OK	→	→	↓	↓	↓	↓
MW-12	OK	→	→	→	→	→	→	↓	↓	↓	↓
MW-2	OK	→	→	3S	OK	→	→	↓	↓	BL/8"/3	↓

Comments

WELL CONDITION STATUS SHEET

Client/
Facility #: **Rolls Royce Engine Test**

Site Address: **6701 Old Earhart Road**

City: **Oakland, CA**

Job #: **25-948218.1**

Event Date: 6/26/14

Sampler: G. MEDINA

WELL ID	Vault Frame Condition	Gasket/ O-Ring (M) Missing (R) Replaced	Bolts (M) Missing (R) Replaced	Bolt Flanges B=Broken S=Stripped R=Retap	Apron Condition C=Cracked B=Broken G=Gone	Grout Seal (Deficient) Inches from TOC	Casing (Condition prevents tight cap seal)	REPLACE LOCK Y/N	REPLACE CAP Y/N	WELL VAULT Manufacture/Size/ # of Bolts	Pictures Taken Y/N
MW-4	OK							Yes	Yes	MORRISON/8/2	Y
MW-6	OK			B(1)	OK						
MW-7	OK			S(1)	OK						
MW-8	OK			S(2)	OK			No	No		
NPORDMW 3	OK			S(1)	OK					MORRISON/12/2	
NPORDMW 4	OK	NA			OK					MONUMENT	

Comments

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Rolls Royce Engine Test Job Number: 25-948218.1
Site Address: 6701 Old Earhart Road Event Date: 6-26-14 (inclusive)
City: Oakland, CA Sampler: AW

Well ID MW-1
Well Diameter (2) 4 in.
Total Depth 8.43 ft.
Depth to Water 2.85 ft.
Date Monitored: 6-26-14

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

5.58 xVF .17 = 0.94 x3 case volume = Estimated Purge Volume: 3.0 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 3.46

Purge Equipment:
Disposable Bailer ✓
Stainless Steel Bailer
Stack Pump
Peristaltic Pump
QED Bladder Pump
Other:

Sampling Equipment:
Disposable Bailer ✓
Pressure Bailer
Metal Filters
Peristaltic Pump
QED Bladder Pump
Other:

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: ft
Visual Confirmation/Description:
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: ltr
Amt Removed from Well: ltr
Water Removed: ltr

Start Time (purge): 0940 Weather Conditions: Sunny
Sample Time/Date: 1010 / 6-26-14 Water Color: Cloudy Odor: Y (N)
Approx. Flow Rate: — gpm. Sediment Description: Cloudy
Did well de-water? N If yes, Time: — Volume: — gal. DTW @ Sampling: 3.55

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
0944	1.0	7.67	out of range	24.0		
0948	2.0	7.50	↓	24.1		
0952	3.0	7.45	↓	24.1		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-1	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS:

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/Facility#: Rolls Royce Engine Test Job Number: 25-948218.1
Site Address: 6701 Old Earhart Road Event Date: 6-26-14 (inclusive)
City: Oakland, CA Sampler: AW

Well ID MW-2 Date Monitored: 6-26-14
Well Diameter (2) 4 in.
Total Depth 8.93 ft.
Depth to Water 2.47 ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

6.46 xVF .17 = 1.09 x3 case volume = Estimated Purge Volume: 3.5 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 3.76

Purge Equipment:

Disposable Bailer	✓
Stainless Steel Bailer	
Stack Pump	
Peristaltic Pump	
QED Bladder Pump	
Other:	

Sampling Equipment:

Disposable Bailer	✓
Pressure Bailer	
Metal Filters	
Peristaltic Pump	
QED Bladder Pump	
Other:	

Time Started: _____ (2400 hrs)
Time Completed: _____ (2400 hrs)
Depth to Product: _____ ft
Depth to Water: _____ ft
Hydrocarbon Thickness: _____ ft
Visual Confirmation/Description: _____
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: _____ ltr
Amt Removed from Well: _____ ltr
Water Removed: _____ ltr

Start Time (purge): 1315 Weather Conditions: Sunny
Sample Time/Date: 1345 / 6-26-14 Water Color: Cloudy Odor: Y (N)
Approx. Flow Rate: — gpm. Sediment Description: Cloudy
Did well de-water? N If yes, Time: — Volume: — gal. DTW @ Sampling: 3.29

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1320	1.5	7.31	Out of range	22.7		
1325	2.5	7.27	↓	23.1		
1330	3.5	7.25		23.2		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-2	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS:

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Rolls Royce Engine Test | Job Number: 25-948218.1
Site Address: 6701 Old Earhart Road | Event Date: 6.26.14 (inclusive)
City: Oakland, CA | Sampler: FF

Well ID: MW-3
Well Diameter: 2/4 in.
Total Depth: 12.10 ft.
Depth to Water: 4.30 ft.
Date Monitored: 6.26.14

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

7.80 xVF .17 = 1.32 x3 case volume = Estimated Purge Volume: 4.0 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 5.86

Purge Equipment:		Sampling Equipment:	
Disposable Bailer	✓	Disposable Bailer	✓
Stainless Steel Bailer		Pressure Bailer	
Stack Pump		Metal Filters	
Peristaltic Pump		Peristaltic Pump	
QED Bladder Pump		QED Bladder Pump	
Other:		Other:	

Time Started: _____ (2400 hrs)
Time Completed: _____ (2400 hrs)
Depth to Product: _____ ft
Depth to Water: _____ ft
Hydrocarbon Thickness: _____ ft
Visual Confirmation/Description: _____
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: _____ ltr
Amt Removed from Well: _____ ltr
Water Removed: _____ ltr

Start Time (purge): 1100 | Weather Conditions: SUNNY
Sample Time/Date: 1120 / 6.26.14 | Water Color: CLEAR Odor: Y / (N)
Approx. Flow Rate: ✓ gpm. | Sediment Description: NONE
Did well de-water? NO If yes, Time: _____ Volume: _____ gal. DTW @ Sampling: 4.35

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1103	1.5	8.34	1922	20.2		
1106	3.0	8.22	1931	19.9	/	/
1109	4.0	8.15	1943	19.7	/	/

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-3	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: BOLT L. 8" (ISF, 2 BROKEN BOLTS IN FLANGE).

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: **Rolls Royce Engine Test** Job Number: **25-948218.1**

Site Address: **6701 Old Earhart Road** Event Date: 6/26/14 (inclusive)

City: **Oakland, CA** Sampler: GM

Well ID: MW-4 Date Monitored: 6/26/14

Well Diameter: (2) 4 in.

Total Depth: 9.95 ft.

Depth to Water: 5.58 ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

4.37 xVF 0.17 = 0.74 x3 case volume = Estimated Purge Volume: 2.5 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 6.45

Purge Equipment:

Disposable Bailer	X
Stainless Steel Bailer	
Stack Pump	
Peristaltic Pump	
QED Bladder Pump	
Other:	

Sampling Equipment:

Disposable Bailer	X
Pressure Bailer	
Metal Filters	
Peristaltic Pump	
QED Bladder Pump	
Other:	

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: 0 ft
Visual Confirmation/Description:

Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: ltr
Amt Removed from Well: ltr
Water Removed: ltr

Start Time (purge): 0905 Weather Conditions: CLOUDY

Sample Time/Date: 0935 / 6/26/14 Water Color: CLOUDY Odor: (Y) N SLIGHT

Approx. Flow Rate: — gpm. Sediment Description: SILT

Did well de-water? NO If yes, Time: — Volume: — gal. DTW @ Sampling: 6.40

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / (mS) µmhos/cm)	Temperature ((C) / F)	D.O. (mg/L)	ORP (mV)
0907	.75	6.89	4.40	21.2		
0905	1.5	6.76	4.41	21.0		
0912	2.5	6.74	4.44	21.0		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-4	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS:

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: X Add/Replaced Plug: X

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Rolls Royce Engine Test Job Number: 25-948218.1
Site Address: 6701 Old Earhart Road Event Date: 6-26-14 (inclusive)
City: Oakland, CA Sampler: AW

Well ID: MW-5 Date Monitored: 6-26-14
Well Diameter: (2) 4 in.
Total Depth: 9.62 ft.
Depth to Water: 4.21 ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

5.41 xVF .17 = 0.91 x3 case volume = Estimated Purge Volume: 3.0 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 5.29

Purge Equipment:		Sampling Equipment:	
Disposable Bailer	✓	Disposable Bailer	✓
Stainless Steel Bailer		Pressure Bailer	
Stack Pump		Metal Filters	
Peristaltic Pump		Peristaltic Pump	
QED Bladder Pump		QED Bladder Pump	
Other:		Other:	

Time Started: _____ (2400 hrs)
Time Completed: _____ (2400 hrs)
Depth to Product: _____ ft
Depth to Water: _____ ft
Hydrocarbon Thickness: _____ ft
Visual Confirmation/Description: _____
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: _____ ltr
Amt Removed from Well: _____ ltr
Water Removed: _____ ltr

Start Time (purge): 0900 Weather Conditions: Cloudy
Sample Time/Date: 0930 / 6-26-14 Water Color: Cloudy Odor: Y (N)
Approx. Flow Rate: — gpm. Sediment Description: Cloudy
Did well de-water? N If yes, Time: — Volume: — gal. DTW @ Sampling: 5.12

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (°C / F)	D.O. (mg/L)	ORP (mV)
0904	1.0	7.18	out of range	22.7		
0908	2.0	7.23	↓	22.9		
0912	3.0	7.26	↓	22.9		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-5	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: _____

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: **Rolls Royce Engine Test** Job Number: **25-948218.1**
Site Address: **6701 Old Earhart Road** Event Date: 6/26/14 (inclusive)
City: **Oakland, CA** Sampler: GM

Well ID MW-6 Date Monitored: 6/26/14
Well Diameter 2 4 in.
Total Depth 12.67 ft.
Depth to Water 5.30 ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

5.37 xVF 0.17 = 0.91 x3 case volume = Estimated Purge Volume: 3 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 6.37

Purge Equipment:
Disposable Bailer ✓
Stainless Steel Bailer
Stack Pump
Peristaltic Pump
QED Bladder Pump
Other:

Sampling Equipment:
Disposable Bailer ✓
Pressure Bailer
Metal Filters
Peristaltic Pump
QED Bladder Pump
Other:

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: Ø ft
Visual Confirmation/Description:
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: ltr
Amt Removed from Well: ltr
Water Removed: ltr

Start Time (purge): 0945 Weather Conditions: SUNNY
Sample Time/Date: 1008 / 6/26/14 Water Color: BLACK Odor: (Y) N MODERATE
Approx. Flow Rate: — gpm. Sediment Description: SILT
Did well de-water? NO If yes, Time: — Volume: — gal. DTW @ Sampling: 6.29

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS/cm µmhos/cm)	Temperature ((C) F)	D.O. (mg/L)	ORP (mV)
0947	1	6.74	5.42	20.9		
0950	2	6.70	5.50	20.8		
0953	3	6.67	5.53	20.6		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-6	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS:

Add/Replaced Gasket: Add/Replaced Bolt: Add/Replaced Lock: ✓ Add/Replaced Plug: ✓

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: **Rolls Royce Engine Test** Job Number: **25-948218.1**
Site Address: **6701 Old Earhart Road** Event Date: 6/26/14 (inclusive)
City: **Oakland, CA** Sampler: GM

Well ID MW-7
Well Diameter (2) 4 in.
Total Depth 10.10 ft.
Depth to Water 5.09 ft.
5.01 xVF 0.17 = 0.95 x3 case volume = Estimated Purge Volume: 3 gal.
Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 6.09

Date Monitored: 6/26/14

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

Purge Equipment:
Disposable Bailer X
Stainless Steel Bailer
Stack Pump
Peristaltic Pump
QED Bladder Pump
Other:

Sampling Equipment:
Disposable Bailer X
Pressure Bailer
Metal Filters
Peristaltic Pump
QED Bladder Pump
Other:

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: 0 ft
Visual Confirmation/Description:
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: ltr
Amt Removed from Well: ltr
Water Removed: ltr

Start Time (purge): 1020 Weather Conditions: Sunny
Sample Time/Date: 1044 / 6/26/14 Water Color: Black Odor: (Y) N STRONG
Approx. Flow Rate: ~ gpm. Sediment Description: Silt
Did well de-water? No If yes, Time: — Volume: — gal. DTW @ Sampling: 6.03

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / (mS) µmhos/cm)	Temperature (C) F)	D.O. (mg/L)	ORP (mV)
1023	1	6.84	5.07	20.2		
1026	2	6.79	5.10	20.1		
1029	3	6.75	5.14	19.9		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-7	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS:

Add/Replaced Gasket: Add/Replaced Bolt: Add/Replaced Lock: Add/Replaced Plug:

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Rolls Royce Engine Test Job Number: 25-948218.1
Site Address: 6701 Old Earhart Road Event Date: 6/26/14 (inclusive)
City: Oakland, CA Sampler: GM

Well ID: MW-8
Well Diameter: (2) 4 in.
Total Depth: 9.79 ft.
Depth to Water: 4.04 ft.
Date Monitored: 6/26/14

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

5.75 xVF 0.17 = 0.97 x3 case volume = Estimated Purge Volume: 3 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 5.19

Purge Equipment:
Disposable Bailer: 6
Stainless Steel Bailer:
Stack Pump:
Peristaltic Pump:
QED Bladder Pump:
Other:

Sampling Equipment:
Disposable Bailer: X
Pressure Bailer:
Metal Filters:
Peristaltic Pump:
QED Bladder Pump:
Other:

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: 0 ft
Visual Confirmation/Description:
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: ltr
Amt Removed from Well: ltr
Water Removed: ltr

Start Time (purge): 1245 Weather Conditions: Sunny
Sample Time/Date: 1320/6/26/14 Water Color: BLACK Odor: (Y) N MODERATE
Approx. Flow Rate: — gpm. Sediment Description: SILT
Did well de-water? NO If yes, Time: — Volume: — gal. DTW @ Sampling: 4.91

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / (mS) µmhos/cm)	Temperature ((C) F)	D.O. (mg/L)	ORP (mV)
1247	1	7.31	3.77	21.9		
1249	2	7.26	3.80	21.6		
1251	3	7.22	3.83	21.4		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-8	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS:

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Rolls Royce Engine Test | Job Number: 25-948218.1
Site Address: 6701 Old Earhart Road | Event Date: 6-26-14 (inclusive)
City: Oakland, CA | Sampler: AW

Well ID: MW-9
Well Diameter: (2) 4 in.
Total Depth: 9.95 ft.
Depth to Water: 5.27 ft.
Date Monitored: 6-26-14

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

4.68 xVF .17 = 0.79 x3 case volume = Estimated Purge Volume: 25 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 6.20

Purge Equipment:		Sampling Equipment:	
Disposable Bailer	✓	Disposable Bailer	✓
Stainless Steel Bailer		Pressure Bailer	
Stack Pump		Metal Filters	
Peristaltic Pump		Peristaltic Pump	
QED Bladder Pump		QED Bladder Pump	
Other:		Other:	

Time Started: _____ (2400 hrs)
Time Completed: _____ (2400 hrs)
Depth to Product: _____ ft
Depth to Water: _____ ft
Hydrocarbon Thickness: _____ ft
Visual Confirmation/Description: _____
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: _____ ltr
Amt Removed from Well: _____ ltr
Water Removed: _____ ltr

Start Time (purge): 1025 | Weather Conditions: Sunny
Sample Time/Date: 1055 / 6-26-14 | Water Color: Cloudy | Odor: Y / (N)
Approx. Flow Rate: — gpm. | Sediment Description: Cloudy
Did well de-water? N | If yes, Time: — | Volume: — gal. | DTW @ Sampling: 6.02

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1029	1.0	7.23	out of range	20.8		
1033	1.5	7.28	↓	21.0		
1037	2.5	7.28		21.2		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-9	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS:

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: **Rolls Royce Engine Test** Job Number: **25-948218.1**

Site Address: **6701 Old Earhart Road** Event Date: 6-26-14 (inclusive)

City: **Oakland, CA** Sampler: AW

Well ID MW-10 Date Monitored: 6-26-14

Well Diameter (2) 4 in.

Total Depth 10.09 ft.

Depth to Water 3.40 ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

6.69 xVF .17 = 1.13 x3 case volume = Estimated Purge Volume: 3.5 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 4.73

Purge Equipment:		Sampling Equipment:	
Disposable Bailer	✓	Disposable Bailer	✓
Stainless Steel Bailer		Pressure Bailer	
Stack Pump		Metal Filters	
Peristaltic Pump		Peristaltic Pump	
QED Bladder Pump		QED Bladder Pump	
Other:		Other:	

Time Started: _____ (2400 hrs)
Time Completed: _____ (2400 hrs)
Depth to Product: _____ ft
Depth to Water: _____ ft
Hydrocarbon Thickness: _____ ft
Visual Confirmation/Description: _____
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: _____ ltr
Amt Removed from Well: _____ ltr
Water Removed: _____ ltr

Start Time (purge): 1150 Weather Conditions: Sunny

Sample Time/Date: 1220 / 6-26-14 Water Color: Cloudy Odor (Y) / N H2S odor

Approx. Flow Rate: — gpm. Sediment Description: Cloudy

Did well de-water? N If yes, Time: — Volume: — gal. DTW @ Sampling: 4.29

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1155	1.5	7.37	out of range	23.2		
1200	2.5	7.39	↓	22.8		
1205	3.5	7.39	↓	22.9		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-10	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS:

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: **Rolls Royce Engine Test** Job Number: **25-948218.1**
Site Address: **6701 Old Earhart Road** Event Date: 6-26-14 (inclusive)
City: **Oakland, CA** Sampler: AW

Well ID MW-11
Well Diameter 2 4 in.
Total Depth 9.70 ft.
Depth to Water 3.55 ft.
6-15 xVF .17 = 1.04 x3 case volume = Estimated Purge Volume: 3.5 gal.
Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 4.78

Date Monitored: 6-26-14

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

Purge Equipment:		Sampling Equipment:	
Disposable Bailer	✓	Disposable Bailer	✓
Stainless Steel Bailer		Pressure Bailer	
Stack Pump		Metal Filters	
Peristaltic Pump		Peristaltic Pump	
QED Bladder Pump		QED Bladder Pump	
Other:		Other:	

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: ft
Visual Confirmation/Description:
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: ltr
Amt Removed from Well: ltr
Water Removed: ltr

Start Time (purge): 1105 Weather Conditions: Sunny
Sample Time/Date: 1135 / 6-26-14 Water Color: black Odor: (Y) N H2S odor
Approx. Flow Rate: - gpm. Sediment Description: Cloudy
Did well de-water? N If yes, Time: - Volume: - gal. DTW @ Sampling: 4.42

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1110	1.5	7.37	out of range	19.9		
1115	2.5	7.32	↓	20.2		
1120	3.5	7.30		20.4		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-11	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS:

Add/Replaced Gasket: Add/Replaced Bolt: Add/Replaced Lock: Add/Replaced Plug:

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: **Rolls Royce Engine Test** Job Number: **25-948218.1**
Site Address: **6701 Old Earhart Road** Event Date: 6-26-14 (inclusive)
City: **Oakland, CA** Sampler: AW

Well ID MW-12 Date Monitored: 6-26-14
Well Diameter (2) 4 in.
Total Depth 9.95 ft.
Depth to Water 3.08 ft. ☐ Check if water column is less then 0.50 ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

6.87 xVF .17 = 1.16 x3 case volume = Estimated Purge Volume: 3.5 gal.
Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 4.45

Purge Equipment:		Sampling Equipment:	
Disposable Bailer	✓	Disposable Bailer	✓
Stainless Steel Bailer		Pressure Bailer	
Stack Pump		Metal Filters	
Peristaltic Pump		Peristaltic Pump	
QED Bladder Pump		QED Bladder Pump	
Other:		Other:	

Time Started: _____ (2400 hrs)
Time Completed: _____ (2400 hrs)
Depth to Product: _____ ft
Depth to Water: _____ ft
Hydrocarbon Thickness: _____ ft
Visual Confirmation/Description: _____
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: _____ ltr
Amt Removed from Well: _____ ltr
Water Removed: _____ ltr

Start Time (purge): 1230 Weather Conditions: Sunny
Sample Time/Date: 1300 / 6-26-14 Water Color: Cloudy Odor Y / N H2S Odor
Approx. Flow Rate: - gpm. Sediment Description: Cloudy
Did well de-water? N If yes, Time: - Volume: - gal. DTW @ Sampling: 3.39

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1235	1.5	7.56	out of range	23.2		
1240	2.3	7.51	↓	23.3		
1245	3.5	7.49		23.5		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-12	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: _____

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: **Rolls Royce Engine Test** Job Number: **25-948218.1**
Site Address: **6701 Old Earhart Road** Event Date: 6.26.14 (inclusive)
City: **Oakland, CA** Sampler: FT

Well ID MW-13
Well Diameter 2/④ in.
Total Depth 9.57 ft.
Depth to Water 2.17 ft.
7.35 xVF .66 = 4.85 x3 case volume = Estimated Purge Volume: 15.0 gal.
Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 3.64

Date Monitored: 6.26.14

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

Purge Equipment:		Sampling Equipment:	
Disposable Bailer	✓	Disposable Bailer	✓
Stainless Steel Bailer		Pressure Bailer	
Stack Pump		Metal Filters	
Peristaltic Pump		Peristaltic Pump	
QED Bladder Pump		QED Bladder Pump	
Other:		Other:	

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: ft
Visual Confirmation/Description:
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: ltr
Amt Removed from Well: ltr
Water Removed: ltr

Start Time (purge): 1140 Weather Conditions: SUNNY
Sample Time/Date: 1300 /6.26.14 Water Color: CLEAR Odor: Y / (N)
Approx. Flow Rate: gpm. Sediment Description: NONE
Did well de-water? Yes If yes, Time: 1148 Volume: 5.0 gal. DTW @ Sampling: 3.61

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (°C / F)	D.O. (mg/L)	ORP (mV)
1148	5.0	7.88	2456	22.0		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-13	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: MODERATE 12" OIL REACTION TO HCL

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Rolls Royce Engine Test Job Number: 25-948218.1
Site Address: 6701 Old Earhart Road Event Date: 6.26.14 (inclusive)
City: Oakland, CA Sampler: FT

Well ID: MW-14 Date Monitored: 6.26.14
Well Diameter: 2/4 in.
Total Depth: 10.04 ft.
Depth to Water: 2.15 ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

7.89 xVF .17 = 1.34 x3 case volume = Estimated Purge Volume: 4.0 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 3.72

Purge Equipment:		Sampling Equipment:	
Disposable Bailer	✓	Disposable Bailer	✓
Stainless Steel Bailer		Pressure Bailer	
Stack Pump		Metal Filters	
Peristaltic Pump		Peristaltic Pump	
QED Bladder Pump		QED Bladder Pump	
Other:		Other:	

Time Started: _____ (2400 hrs)
Time Completed: _____ (2400 hrs)
Depth to Product: _____ ft
Depth to Water: _____ ft
Hydrocarbon Thickness: _____ ft
Visual Confirmation/Description: _____
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: _____ ltr
Amt Removed from Well: _____ ltr
Water Removed: _____ ltr

Start Time (purge): 1025 Weather Conditions: SUNNY
Sample Time/Date: 1044 / 6.26.14 Water Color: CLEAR Odor: Ⓨ / N MODERATE
Approx. Flow Rate: ✓ gpm. Sediment Description: NONE
Did well de-water? NO If yes, Time: _____ Volume: _____ gal. DTW @ Sampling: 2.17

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (Ⓒ / F)	D.O. (mg/L)	ORP (mV)
1028	1.5	8.06	2260	23.5		
1031	3.0	8.10	2279	23.9		
1034	4.0	7.95	2287	23.6	✓	✓

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-14	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: MORRISON 8" (15ft)

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Rolls Royce Engine Test Job Number: 25-948218.1
Site Address: 6701 Old Earhart Road Event Date: 6-26-14 (inclusive)
City: Oakland, CA Sampler: FT

Well ID: MW-15 Date Monitored: 6-26-14
Well Diameter: 2/4 in.
Total Depth: 10.00 ft.
Depth to Water: 4.58 ft. ☐ Check if water column is less then 0.50 ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

5.42 xVF .17 = .92 x3 case volume = Estimated Purge Volume: 3.0 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 5.66

Purge Equipment:		Sampling Equipment:	
Disposable Bailer	✓	Disposable Bailer	✓
Stainless Steel Bailer		Pressure Bailer	
Stack Pump		Metal Filters	
Peristaltic Pump		Peristaltic Pump	
QED Bladder Pump		QED Bladder Pump	
Other:		Other:	

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: ft
Visual Confirmation/Description:
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: ltr
Amt Removed from Well: ltr
Water Removed: ltr

Start Time (purge): 0950 Weather Conditions: SUNNY / CLOUDY
Sample Time/Date: 1010 / 6.26.14 Water Color: CLEAR Odor: Y / (N)
Approx. Flow Rate: ✓ gpm. Sediment Description: NONE
Did well de-water? NO If yes, Time: ____ Volume: ____ gal. DTW @ Sampling: 5.40

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
0953	1.0	7.45	2164	23.1		
0956	2.0	7.52	2173	23.7		
0959	3.0	7.60	2182	23.8	✓	✓

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-15	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: MORRISON 8"

Add/Replaced Gasket: ____ Add/Replaced Bolt: ____ Add/Replaced Lock: ____ Add/Replaced Plug: ____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: **Rolls Royce Engine Test** Job Number: **25-948218.1**

Site Address: **6701 Old Earhart Road** Event Date: 6.26.14 (inclusive)

City: **Oakland, CA** Sampler: FT

Well ID MW-17 Date Monitored: 6.26.14

Well Diameter (2)4 in.

Total Depth 9.81 ft.

Depth to Water 2.73 ft. ☐ Check if water column is less then 0.50 ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

7.08 xVF .17 = 1.20 x3 case volume = Estimated Purge Volume: 4.0 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 4.14

Purge Equipment:		Sampling Equipment:	
Disposable Bailer	✓	Disposable Bailer	✓
Stainless Steel Bailer		Pressure Bailer	
Stack Pump		Metal Filters	
Peristaltic Pump		Peristaltic Pump	
QED Bladder Pump		QED Bladder Pump	
Other:		Other:	

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: ft
Visual Confirmation/Description:
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: ltr
Amt Removed from Well: ltr
Water Removed: ltr

Start Time (purge): 0900 Weather Conditions: CLOUDY

Sample Time/Date: 0930 / 6.26.14 Water Color: CLEAR Odor: Y / (N)

Approx. Flow Rate: ✓ gpm. Sediment Description: NONE

Did well de-water? YES If yes, Time: Volume: 2.0 gal. DTW @ Sampling: 4.12

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
0903	1.5	7.42	2015	20.2		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-17	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: MORRISON 8" (1BF, 1SF)
REACTION TO HCL

Add/Replaced Gasket: Add/Replaced Bolt: Add/Replaced Lock: Add/Replaced Plug:

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Rolls Royce Engine Test | Job Number: 25-948218.1
Site Address: 6701 Old Earhart Road | Event Date: 6.26.14 (inclusive)
City: Oakland, CA | Sampler: FT

Well ID: MW-18
Well Diameter: 2 | 4 in.
Total Depth: 9.95 ft.
Depth to Water: 2.91 ft.
Date Monitored: 6.26.14

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

7.04 xVF .17 = 1.19 x3 case volume = Estimated Purge Volume: 4.0 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 4.31

Purge Equipment:		Sampling Equipment:	
Disposable Bailer	✓	Disposable Bailer	✓
Stainless Steel Bailer		Pressure Bailer	
Stack Pump		Metal Filters	
Peristaltic Pump		Peristaltic Pump	
QED Bladder Pump		QED Bladder Pump	
Other:		Other:	

Time Started: _____ (2400 hrs)
Time Completed: _____ (2400 hrs)
Depth to Product: _____ ft
Depth to Water: _____ ft
Hydrocarbon Thickness: _____ ft
Visual Confirmation/Description: _____
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: _____ ltr
Amt Removed from Well: _____ ltr
Water Removed: _____ ltr

Start Time (purge): 1215 | Weather Conditions: SUNNY
Sample Time/Date: 1235 / 6.26.14 | Water Color: CLEAR | Odor: (Y) / N | STRONG
Approx. Flow Rate: ✓ gpm. | Sediment Description: NONE
Did well de-water? NO | If yes, Time: _____ | Volume: _____ gal. | DTW @ Sampling: 2.97

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (°C / F)	D.O. (mg/L)	ORP (mV)
1218	1.5	8.26	2862	20.6		
1221	3.0	8.20	2879	20.9		
1224	4.0	8.16	2891	21.2		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-18	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: MORRISON 8" (2 BF)
NO MEASUREABLE PRODUCT BY INTERFACE PROBE DETECTED.
AS I BAILED THE WELL (PURGED) PRODUCT APPEARED ON THE OUTSIDE OF THE BAILER.

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: **Rolls Royce Engine Test** Job Number: **25-948218.1**

Site Address: **6701 Old Earhart Road** Event Date: 6/26/14 (inclusive)

City: **Oakland, CA** Sampler: GM

Well ID NPORDMW-3 Date Monitored: 6/26/14

Well Diameter 2 (4) in.

Total Depth 16.46 ft.

Depth to Water 3.91 ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

12.55 xVF 0.66 = 8.28 x3 case volume = Estimated Purge Volume: 25 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 6.42

Purge Equipment:		Sampling Equipment:	
Disposable Bailer		Disposable Bailer	X
Stainless Steel Bailer		Pressure Bailer	
Stack Pump	X	Metal Filters	
Peristaltic Pump		Peristaltic Pump	
QED Bladder Pump		QED Bladder Pump	
Other:		Other:	

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: Ø ft
Visual Confirmation/Description:
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: ltr
Amt Removed from Well: ltr
Water Removed: ltr

Start Time (purge): 1100 Weather Conditions: Sunny

Sample Time/Date: 1140 / 6/26/14 Water Color: Clear Odor: Y / (N)

Approx. Flow Rate: 2 gpm. Sediment Description: SC Silt

Did well de-water? No If yes, Time: — Volume: — gal. DTW @ Sampling: 6.40

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / (mS) µmhos/cm)	Temperature ((C) F)	D.O. (mg/L)	ORP (mV)
1105	9	7.22	9.10	21.6		
1109	17	7.15	9.22	21.0		
1113	25	7.13	9.31	20.9		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
NPORDMW-3	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: 2 tubes in well.

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: **Rolls Royce Engine Test** Job Number: **25-948218.1**
Site Address: **6701 Old Earhart Road** Event Date: 6/26/14 (inclusive)
City: **Oakland, CA** Sampler: GM

Well ID NPORDMW4 Date Monitored: 6/26/14
Well Diameter 2 4 in.
Total Depth 11.43 ft.
Depth to Water 6.01 ft. ☐ Check if water column is less then 0.50 ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

5.42 xVF 0.17 = 0.92 x3 case volume = Estimated Purge Volume: 3 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 7.09

Purge Equipment:

Disposable Bailer	X
Stainless Steel Bailer	
Stack Pump	
Peristaltic Pump	
QED Bladder Pump	
Other:	

Sampling Equipment:

Disposable Bailer	X
Pressure Bailer	
Metal Filters	
Peristaltic Pump	
QED Bladder Pump	
Other:	

Time Started: _____ (2400 hrs)
Time Completed: _____ (2400 hrs)
Depth to Product: _____ ft
Depth to Water: _____ ft
Hydrocarbon Thickness: Ø ft
Visual Confirmation/Description: _____
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: _____ ltr
Amt Removed from Well: _____ ltr
Water Removed: _____ ltr

Start Time (purge): 1200 Weather Conditions: SUNNY/WINDY
Sample Time/Date: 1230 / 6/26/14 Water Color: BLACK Odor (Y) N MODERATE
Approx. Flow Rate: — gpm. Sediment Description: SILT
Did well de-water? NO If yes, Time: _____ Volume: — gal. DTW @ Sampling: 6.97

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1203	1	7.31	7.84	22.1		
1205	2	7.27	7.91	21.6		
1207	3	7.25	7.98	21.5		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
NPORDMW4	7x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: _____

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

PES Environmental, Inc.
Engineering & Environmental Services

LOCATION: BRESO TEST CELL
PROJECT:
JOB NO.:

SEPARATE-PHASE HYDROCARBON REMOVAL LOG

Date	Time	Well ID	Depth to Product (feet BTOC)	Depth to Water (feet BTOC)	Product Thickness (feet)	Amount of Product Removed	Notes
12-9-13	13:00	MW18				120	
12-17-13	05:00	MW18				80	
12-23-13	08:00	MW18				90	
1-8-14	05:00	MW18				270	
1-14-14	16:00	MW18				110	
1-22-14	10:45	MW18				112	
1-30-14	05:00	MW18				90	
2-11-14	05:00	MW18				310	
2-24-14	05:00	MW18				190	
3-11-14	07:00	MW18				480	
3-18-14	5:30	MW18				370	
3-28-14	05:00	MW18				440	

PES Environmental, Inc.
Engineering & Environmental Services

LOCATION: BAESO TEST CELL
PROJECT:
JOB NO.:

SEPARATE-PHASE HYDROCARBON REMOVAL LOG

Date	Time	Well ID	Depth to Product (feet BTOC)	Depth to Water (feet BTOC)	Product Thickness (feet)	Amount of Product Removed	Notes
4-2-14	05:10	MW18				100	
4-11-14	05:00	MW18				470	
4-16-14	05:14	MW18				470	
4-23-14	05:15	MW18				450	
5-6-14	05:25	MW18				110	
5-12-14	05:05	MW18				80	
5-22-14	05:30	MW18				460	
6-3-14	05:15	MW18				520	
6-11-14	05:10	MW18				500	
6-18-14	05:00	MW18				410	
6-30-14	05:00	MW18				460	
7-8-14	05:10	MW18				510	

PES Environmental, Inc.
Engineering & Environmental Services

LOCATION: RREGO TEST CELL
PROJECT:
JOB NO.:

SEPARATE-PHASE HYDROCARBON REMOVAL LOG

Date	Time	Well ID	Depth to Product (feet BTOC)	Depth to Water (feet BTOC)	Product Thickness (feet)	Amount of Product Removed	Notes
7-17-14	5:15	MW18				410	
7-21-14	5:10	MW18				106	
7-30	5:15	MW18				90	
8-4	5:05	MW18				420	
8-11	5:00	MW18				300	
8-18	5:00	MW18				20	

KIFF Analytical LLC

Report Number : 88565
Date : 07/11/2014

Laboratory Results

Doug Lee
Gettler-Ryan Inc.
6805 Sierra Court, Suite G
Dublin, CA 94568

Subject : 20 Water Samples
Project Name : Rolls-Royce Engine Test Facility
Project Number : 25-948218.1

Dear Mr. Lee,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed. Testing procedures comply with the 2003 NELAC and TNI 2009 standards. Laboratory results relate only to the samples tested. This report may be freely reproduced in full, but may only be reproduced in part with the express permission of Kiff Analytical, LLC.
Kiff Analytical, LLC is certified by the State of California under the Environmental Laboratory Accreditation Program (ELAP), lab number 08263CA.
If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Troy G. Turpen

Troy Turpen

KIFF Analytical LLC

Report Number : 88565
Date : 07/11/2014

Subject : 20 Water Samples
Project Name : Rolls-Royce Engine Test Facility
Project Number : 25-948218.1

Case Narrative

Samples MW-4, MW-5, W-13 and MW-14 were analyzed by EPA Method 8260B from a bottle that contained headspace bubbles greater than 1/4 inch in diameter.

The Method Reporting Limit for Naphthalene has been increased due to the presence of an interfering compound for sample MW-18.

Recoveries for some Matrix Spike/ Matrix Spike Duplicate analytes were outside control limits. This may indicate a bias for the samples that were spiked. Since the LCS recoveries were within control limits, no data are flagged.

Sample MW-13 was analyzed outside of hold time for Method EPA 8260B. The hydrochloric acid (HCl) preservation was insufficient to maintain a pH of 2.0 or less required to extend sample hold time from 7 to 14 days.

Surrogate Recovery for samples MW-14 and NPORD-MW-4 for test method Mod. EPA 8015 was outside of control limits. This may indicate a bias in the analysis due to the sample's matrix or an interference from compounds present in the sample.

KIFF Analytical LLC

Report Number : 88565
Date : 07/11/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **QA** Matrix : Water Lab Number : 88565-01
Sample Date :06/26/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 22:47
Toluene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 22:47
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 22:47
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 22:47
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 22:47
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	07/01/14 22:47
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 22:47
1,2-Dichloroethane-d4 (Surr)	100		% Recovery	EPA 8260B	07/01/14 22:47
Toluene - d8 (Surr)	98.3		% Recovery	EPA 8260B	07/01/14 22:47
4-Bromofluorobenzene (Surr)	94.9		% Recovery	EPA 8260B	07/01/14 22:47

KIFF Analytical LLC

Report Number : 88565
Date : 07/11/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-1** Matrix : Water Lab Number : 88565-02
Sample Date :06/26/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 14:23
Toluene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 14:23
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 14:23
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 14:23
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 14:23
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	07/01/14 14:23
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 14:23
1,2-Dichloroethane-d4 (Surr)	100		% Recovery	EPA 8260B	07/01/14 14:23
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	07/01/14 14:23
4-Bromofluorobenzene (Surr)	94.3		% Recovery	EPA 8260B	07/01/14 14:23
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	07/08/14 23:36
TPH as Jet Fuel	< 50	50	ug/L	M EPA 8015	07/08/14 15:24
TPH as Motor Oil	< 100	100	ug/L	M EPA 8015	07/08/14 15:24
Octacosane (Silica Gel Surr)	118		% Recovery	M EPA 8015	07/08/14 23:36
Octacosane (Diesel Surrogate)	105		% Recovery	M EPA 8015	07/08/14 15:24

KIFF Analytical LLC

Report Number : 88565
Date : 07/11/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-2** Matrix : Water Lab Number : 88565-03
Sample Date :06/26/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 14:59
Toluene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 14:59
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 14:59
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 14:59
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 14:59
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	07/01/14 14:59
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 14:59
1,2-Dichloroethane-d4 (Surr)	99.3		% Recovery	EPA 8260B	07/01/14 14:59
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	07/01/14 14:59
4-Bromofluorobenzene (Surr)	94.2		% Recovery	EPA 8260B	07/01/14 14:59
TPH as Diesel (Silica Gel)	**53**	50	ug/L	M EPA 8015	07/09/14 00:11
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
TPH as Jet Fuel	**67**	50	ug/L	M EPA 8015	07/08/14 15:53
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel.)					
TPH as Motor Oil	**490**	100	ug/L	M EPA 8015	07/08/14 15:53
Octacosane (Silica Gel Surr)	110		% Recovery	M EPA 8015	07/09/14 00:11
Octacosane (Diesel Surrogate)	106		% Recovery	M EPA 8015	07/08/14 15:53

KIFF Analytical LLC

Report Number : 88565
Date : 07/11/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-3** Matrix : Water Lab Number : 88565-04
Sample Date :06/26/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 15:34
Toluene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 15:34
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 15:34
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 15:34
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 15:34
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	07/01/14 15:34
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 15:34
1,2-Dichloroethane-d4 (Surr)	99.4		% Recovery	EPA 8260B	07/01/14 15:34
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	07/01/14 15:34
4-Bromofluorobenzene (Surr)	95.0		% Recovery	EPA 8260B	07/01/14 15:34
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	07/09/14 00:46
TPH as Jet Fuel	**500**	50	ug/L	M EPA 8015	07/08/14 16:22
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel.)					
TPH as Motor Oil	**460**	100	ug/L	M EPA 8015	07/08/14 16:22
Octacosane (Silica Gel Surr)	113		% Recovery	M EPA 8015	07/09/14 00:46
Octacosane (Diesel Surrogate)	102		% Recovery	M EPA 8015	07/08/14 16:22

KIFF Analytical LLC

Report Number : 88565
Date : 07/11/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-4** Matrix : Water Lab Number : 88565-05
Sample Date :06/26/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 16:09
Toluene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 16:09
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 16:09
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 16:09
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 16:09
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	07/01/14 16:09
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 16:09
1,2-Dichloroethane-d4 (Surr)	99.4		% Recovery	EPA 8260B	07/01/14 16:09
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	07/01/14 16:09
4-Bromofluorobenzene (Surr)	93.5		% Recovery	EPA 8260B	07/01/14 16:09
TPH as Diesel (Silica Gel)	**73**	50	ug/L	M EPA 8015	07/09/14 01:21
TPH as Jet Fuel	**330**	50	ug/L	M EPA 8015	07/08/14 16:51
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel.)					
TPH as Motor Oil	**250**	100	ug/L	M EPA 8015	07/08/14 16:51
Octacosane (Silica Gel Surr)	116		% Recovery	M EPA 8015	07/09/14 01:21
Octacosane (Diesel Surrogate)	101		% Recovery	M EPA 8015	07/08/14 16:51

KIFF Analytical LLC

Report Number : 88565
Date : 07/11/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-5** Matrix : Water Lab Number : 88565-06
Sample Date :06/26/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 16:44
Toluene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 16:44
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 16:44
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 16:44
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 16:44
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	07/01/14 16:44
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 16:44
1,2-Dichloroethane-d4 (Surr)	98.7		% Recovery	EPA 8260B	07/01/14 16:44
Toluene - d8 (Surr)	99.3		% Recovery	EPA 8260B	07/01/14 16:44
4-Bromofluorobenzene (Surr)	94.0		% Recovery	EPA 8260B	07/01/14 16:44
TPH as Diesel (Silica Gel)	**180**	50	ug/L	M EPA 8015	07/09/14 01:55
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
TPH as Jet Fuel	**330**	50	ug/L	M EPA 8015	07/08/14 17:21
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel.)					
TPH as Motor Oil	**690**	100	ug/L	M EPA 8015	07/08/14 17:21
Octacosane (Silica Gel Surr)	113		% Recovery	M EPA 8015	07/09/14 01:55
Octacosane (Diesel Surrogate)	105		% Recovery	M EPA 8015	07/08/14 17:21

KIFF Analytical LLC

Report Number : 88565
Date : 07/11/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-6** Matrix : Water Lab Number : 88565-07
Sample Date :06/26/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 15:36
Toluene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 15:36
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 15:36
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 15:36
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 15:36
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	07/01/14 15:36
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 15:36
1,2-Dichloroethane-d4 (Surr)	99.8		% Recovery	EPA 8260B	07/01/14 15:36
Toluene - d8 (Surr)	98.9		% Recovery	EPA 8260B	07/01/14 15:36
4-Bromofluorobenzene (Surr)	96.3		% Recovery	EPA 8260B	07/01/14 15:36
TPH as Diesel (Silica Gel)	**400**	50	ug/L	M EPA 8015	07/09/14 02:29
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
TPH as Jet Fuel	**490**	50	ug/L	M EPA 8015	07/08/14 17:50
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel.)					
TPH as Motor Oil	**2600**	100	ug/L	M EPA 8015	07/08/14 17:50
Octacosane (Silica Gel Surr)	109		% Recovery	M EPA 8015	07/09/14 02:29
Octacosane (Diesel Surrogate)	101		% Recovery	M EPA 8015	07/08/14 17:50

KIFF Analytical LLC

Report Number : 88565
Date : 07/11/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-7** Matrix : Water Lab Number : 88565-08
Sample Date :06/26/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 16:07
Toluene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 16:07
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 16:07
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 16:07
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 16:07
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	07/01/14 16:07
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 16:07
1,2-Dichloroethane-d4 (Surr)	97.9		% Recovery	EPA 8260B	07/01/14 16:07
Toluene - d8 (Surr)	98.4		% Recovery	EPA 8260B	07/01/14 16:07
4-Bromofluorobenzene (Surr)	95.7		% Recovery	EPA 8260B	07/01/14 16:07
TPH as Diesel (Silica Gel)	**660**	50	ug/L	M EPA 8015	07/09/14 03:04
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
TPH as Jet Fuel	**830**	50	ug/L	M EPA 8015	07/08/14 18:20
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel.)					
TPH as Motor Oil	**4100**	100	ug/L	M EPA 8015	07/08/14 18:20
Octacosane (Silica Gel Surr)	109		% Recovery	M EPA 8015	07/09/14 03:04
Octacosane (Diesel Surrogate)	95.3		% Recovery	M EPA 8015	07/08/14 18:20

KIFF Analytical LLC

Report Number : 88565
Date : 07/11/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-8** Matrix : Water Lab Number : 88565-09
Sample Date :06/26/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 14:19
Toluene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 14:19
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 14:19
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 14:19
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 14:19
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	07/01/14 14:19
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 14:19
1,2-Dichloroethane-d4 (Surr)	99.7		% Recovery	EPA 8260B	07/01/14 14:19
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	07/01/14 14:19
4-Bromofluorobenzene (Surr)	90.2		% Recovery	EPA 8260B	07/01/14 14:19
TPH as Diesel (Silica Gel)	**72**	50	ug/L	M EPA 8015	07/09/14 03:39
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
TPH as Jet Fuel	**330**	50	ug/L	M EPA 8015	07/08/14 18:49
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel.)					
TPH as Motor Oil	**850**	100	ug/L	M EPA 8015	07/08/14 18:49
Octacosane (Silica Gel Surr)	114		% Recovery	M EPA 8015	07/09/14 03:39
Octacosane (Diesel Surrogate)	112		% Recovery	M EPA 8015	07/08/14 18:49

KIFF Analytical LLC

Report Number : 88565
Date : 07/11/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-9** Matrix : Water Lab Number : 88565-10
Sample Date :06/26/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 14:52
Toluene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 14:52
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 14:52
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 14:52
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 14:52
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	07/01/14 14:52
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 14:52
1,2-Dichloroethane-d4 (Surr)	99.6		% Recovery	EPA 8260B	07/01/14 14:52
Toluene - d8 (Surr)	103		% Recovery	EPA 8260B	07/01/14 14:52
4-Bromofluorobenzene (Surr)	89.8		% Recovery	EPA 8260B	07/01/14 14:52
TPH as Diesel (Silica Gel)	**610**	50	ug/L	M EPA 8015	07/08/14 18:23
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
TPH as Jet Fuel	**710**	50	ug/L	M EPA 8015	07/08/14 14:25
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel.)					
TPH as Motor Oil	**3000**	100	ug/L	M EPA 8015	07/08/14 14:25
Octacosane (Silica Gel Surr)	95.4		% Recovery	M EPA 8015	07/08/14 18:23
Octacosane (Diesel Surrogate)	86.4		% Recovery	M EPA 8015	07/08/14 14:25

KIFF Analytical LLC

Report Number : 88565
Date : 07/11/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-10** Matrix : Water Lab Number : 88565-11
Sample Date :06/26/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 15:24
Toluene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 15:24
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 15:24
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 15:24
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 15:24
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	07/01/14 15:24
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 15:24
1,2-Dichloroethane-d4 (Surr)	99.0		% Recovery	EPA 8260B	07/01/14 15:24
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	07/01/14 15:24
4-Bromofluorobenzene (Surr)	90.2		% Recovery	EPA 8260B	07/01/14 15:24
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	07/09/14 04:14
TPH as Jet Fuel	**330**	50	ug/L	M EPA 8015	07/08/14 19:18
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel.)					
TPH as Motor Oil	**210**	100	ug/L	M EPA 8015	07/08/14 19:18
Octacosane (Silica Gel Surr)	116		% Recovery	M EPA 8015	07/09/14 04:14
Octacosane (Diesel Surrogate)	115		% Recovery	M EPA 8015	07/08/14 19:18

KIFF Analytical LLC

Report Number : 88565
Date : 07/11/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-11** Matrix : Water Lab Number : 88565-12
Sample Date :06/26/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 15:57
Toluene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 15:57
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 15:57
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 15:57
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 15:57
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	07/01/14 15:57
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 15:57
1,2-Dichloroethane-d4 (Surr)	100		% Recovery	EPA 8260B	07/01/14 15:57
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	07/01/14 15:57
4-Bromofluorobenzene (Surr)	89.9		% Recovery	EPA 8260B	07/01/14 15:57
TPH as Diesel (Silica Gel)	**220**	50	ug/L	M EPA 8015	07/09/14 05:33
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
TPH as Jet Fuel	**560**	50	ug/L	M EPA 8015	07/08/14 19:48
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel.)					
TPH as Motor Oil	**1000**	100	ug/L	M EPA 8015	07/08/14 19:48
Octacosane (Silica Gel Surr)	117		% Recovery	M EPA 8015	07/09/14 05:33
Octacosane (Diesel Surrogate)	114		% Recovery	M EPA 8015	07/08/14 19:48

KIFF Analytical LLC

Report Number : 88565
Date : 07/11/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-12** Matrix : Water Lab Number : 88565-13
Sample Date :06/26/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 16:30
Toluene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 16:30
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 16:30
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 16:30
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 16:30
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	07/01/14 16:30
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 16:30
1,2-Dichloroethane-d4 (Surr)	99.7		% Recovery	EPA 8260B	07/01/14 16:30
Toluene - d8 (Surr)	103		% Recovery	EPA 8260B	07/01/14 16:30
4-Bromofluorobenzene (Surr)	89.4		% Recovery	EPA 8260B	07/01/14 16:30
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	07/10/14 14:00
TPH as Jet Fuel	< 50	50	ug/L	M EPA 8015	07/10/14 14:30
TPH as Motor Oil	< 100	100	ug/L	M EPA 8015	07/10/14 14:30
Octacosane (Silica Gel Surr)	120		% Recovery	M EPA 8015	07/10/14 14:00
Octacosane (Diesel Surrogate)	115		% Recovery	M EPA 8015	07/10/14 14:30

KIFF Analytical LLC

Report Number : 88565
Date : 07/11/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-13** Matrix : Water Lab Number : 88565-14
Sample Date :06/26/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	**0.73**	0.50	ug/L	EPA 8260B	07/01/14 16:39
Toluene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 16:39
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 16:39
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 16:39
Methyl-t-butyl ether (MTBE)	**2.4**	0.50	ug/L	EPA 8260B	07/01/14 16:39
TPH as Gasoline	**340**	50	ug/L	EPA 8260B	07/01/14 16:39
Naphthalene	**0.60**	0.50	ug/L	EPA 8260B	07/01/14 16:39
1,2-Dichloroethane-d4 (Surr)	97.6		% Recovery	EPA 8260B	07/01/14 16:39
Toluene - d8 (Surr)	97.3		% Recovery	EPA 8260B	07/01/14 16:39
4-Bromofluorobenzene (Surr)	98.1		% Recovery	EPA 8260B	07/01/14 16:39
TPH as Diesel (Silica Gel)	**110**	50	ug/L	M EPA 8015	07/09/14 09:57
TPH as Jet Fuel	**1900**	50	ug/L	M EPA 8015	07/09/14 05:04
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel.)					
TPH as Motor Oil	**150**	100	ug/L	M EPA 8015	07/10/14 13:18
(Note: Hydrocarbons are lower-boiling than typical Motor Oil)					
Octacosane (Silica Gel Surr)	125		% Recovery	M EPA 8015	07/09/14 09:57
Octacosane (Diesel Surrogate)	117		% Recovery	M EPA 8015	07/10/14 13:18

KIFF Analytical LLC

Report Number : 88565
Date : 07/11/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-14** Matrix : Water Lab Number : 88565-15
Sample Date :06/26/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 23:19
Toluene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 23:19
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 23:19
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 23:19
Methyl-t-butyl ether (MTBE)	**0.98**	0.50	ug/L	EPA 8260B	07/01/14 23:19
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	07/01/14 23:19
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 23:19
1,2-Dichloroethane-d4 (Surr)	99.8		% Recovery	EPA 8260B	07/01/14 23:19
Toluene - d8 (Surr)	99.4		% Recovery	EPA 8260B	07/01/14 23:19
4-Bromofluorobenzene (Surr)	96.8		% Recovery	EPA 8260B	07/01/14 23:19
TPH as Diesel (Silica Gel)	**100**	50	ug/L	M EPA 8015	07/09/14 04:35
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
TPH as Jet Fuel	**950**	50	ug/L	M EPA 8015	07/08/14 23:42
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel.)					
TPH as Motor Oil	**650**	100	ug/L	M EPA 8015	07/10/14 13:53
Octacosane (Silica Gel Surr)	112		% Recovery	M EPA 8015	07/09/14 04:35
Octacosane (Diesel Surrogate)	112		% Recovery	M EPA 8015	07/10/14 13:53

KIFF Analytical LLC

Report Number : 88565
Date : 07/11/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-15** Matrix : Water Lab Number : 88565-16
Sample Date :06/26/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 23:51
Toluene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 23:51
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 23:51
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 23:51
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 23:51
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	07/01/14 23:51
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 23:51
1,2-Dichloroethane-d4 (Surr)	98.0		% Recovery	EPA 8260B	07/01/14 23:51
Toluene - d8 (Surr)	98.6		% Recovery	EPA 8260B	07/01/14 23:51
4-Bromofluorobenzene (Surr)	94.5		% Recovery	EPA 8260B	07/01/14 23:51
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	07/09/14 04:48
TPH as Jet Fuel	**71**	50	ug/L	M EPA 8015	07/09/14 00:12
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel.)					
TPH as Motor Oil	**100**	100	ug/L	M EPA 8015	07/10/14 11:33
Octacosane (Silica Gel Surr)	118		% Recovery	M EPA 8015	07/09/14 04:48
Octacosane (Diesel Surrogate)	112		% Recovery	M EPA 8015	07/10/14 11:33

KIFF Analytical LLC

Report Number : 88565
Date : 07/11/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-17** Matrix : Water Lab Number : 88565-17
Sample Date :06/26/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	07/02/14 00:23
Toluene	< 0.50	0.50	ug/L	EPA 8260B	07/02/14 00:23
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	07/02/14 00:23
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	07/02/14 00:23
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	07/02/14 00:23
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	07/02/14 00:23
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	07/02/14 00:23
1,2-Dichloroethane-d4 (Surr)	99.4		% Recovery	EPA 8260B	07/02/14 00:23
Toluene - d8 (Surr)	98.4		% Recovery	EPA 8260B	07/02/14 00:23
4-Bromofluorobenzene (Surr)	96.0		% Recovery	EPA 8260B	07/02/14 00:23
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	07/09/14 05:23
TPH as Jet Fuel	**70**	50	ug/L	M EPA 8015	07/09/14 00:41
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel.)					
TPH as Motor Oil	< 100	100	ug/L	M EPA 8015	07/10/14 10:59
Octacosane (Silica Gel Surr)	109		% Recovery	M EPA 8015	07/09/14 05:23
Octacosane (Diesel Surrogate)	110		% Recovery	M EPA 8015	07/10/14 10:59

KIFF Analytical LLC

Report Number : 88565
Date : 07/11/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **MW-18** Matrix : Water Lab Number : 88565-18
Sample Date :06/26/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	07/02/14 00:55
Toluene	< 0.50	0.50	ug/L	EPA 8260B	07/02/14 00:55
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	07/02/14 00:55
Total Xylenes	**1.0**	0.50	ug/L	EPA 8260B	07/02/14 00:55
Methyl-t-butyl ether (MTBE)	**1.8**	0.50	ug/L	EPA 8260B	07/02/14 00:55
TPH as Gasoline	**600**	50	ug/L	EPA 8260B	07/02/14 00:55
Naphthalene	< 0.80	0.80	ug/L	EPA 8260B	07/02/14 00:55
1,2-Dichloroethane-d4 (Surr)	98.9		% Recovery	EPA 8260B	07/02/14 00:55
Toluene - d8 (Surr)	99.5		% Recovery	EPA 8260B	07/02/14 00:55
4-Bromofluorobenzene (Surr)	99.2		% Recovery	EPA 8260B	07/02/14 00:55
TPH as Diesel (Silica Gel)	**100000**	5000	ug/L	M EPA 8015	07/10/14 14:27
(Note: Lower boiling hydrocarbons present, atypical for Diesel Fuel.)					
TPH as Jet Fuel	**110000**	5000	ug/L	M EPA 8015	07/10/14 15:28
TPH as Motor Oil	**150000**	5000	ug/L	M EPA 8015	07/10/14 15:28
Octacosane (Silica Gel Surr)	Diluted Out		% Recovery	M EPA 8015	07/10/14 14:27
Octacosane (Diesel Surrogate)	Diluted Out		% Recovery	M EPA 8015	07/10/14 15:28

KIFF Analytical LLC

Report Number : 88565
Date : 07/11/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **NPORD-MW-3** Matrix : Water Lab Number : 88565-19
Sample Date :06/26/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 22:50
Toluene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 22:50
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 22:50
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 22:50
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 22:50
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	07/01/14 22:50
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 22:50
1,2-Dichloroethane-d4 (Surr)	97.8		% Recovery	EPA 8260B	07/01/14 22:50
Toluene - d8 (Surr)	99.1		% Recovery	EPA 8260B	07/01/14 22:50
4-Bromofluorobenzene (Surr)	104		% Recovery	EPA 8260B	07/01/14 22:50
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	07/10/14 23:24
TPH as Jet Fuel	< 50	50	ug/L	M EPA 8015	07/10/14 13:01
TPH as Motor Oil	< 100	100	ug/L	M EPA 8015	07/10/14 13:01
Octacosane (Silica Gel Surr)	109		% Recovery	M EPA 8015	07/10/14 23:24
Octacosane (Diesel Surrogate)	128		% Recovery	M EPA 8015	07/10/14 13:01

KIFF Analytical LLC

Report Number : 88565
Date : 07/11/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Sample : **NPORD-MW-4** Matrix : Water Lab Number : 88565-20
Sample Date :06/26/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 23:24
Toluene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 23:24
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 23:24
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 23:24
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 23:24
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	07/01/14 23:24
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	07/01/14 23:24
1,2-Dichloroethane-d4 (Surr)	100		% Recovery	EPA 8260B	07/01/14 23:24
Toluene - d8 (Surr)	99.4		% Recovery	EPA 8260B	07/01/14 23:24
4-Bromofluorobenzene (Surr)	104		% Recovery	EPA 8260B	07/01/14 23:24
TPH as Diesel (Silica Gel)	**90**	50	ug/L	M EPA 8015	07/08/14 18:58
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
TPH as Jet Fuel	**520**	50	ug/L	M EPA 8015	07/10/14 14:59
(Note: Higher boiling hydrocarbons present, atypical for Jet Fuel.)					
TPH as Motor Oil	**260**	100	ug/L	M EPA 8015	07/10/14 14:59
Octacosane (Silica Gel Surr)	119		% Recovery	M EPA 8015	07/08/14 18:58
Octacosane (Diesel Surrogate)	110		% Recovery	M EPA 8015	07/10/14 14:59

Report Number : 88565

Date : 07/11/2014

QC Report : Method Blank Data

Project Name : **Rolls-Royce Engine Test Facility**

Project Number : **25-948218.1**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	07/08/2014
TPH as Jet Fuel	< 50	50	ug/L	M EPA 8015	07/08/2014
TPH as Motor Oil	< 100	100	ug/L	M EPA 8015	07/08/2014
Octacosane (Diesel Surrogate)	97.7		%	M EPA 8015	07/08/2014
Octacosane (Silica Gel Surr)	114		%	M EPA 8015	07/08/2014
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	07/11/2014
Octacosane (Silica Gel Surr)	103		%	M EPA 8015	07/11/2014
Benzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/2014
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/2014
Toluene	< 0.50	0.50	ug/L	EPA 8260B	07/01/2014
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	07/01/2014
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	07/01/2014
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	07/01/2014
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	07/01/2014
1,2-Dichloroethane-d4 (Surr)	98.7		%	EPA 8260B	07/01/2014
4-Bromofluorobenzene (Surr)	96.5		%	EPA 8260B	07/01/2014
Toluene - d8 (Surr)	99.5		%	EPA 8260B	07/01/2014
Benzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/2014
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/2014
Toluene	< 0.50	0.50	ug/L	EPA 8260B	07/01/2014
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	07/01/2014
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	07/01/2014
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	07/01/2014
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	07/01/2014
1,2-Dichloroethane-d4 (Surr)	96.0		%	EPA 8260B	07/01/2014
4-Bromofluorobenzene (Surr)	97.6		%	EPA 8260B	07/01/2014
Toluene - d8 (Surr)	98.1		%	EPA 8260B	07/01/2014

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/2014
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/2014
Toluene	< 0.50	0.50	ug/L	EPA 8260B	07/01/2014
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	07/01/2014
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	07/01/2014
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	07/01/2014
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	07/01/2014
1,2-Dichloroethane-d4 (Surr)	100		%	EPA 8260B	07/01/2014
4-Bromofluorobenzene (Surr)	94.7		%	EPA 8260B	07/01/2014
Toluene - d8 (Surr)	100		%	EPA 8260B	07/01/2014
Benzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/2014
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	07/01/2014
Toluene	< 0.50	0.50	ug/L	EPA 8260B	07/01/2014
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	07/01/2014
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	07/01/2014
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	07/01/2014
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	07/01/2014
1,2-Dichloroethane-d4 (Surr)	101		%	EPA 8260B	07/01/2014
4-Bromofluorobenzene (Surr)	103		%	EPA 8260B	07/01/2014
Toluene - d8 (Surr)	100		%	EPA 8260B	07/01/2014

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Matrix Spike/ Matrix Spike Duplicate

Report Number : 88565
Date : 07/11/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Benzene	88554-02	<0.50	40.0	40.0	40.2	39.6	ug/L	EPA 8260B	7/1/14	100	99.1	1.41	70.0-130	25
Ethylbenzene	88554-02	<0.50	40.0	40.0	41.8	40.5	ug/L	EPA 8260B	7/1/14	104	101	2.98	70.0-130	25
Methyl-t-butyl ether	88554-02	<0.50	40.1	40.1	43.4	43.4	ug/L	EPA 8260B	7/1/14	108	108	0.109	70.0-130	25
Naphthalene	88554-02	<0.50	40.0	40.0	42.8	42.6	ug/L	EPA 8260B	7/1/14	107	106	0.664	70.0-130	25
P + M Xylene	88554-02	<0.50	40.0	40.0	41.3	40.4	ug/L	EPA 8260B	7/1/14	103	101	1.97	70.0-130	25
Toluene	88554-02	<0.50	40.0	40.0	40.9	40.4	ug/L	EPA 8260B	7/1/14	102	101	1.43	70.0-130	25
Benzene	88573-02	<0.50	40.0	40.0	39.8	39.8	ug/L	EPA 8260B	7/1/14	99.6	99.4	0.250	70.0-130	25
Ethylbenzene	88573-02	<0.50	40.0	40.0	41.1	40.0	ug/L	EPA 8260B	7/1/14	103	100	2.62	70.0-130	25
Methyl-t-butyl ether	88573-02	<0.50	40.1	40.1	44.2	46.6	ug/L	EPA 8260B	7/1/14	110	116	5.28	70.0-130	25

KIFF ANALYTICAL, LLC
2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Matrix Spike/ Matrix Spike Duplicate

Report Number : 88565
Date : 07/11/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Naphthalene	88573-02	<0.50	40.0	40.0	42.6	41.8	ug/L	EPA 8260B	7/1/14	107	104	1.95	70.0-130	25
P + M Xylene	88573-02	<0.50	40.0	40.0	40.9	40.0	ug/L	EPA 8260B	7/1/14	102	99.9	2.26	70.0-130	25
Toluene	88573-02	<0.50	40.0	40.0	40.6	40.2	ug/L	EPA 8260B	7/1/14	101	100	0.921	70.0-130	25
Benzene	88554-06	1.4	40.0	40.0	38.9	42.1	ug/L	EPA 8260B	7/1/14	93.7	102	8.08	70.0-130	25
Ethylbenzene	88554-06	49	40.0	40.0	102	95.9	ug/L	EPA 8260B	7/1/14	**132**	116	12.7	70.0-130	25
Methyl-t-butyl ether	88554-06	<0.50	40.1	40.1	30.9	34.6	ug/L	EPA 8260B	7/1/14	77.1	86.2	11.2	70.0-130	25
Naphthalene	88554-06	22	40.0	40.0	65.5	60.3	ug/L	EPA 8260B	7/1/14	110	96.6	12.8	70.0-130	25
P + M Xylene	88554-06	110	40.0	40.0	165	109	ug/L	EPA 8260B	7/1/14	**138**	**0.00**	**200**	70.0-130	25
Toluene	88554-06	1.8	40.0	40.0	39.2	39.5	ug/L	EPA 8260B	7/1/14	93.4	94.2	0.826	70.0-130	25

KIFF ANALYTICAL, LLC
2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Matrix Spike/ Matrix Spike Duplicate

Report Number : 88565
Date : 07/11/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Benzene	88573-10	<0.50	40.0	40.0	40.4	39.6	ug/L	EPA 8260B	7/1/14	101	99.1	1.86	70.0-130	25
Ethylbenzene	88573-10	<0.50	40.0	40.0	40.3	40.7	ug/L	EPA 8260B	7/1/14	101	102	1.09	70.0-130	25
Methyl-t-butyl ether	88573-10	<0.50	40.1	40.1	42.7	42.1	ug/L	EPA 8260B	7/1/14	106	105	1.52	70.0-130	25
Naphthalene	88573-10	<0.50	40.0	40.0	42.2	41.8	ug/L	EPA 8260B	7/1/14	106	104	1.00	70.0-130	25
P + M Xylene	88573-10	<0.50	40.0	40.0	42.2	41.8	ug/L	EPA 8260B	7/1/14	106	104	0.929	70.0-130	25
Toluene	88573-10	<0.50	40.0	40.0	41.3	40.7	ug/L	EPA 8260B	7/1/14	103	102	1.38	70.0-130	25
Benzene	88554-07	<0.50	40.0	40.0	43.2	43.7	ug/L	EPA 8260B	7/1/14	108	109	1.07	70.0-130	25
Ethylbenzene	88554-07	<0.50	40.0	40.0	43.9	44.1	ug/L	EPA 8260B	7/1/14	110	110	0.350	70.0-130	25
Methyl-t-butyl ether	88554-07	<0.50	40.1	40.1	40.8	41.8	ug/L	EPA 8260B	7/1/14	102	104	2.21	70.0-130	25

KIFF ANALYTICAL, LLC
2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Matrix Spike/ Matrix Spike Duplicate

Report Number : 88565

Date : 07/11/2014

Project Name : **Rolls-Royce Engine Test Facility**

Project Number : **25-948218.1**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Naphthalene														
	88554-07	<0.50	40.0	40.0	40.5	41.2	ug/L	EPA 8260B	7/1/14	101	103	1.67	70.0-130	25
P + M Xylene														
	88554-07	<0.50	40.0	40.0	41.8	41.8	ug/L	EPA 8260B	7/1/14	104	104	0.162	70.0-130	25
Toluene														
	88554-07	<0.50	40.0	40.0	45.0	45.0	ug/L	EPA 8260B	7/1/14	112	112	0.0635	70.0-130	25
TPH-D (Si Gel)														
	88565-10	630	1000	1000	1340	1200	ug/L	M EPA 8015	7/8/14	71.0	**57.6**	20.8	70-130	25
TPH as Diesel														
	88565-10	810	1000	1000	1820	1590	ug/L	M EPA 8015	7/8/14	101	77.9	**25.6**	70-130	25
TPH-D (Si Gel)														
	88641-06	<50	1000	1000	809	822	ug/L	M EPA 8015	7/11/14	80.9	82.2	1.60	70-130	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Laboratory Control Sample (LCS)

Report Number : 88565
Date : 07/11/2014

Project Name : **Rolls-Royce Engine Test Facility**
Project Number : **25-948218.1**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
TPH as Diesel	1000	ug/L	M EPA 8015	7/8/14	103	70-130
TPH-D (Si Gel)	1000	ug/L	M EPA 8015	7/11/14	81.7	70-130
Benzene	39.9	ug/L	EPA 8260B	7/1/14	98.0	70.0-130
Ethylbenzene	39.9	ug/L	EPA 8260B	7/1/14	102	70.0-130
Methyl-t-butyl ether	40.0	ug/L	EPA 8260B	7/1/14	104	70.0-130
Naphthalene	39.9	ug/L	EPA 8260B	7/1/14	103	70.0-130
P + M Xylene	39.9	ug/L	EPA 8260B	7/1/14	102	70.0-130
TPH as Gasoline	483	ug/L	EPA 8260B	7/1/14	98.7	70.0-130
Toluene	39.9	ug/L	EPA 8260B	7/1/14	100	70.0-130
Benzene	40.1	ug/L	EPA 8260B	7/1/14	95.1	70.0-130
Ethylbenzene	40.1	ug/L	EPA 8260B	7/1/14	96.1	70.0-130
Methyl-t-butyl ether	40.2	ug/L	EPA 8260B	7/1/14	102	70.0-130
Naphthalene	40.1	ug/L	EPA 8260B	7/1/14	100	70.0-130
P + M Xylene	40.1	ug/L	EPA 8260B	7/1/14	96.0	70.0-130
TPH as Gasoline	485	ug/L	EPA 8260B	7/1/14	84.6	70.0-130
Toluene	40.1	ug/L	EPA 8260B	7/1/14	95.7	70.0-130
Benzene	40.0	ug/L	EPA 8260B	7/1/14	102	70.0-130

KIFF ANALYTICAL, LLC
2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 88565

Date : 07/11/2014

QC Report : Laboratory Control Sample (LCS)

Project Name : **Rolls-Royce Engine Test Facility**

Project Number : **25-948218.1**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Ethylbenzene	40.0	ug/L	EPA 8260B	7/1/14	99.7	70.0-130
Methyl-t-butyl ether	40.1	ug/L	EPA 8260B	7/1/14	83.7	70.0-130
Naphthalene	40.0	ug/L	EPA 8260B	7/1/14	106	70.0-130
P + M Xylene	40.0	ug/L	EPA 8260B	7/1/14	98.8	70.0-130
TPH as Gasoline	483	ug/L	EPA 8260B	7/1/14	110	70.0-130
Toluene	40.0	ug/L	EPA 8260B	7/1/14	101	70.0-130
Benzene	39.9	ug/L	EPA 8260B	7/1/14	98.0	70.0-130
Ethylbenzene	39.9	ug/L	EPA 8260B	7/1/14	98.5	70.0-130
Methyl-t-butyl ether	40.0	ug/L	EPA 8260B	7/1/14	100	70.0-130
Naphthalene	39.9	ug/L	EPA 8260B	7/1/14	102	70.0-130
P + M Xylene	39.9	ug/L	EPA 8260B	7/1/14	103	70.0-130
TPH as Gasoline	485	ug/L	EPA 8260B	7/1/14	86.0	70.0-130
Toluene	39.9	ug/L	EPA 8260B	7/1/14	99.3	70.0-130
Benzene	40.2	ug/L	EPA 8260B	7/1/14	109	70.0-130
Ethylbenzene	40.2	ug/L	EPA 8260B	7/1/14	110	70.0-130
Methyl-t-butyl ether	40.3	ug/L	EPA 8260B	7/1/14	102	70.0-130
Naphthalene	40.2	ug/L	EPA 8260B	7/1/14	102	70.0-130
P + M Xylene	40.2	ug/L	EPA 8260B	7/1/14	104	70.0-130
TPH as Gasoline	482	ug/L	EPA 8260B	7/1/14	95.0	70.0-130
Toluene	40.2	ug/L	EPA 8260B	7/1/14	113	70.0-130

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

KIFF Analytical LLC

SAMPLE RECEIPT CHECKLIST

SRG #: 88565

Sample Receipt	**Initials/Date:** TJB 062714	**Storage Time:** 1403	**Sample Login**	**Initials/Date:** ES 063014	
TAT: ☒ Standard	☐ Rush	☐ Split	☐ None	**Method of Receipt:** ☐ Courier	☒ Over-the-counter ☐ Shipped
Temp °C 0.0 ☐ N/A	Therm ID IR-3	Time 1352	Coolant present ☒ Yes ☐ No	☐ Water	☐ Temp Excursion
For Shipments Only:	Cooler Receipt Initials/Date/Time:		Custody Seals ☐ N/A	☐ Intact	☐ Broken

Chain-of-Custody:	**Yes**	**No**
Is COC present?	X	
Is COC signed by relinquisher?	X	
Is COC dated by relinquisher?	X	
Is the sampler's name on the COC?	X	
Are there analyses or hold for all samples?	X	

Documented on	**COC**	**Labels**	**Discrepancies:**
Sample ID	X	X	
Project ID	X	X	
Sample Date	X		No sample date recorded on sample-14 VOA 07 labels. ES 063014 2105
Sample Time	X	X	
Does COC match project history?	☐ N/A	☐ Yes	☒ No

Samples:	**N/A**	**Yes**	**No**
Are sample custody seals intact?	X		
Are sample containers intact?		X	
Is preservation documented?		X	
In-house Analysis:	**N/A**	**Yes**	**No**
Are preservatives acceptable?		X	
Are samples within holding time?		X	
Are sample container types correct?		X	
Is there adequate sample volume?		X	

Receipt Details:

Matrix	Container Type	# of Containers
WA	VOA	135

Comments:

Sample -03 VOAs 04-07 contain bubbles. ES 063014 2030
Sample -05 VOAs 01-07 contain bubbles. ES 063014 2032
Sample -03 VOAs 01-07 contain sediment. ES 063014 2035
Sample -06 VOAs 01-07 contain bubbles. ES 063014 2035
Sample -07 VOAs 02-07 contain bubbles. ES 063014 2036
Sample -08 VOAs 03-07 contain bubbles. ES 063014 2037
Sample -09 VOAs 06-07 contain bubbles. ES 063014 2038
Sample -10 VOAs 04-07 contain bubbles. ES 063014 2040
Sample -11 VOAs 06-07 contain bubbles. ES 063014 2100
Samples -14 & -15 VOAs 01-07 contain bubbles. ES 063014 2110
Samples -17 & -19 VOAs 04-07 contain bubbles. ES 063014 2115
Sample -20 VOAs 03-07 contain bubbles. ES 063014 2118

CS Required: ☒

Proceed With Analysis: ☐ YES ☐ NO Init/Date:
Client Communication:

Sample -30 VOA 07 contains foreign matter. ES 063014 2137

88565

Global ID #: T06019775776

☐ Yes
☐ No

KIFF Analytical LLC

Chain-of-Custody-Record

Direct Bill To:
Douglas Lee
Gettler-Ryan Inc.
6805 Sierra Court
Suite G
Dublin, CA 94568

Facility: Rolls-Royce Engine Test Facility
Facility Address: 6701 Old Earhart Road, Oakland, CA
Consultant Project #: 25-948218.1
Consultant Name: GETTLER-RYAN INC.
Address: 6805 Sierra Court Suite G, Dublin, CA 94568
Project Contact: (Name) Douglas Lee
(Phone) 925-551-7444 x123 (e-mail) dlee@grinc.com

(Name) Douglas Lee
(Phone) 925-551-7444 x123
Laboratory Name: Kiff Analytical
Laboratory Service Order:
Laboratory Service Code:
Samples Collected by: (Name) Alex Worg
Signature:

State Method: ☑ CA ☐ OR ☐ WA ☐ NW Series ☐ CO ☐ UT ☐ ID

Sample I.D.	Number of Containers	Matrix S=Soil A=Air W=Water C=Charcoal	DATE/SAMPLE COLLECTION TIME	TPH-Jet A Fuel (8015) (HCL)	TPH-MO (8015) (HCL)	TPH-DRO with Silica Gel Cleanup (8015) (HCL)	TPH-GRO/BTEX/MTBE/ Naphthalene (8260) (HCL)	TPH-Jet A Fuel (8015) (NP)	TPH-MO (8015) (NP)	TPH-DRO with Silica Gel Cleanup (8015) (NP)	TPH-GRO/BTEX/MTBE/ Naphthalene (8260) (NP)	Remarks	Lab Sample No.
QA	2	W	6-26-14 / N/A				X					EDF NEEDED	01
MW-1	7	W	/ 1010	X	X	X	X					1 of 2	02
MW-2			/ 1345										03
MW-3			/ 1120										04
MW-4			/ 0935										05
MW-5			/ 0930										06
MW-6			/ 1008										07
MW-7			/ 1044										08
MW-8			/ 1320										09
MW-9			/ 1055										10
MW-10			/ 1220										11
MW-11			/ 1135										12
MW-12			/ 1300										13
MW-13	↓	↓	↓ / 1300	↓	↓	↓	↓						14

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time	Iced (Y/N)
	Gettler-Ryan	6-27-14				
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time	Iced (Y/N)
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)		Date/Time	Iced (Y/N)
				Kiff Analytical LLC	06/27/14 1403	

Turn Around Time (Circle Choice)

24 Hrs.
48 Hrs.
5 Days
10 Days
(As Contracted)

88565

Global ID #: T06019775776

☐ Yes
☐ No

KIFF Analytical LLC

Chain-of-Custody-Record

Direct Bill To:
Douglas Lee
Gettler-Ryan Inc.
6805 Sierra Court
Suite G
Dublin, CA 94568

Facility: Rolls-Royce Engine Test Facility
Facility Address: 6701 Old Earhart Road, Oakland, CA
Consultant Project #: 25-948218.1
Consultant Name: GETTLER-RYAN INC.
Address: 6805 Sierra Court Suite G, Dublin, CA 94568
Project Contact: (Name) Douglas Lee
(Phone) 925-551-7444 x123 (e-mail) dlee@grinc.com

(Name) Douglas Lee
(Phone) 925-551-7444 x123
Laboratory Name: Kiff Analytical
Laboratory Service Order:
Laboratory Service Code:
Samples Collected by: (Name) Alex Wong
Signature:

State Method: ☑ CA ☐ OR ☐ WA ☐ NW Series ☐ CO ☐ UT ☐ ID

Sample I.D.	Number of Containers	Matrix S=Soil A=Air W=Water C=Charcoal	DATE/SAMPLE COLLECTION TIME	TPH-Jet A Fuel (8015) (HCL)	TPH-MO (8015) (HCL)	TPH-DRO with Silica Gel Cleanup (8015) (HCL)	TPH-GRO/BTEX/MTBE/ Naphthalene (8260) (HCL)	TPH-Jet A Fuel (8015) (NP)	TPH-MO (8015) (NP)	TPH-DRO with Silica Gel Cleanup (8015) (NP)	TPH-GRO/BTEX/MTBE/ Naphthalene (8260) (NP)	Remarks / Lab Sample No.
MW-14	7	W	6-26-14 / 1044	X	X	X	X					EDF NEEDED 2 of 2 15
MW-15			/ 1010									16
MW-17			/ 0930									17
MW-18			/ 1235									18
NPORDMW-3			/ 1140									19
NPORDMW-4	↓	↓	↓ / 1230	↓	↓	↓	↓					20

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time	Iced (Y/N)
	Gettler-Ryan	6-27-14				

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time	Iced (Y/N)

Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)	Date/Time	Iced (Y/N)
			RAF	062714 1405	

Turn Around Time (Circle Choice)

24 Hrs.
48 Hrs.
5 Days
10 Days
(As Contracted)