Rolls-Royce Engine Services – Oakland, Inc.
7200 Earhart Rd
Oakland, CA 94621
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RECEIVED
By Alameda County Environmental Health 11:29 am, Jan 09, 2017

December 21, 2016

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 December, 21st, 2016.

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

HS&E Manager

GETTLER-RYAN INC.

December 21, 2016

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

Subject: **Second Semi-Annual 2016 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 Second Semi-Annual 2016 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 October 24 and 25, 2016, 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 October 24 and 25, 2016, 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). SPH was not detected in any of the wells. 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. Groundwater samples were submitted under chain-of-custody protocol to Pace 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 October 24, 2016, the groundwater flow direction was to the south 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 seven wells at concentrations ranging from 111 parts per billion (ppb) in well NPORDMW-4 to 61,100 ppb in well MW-18. Concentrations of TPHmo were detected in eleven wells at levels ranging from 111 ppb in well NPORDMW-4 to 105,000 ppb in well MW-18. TPHjf were detected in twelve wells at concentrations ranging from 78 ppb in well MW-4 to 27,000 ppb in well MW-18.

TPHg was detected in two wells at a concentration of 83.2 ppb in MW-11 and 3,070 ppb in MW-18. 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. MtBE was detected in wells MW-11 and MW-18 at concentrations of 1.4 ppb and 1.5 ppb, respectively. Concentrations of Naphthalene were reported below the laboratory method detection limits in water samples collected from all the wells. 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-11 and MW-18;
- Separate-Phase Hydrocarbons was not 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

REGISTERED PROFESSIONAL ENGINEER
HAGOP KEVORK
No. C 55734
Exp. 12/31/18
CIVIL
STATE OF CALIFORNIA

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
10/16/14	7.17	2.77	0.00	4.40	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/15	7.17	2.27	0.00	4.90	<50	<48	<95	<48	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
09/29/15	7.17	2.67	0.00	4.50	<50	<47.8	<98.6	<98.6[25]	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
03/29/16	7.17	2.85	0.00	4.32	<50	<47	<94	<150[26]	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
10/24-25/16	**7.17**	**2.87**	**0.00**	**4.30**	**<50**	**<93**	**<93**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<1.5**	**<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

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)															
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
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
10/16/14	7.03	2.56	0.00	4.47	<50	110[6]	830	93[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/15	7.03	2.80	0.00	4.23	<50	56	560	73[18]	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
09/29/15	7.03	2.00	0.00	5.03	<50	<46.6	248	93.6[18, 25]	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
03/29/16	7.03	2.64	0.00	4.39	<50	120[30]	400	<150[26,27]	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
10/24-25/16	**7.03**	**2.40**	**0.00**	**4.63**	**<50**	**<94**	**522**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<1.5**	**<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
10/16/14	6.73	4.23	0.00	2.50	95	<50	210	440	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/15	6.73	4.05	0.00	2.68	<50	<48	340	510[18]	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
09/29/15	6.73	4.25	0.00	2.48	<50	<49.3	806	1,110[18,25]	<0.50	<0.50	<0.50	<1.0	<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-3 (cont)															
03/29/16	6.73	3.68	0.00	3.05	<50	110[31]	530	82[28,29]	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
10/24-25/16	**6.73**	**3.91**	**0.00**	**2.82**	**<50**	**<95**	**<95**	**170[28,29]**	**<0.50**	**<0.50**	**<0.50**	**<1.5**	**<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
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
10/16/14	9.79	5.36	0.00	4.43	<50	55[6]	180[13]	380[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/15	9.79	4.87	0.00	4.92	<50	<49	110[13]	290[18]	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
09/29/15	9.79	5.57	0.00	4.22	<50	<48.2	232[13]	634[18]	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
03/29/16	9.79	5.03	0.00	4.76	<50	70	290[23]	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
10/24-25/16	**9.79**	**5.47**	**0.00**	**4.32**	**<50**	**184[30]**	**1,050**	**78[28,32]**	**<0.50**	**<0.50**	**<0.50**	**<1.5**	**<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

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-5 (cont)															
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
10/16/14	8.35	4.10	0.00	4.25	<50	160[6]	690	350[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/15	8.35	3.54	0.00	4.81	<50	270	1,100	370[18]	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
09/29/15	8.35	4.19	0.00	4.16	<50	<47.4	197[13]	646[18]	<0.50	<0.50	<0.50	<1.0	<0.50	1.1	NA
03/29/16	8.35	3.69	0.00	4.66	<50	330[30]	1,400	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
10/24-25/16	**8.35**	**4.13**	**0.00**	**4.22**	**<50**	**483[30]**	**1,830**	**84[28]**	**<0.50**	**<0.50**	**<0.50**	**<1.5**	**<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
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

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)															
10/16/14	9.51	5.18	0.00	4.33	<50	670[6]	4,400	680[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/15	9.51	4.61	0.00	4.90	<50	170[6]	1,700	230[18]	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
09/29/15	9.51	5.24	0.00	4.27	<50	151[6]	1,340	406[18,25]	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
03/29/16	9.51	4.75	0.00	4.76	<50	210[30]	1,200	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
10/24-25/16	**9.51**	**5.20**	**0.00**	**4.31**	**<50**	**<95**	**131**	**290[28,29,30]**	**<0.50**	**<0.50**	**<0.50**	**<1.5**	**<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
10/16/14	9.23	5.01	0.00	4.22	<50	290[6]	2,000	520[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/15	9.23	4.45	0.00	4.78	<50	370[6]	3,100	400[18]	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
09/29/15	9.23	5.07	0.00	4.16	<50	<48.6	167[13]	637[18]	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
03/29/16	9.23	4.59	0.00	4.64	<50	550[30]	<470	<500[26]	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
10/24-25/16	**9.23**	**5.02**	**0.00**	**4.21**	**<50**	**602[30]**	**3,770**	**140[28]**	**<0.50**	**<0.50**	**<0.50**	**<1.5**	**<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														
07/03/08	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

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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-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
10/16/14	8.25	3.92	0.00	4.33	<50	110[6]	860	250[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/15	8.25	3.61	0.00	4.64	<50	<48	650	370[18]	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
09/29/15	8.25	4.01	0.00	4.24	<50	<48.6	408	299[18]	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
03/29/16	8.25	3.37	0.00	4.88	<50	64[30]	150	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
10/24-25/16	**8.25**	**3.95**	**0.00**	**4.30**	**<50**	**<95**	**153[13]**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<1.5**	**<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

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-9 (cont)															
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
10/16/14	9.44	5.20	0.00	4.24	<50	220[6]	880	510[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/15	9.44	4.78	0.00	4.66	<50	230	1,400	360[18]	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
09/29/15	9.44	5.25	0.00	4.19	<50	813[6]	4,570	1,310[18,25]	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
03/29/16	9.44	4.61	0.00	4.83	<50	570[30]	2,400	<500[26]	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
10/24-25/16	**9.44**	**5.13**	**0.00**	**4.31**	**<50**	**855**	**4,090[13]**	**120[28,33]**	**<0.50**	**<0.50**	**<0.50**	**<1.5**	**<0.50**	**<0.50**	**NA**
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
10/16/14	7.51	3.25	0.00	4.26	<50	<50	<100	250[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/15	7.51	2.94	0.00	4.57	<50	<48	<96	230[18]	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
09/29/15	7.51	3.43	0.00	4.08	<50	<46.8	<93.7	269[18]	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
03/29/16	7.51	2.78	0.00	4.73	<50	84	<95	130[28]	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
10/24-25/16	**7.51**	**3.28**	**0.00**	**4.23**	**<50**	**<94**	**<94**	**170[28]**	**<0.50**	**<0.50**	**<0.50**	**<1.5**	**<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															
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
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
10/16/14	7.60	3.48	0.00	4.12	<50	110[6]	430	340[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/15	7.60	3.17	0.00	4.43	<50	160[6]	770	540[18]	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
09/29/15	7.60	3.57	0.00	4.03	<50	<47.2	156[13]	340[18]	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
03/29/16	7.60	2.90	0.00	4.70	<50	76	250	91[28]	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
10/24-25/16	**7.60**	**3.48**	**0.00**	**4.12**	**83.2**	**194[30]**	**<96**	**480[28,33]**	**<0.50**	**<0.50**	**<0.50**	**<1.5**	**1.4**	**<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

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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-12 (cont)															
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
10/16/14	7.32	3.04	0.00	4.28	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/15	7.32	3.03	0.00	4.29	<50	<48	<96	<48	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
09/29/15	7.32	3.00	0.00	4.32	<50	<47.1	<94.2	<94.2	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
03/29/16	7.32	2.83	0.00	4.49	<50	<47	<94	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
10/24-25/16	**7.32**	**3.00**	**0.00**	**4.32**	**<50**	**<95**	**<95**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<1.5**	**<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
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
10/16/14	6.10	1.89	0.00	4.21	180[12]	58	<100	1,500[18]	<0.50	<0.50	<0.50	<0.50	1.9	<0.50	NA
03/26/15	6.10	2.03	0.00	4.07	192	<48	230[13]	1,500	0.61	<0.50	<0.50	<1.0	1.9	<0.50	NA
09/29/15	6.10	2.21	0.00	3.89	254	89	211[13]	3,060[18]	0.9	<0.50	<0.50	<1.0	2.1	0.59	NA
03/29/16	6.10	1.17	0.00	4.93	169	140	140	540[28,29]	<0.50	<0.50	<0.50	<1.0	1.6	<0.50	NA
10/24-25/16	**6.10**	**2.70**	**0.00**	**3.40**	**<50**	**<95**	**<95**	**380[28,29]**	**<0.50**	**<0.50**	**<0.50**	**<1.5**	**<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-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
10/16/14	6.42	2.08	0.00	4.34	<50	100[6]	880	920[18]	<0.50	<0.50	<0.50	<0.50	0.83	<0.50	NA
03/26/15	6.42	2.08	0.00	4.34	<50	48[6]	730	790[18]	<0.50	<0.50	<0.50	<1.0	0.69	0.50	NA
09/29/15	6.42	2.03	0.00	4.39	<50	<48.7	574	1,070	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
03/29/16	6.42	1.90	0.00	4.52	<50	54	430	150[28]	<0.50	<0.50	<0.50	<1.0	0.52	<0.50	NA
10/24-25/16	**6.42**	**2.03**	**0.00**	**4.39**	**<50**	**<94**	**129**	**100[28]**	**<0.50**	**<0.50**	**<0.50**	**<1.5**	**<0.50**	**<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
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

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-15 (cont)															
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
10/16/14	7.51	4.43	0.00	3.08	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/15	7.51	4.43	0.00	3.08	<50	<48	<96	<48	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
09/29/15	7.51	4.47	0.00	3.04	<50	<47.2	<94.5	<94.5	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
03/29/16	7.51	3.84	0.00	3.67	<50	66[24]	<94	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
10/24-25/16	**7.51**	**4.19**	**0.00**	**3.32**	**<50**	**<93**	**<93**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<1.5**	**<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
10/16/14	0.04	2.47	0.00	-2.43	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/15	0.04	0.25	0.00	-0.21	<50	<49	<97	<49	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
09/29/15	0.04	2.88	0.00	-2.84	<50	<48.3	<96.5	110	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
03/29/16	0.04	2.15	0.00	-2.11	<50	<47	<95	<50	<0.50	<0.50	<0.50	>1.0	<0.50	<0.50	NA
10/24-25/16	**0.04**	**2.62**	**0.00**	**-2.58**	**<50**	**<94**	**<94**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<1.5**	**<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-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				--	--	--	--	--	--	--
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
10/16/14	7.05	2.77	0.00	4.28	450	12,000	25,000	17,000[18]	<0.50	<0.50	<0.50	0.77	2.2	<0.50	NA
03/26/15	7.05	2.58	0.00	4.47	640	31,800	72,700	41,700[18]	<0.50	<0.50	<0.50	1.1	1.3	<0.50	NA
09/29/15	7.05	2.88	0.00	4.17	608	23,600[6]	47,100	31,900[18,25]	<0.50	<0.50	<0.50	<0.50	1.1	0.52	NA
03/29/16	7.05	2.36	0.04	4.72**	Not sampled due to presence of SPH				--	--	--	--	--	--	--
10/24-25/16	**7.05**	**2.49**	**0.00**	**4.56**	**3,070**	**61,100[30]**	**105,000**	**27,000[29,33,34,35]**	**<0.50**	**<0.50**	**<0.50**	**<1.5**	**1.5**	**<0.50**	**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

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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)
NPORD MW-3 (cont)															
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
10/16/14	8.11	3.69	0.00	4.42	<50	<50	<100	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/15	8.11	3.70	0.00	4.41	<50	<48	<97	<48	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
09/29/15	8.11	3.65	0.00	4.46	<50	<47.2	<94.4	<94.4	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
03/29/16	8.11	3.86	0.00	4.25	<50	<46	<92	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
10/24-25/16	**8.11**	**3.64**	**0.00**	**4.47**	**<50**	**<95**	**301[13]**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<1.5**	**<0.50**	**<0.50**	**NA**
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
10/16/14	10.06	6.91	0.00	3.15	<50	200	480	690[18]	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/15	10.06	5.56	0.00	4.50	<50	91	270	470[18]	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
09/29/15	10.06	6.01	0.00	4.05	<50	140	711	771[18,25]	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
03/29/16	10.06	5.37	0.00	4.69	<50	100	130	290[28]	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
10/24-25/16	**10.06**	**5.93**	**0.00**	**4.13**	**<50**	**111[30]**	**111[13]**	**380**	**<0.50**	**<0.50**	**<0.50**	**<1.5**	**<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															
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
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
10/16/14	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
03/26/15	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
09/29/15	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
03/29/16	--	--	--	--	<50	NA	NA	NA	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	NA
10/24-25/16	--	--	--	--	**<50**	**NA**	**NA**	**NA**	**<0.50**	**<0.50**	**<0.50**	**<1.5**	**<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) prior to 2015
Pace Analytical (CA Certification #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.

Table 1

Groundwater Monitoring Data and Analytical Results

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

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.

[25] The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.

[26] Sample diluted due to high organic content.

[27] Aqueous sample that contains greater than ~1 vol % sediment.

[28] Diesel range compounds are significant; no recognizable pattern.

[29] Kerosene/kerosene range/jet fuel range.

[30] Higher-boiling hydrocarbons present, atypical for Diesel Fuel.

[31] Lower and higher-boiling hydrocarbons present, atypical for Diesel Fuel.

[32] Stoddard solvent/mineral spirit(>); and/or kerosene range/jet fuel range.

[33] Oil range compounds are significant.

[34] Gasoline range compounds are significant; and/or stoddard solvent/mineral spirit (?).

[35] Lighter than water immiscible sheen/product is present.

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

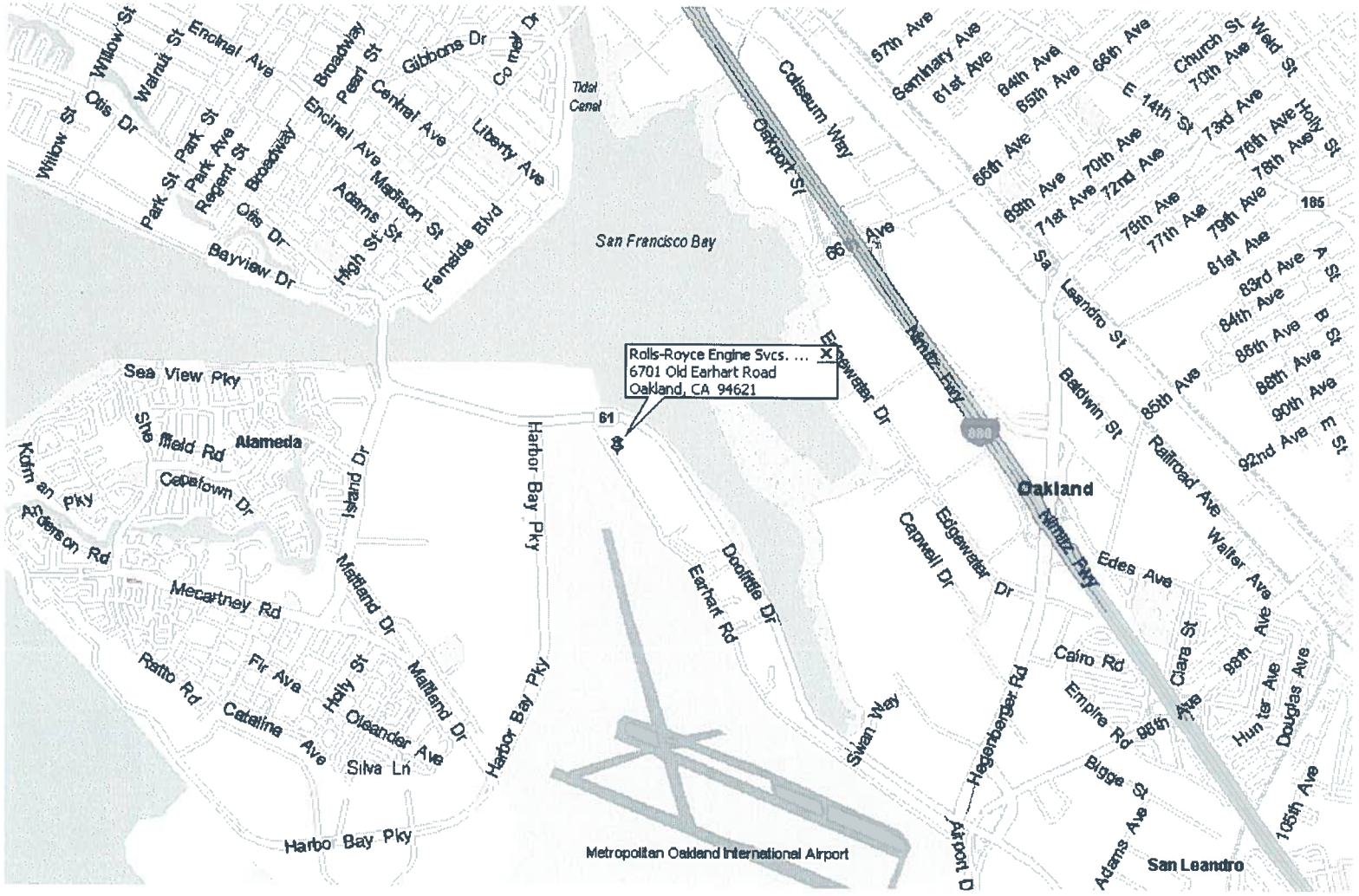
Ferrous Iron by SM 3500 Fe D

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
10/16/14	0.00	NA	4.00	0.00
3/26/2015	0.00	NA	4.00	0.00
9/29/2015	0.00	NA	4.00	0.00
3/29/2016	0.04	2.32	0.00	0.00
10/24-25/2016	**0.00**	**NA**	**4.00**	**0.00**
		Totals:	**39.66**	**4.21**

NA = Not Applicable



SITE LOCATION MAP

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

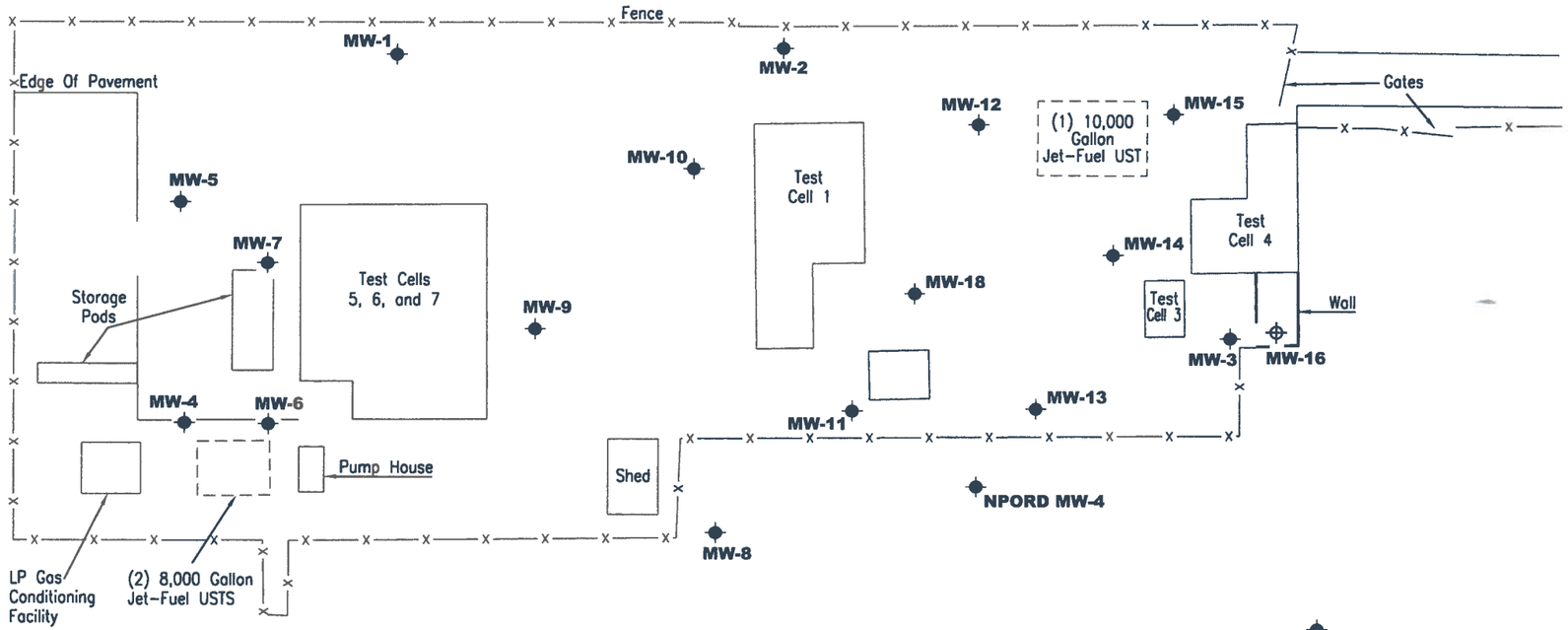
FIGURE
1

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

EXPLANATION

- Groundwater monitoring well
- Proposed monitoring well – not installed location inaccessible by drill rig



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

REVISED DATE

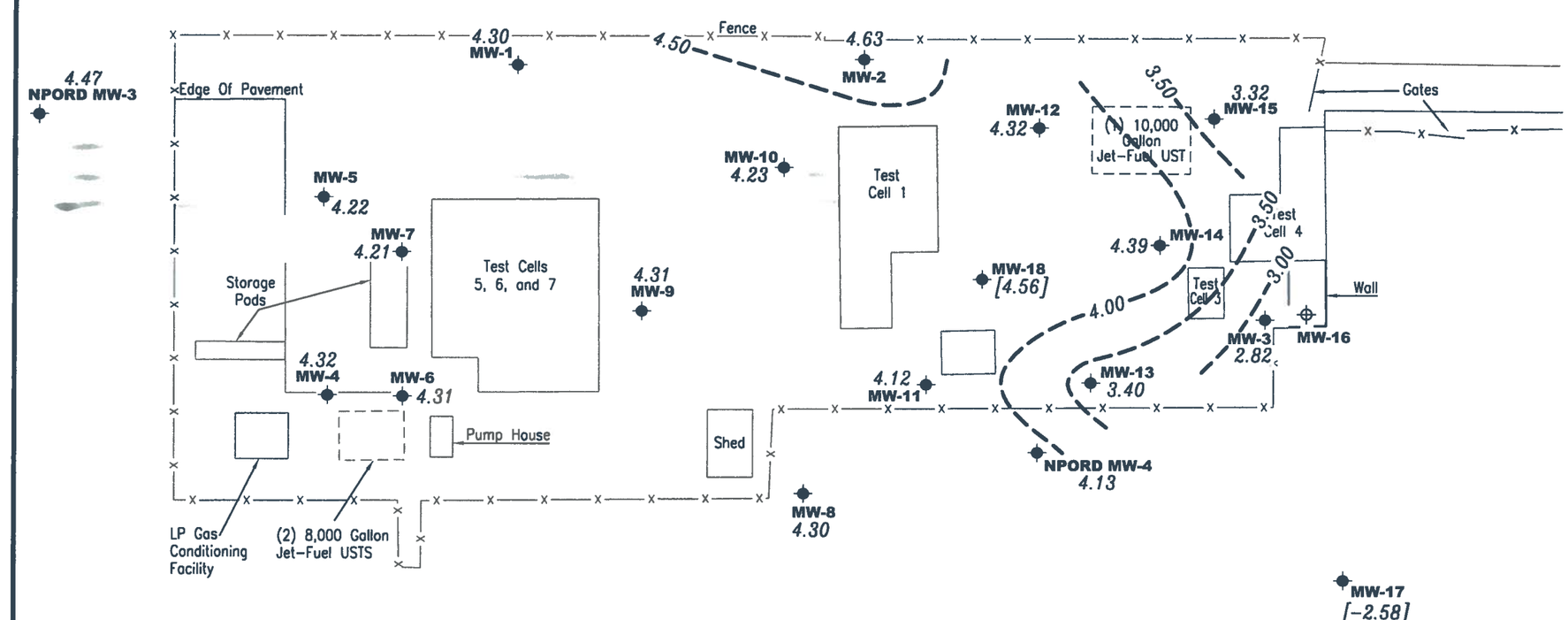
GETTLER-RYAN INC.
6805 Sierra Court, Suite G
Dublin, CA 94568
(925) 551-7555

PROJECT NUMBER 948218.2
REVIEWED BY
DATE 11/07

FILE NAME: P:\Enviro\Rolls Royce\Q16-Rolls Royce - Copy.dwg | Layout Tab: Site Plan

EXPLANATION

- Groundwater monitoring well
- Proposed monitoring well – not installed location inaccessible by drill rig
- *99.99* Groundwater elevation in feet referenced to Mean Sea Level
- *99.99* Groundwater elevation contour, dashed where inferred
- *[99.99]* Not used in contouring



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 October 24-25, 2016

REVISED DATE

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

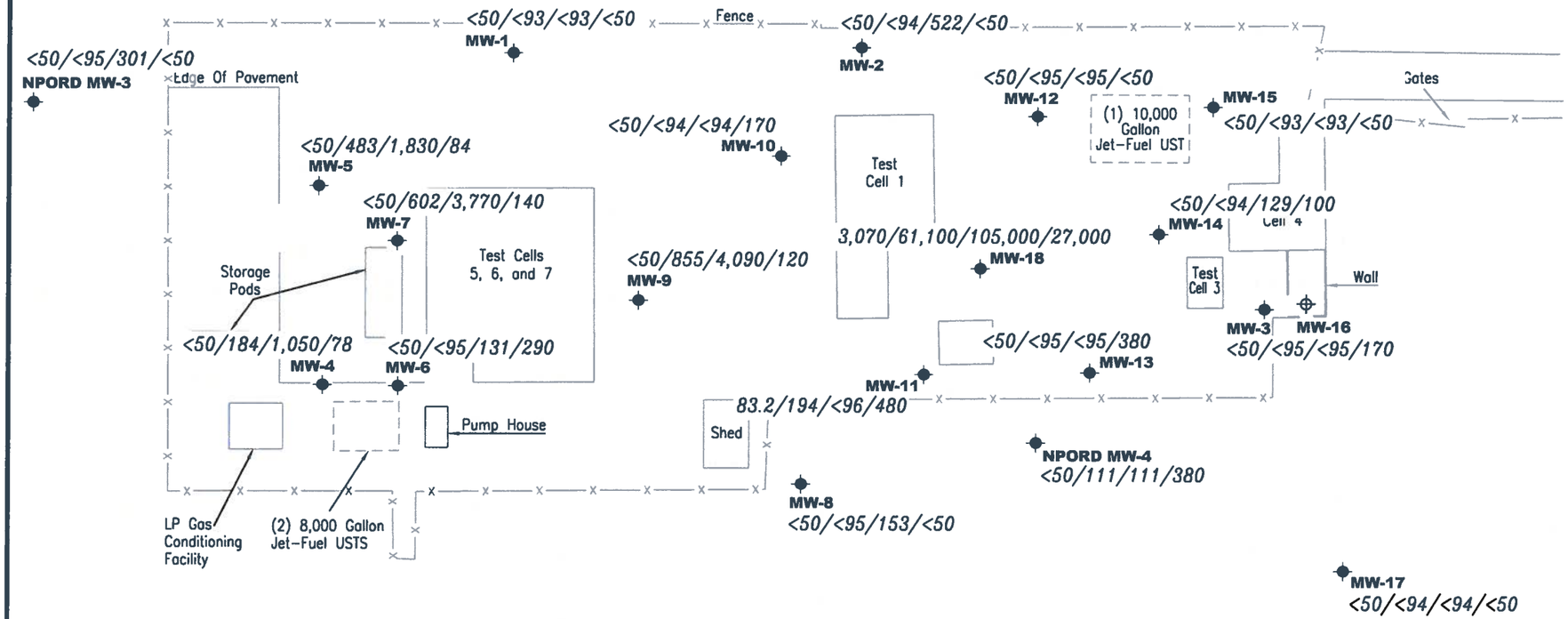
PROJECT NUMBER 948218.2

REVIEWED BY

FILE NAME: P:\Enviro\Rolls Royce\Q16-Rolls Royce - Copy.dwg | Layout Tab: Pot4

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



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

REVISED DATE

DATE
October 24-25, 2016

REVIEWED BY

PROJECT NUMBER
948218.2

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

FILE NAME: P:\Enviro\Rolls Royce\2016-Rolls Royce - Copy.dwg | Layout Tab: Con4

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.

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: 10/24/16 - 10/25/16 (inclusive)

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

Well ID MW 1 Date Monitored: 10/24/16

Well Diameter 2 4 in.

Total Depth 8.43 ft.

Depth to Water 2.87 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.

5.56 xVF 0.17 = 0.94 x3 case volume = Estimated Purge Volume: 2.83 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 3.98

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: 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): 1215 Weather Conditions: Cloudy

Sample Time/Date: 1245 / 10/24/16 Water Color: Cloudy Odor: Y (N)

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

Did well de-water? No If yes, Time: — Volume: — gal. DTW @ Sampling: 3.14

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (uS) mS µmhos/cm	Temperature (C) / F	D.O. (mg/L)	ORP (mV)
1218	1	7.14	2895	20.1		
1221	2	7.10	2914	19.9		
1224	3	7.09	2963	19.9		

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: 10/24-25/16 (inclusive)
City: **Oakland, CA** Sampler: AD

Well ID MW-2
Well Diameter (2) 4 in.
Total Depth 8.93 ft.
Depth to Water 2.40 ft.
Date Monitored: 10/24/16

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.

6.53 xVF 0.17 = 1.11 x3 case volume = Estimated Purge Volume: 3.33 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 3.70

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: 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): 0915 Weather Conditions: Cloudy
Sample Time/Date: 0930 / 10/25/16 Water Color: Cloudy Odor: Y / (N)
Approx. Flow Rate: — gpm. Sediment Description: Grey Silt
Did well de-water? NO If yes, Time: — Volume: — gal. DTW @ Sampling: 6.26

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
0919	1.75	7.52	Out of Range	20.5		
0921	2.50	7.51	↓	20.6		
0923	3.5	7.54	↓	20.7		

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: 10/24-25/16 (inclusive)
City: **Oakland, CA** Sampler: GM/AD

Well ID MW-3
Well Diameter (2) 4 in.
Total Depth 12.09 ft.
Depth to Water 3.91 ft.
8.18 xVF 0.17 = 1.39

Date Monitored: 10/24/16

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.

x3 case volume = Estimated Purge Volume: 4.17 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 5.54

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): 1040 Weather Conditions: CLOUDY
Sample Time/Date: 1100/10/25/16 Water Color: CLEAR Odor: (Y) N SLIGHT
Approx. Flow Rate: — gpm. Sediment Description: CLEAR
Did well de-water? NO If yes, Time: Volume: gal. DTW @ Sampling: 4.27

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS (mS) µmhos/cm)	Temperature (C) / F)	D.O. (mg/L)	ORP (mV)
1043	1.5	7.07	7.47	21.5		
1046	3	7.05	7.41	21.3		
1049	4.5	7.02	7.40	21.2		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-3	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:

GETTLER-RYAN, INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

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

Job Number: 25-948218.1
Event Date: 10/24-25/16 (inclusive)
Sampler: GM

Well ID: MW-4
Well Diameter: (2) 4 in.
Total Depth: 9.99 ft.
Depth to Water: 5.47 ft.

Date Monitored: 10/24/16

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.

4.52 xVF 0.17 = 0.76 x3 case volume = Estimated Purge Volume: 2.5 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 6.43

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): 1240
Sample Time/Date: 1305 / 10/24/16
Approx. Flow Rate: — gpm.
Did well de-water? NO If yes, Time: — Volume: — gal. DTW @ Sampling: 5.61

Weather Conditions: CLOUDY
Water Color: CLOUDY Odor: Y / (N)
Sediment Description: SILT

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS (mS) µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1243	.75	6.95	7.05	22.4		
1246	1.50	6.92	6.91	22.0		
1249	2.5	6.88	6.72	21.9		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-4	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: _____

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: 10/24/16 - 10/25/16 (inclusive)

City: **Oakland, CA** Sampler: CB/KD

Well ID MW-5

Well Diameter (2) 4 in.

Total Depth 9.66 ft.

Depth to Water 4.13 ft.

Date Monitored: 10/24/16

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.

5.53 xVF 0.17 = 0.94 x3 case volume = Estimated Purge Volume: 2.82 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 5.23

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: 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): 1255 Weather Conditions: Cloudy

Sample Time/Date: 1325 / 10/24/16 Water Color: TAN Odor: Y / (N)

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

Did well de-water? No If yes, Time: — Volume: — gal. DTW @ Sampling: 4.39

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS) mS µmhos/cm)	Temperature ((C) / F)	D.O. (mg/L)	ORP (mV)
1258	1	7.29	2879	20.1		
1301	2	7.25	2915	20.0		
1304	3	7.22	2962	19.5		

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
Site Address: 6701 Old Earhart Road
City: Oakland, CA

Job Number: 25-948218.1
Event Date: 10/24-25/16 (inclusive)
Sampler: GM/AD

Well ID: MW-6
Well Diameter: (2) 4 in.
Total Depth: 10.70 ft.
Depth to Water: 5.20 ft.

Date Monitored: 10/24/16

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.

5.50 ~~2.50~~ x VF 0.17 = 0.93 x3 case volume = Estimated Purge Volume: 3 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 6.30

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): 1200
Sample Time/Date: 1230 / 10/24/16
Approx. Flow Rate: ~ gpm.
Did well de-water? NO If yes, Time: _____ Volume: _____ gal. DTW @ Sampling: 5.60

Weather Conditions: CLOUDY
Water Color: GREY Odor: (Y) / N MODERATE
Sediment Description: SILT

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS) mS µmhos/cm)	Temperature (C) F)	D.O. (mg/L)	ORP (mV)
1203	1	7.24	106.4	21.8		
1206	2	7.21	105.6	21.5		
1209	3	7.18	104.1	21.4		

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
Site Address: 6701 Old Earhart Road
City: Oakland, CA
Job Number: 25-948218.1
Event Date: 10/24/16 - 10/25/16 (inclusive)
Sampler: GM/MD

Well ID: MW-7
Well Diameter: (2) 4 in.
Total Depth: 10.10 ft.
Depth to Water: 5.02 ft.
5.08 xVF 0.17 = 0.86
Date Monitored: 10/24/16

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.

x3 case volume = Estimated Purge Volume: 2.59 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 6.05

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: 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): 1320
Sample Time/Date: 1350 / 10/24/16
Approx. Flow Rate: — gpm.
Did well de-water? NO If yes, Time: — Volume: — gal. DTW @ Sampling: 5.24

Weather Conditions: Cloudy
Water Color: Black Odor: (Y) / N Moderate
Sediment Description: heavy Silt

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1323	1	7.22	2965	19.4		
1326	2	7.19	2970	19.4		
1329	3	7.17	2977	19.4		

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
Site Address: 6701 Old Earhart Road
City: Oakland, CA

Job Number: 25-948218.1
Event Date: 10/24-25/16 (inclusive)
Sampler: GM / AD

Well ID: MW-8
Well Diameter: 2 (4) in.
Total Depth: 9.83 ft.
Depth to Water: 3.95 ft.

Date Monitored: 10/24/16

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.

5.88 xVF 0.17 = 0.99 x3 case volume = Estimated Purge Volume: 3 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 5.12

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): 1040
Sample Time/Date: 1110 / 10/24/16
Approx. Flow Rate: — gpm.
Did well de-water? NO If yes, Time: — Volume: — gal. DTW @ Sampling: 4.11

Weather Conditions: Cloudy
Water Color: CLOUDY Odor (Y) / N SLIGHT
Sediment Description: SILT

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS) mS µmhos/cm)	Temperature (C) / F)	D.O. (mg/L)	ORP (mV)
1043	1	7.29	1256	20.9		
1046	2	7.25	1249	20.6		
1049	3	7.24	1248	20.7		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-8	2 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
Site Address: 6701 Old Earhart Road
City: Oakland, CA

Job Number: 25-948218.1
Event Date: 10/24-25/16 (inclusive)
Sampler: GM

Well ID: MW-9
Well Diameter: (2) 4 in.
Total Depth: 9.95 ft.
Depth to Water: 5.13 ft.

Date Monitored: 10/24/16

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.

4.82 xVF 0.17 = 0.81 x3 case volume = Estimated Purge Volume: 2.5 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 6.09

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: 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): 0720
Sample Time/Date: 0750/10/25/16
Approx. Flow Rate: — gpm.
Did well de-water? No If yes, Time: — Volume: — gal. DTW @ Sampling: 5.62

Weather Conditions: Cloudy
Water Color: GRAY Odor: Y / N SLIGHT
Sediment Description: SILT

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
0723	.75	7.56	1201	22.1		
0726	1.5	7.52	1196	22.0		
0729	2.5	7.49	1204	22.1		

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: 10/24-25/16 (inclusive)
City: **Oakland, CA** Sampler: AD

Well ID MW-10
Well Diameter 2/4 in.
Total Depth 10.05 ft.
Depth to Water 3.28 ft.
Date Monitored: 10/24/16

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.

6.77 xVF 0.17 = 1.15 x3 case volume = Estimated Purge Volume: 3.45 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 4.63

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: 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): 0805
Sample Time/Date: 0835 / 10/25/16
Approx. Flow Rate: ~ gpm.
Did well de-water? NO If yes, Time: ~ Volume: ~ gal. DTW @ Sampling: 3.77

Weather Conditions: CLOUDY
Water Color: CLOUDY Odor: Y / N SLIGHT
Sediment Description: SILT

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
0808	1.75	7.56	13.79	21.6		
0811	2.5	7.53	13.74	21.4		
0814	3.5	7.51	13.76	21.0		

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: 10/24-25/16 (inclusive)
City: Oakland, CA | Sampler: GM/AT

Well ID: MW-11 | Date Monitored: 10/24/16
Well Diameter: (2)4 in.
Total Depth: 9.69 ft.
Depth to Water: 3.48 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.

6.21 xVF 0.17 = 1.05 x3 case volume = Estimated Purge Volume: 3.5 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 4.72

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): 1125 | Weather Conditions: CLOUDY
Sample Time/Date: 1145 / 10/25/16 | 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: 3.56

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1128	1.25	7.50	19.6	21.6		
1131	2.5	7.38	19.2	21.6		
1134	3.5	7.35	19.0	21.5		

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
Site Address: 6701 Old Earhart Road
City: Oakland, CA

Job Number: 25-948218.1
Event Date: 10/24-25/16 (inclusive)
Sampler: GW/MS

Well ID: MW-12
Well Diameter: 2 / 4 in.
Total Depth: 9.94 ft.
Depth to Water: 3.00 ft.
6.94 xVF 0.17 = 1.17

Date Monitored: 10/24/16

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.

x3 case volume = Estimated Purge Volume: 3.5 gal.

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

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: 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): 0940
Sample Time/Date: 1005 / 10/25/16
Approx. Flow Rate: — gpm.
Did well de-water? NO If yes, Time: — Volume: — gal. DTW @ Sampling: 3.0

Weather Conditions: Cloudy
Water Color: Clear Odor: Y / (N)
Sediment Description: Clear

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS/mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1001	1.25	7.63	2.06	22.1		
1003	2.5	7.50	2.01	22.3		
1005	3.5	7.43	1.92	22.2		

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
Site Address: 6701 Old Earhart Road
City: Oakland, CA

Job Number: 25-948218.1
Event Date: 10/24-25/16 (inclusive)
Sampler: GM

Well ID: MW-13
Well Diameter: (2) 4 in.
Total Depth: 9.51 ft.
Depth to Water: 2.70 ft.

Date Monitored: 10/24/16

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.

6.81 xVF 0.17 = 1.15 x3 case volume = Estimated Purge Volume: 3.5 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 4.06

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): 1240
Sample Time/Date: 1315 / 10/25/16
Approx. Flow Rate: — gpm.
Did well de-water? NO If yes, Time: — Volume: — gal. DTW @ Sampling: 3.14

Weather Conditions: Cloudy
Water Color: Brown Odor (Y) / N SLIGHT
Sediment Description: silt

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C) F	D.O. (mg/L)	ORP (mV)
1243	1.25	7.57	out of range	21.2		
1246	2.5	7.49	↓	21.3		
1249	3.5	7.45	↓	21.2		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-13	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: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING
FIELD DATA SHEET

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

Job Number: 25-948218.1
Event Date: 10/24-25/16 (inclusive)
Sampler: AD

Well ID: MW-14
Well Diameter: 4 in.
Total Depth: 10.03 ft.
Depth to Water: 2.03 ft.

Date Monitored: 10/24/16

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.

8.00 xVF 0.17 = 1.36 x3 case volume = Estimated Purge Volume: 4.08 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 3.63

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: 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
Sample Time/Date: 1100 / 10/25/16
Approx. Flow Rate: — gpm.
Did well de-water? no If yes, Time: — Volume: — gal.

Weather Conditions: RAIN
Water Color: Cloudy Odor: Y / N slight
Sediment Description: silt
DTW @ Sampling: 2.29

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1033	1.5	7.21	out of range	21.6		
1036	3.0	7.29	↓	21.4		
1040	4.5	7.17	↓	21.7		

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:

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
Site Address: 6701 Old Earhart Road
City: Oakland, CA

Job Number: 25-948218.1
Event Date: 10/24-25/16 (inclusive)
Sampler: GM/BA

Well ID: MW 15
Well Diameter: (2) 4 in.
Total Depth: 10.00 ft.
Depth to Water: 4.19 ft.

Date Monitored: 10/24/16

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.

5.81 xVF 0.17 = 0.98 x3 case volume = Estimated Purge Volume: 2.96 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 5.35

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): 1200
Sample Time/Date: 1235 / 10/25/16
Approx. Flow Rate: — gpm.
Did well de-water? NO If yes, Time: — Volume: — gal. DTW @ Sampling: 4.44

Weather Conditions: Cloudy
Water Color: Cloudy Odor: (Y) N SLIGHT
Sediment Description: SL SILT

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C) F	D.O. (mg/L)	ORP (mV)
1203	1	6.95	OUT OF RANGE	21.1		
1206	2	6.99		21.2		
1209	3	7.01	↓	21.1		

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: _____

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: 10/24-25/16 (inclusive)
City: Oakland, CA Sampler: GM

Well ID MW-17
Well Diameter (2)4 in.
Total Depth 9.81 ft.
Depth to Water 2.62 ft.
7.19 xVF 0.17 = 1.22 x3 case volume = Estimated Purge Volume: 4 gal.
Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 4.05

Date Monitored: 10/24/16

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: 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): 1115 Weather Conditions: Cloudy
Sample Time/Date: 1145 / 10/25/16 Water Color: CLOUDY Odor: (Y) N SLIGHT
Approx. Flow Rate: — gpm. Sediment Description: SL SILT
Did well de-water? NO If yes, Time: — Volume: — gal. DTW @ Sampling: 3.11

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C) F)	D.O. (mg/L)	ORP (mV)
1118	1.5	6.90	OUT OF RANGE	21.0		
1121	3	6.94	↓	20.5		
1124	4	6.81		20.2		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-17	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: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

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

Job Number: 25-948218.1
Event Date: 10/24-25/16 (inclusive)
Sampler: GM/AD

Well ID: MW-18
Well Diameter: (2) 4 in.
Total Depth: 9.94 ft.
Depth to Water: 7.49 ft.

Date Monitored: 10/24/16

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.

7.45 xVF 0.17 = 1.26 x3 case volume = Estimated Purge Volume: 3.79 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 3.98

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: 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): 1200
Sample Time/Date: 1235 / 10/25/16
Approx. Flow Rate: _____ gpm.
Did well de-water? NO If yes, Time: _____ Volume: _____ gal.

Weather Conditions: Cloudy
Water Color: Gray Odor: (Y) N Strong
Sediment Description: Silt
DTW @ Sampling: ~~3.25~~ 3.25

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS) (µmhos/cm)	Temperature (°C / F)	D.O. (mg/L)	ORP (mV)
1203	1	7.55	5.93	22.2		
1206	2.5	7.59	5.87	21.9		
1209	4	7.51	5.85	21.9		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW18	7 x voa vial	YES	HCL	KIFF	TPH-JET FUEL/TPH-MO/TPH-DRO w/sgc(8015)/ TPH-GRO/BTEX/MTBE/NAPHTHALENE(8260)

COMMENTS: MW-18 has Sock in Over in

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: 10/24-25/16 (inclusive)
City: Oakland, CA | Sampler: GM

Well ID: NPORDMW-3 | Date Monitored: 10/24/16
Well Diameter: 2 (4) in.
Total Depth: 16.47 ft.
Depth to Water: 3.64 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.

12.83 xVF 0.66 = 8.46 x3 case volume = Estimated Purge Volume: 26 gal.

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

Purge Equipment:

Disposable Bailer	
Stainless Steel Bailer	
Stack Pump	X
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): 1125 | Weather Conditions: CLOUDY
Sample Time/Date: 1200/10/24/16 | Water Color: CLEAR Odor: Y / (N)
Approx. Flow Rate: - gpm. | Sediment Description: SLIGHT
Did well de-water? NO If yes, Time: _____ Volume: - gal. DTW @ Sampling: 4.11

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1130	10	7.34	OUT OF RANGE	20.4		
1134	13	7.35	↓	20.3		
1138	26	7.36	↓	20.5		

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: _____

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: 10/24/16 -10/25/16 (inclusive)
City: Oakland, CA Sampler: GM/AD

Well ID: NPORDMW4 Date Monitored: 10/24/16
Well Diameter: (2) 4 in.
Total Depth: 11.45 ft.
Depth to Water: 5.93 ft.
5.52 4.52 nwc xVF 0.17 = 0.76

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.

x3 case volume = Estimated Purge Volume: 2.50 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 7.83

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: 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): 0955 Weather Conditions: Cloudy/windy
Sample Time/Date: 1025 / 10/24/16 Water Color: GRAY Odor: (Y) N STRONG
Approx. Flow Rate: — gpm. Sediment Description: SILT
Did well de-water? no If yes, Time: — Volume: — gal. DTW @ Sampling: 5.96

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (~~µS~~ mS µmhos/cm)	Temperature (C F)	D.O. (mg/L)	ORP (mV)
0957	.75	7.02	5.12	19.5		
0959	1.5	7.08	5.30	19.6		
1002	2.5	7.04	5.42	19.5		

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: TUBE IN WELL.

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

PES Environmental, Inc.
Engineering & Environmental Services

LOCATION:	
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
9/12/16	05:00	MW18				170	
9/19/16	05:00	MW18				210	
9/26/16	4:35	MW18				10	
10/3/16	05:30	MW18				10	
10/10/16	05:30	MW18				40	
10/17/16	05:00	MW18				120	
10/24/16	05:00	MW18				10	
10/31/16	05:00	MW18				10	
11/7/16	05:00	MW18				260	
11/14/16	05:00	MW18				410	
11/21/16	05:00	MW18				90	
11/28/16	04:35	MW18				100	

PES Environmental, Inc.
Engineering & Environmental Services

LOCATION: RRESO 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
6/13/16	05:00	MW18				170	
6/20/16	05:00	MW18				350	
6/27/16	05:00	MW18				360	
7/5/16	04:40	MW18				360	
7/11/16	05:00	MW18				180	
7/18/16	05:00	MW18				300	
7/25/16	06:00	MW18				290	
8/8	05:00	MW18				300	
8/15	05:00	MW18				300	
8/22	05:00	MW18				210	
8/29	05:00	MW18				180	
9/6	05:00	MW18				10	

PES Environmental, Inc.
Engineering & Environmental Services

LOCATION: BBESO 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
3/21/16	05:00	MW18				140	
3/28/16	05:00	MW18				370	
4/4/16	05:00	MW18				390	
4/11/16	05:00	MW18				420	
4/18/16	05:00	MW18				410	
4/25/16	05:00	MW18				390	
5/2/16	05:00	MW18				420	
5/9/16	05:00	MW18				110	
5/16/16	05:00	MW18				270	
5/23/16	05:00	MW18				380	
5/31/16	05:00	MW18				310	
6/6/16	05:00	MW18				310	

PES Environmental, Inc.
Engineering & Environmental Services

LOCATION: BB650 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
12/28/15	05:00	MW18				250	
1/4/16	05:00	MW18				320	
1/11/16	05:00	MW18				410	
1/19/16	05:30	MW18				110	
1/25/16	05:00	MW18				20	
2/1/16	05:00	MW18				360	
2/8/16	05:00	MW18				320	
2/15/16	05:00	MW18				320	
2/22/16	05:00	MW18				360	
2/29/16	05:00	MW18				400	
3/7/16	05:00	MW18				410	
3/14/16	05:00	MW18				410	

Pace Analytical Services, LLC
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Davis, CA 95618
(530) 297-4800

November 30, 2016

Deanna L. Harding
Gettler-Ryan Inc.
6805 Sierra Court
Suite G
Dublin, CA 94568

RE: Project: Rolls-Royce Engine Test FacREV
Pace Project No.: 1277884

Dear Deanna L. Harding:
Enclosed are the analytical results for sample(s) received by the laboratory on October 26, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

This is a revised report. Units were updated to ug/L.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Carrie Jensen for
Scott M Forbes
scott.forbes@pacelabs.com
Project Manager

Enclosures

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(530) 297-4800

CERTIFICATIONS

Project: Rolls-Royce Engine Test FacREV
Pace Project No.: 1277884

Davis Cerification IDs
2795 Second Street Suite 300 Davis, CA 95618
North Dakota Certification #: R-214
Oregon Certification #: CA300002
Washington Certification #: C926-15a
California Certification #: 08263CA
Minnesota Department of Health Certification #: 006-999-465

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SAMPLE SUMMARY

Project: Rolls-Royce Engine Test FacREV
Pace Project No.: 1277884

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1277884001	QA	Water	10/24/16 00:00	10/26/16 11:38
1277884002	MW-2	Water	10/25/16 09:30	10/26/16 11:38
1277884003	MW-3	Water	10/25/16 11:00	10/26/16 11:38
1277884004	MW-4	Water	10/24/16 13:05	10/26/16 11:38
1277884005	MW-5	Water	10/24/16 13:25	10/26/16 11:38
1277884006	MW-6	Water	10/24/16 12:30	10/26/16 11:38
1277884007	MW-7	Water	10/24/16 13:50	10/26/16 11:38
1277884008	MW-8	Water	10/24/16 11:10	10/26/16 11:38
1277884009	MW-9	Water	10/25/16 07:50	10/26/16 11:38
1277884010	MW-10	Water	10/25/16 08:35	10/26/16 11:38
1277884011	MW-11	Water	10/25/16 11:45	10/26/16 11:38
1277884012	MW-12	Water	10/25/16 10:15	10/26/16 11:38
1277884013	MW-13	Water	10/25/16 13:15	10/26/16 11:38
1277884014	MW-14	Water	10/25/16 11:00	10/26/16 11:38
1277884015	MW-15	Water	10/25/16 12:35	10/26/16 11:38
1277884016	MW-17	Water	10/25/16 11:45	10/26/16 11:38
1277884017	MW-18	Water	10/25/16 12:35	10/26/16 11:38
1277884018	NPORDMW-3	Water	10/24/16 12:00	10/26/16 11:38
1277884019	NPORDMW-4	Water	10/24/16 10:25	10/26/16 11:38
1277884020	MW-1	Water	10/24/16 12:45	10/26/16 11:38

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SAMPLE ANALYTE COUNT

Project: Rolls-Royce Engine Test FacREV
Pace Project No.: 1277884

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
1277884001	QA	EPA 8260B	JCP	10	PASI-DAV
1277884002	MW-2	EPA 8015B	CCB	2	PASI-DAV
		EPA 8015B	CCB	2	PASI-DAV
		EPA 8260B	JCP	10	PASI-DAV
1277884003	MW-3	EPA 8015B	CCB	2	PASI-DAV
		EPA 8015B	CCB	2	PASI-DAV
		EPA 8260B	JCP	10	PASI-DAV
1277884004	MW-4	EPA 8015B	CCB	2	PASI-DAV
		EPA 8015B	CCB	2	PASI-DAV
		EPA 8260B	JCP	10	PASI-DAV
1277884005	MW-5	EPA 8015B	CCB	2	PASI-DAV
		EPA 8015B	CCB	2	PASI-DAV
		EPA 8260B	JCP	10	PASI-DAV
1277884006	MW-6	EPA 8015B	CCB	2	PASI-DAV
		EPA 8015B	CCB	2	PASI-DAV
		EPA 8260B	JCP	10	PASI-DAV
1277884007	MW-7	EPA 8015B	CCB	2	PASI-DAV
		EPA 8015B	CCB	2	PASI-DAV
		EPA 8260B	JCP	10	PASI-DAV
1277884008	MW-8	EPA 8015B	CCB	2	PASI-DAV
		EPA 8015B	CCB	2	PASI-DAV
		EPA 8260B	JCP	10	PASI-DAV
1277884009	MW-9	EPA 8015B	CCB	2	PASI-DAV
		EPA 8015B	CCB	2	PASI-DAV
		EPA 8260B	JCP	10	PASI-DAV
1277884010	MW-10	EPA 8015B	CCB	2	PASI-DAV
		EPA 8015B	CCB	2	PASI-DAV
		EPA 8260B	JCP	10	PASI-DAV
1277884011	MW-11	EPA 8015B	CCB	2	PASI-DAV
		EPA 8015B	CCB	2	PASI-DAV
		EPA 8260B	JCP	10	PASI-DAV
1277884012	MW-12	EPA 8015B	CCB	2	PASI-DAV
		EPA 8015B	CCB	2	PASI-DAV
		EPA 8260B	JCP	10	PASI-DAV
1277884013	MW-13	EPA 8015B	CCB	2	PASI-DAV
		EPA 8015B	CCB	2	PASI-DAV
		EPA 8260B	JCP	10	PASI-DAV

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SAMPLE ANALYTE COUNT

Project: Rolls-Royce Engine Test FacREV
Pace Project No.: 1277884

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
1277884014	MW-14	EPA 8015B	CCB	2	PASI-DAV
		EPA 8015B	CCB	2	PASI-DAV
		EPA 8260B	JCP	10	PASI-DAV
1277884015	MW-15	EPA 8015B	CCB	2	PASI-DAV
		EPA 8015B	JSD	2	PASI-DAV
		EPA 8260B	JCP	10	PASI-DAV
1277884016	MW-17	EPA 8015B	CCB	2	PASI-DAV
		EPA 8015B	JSD	2	PASI-DAV
		EPA 8260B	JCP	10	PASI-DAV
1277884017	MW-18	EPA 8015B	CCB	2	PASI-DAV
		EPA 8015B	CCB, JSD	2	PASI-DAV
		EPA 8260B	JCP	10	PASI-DAV
1277884018	NPORDMW-3	EPA 8015B	CCB	2	PASI-DAV
		EPA 8015B	JSD	2	PASI-DAV
		EPA 8260B	JCP	10	PASI-DAV
1277884019	NPORDMW-4	EPA 8015B	CCB	2	PASI-DAV
		EPA 8015B	CCB	2	PASI-DAV
		EPA 8260B	JCP	10	PASI-DAV
1277884020	MW-1	EPA 8015B	CCB	2	PASI-DAV
		EPA 8015B	JSD	2	PASI-DAV
		EPA 8260B	JCP	10	PASI-DAV

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ANALYTICAL RESULTS

Project: Rolls-Royce Engine Test FacREV
Pace Project No.: 1277884

Sample: QA **Lab ID: 1277884001** Collected: 10/24/16 00:00 Received: 10/26/16 11:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		10/27/16 21:35	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		10/27/16 21:35	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		10/27/16 21:35	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		10/27/16 21:35	91-20-3	
Toluene	ND	ug/L	0.50	1		10/27/16 21:35	108-88-3	
TPH as Gas	ND	ug/L	50.0	1		10/27/16 21:35		
Xylene (Total)	ND	ug/L	1.5	1		10/27/16 21:35	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	103	%.	70-130	1		10/27/16 21:35	17060-07-0	
Toluene-d8 (S)	101	%.	70-130	1		10/27/16 21:35	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	70-130	1		10/27/16 21:35	460-00-4	

Sample: MW-2 **Lab ID: 1277884002** Collected: 10/25/16 09:30 Received: 10/26/16 11:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Water	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH - Motor Oil	**522**	ug/L	94.6	1	10/28/16 13:24	11/03/16 21:17	64742-65-0	
Surrogates								
n-Octacosane (S)	130	%.	75-150	1	10/28/16 13:24	11/03/16 21:17	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	ND	ug/L	94.6	1	10/28/16 13:24	11/02/16 17:25		
Surrogates								
n-Octacosane (S)	114	%.	75-139	1	10/28/16 13:24	11/02/16 17:25	630-02-4	
8260 MSV UST Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		10/27/16 19:40	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		10/27/16 19:40	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		10/27/16 19:40	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		10/27/16 19:40	91-20-3	
Toluene	ND	ug/L	0.50	1		10/27/16 19:40	108-88-3	
TPH as Gas	ND	ug/L	50.0	1		10/27/16 19:40		
Xylene (Total)	ND	ug/L	1.5	1		10/27/16 19:40	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	104	%.	70-130	1		10/27/16 19:40	17060-07-0	
Toluene-d8 (S)	101	%.	70-130	1		10/27/16 19:40	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	70-130	1		10/27/16 19:40	460-00-4	

Sample: MW-3 **Lab ID: 1277884003** Collected: 10/25/16 11:00 Received: 10/26/16 11:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Water	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH - Motor Oil	ND	ug/L	95.2	1	10/28/16 13:24	11/03/16 21:48	64742-65-0	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
2795 Second Street - Suite 300
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(530) 297-4800

ANALYTICAL RESULTS

Project: Rolls-Royce Engine Test FacREV
Pace Project No.: 1277884

Sample: MW-3 **Lab ID: 1277884003** Collected: 10/25/16 11:00 Received: 10/26/16 11:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Water	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
Surrogates								
n-Octacosane (S)	105	%.	75-150	1	10/28/16 13:24	11/03/16 21:48	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	ND	ug/L	95.2	1	10/28/16 13:24	11/02/16 11:18		
Surrogates								
n-Octacosane (S)	108	%.	75-139	1	10/28/16 13:24	11/02/16 11:18	630-02-4	
8260 MSV UST Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		10/27/16 21:54	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		10/27/16 21:54	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		10/27/16 21:54	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		10/27/16 21:54	91-20-3	
Toluene	ND	ug/L	0.50	1		10/27/16 21:54	108-88-3	
TPH as Gas	ND	ug/L	50.0	1		10/27/16 21:54		
Xylene (Total)	ND	ug/L	1.5	1		10/27/16 21:54	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	104	%.	70-130	1		10/27/16 21:54	17060-07-0	
Toluene-d8 (S)	101	%.	70-130	1		10/27/16 21:54	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	70-130	1		10/27/16 21:54	460-00-4	

Sample: MW-4 **Lab ID: 1277884004** Collected: 10/24/16 13:05 Received: 10/26/16 11:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Water	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH - Motor Oil	**1050**	ug/L	94.3	1	10/28/16 13:24	11/03/16 22:19	64742-65-0	
Surrogates								
n-Octacosane (S)	113	%.	75-150	1	10/28/16 13:24	11/03/16 22:19	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	**184**	ug/L	94.3	1	10/28/16 13:24	11/02/16 11:55		DM
Surrogates								
n-Octacosane (S)	110	%.	75-139	1	10/28/16 13:24	11/02/16 11:55	630-02-4	
8260 MSV UST Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		10/27/16 22:13	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		10/27/16 22:13	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		10/27/16 22:13	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		10/27/16 22:13	91-20-3	
Toluene	ND	ug/L	0.50	1		10/27/16 22:13	108-88-3	
TPH as Gas	ND	ug/L	50.0	1		10/27/16 22:13		
Xylene (Total)	ND	ug/L	1.5	1		10/27/16 22:13	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	102	%.	70-130	1		10/27/16 22:13	17060-07-0	
Toluene-d8 (S)	100	%.	70-130	1		10/27/16 22:13	2037-26-5	

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Rolls-Royce Engine Test FacREV
Pace Project No.: 1277884

Sample: MW-4 **Lab ID: 1277884004** Collected: 10/24/16 13:05 Received: 10/26/16 11:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST Water	Analytical Method: EPA 8260B							
Surrogates								
4-Bromofluorobenzene (S)	97	%.	70-130	1		10/27/16 22:13	460-00-4	

Sample: MW-5 **Lab ID: 1277884005** Collected: 10/24/16 13:25 Received: 10/26/16 11:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Water	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH - Motor Oil	**1830**	ug/L	96.0	1	10/28/16 13:24	11/03/16 22:50	64742-65-0	
Surrogates								
n-Octacosane (S)	109	%.	75-150	1	10/28/16 13:24	11/03/16 22:50	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	**483**	ug/L	96.0	1	10/28/16 13:24	11/02/16 12:31		DM
Surrogates								
n-Octacosane (S)	109	%.	75-139	1	10/28/16 13:24	11/02/16 12:31	630-02-4	
8260 MSV UST Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		10/27/16 22:32	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		10/27/16 22:32	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		10/27/16 22:32	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		10/27/16 22:32	91-20-3	
Toluene	ND	ug/L	0.50	1		10/27/16 22:32	108-88-3	
TPH as Gas	ND	ug/L	50.0	1		10/27/16 22:32		
Xylene (Total)	ND	ug/L	1.5	1		10/27/16 22:32	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	103	%.	70-130	1		10/27/16 22:32	17060-07-0	
Toluene-d8 (S)	100	%.	70-130	1		10/27/16 22:32	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	70-130	1		10/27/16 22:32	460-00-4	

Sample: MW-6 **Lab ID: 1277884006** Collected: 10/24/16 12:30 Received: 10/26/16 11:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Water	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH - Motor Oil	**131**	ug/L	95.3	1	10/28/16 13:24	11/03/16 23:21	64742-65-0	
Surrogates								
n-Octacosane (S)	118	%.	75-150	1	10/28/16 13:24	11/03/16 23:21	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	ND	ug/L	95.3	1	10/28/16 13:24	10/27/16 18:02		
Surrogates								
n-Octacosane (S)	117	%.	75-139	1	10/28/16 13:24	10/27/16 18:02	630-02-4	

Pace Analytical Services, LLC
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(530) 297-4800

ANALYTICAL RESULTS

Project: Rolls-Royce Engine Test FacREV
Pace Project No.: 1277884

Sample: MW-6 **Lab ID: 1277884006** Collected: 10/24/16 12:30 Received: 10/26/16 11:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		10/27/16 22:52	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		10/27/16 22:52	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		10/27/16 22:52	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		10/27/16 22:52	91-20-3	
Toluene	ND	ug/L	0.50	1		10/27/16 22:52	108-88-3	
TPH as Gas	ND	ug/L	50.0	1		10/27/16 22:52		
Xylene (Total)	ND	ug/L	1.5	1		10/27/16 22:52	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	103	%.	70-130	1		10/27/16 22:52	17060-07-0	
Toluene-d8 (S)	101	%.	70-130	1		10/27/16 22:52	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	70-130	1		10/27/16 22:52	460-00-4	

Sample: MW-7 **Lab ID: 1277884007** Collected: 10/24/16 13:50 Received: 10/26/16 11:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Water	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH - Motor Oil	**3770**	ug/L	95.9	1	10/28/16 13:24	11/03/16 23:52	64742-65-0	
Surrogates								
n-Octacosane (S)	111	%.	75-150	1	10/28/16 13:24	11/03/16 23:52	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	**602**	ug/L	95.9	1	10/28/16 13:24	11/02/16 18:39		DM
Surrogates								
n-Octacosane (S)	115	%.	75-139	1	10/28/16 13:24	11/02/16 18:39	630-02-4	
8260 MSV UST Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		10/27/16 23:11	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		10/27/16 23:11	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		10/27/16 23:11	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		10/27/16 23:11	91-20-3	
Toluene	ND	ug/L	0.50	1		10/27/16 23:11	108-88-3	
TPH as Gas	ND	ug/L	50.0	1		10/27/16 23:11		
Xylene (Total)	ND	ug/L	1.5	1		10/27/16 23:11	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	103	%.	70-130	1		10/27/16 23:11	17060-07-0	
Toluene-d8 (S)	100	%.	70-130	1		10/27/16 23:11	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	70-130	1		10/27/16 23:11	460-00-4	

Sample: MW-8 **Lab ID: 1277884008** Collected: 10/24/16 11:10 Received: 10/26/16 11:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Water	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH - Motor Oil	**153**	ug/L	95.8	1	10/28/16 13:24	11/04/16 08:36	64742-65-0	DH

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Rolls-Royce Engine Test FacREV
Pace Project No.: 1277884

Sample: MW-8 **Lab ID: 1277884008** Collected: 10/24/16 11:10 Received: 10/26/16 11:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Water	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
Surrogates								
n-Octacosane (S)	108	%.	75-150	1	10/28/16 13:24	11/04/16 08:36	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	ND	ug/L	95.8	1	10/28/16 13:24	11/02/16 14:58		
Surrogates								
n-Octacosane (S)	125	%.	75-139	1	10/28/16 13:24	11/02/16 14:58	630-02-4	
8260 MSV UST Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		10/27/16 23:30	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		10/27/16 23:30	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		10/27/16 23:30	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		10/27/16 23:30	91-20-3	
Toluene	ND	ug/L	0.50	1		10/27/16 23:30	108-88-3	
TPH as Gas	ND	ug/L	50.0	1		10/27/16 23:30		
Xylene (Total)	ND	ug/L	1.5	1		10/27/16 23:30	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	103	%.	70-130	1		10/27/16 23:30	17060-07-0	
Toluene-d8 (S)	100	%.	70-130	1		10/27/16 23:30	2037-26-5	
4-Bromofluorobenzene (S)	95	%.	70-130	1		10/27/16 23:30	460-00-4	

Sample: MW-9 **Lab ID: 1277884009** Collected: 10/25/16 07:50 Received: 10/26/16 11:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Water	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH - Motor Oil	**4090**	ug/L	96.0	1	10/28/16 13:24	11/04/16 08:05	64742-65-0	DH
Surrogates								
n-Octacosane (S)	97	%.	75-150	1	10/28/16 13:24	11/04/16 08:05	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	**855**	ug/L	96.0	1	10/28/16 13:24	11/02/16 15:35		
Surrogates								
n-Octacosane (S)	108	%.	75-139	1	10/28/16 13:24	11/02/16 15:35	630-02-4	
8260 MSV UST Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		10/27/16 23:49	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		10/27/16 23:49	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		10/27/16 23:49	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		10/27/16 23:49	91-20-3	
Toluene	ND	ug/L	0.50	1		10/27/16 23:49	108-88-3	
TPH as Gas	ND	ug/L	50.0	1		10/27/16 23:49		
Xylene (Total)	ND	ug/L	1.5	1		10/27/16 23:49	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	104	%.	70-130	1		10/27/16 23:49	17060-07-0	
Toluene-d8 (S)	101	%.	70-130	1		10/27/16 23:49	2037-26-5	

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ANALYTICAL RESULTS

Project: Rolls-Royce Engine Test FacREV
Pace Project No.: 1277884

Sample: MW-9 **Lab ID: 1277884009** Collected: 10/25/16 07:50 Received: 10/26/16 11:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST Water	Analytical Method: EPA 8260B							
Surrogates								
4-Bromofluorobenzene (S)	97	%.	70-130	1		10/27/16 23:49	460-00-4	

Sample: MW-10 **Lab ID: 1277884010** Collected: 10/25/16 08:35 Received: 10/26/16 11:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Water	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH - Motor Oil	ND	ug/L	94.6	1	10/28/16 13:24	11/04/16 07:34	64742-65-0	
Surrogates								
n-Octacosane (S)	117	%.	75-150	1	10/28/16 13:24	11/04/16 07:34	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	ND	ug/L	94.6	1	10/28/16 13:24	10/27/16 16:12		
Surrogates								
n-Octacosane (S)	118	%.	75-139	1	10/28/16 13:24	10/27/16 16:12	630-02-4	
8260 MSV UST Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		10/28/16 00:09	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		10/28/16 00:09	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		10/28/16 00:09	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		10/28/16 00:09	91-20-3	
Toluene	ND	ug/L	0.50	1		10/28/16 00:09	108-88-3	
TPH as Gas	ND	ug/L	50.0	1		10/28/16 00:09		
Xylene (Total)	ND	ug/L	1.5	1		10/28/16 00:09	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	103	%.	70-130	1		10/28/16 00:09	17060-07-0	
Toluene-d8 (S)	101	%.	70-130	1		10/28/16 00:09	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	70-130	1		10/28/16 00:09	460-00-4	

Sample: MW-11 **Lab ID: 1277884011** Collected: 10/25/16 11:45 Received: 10/26/16 11:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Water	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH - Motor Oil	ND	ug/L	96.1	1	10/28/16 13:24	11/04/16 07:03	64742-65-0	
Surrogates								
n-Octacosane (S)	98	%.	75-150	1	10/28/16 13:24	11/04/16 07:03	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	**194**	ug/L	96.1	1	10/28/16 13:24	11/02/16 16:49		DM
Surrogates								
n-Octacosane (S)	117	%.	75-139	1	10/28/16 13:24	11/02/16 16:49	630-02-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Rolls-Royce Engine Test FacREV
Pace Project No.: 1277884

Sample: MW-11 **Lab ID: 1277884011** Collected: 10/25/16 11:45 Received: 10/26/16 11:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		10/28/16 00:28	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		10/28/16 00:28	100-41-4	
Methyl-tert-butyl ether	**1.4**	ug/L	0.50	1		10/28/16 00:28	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		10/28/16 00:28	91-20-3	
Toluene	ND	ug/L	0.50	1		10/28/16 00:28	108-88-3	
TPH as Gas	**83.2**	ug/L	50.0	1		10/28/16 00:28		
Xylene (Total)	ND	ug/L	1.5	1		10/28/16 00:28	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	104	%.	70-130	1		10/28/16 00:28	17060-07-0	
Toluene-d8 (S)	100	%.	70-130	1		10/28/16 00:28	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	70-130	1		10/28/16 00:28	460-00-4	

Sample: MW-12 **Lab ID: 1277884012** Collected: 10/25/16 10:15 Received: 10/26/16 11:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Water	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH - Motor Oil	ND	ug/L	95.2	1	10/28/16 13:24	10/31/16 12:56	64742-65-0	
Surrogates								
n-Octacosane (S)	107	%.	75-150	1	10/28/16 13:24	10/31/16 12:56	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	ND	ug/L	95.2	1	10/28/16 13:24	10/31/16 11:40		
Surrogates								
n-Octacosane (S)	112	%.	75-139	1	10/28/16 13:24	10/31/16 11:40	630-02-4	
8260 MSV UST Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		10/28/16 00:47	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		10/28/16 00:47	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		10/28/16 00:47	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		10/28/16 00:47	91-20-3	
Toluene	ND	ug/L	0.50	1		10/28/16 00:47	108-88-3	
TPH as Gas	ND	ug/L	50.0	1		10/28/16 00:47		
Xylene (Total)	ND	ug/L	1.5	1		10/28/16 00:47	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	104	%.	70-130	1		10/28/16 00:47	17060-07-0	
Toluene-d8 (S)	101	%.	70-130	1		10/28/16 00:47	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	70-130	1		10/28/16 00:47	460-00-4	

Sample: MW-13 **Lab ID: 1277884013** Collected: 10/25/16 13:15 Received: 10/26/16 11:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Water	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH - Motor Oil	ND	ug/L	95.2	1	10/28/16 13:24	11/04/16 09:07	64742-65-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Rolls-Royce Engine Test FacREV
Pace Project No.: 1277884

Sample: MW-13 **Lab ID: 1277884013** Collected: 10/25/16 13:15 Received: 10/26/16 11:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Water	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
Surrogates								
n-Octacosane (S)	116	%.	75-150	1	10/28/16 13:24	11/04/16 09:07	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	ND	ug/L	95.2	1	10/28/16 13:24	11/03/16 19:43		
Surrogates								
n-Octacosane (S)	108	%.	75-139	1	10/28/16 13:24	11/03/16 19:43	630-02-4	
8260 MSV UST Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		10/28/16 01:06	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		10/28/16 01:06	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		10/28/16 01:06	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		10/28/16 01:06	91-20-3	
Toluene	ND	ug/L	0.50	1		10/28/16 01:06	108-88-3	
TPH as Gas	ND	ug/L	50.0	1		10/28/16 01:06		
Xylene (Total)	ND	ug/L	1.5	1		10/28/16 01:06	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	105	%.	70-130	1		10/28/16 01:06	17060-07-0	
Toluene-d8 (S)	101	%.	70-130	1		10/28/16 01:06	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	70-130	1		10/28/16 01:06	460-00-4	

Sample: MW-14 **Lab ID: 1277884014** Collected: 10/25/16 11:00 Received: 10/26/16 11:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Water	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH - Motor Oil	**129**	ug/L	94.2	1	10/28/16 13:24	11/04/16 09:38	64742-65-0	
Surrogates								
n-Octacosane (S)	100	%.	75-150	1	10/28/16 13:24	11/04/16 09:38	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	ND	ug/L	94.2	1	10/28/16 13:24	11/03/16 20:14		
Surrogates								
n-Octacosane (S)	109	%.	75-139	1	10/28/16 13:24	11/03/16 20:14	630-02-4	
8260 MSV UST Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		10/28/16 01:25	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		10/28/16 01:25	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		10/28/16 01:25	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		10/28/16 01:25	91-20-3	
Toluene	ND	ug/L	0.50	1		10/28/16 01:25	108-88-3	
TPH as Gas	ND	ug/L	50.0	1		10/28/16 01:25		
Xylene (Total)	ND	ug/L	1.5	1		10/28/16 01:25	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	105	%.	70-130	1		10/28/16 01:25	17060-07-0	
Toluene-d8 (S)	100	%.	70-130	1		10/28/16 01:25	2037-26-5	

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ANALYTICAL RESULTS

Project: Rolls-Royce Engine Test FacREV
Pace Project No.: 1277884

Sample: MW-14 **Lab ID: 1277884014** Collected: 10/25/16 11:00 Received: 10/26/16 11:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST Water	Analytical Method: EPA 8260B							
Surrogates								
4-Bromofluorobenzene (S)	96	%.	70-130	1		10/28/16 01:25	460-00-4	

Sample: MW-15 **Lab ID: 1277884015** Collected: 10/25/16 12:35 Received: 10/26/16 11:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Water	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH - Motor Oil	ND	ug/L	93.8	1	10/28/16 13:24	11/04/16 10:09	64742-65-0	
Surrogates								
n-Octacosane (S)	103	%.	75-150	1	10/28/16 13:24	11/04/16 10:09	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	ND	ug/L	93.8	1	10/28/16 13:24	11/01/16 11:49		
Surrogates								
n-Octacosane (S)	111	%.	75-139	1	10/28/16 13:24	11/01/16 11:49	630-02-4	
8260 MSV UST Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		10/28/16 01:44	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		10/28/16 01:44	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		10/28/16 01:44	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		10/28/16 01:44	91-20-3	
Toluene	ND	ug/L	0.50	1		10/28/16 01:44	108-88-3	
TPH as Gas	ND	ug/L	50.0	1		10/28/16 01:44		
Xylene (Total)	ND	ug/L	1.5	1		10/28/16 01:44	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	105	%.	70-130	1		10/28/16 01:44	17060-07-0	
Toluene-d8 (S)	101	%.	70-130	1		10/28/16 01:44	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	70-130	1		10/28/16 01:44	460-00-4	

Sample: MW-17 **Lab ID: 1277884016** Collected: 10/25/16 11:45 Received: 10/26/16 11:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Water	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH - Motor Oil	ND	ug/L	94.7	1	10/28/16 13:24	11/04/16 10:40	64742-65-0	
Surrogates								
n-Octacosane (S)	90	%.	75-150	1	10/28/16 13:24	11/04/16 10:40	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	ND	ug/L	94.7	1	10/28/16 13:24	11/01/16 11:12		
Surrogates								
n-Octacosane (S)	103	%.	75-139	1	10/28/16 13:24	11/01/16 11:12	630-02-4	

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ANALYTICAL RESULTS

Project: Rolls-Royce Engine Test FacREV
Pace Project No.: 1277884

Sample: MW-17 **Lab ID: 1277884016** Collected: 10/25/16 11:45 Received: 10/26/16 11:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		10/28/16 02:04	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		10/28/16 02:04	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		10/28/16 02:04	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		10/28/16 02:04	91-20-3	
Toluene	ND	ug/L	0.50	1		10/28/16 02:04	108-88-3	
TPH as Gas	ND	ug/L	50.0	1		10/28/16 02:04		
Xylene (Total)	ND	ug/L	1.5	1		10/28/16 02:04	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	104	%.	70-130	1		10/28/16 02:04	17060-07-0	
Toluene-d8 (S)	101	%.	70-130	1		10/28/16 02:04	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	70-130	1		10/28/16 02:04	460-00-4	

Sample: MW-18 **Lab ID: 1277884017** Collected: 10/25/16 12:35 Received: 10/26/16 11:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Water	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH - Motor Oil	**105000**	ug/L	1910	20	10/28/16 13:24	11/08/16 12:38	64742-65-0	CH,DH
Surrogates								
n-Octacosane (S)	194	%.	75-150	20	10/28/16 13:24	11/08/16 12:38	630-02-4	S4
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	**61100**	ug/L	956	10	10/28/16 13:24	11/08/16 10:50		DM
Surrogates								
n-Octacosane (S)	181	%.	75-139	20	10/28/16 13:24	11/08/16 13:09	630-02-4	
n-Octacosane (S)	139	%.	75-139	1	10/28/16 13:24	11/01/16 08:45	630-02-4	S5
8260 MSV UST Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		10/28/16 02:23	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		10/28/16 02:23	100-41-4	
Methyl-tert-butyl ether	**1.5**	ug/L	0.50	1		10/28/16 02:23	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		10/28/16 02:23	91-20-3	
Toluene	ND	ug/L	0.50	1		10/28/16 02:23	108-88-3	
TPH as Gas	**3070**	ug/L	50.0	1		10/28/16 02:23		
Xylene (Total)	ND	ug/L	1.5	1		10/28/16 02:23	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	104	%.	70-130	1		10/28/16 02:23	17060-07-0	
Toluene-d8 (S)	103	%.	70-130	1		10/28/16 02:23	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	70-130	1		10/28/16 02:23	460-00-4	

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ANALYTICAL RESULTS

Project: Rolls-Royce Engine Test FacREV
Pace Project No.: 1277884

Sample: NPORDMW-3 **Lab ID: 1277884018** Collected: 10/24/16 12:00 Received: 10/26/16 11:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Water	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH - Motor Oil	**301**	ug/L	95.0	1	10/28/16 13:24	11/04/16 14:04	64742-65-0	DH
Surrogates								
n-Octacosane (S)	126	%.	75-150	1	10/28/16 13:24	11/04/16 14:04	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	ND	ug/L	95.0	1	10/28/16 13:24	11/01/16 09:22		
Surrogates								
n-Octacosane (S)	113	%.	75-139	1	10/28/16 13:24	11/01/16 09:22	630-02-4	
8260 MSV UST Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		10/28/16 02:42	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		10/28/16 02:42	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		10/28/16 02:42	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		10/28/16 02:42	91-20-3	
Toluene	ND	ug/L	0.50	1		10/28/16 02:42	108-88-3	
TPH as Gas	ND	ug/L	50.0	1		10/28/16 02:42		
Xylene (Total)	ND	ug/L	1.5	1		10/28/16 02:42	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	105	%.	70-130	1		10/28/16 02:42	17060-07-0	
Toluene-d8 (S)	100	%.	70-130	1		10/28/16 02:42	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	70-130	1		10/28/16 02:42	460-00-4	

Sample: NPORDMW-4 **Lab ID: 1277884019** Collected: 10/24/16 10:25 Received: 10/26/16 11:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Water	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH - Motor Oil	**111**	ug/L	94.5	1	10/28/16 13:24	11/04/16 14:35	64742-65-0	DH
Surrogates								
n-Octacosane (S)	110	%.	75-150	1	10/28/16 13:24	11/04/16 14:35	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	**111**	ug/L	94.5	1	10/28/16 13:24	11/03/16 20:46		DM
Surrogates								
n-Octacosane (S)	129	%.	75-139	1	10/28/16 13:24	11/03/16 20:46	630-02-4	
8260 MSV UST Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		10/28/16 03:01	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		10/28/16 03:01	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		10/28/16 03:01	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		10/28/16 03:01	91-20-3	
Toluene	ND	ug/L	0.50	1		10/28/16 03:01	108-88-3	
TPH as Gas	ND	ug/L	50.0	1		10/28/16 03:01		
Xylene (Total)	ND	ug/L	1.5	1		10/28/16 03:01	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	105	%.	70-130	1		10/28/16 03:01	17060-07-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Rolls-Royce Engine Test FacREV
Pace Project No.: 1277884

Sample: NPORDMW-4 **Lab ID: 1277884019** Collected: 10/24/16 10:25 Received: 10/26/16 11:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST Water	Analytical Method: EPA 8260B							
Surrogates								
Toluene-d8 (S)	100	%.	70-130	1		10/28/16 03:01	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	70-130	1		10/28/16 03:01	460-00-4	

Sample: MW-1 **Lab ID: 1277884020** Collected: 10/24/16 12:45 Received: 10/26/16 11:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Water	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH - Motor Oil	ND	ug/L	93.2	1	10/28/16 13:24	11/04/16 15:06	64742-65-0	
Surrogates								
n-Octacosane (S)	100	%.	75-150	1	10/28/16 13:24	11/04/16 15:06	630-02-4	
8015 GCS Water, Silica Gel	Analytical Method: EPA 8015B Preparation Method: EPA 3511							
TPH-DRO (C10-C28)	ND	ug/L	93.2	1	10/28/16 13:24	11/01/16 10:35		
Surrogates								
n-Octacosane (S)	110	%.	75-139	1	10/28/16 13:24	11/01/16 10:35	630-02-4	
8260 MSV UST Water	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	0.50	1		10/28/16 03:20	71-43-2	
Ethylbenzene	ND	ug/L	0.50	1		10/28/16 03:20	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		10/28/16 03:20	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		10/28/16 03:20	91-20-3	
Toluene	ND	ug/L	0.50	1		10/28/16 03:20	108-88-3	
TPH as Gas	ND	ug/L	50.0	1		10/28/16 03:20		
Xylene (Total)	ND	ug/L	1.5	1		10/28/16 03:20	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	104	%.	70-130	1		10/28/16 03:20	17060-07-0	
Toluene-d8 (S)	100	%.	70-130	1		10/28/16 03:20	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	70-130	1		10/28/16 03:20	460-00-4	

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QUALITY CONTROL DATA

Project: Rolls-Royce Engine Test FacREV
Pace Project No.: 1277884

QC Batch: 98628 Analysis Method: EPA 8015B
QC Batch Method: EPA 3511 Analysis Description: 8015 GCS Water
Associated Lab Samples: 1277884002, 1277884003, 1277884004, 1277884005, 1277884006, 1277884007, 1277884008, 1277884009, 1277884010, 1277884011, 1277884012, 1277884013, 1277884014, 1277884015, 1277884016, 1277884017, 1277884018, 1277884019, 1277884020

METHOD BLANK: 391288 Matrix: Water
Associated Lab Samples: 1277884002, 1277884003, 1277884004, 1277884005, 1277884006, 1277884007, 1277884008, 1277884009, 1277884010, 1277884011, 1277884012, 1277884013, 1277884014, 1277884015, 1277884016, 1277884017, 1277884018, 1277884019, 1277884020

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH - Motor Oil	ug/L	ND	100	10/31/16 11:03	
n-Octacosane (S)	%.	111	75-150	10/31/16 11:03	

LABORATORY CONTROL SAMPLE: 391289

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
n-Octacosane (S)	%.			118	75-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 391555 391556

Parameter	Units	1277884012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
n-Octacosane (S)	%.						116	113	75-150			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Rolls-Royce Engine Test FacREV
Pace Project No.: 1277884

QC Batch: 98627 Analysis Method: EPA 8015B
QC Batch Method: EPA 3511 Analysis Description: 8015 GCS Water, SI Gel
Associated Lab Samples: 1277884002, 1277884003, 1277884004, 1277884005, 1277884006, 1277884007, 1277884008, 1277884009, 1277884010, 1277884011, 1277884012, 1277884013, 1277884014, 1277884015, 1277884016, 1277884017, 1277884018, 1277884019, 1277884020

METHOD BLANK: 391284 Matrix: Water
Associated Lab Samples: 1277884002, 1277884003, 1277884004, 1277884005, 1277884006, 1277884007, 1277884008, 1277884009, 1277884010, 1277884011, 1277884012, 1277884013, 1277884014, 1277884015, 1277884016, 1277884017, 1277884018, 1277884019, 1277884020

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-DRO (C10-C28)	ug/L	ND	100	10/31/16 10:27	
n-Octacosane (S)	%.	108	75-139	10/31/16 10:27	

LABORATORY CONTROL SAMPLE: 391285

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-DRO (C10-C28)	ug/L	1020	935	92	59-125	
n-Octacosane (S)	%.			119	75-139	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 391553 391554

Parameter	Units	1277884012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH-DRO (C10-C28)	ug/L	ND	970	967	1020	917	101	91	57-125	10	25	
n-Octacosane (S)	%.						115	111	75-139			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Rolls-Royce Engine Test FacREV
Pace Project No.: 1277884

QC Batch: 98590 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV UST Water
Associated Lab Samples: 1277884001, 1277884002, 1277884003, 1277884004, 1277884005, 1277884006, 1277884007, 1277884008, 1277884009, 1277884010, 1277884011, 1277884012, 1277884013, 1277884014, 1277884015, 1277884016, 1277884017, 1277884018, 1277884019, 1277884020

METHOD BLANK: 391096 Matrix: Water
Associated Lab Samples: 1277884001, 1277884002, 1277884003, 1277884004, 1277884005, 1277884006, 1277884007, 1277884008, 1277884009, 1277884010, 1277884011, 1277884012, 1277884013, 1277884014, 1277884015, 1277884016, 1277884017, 1277884018, 1277884019, 1277884020

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	0.50	10/27/16 19:21	
Ethylbenzene	ug/L	ND	0.50	10/27/16 19:21	
Methyl-tert-butyl ether	ug/L	ND	0.50	10/27/16 19:21	
Naphthalene	ug/L	ND	0.50	10/27/16 19:21	
Toluene	ug/L	ND	0.50	10/27/16 19:21	
TPH as Gas	ug/L	ND	50.0	10/27/16 19:21	
Xylene (Total)	ug/L	ND	1.5	10/27/16 19:21	
1,2-Dichloroethane-d4 (S)	%.	103	70-130	10/27/16 19:21	
4-Bromofluorobenzene (S)	%.	97	70-130	10/27/16 19:21	
Toluene-d8 (S)	%.	101	70-130	10/27/16 19:21	

LABORATORY CONTROL SAMPLE: 391097

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	40	39.7	99	75-125	
Ethylbenzene	ug/L	40	41.2	103	75-125	
Methyl-tert-butyl ether	ug/L	40	39.3	98	73-125	
Naphthalene	ug/L	40	38.7	97	69-128	
Toluene	ug/L	40	38.3	96	75-125	
Xylene (Total)	ug/L	120	118	98	75-125	
1,2-Dichloroethane-d4 (S)	%.			99	70-130	
4-Bromofluorobenzene (S)	%.			101	70-130	
Toluene-d8 (S)	%.			100	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 391098 391099

Parameter	Units	1277884002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	ND	40	40	39.9	40.6	100	102	75-125	2	30	
Ethylbenzene	ug/L	ND	40	40	40.1	40.7	100	102	74-125	1	30	
Methyl-tert-butyl ether	ug/L	ND	40	40	42.0	43.6	105	109	73-129	4	30	
Naphthalene	ug/L	ND	40	40	44.1	46.5	110	116	60-133	5	30	
Toluene	ug/L	ND	40	40	37.8	38.7	95	97	75-125	2	30	
Xylene (Total)	ug/L	ND	120	120	114	115	95	96	61-129	2	30	
1,2-Dichloroethane-d4 (S)	%.						102	102	70-130			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Rolls-Royce Engine Test FacREV
Pace Project No.: 1277884

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 391098 391099

Parameter	Units	1277884002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
4-Bromofluorobenzene (S)	%.						101	100	70-130			
Toluene-d8 (S)	%.						101	100	70-130			

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Rolls-Royce Engine Test FacREV
Pace Project No.: 1277884

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-DAV Pace Analytical Services - Davis

ANALYTE QUALIFIERS

CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
DH	Lower boiling hydrocarbons present, atypical for Motor Oil.
DM	Higher boiling hydrocarbons present, atypical for Diesel Fuel.
S4	Surrogate recovery not evaluated against control limits due to sample dilution.
S5	Surrogate recovery outside control limits due to matrix interferences (not confirmed by re-analysis).

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Rolls-Royce Engine Test FacREV
Pace Project No.: 1277884

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1277884002	MW-2	EPA 3511	98628	EPA 8015B	98702
1277884003	MW-3	EPA 3511	98628	EPA 8015B	98702
1277884004	MW-4	EPA 3511	98628	EPA 8015B	98702
1277884005	MW-5	EPA 3511	98628	EPA 8015B	98702
1277884006	MW-6	EPA 3511	98628	EPA 8015B	98702
1277884007	MW-7	EPA 3511	98628	EPA 8015B	98702
1277884008	MW-8	EPA 3511	98628	EPA 8015B	98702
1277884009	MW-9	EPA 3511	98628	EPA 8015B	98702
1277884010	MW-10	EPA 3511	98628	EPA 8015B	98702
1277884011	MW-11	EPA 3511	98628	EPA 8015B	98702
1277884012	MW-12	EPA 3511	98628	EPA 8015B	98702
1277884013	MW-13	EPA 3511	98628	EPA 8015B	98702
1277884014	MW-14	EPA 3511	98628	EPA 8015B	98702
1277884015	MW-15	EPA 3511	98628	EPA 8015B	98702
1277884016	MW-17	EPA 3511	98628	EPA 8015B	98702
1277884017	MW-18	EPA 3511	98628	EPA 8015B	98702
1277884018	NPORDMW-3	EPA 3511	98628	EPA 8015B	98702
1277884019	NPORDMW-4	EPA 3511	98628	EPA 8015B	98702
1277884020	MW-1	EPA 3511	98628	EPA 8015B	98702
1277884002	MW-2	EPA 3511	98627	EPA 8015B	98701
1277884003	MW-3	EPA 3511	98627	EPA 8015B	98701
1277884004	MW-4	EPA 3511	98627	EPA 8015B	98701
1277884005	MW-5	EPA 3511	98627	EPA 8015B	98701
1277884006	MW-6	EPA 3511	98627	EPA 8015B	98701
1277884007	MW-7	EPA 3511	98627	EPA 8015B	98701
1277884008	MW-8	EPA 3511	98627	EPA 8015B	98701
1277884009	MW-9	EPA 3511	98627	EPA 8015B	98701
1277884010	MW-10	EPA 3511	98627	EPA 8015B	98701
1277884011	MW-11	EPA 3511	98627	EPA 8015B	98701
1277884012	MW-12	EPA 3511	98627	EPA 8015B	98701
1277884013	MW-13	EPA 3511	98627	EPA 8015B	98701
1277884014	MW-14	EPA 3511	98627	EPA 8015B	98701
1277884015	MW-15	EPA 3511	98627	EPA 8015B	98701
1277884016	MW-17	EPA 3511	98627	EPA 8015B	98701
1277884017	MW-18	EPA 3511	98627	EPA 8015B	98701
1277884018	NPORDMW-3	EPA 3511	98627	EPA 8015B	98701
1277884019	NPORDMW-4	EPA 3511	98627	EPA 8015B	98701
1277884020	MW-1	EPA 3511	98627	EPA 8015B	98701
1277884001	QA	EPA 8260B	98590		
1277884002	MW-2	EPA 8260B	98590		
1277884003	MW-3	EPA 8260B	98590		
1277884004	MW-4	EPA 8260B	98590		
1277884005	MW-5	EPA 8260B	98590		
1277884006	MW-6	EPA 8260B	98590		
1277884007	MW-7	EPA 8260B	98590		
1277884008	MW-8	EPA 8260B	98590		
1277884009	MW-9	EPA 8260B	98590		
1277884010	MW-10	EPA 8260B	98590		

Pace Analytical Services, LLC
2795 Second Street - Suite 300
Davis, CA 95618
(530) 297-4800

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Rolls-Royce Engine Test FacREV
Pace Project No.: 1277884

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1277884011	MW-11	EPA 8260B	98590		
1277884012	MW-12	EPA 8260B	98590		
1277884013	MW-13	EPA 8260B	98590		
1277884014	MW-14	EPA 8260B	98590		
1277884015	MW-15	EPA 8260B	98590		
1277884016	MW-17	EPA 8260B	98590		
1277884017	MW-18	EPA 8260B	98590		
1277884018	NPORDMW-3	EPA 8260B	98590		
1277884019	NPORDMW-4	EPA 8260B	98590		
1277884020	MW-1	EPA 8260B	98590		

Global ID #: T06019775776 ☐ Yes ☐ No

KIFF Analytical LLC

Chain-of-Custody-Record

Direct Bill To:
Deanna Harding
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) Deanna Harding
(Phone) 925-551-7444 x180 (e-mail) deanna@grinc.com

(Name) Deanna Harding
(Phone) 925-551-7444 x180
Laboratory Name: Kiff Analytical
Laboratory Service Order:
Laboratory Service Code:
Samples Collected by: (Name) G. MEDINA
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: EDF NEEDED	Lab Sample No.
QA	2	W	10/24/16 —				X						001
MW-2	7		25 0930	X	X	X	X						002
MW-3			1100										003
MW-4			24 1305										004
MW-5			1325										005
MW-6			1230										006
MW-7			1350										007
MW-8			1110 Blocked										008
MW-9			25 0750										009
MW-10			0835										010
MW-11			1145										011
MW-12			25 1015										012
MW-13			1315										013
MW-14			1100										014

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time	Iced (Y/N)
	Gettler-Ryan	10/25/16 1500	GR-Fridge			
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time	Iced (Y/N)
	GR	10/26/16 1138	PACE Andrea	PACE	10/26/16 1138	(Y)
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)		Date/Time	Iced (Y/N)

Turn Around Time (Circle Choice)

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

Global ID #: T06019775776

☐ Yes
☐ No

KIFF Analytical LLC

Chain-of-Custody-Record

Direct Bill To:
Deanna Harding
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) Deanna Harding
(Phone) 925-551-7444 x180 (e-mail) deanna@grinc.com

(Name) Deanna Harding
(Phone) 925-551-7444 x180
Laboratory Name: Kiff Analytical
Laboratory Service Order:
Laboratory Service Code:
Samples Collected by: (Name) GILBERT MEDINA
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-15			10/25/16 1235	X	X	X	X					015
MW-17			1145									016
MW-18			1235									017
NPORDMW-3			24 1200									018
NPORDMW-4			1025									09
MW-1			1245									020

EDF NEEDED

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time	Iced (Y/N)
	Gettler-Ryan	10/25/16 1500	GR-Fridge			
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time	Iced (Y/N)
	GR	10/26/16 11:58		PACE Analytical	10/26/16 1138	
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)		Date/Time	Iced (Y/N)

Turn Around Time (Circle Choice)

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

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 25Feb2015 Page 1 of 1
	Document No.: F-DAV-C-002-rev.02	Issuing Authority: Pace Davis, CA Quality Office

Sample Condition Upon Receipt

Client Name: Getter Ryan

Project #: WO# : 1277884

1277884

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☒ Client ☐ Commercial ☐ Pace ☐ OnTrac ☐ Other:

Tracking Number: N/A

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No **Seals Intact?** ☐ Yes ☒ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other: **Temp Blank?** ☐ Yes ☒ No

Thermom. Used: ☐ DA1434 ☒ ~~DA2285~~ 191R-1 **Type of Ice:** ☒ Wet ☐ Blue ☐ Dry Ice ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read(°C): 0.2 **Cooler Temp Corrected(°C):** 0.5

Temp should be above freezing to 6°C **Correction Factor:** +0.3

Biological Tissue Frozen? ☐ Yes ☐ No ☒ N/A

Date and Initials of Person Examining Contents: DSD 10 26 16

				Comments:
Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1. Sample out "QA" does not
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2. Match on Container ID
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3. ~~Sr will login per coc.~~ DSD 102616
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4. Samples MW-2, MW-3,
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5. MW-4, MW-6, MW-7,
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6. MW-8, MW-11, MW-13,
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7. MW-15, MW-17, and
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8. VIPOR MW-4 all have
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9. Containers with >6mm
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	headspace
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☒ Yes	☒ No	☐ N/A	12. DSD 102616
All containers needing acid/base preservation have been checked?	☐ Yes	☒ No	☐ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☒ N/A	Sample #
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC	☒ Yes	☐ No		Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☒ Yes	☐ No	☐ N/A	14.
Trip Blank Present?	☒ Yes	☐ No	☐ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Scott Rance **Date:** 10/27/16

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

McCampbell Analytical, Inc.
"When Quality Counts"

Analytical Report

WorkOrder: 1610D49

Report Created for: Pace Analytical Services

2795 Second Street, Ste. 300
Davis, CA 95616

Project Contact: Scott Forbes
Project P.O.: 1277884
Project Name: 1277884; Rolls-Royce Engine Test Facility

Project Received: 10/28/2016

Analytical Report reviewed & approved for release on 11/03/2016 by:

Angela Rydelius,
Laboratory Manager

McCampbell Analytical, Inc.
"When Quality Counts"
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Glossary of Terms & Qualifier Definitions

Client: Pace Analytical Services
Project: 1277884; Rolls-Royce Engine Test Facility
WorkOrder: 1610D49

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

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Glossary of Terms & Qualifier Definitions

Client: Pace Analytical Services
Project: 1277884; Rolls-Royce Engine Test Facility
WorkOrder: 1610D49

Analytical Qualifiers

S	Surrogate spike recovery outside accepted recovery limits
b6	lighter than water immiscible sheen/product is present
c2	surrogate recovery outside of the control limits due to matrix interference.
e2/e8	diesel range compounds are significant; no recognizable pattern; and/or kerosene/kerosene range/jet fuel range
e2	diesel range compounds are significant; no recognizable pattern
e4/e11	gasoline range compounds are significant.; and/or stoddard solvent/mineral spirit (?)
e4	gasoline range compounds are significant.
e7	oil range compounds are significant
e8	kerosene/kerosene range/jet fuel range
e11/e8	stoddard solvent/mineral spirit (?); and/or kerosene/kerosene range/jet fuel range

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Analytical Report

Client:	Pace Analytical Services	**WorkOrder:**	1610D49
Date Received:	10/28/16 10:00	**Extraction Method:**	SW3510C
Date Prepared:	10/28/16	**Analytical Method:**	SW8015B
Project:	1277884; Rolls-Royce Engine Test Facility	**Unit:**	µg/L

Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-2	1610D49-001A	Water	10/25/2016 09:30	GC6A	128906

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	ND	50	1	10/29/2016 09:20
Surrogates	**REC (%)**	**Limits**		
C9	99	72-117		10/29/2016 09:20

Analyst(s): TK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-3	1610D49-002A	Water	10/25/2016 11:00	GC6A	128906

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	170	50	1	10/31/2016 12:51
Surrogates	**REC (%)**	**Limits**		
C9	100	72-117		10/31/2016 12:51

Analyst(s): TK Analytical Comments: e2,e8

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-4	1610D49-003A	Water	10/25/2016 13:05	GC6A	128906

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	78	50	1	10/31/2016 13:30
Surrogates	**REC (%)**	**Limits**		
C9	105	72-117		10/31/2016 13:30

Analyst(s): TK Analytical Comments: e2,e11/e8

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-5	1610D49-004A	Water	10/25/2016 13:25	GC6A	128906

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	84	50	1	10/29/2016 10:38
Surrogates	**REC (%)**	**Limits**		
C9	100	72-117		10/29/2016 10:38

Analyst(s): TK Analytical Comments: e2

(Cont.)

NELAP 4033ORELAP

Angela Rydelius, Lab Manager

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Analytical Report

Client:	Pace Analytical Services	**WorkOrder:**	1610D49
Date Received:	10/28/16 10:00	**Extraction Method:**	SW3510C
Date Prepared:	10/28/16	**Analytical Method:**	SW8015B
Project:	1277884; Rolls-Royce Engine Test Facility	**Unit:**	µg/L

Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-6	1610D49-005A	Water	10/25/2016 12:30	GC6A	128954

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	290	50	1	10/31/2016 14:57

Surrogates	REC (%)	Limits	
C9	112	72-117	10/31/2016 14:57

Analyst(s): TK Analytical Comments: e2,e8,e4

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-7	1610D49-006A	Water	10/25/2016 13:50	GC6A	128954

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	140	50	1	10/31/2016 11:34

Surrogates	REC (%)	Limits	
C9	103	72-117	10/31/2016 11:34

Analyst(s): TK Analytical Comments: e2

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-8	1610D49-007A	Water	10/25/2016 11:10	GC6A	128954

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	ND	50	1	11/01/2016 02:48

Surrogates	REC (%)	Limits	
C9	100	72-117	11/01/2016 02:48

Analyst(s): TK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-9	1610D49-008A	Water	10/25/2016 07:50	GC6A	128954

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	120	50	1	11/01/2016 03:27

Surrogates	REC (%)	Limits	
C9	99	72-117	11/01/2016 03:27

Analyst(s): TK Analytical Comments: e7,e2

(Cont.)

NELAP 4033ORELAP

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Analytical Report

Client:	Pace Analytical Services	**WorkOrder:**	1610D49
Date Received:	10/28/16 10:00	**Extraction Method:**	SW3510C
Date Prepared:	10/28/16	**Analytical Method:**	SW8015B
Project:	1277884; Rolls-Royce Engine Test Facility	**Unit:**	µg/L

Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-10	1610D49-009A	Water	10/25/2016 08:35	GC6A	128954

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	170	50	1	11/01/2016 04:06
Surrogates	**REC (%)**	**Limits**		
C9	98	72-117		11/01/2016 04:06

Analyst(s): TK Analytical Comments: e2

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-11	1610D49-010A	Water	10/25/2016 11:45	GC6A	128954

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	480	50	1	11/01/2016 06:41
Surrogates	**REC (%)**	**Limits**		
C9	107	72-117		11/01/2016 06:41

Analyst(s): TK Analytical Comments: e2,e7

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-12	1610D49-011A	Water	10/25/2016 10:15	GC6A	128954

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	ND	50	1	10/29/2016 02:13
Surrogates	**REC (%)**	**Limits**		
C9	98	72-117		10/29/2016 02:13

Analyst(s): TK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-13	1610D49-012A	Water	10/25/2016 13:15	GC6A	128954

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	380	50	1	10/29/2016 00:16
Surrogates	**REC (%)**	**Limits**		
C9	97	72-117		10/29/2016 00:16

Analyst(s): TK Analytical Comments: e2/e8

(Cont.)

NELAP 4033ORELAP

Angela Rydelius, Lab Manager

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Analytical Report

Client:	Pace Analytical Services	**WorkOrder:**	1610D49
Date Received:	10/28/16 10:00	**Extraction Method:**	SW3510C
Date Prepared:	10/28/16	**Analytical Method:**	SW8015B
Project:	1277884; Rolls-Royce Engine Test Facility	**Unit:**	µg/L

Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-14	1610D49-013A	Water	10/25/2016 11:00	GC6A	128954

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	100	50	1	10/29/2016 00:55

Surrogates	REC (%)	Limits	
C9	97	72-117	10/29/2016 00:55

Analyst(s): TK Analytical Comments: e2

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-15	1610D49-014A	Water	10/25/2016 12:35	GC6A	128954

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	ND	50	1	10/29/2016 02:52

Surrogates	REC (%)	Limits	
C9	97	72-117	10/29/2016 02:52

Analyst(s): TK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-17	1610D49-015A	Water	10/25/2016 11:45	GC6A	128954

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	ND	50	1	10/29/2016 04:09

Surrogates	REC (%)	Limits	
C9	97	72-117	10/29/2016 04:09

Analyst(s): TK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-18	1610D49-016A	Water	10/25/2016 12:35	GC6A	128954

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	27,000	2500	50	10/31/2016 23:34

Surrogates	REC (%)	Qualifiers	Limits	
C9	119	S	72-117	10/31/2016 23:34

Analyst(s): TK Analytical Comments: e8,e7,e4/e11,b6,c2

(Cont.)

NELAP 4033ORELAP

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Analytical Report

Client:	Pace Analytical Services	**WorkOrder:**	1610D49
Date Received:	10/28/16 10:00	**Extraction Method:**	SW3510C
Date Prepared:	10/28/16	**Analytical Method:**	SW8015B
Project:	1277884; Rolls-Royce Engine Test Facility	**Unit:**	µg/L

Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
NPORDMW-3	1610D49-017A	Water	10/24/2016 12:00	GC6A	128954

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	ND	50	1	10/29/2016 06:44
Surrogates	**REC (%)**	**Limits**		
C9	97	72-117		10/29/2016 06:44

Analyst(s): TK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
NPORDMW-4	1610D49-018A	Water	10/24/2016 10:25	GC6A	128954

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	380	50	1	10/29/2016 07:24
Surrogates	**REC (%)**	**Limits**		
C9	98	72-117		10/29/2016 07:24

Analyst(s): TK Analytical Comments: e2

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-1	1610D49-019A	Water	10/24/2016 12:45	GC6A	128954

Analytes	Result	RL	DF	Date Analyzed
TPH-Jet Fuel (C9-C18)	ND	50	1	10/29/2016 08:41
Surrogates	**REC (%)**	**Limits**		
C9	99	72-117		10/29/2016 08:41

Analyst(s): TK

McCampbell Analytical, Inc.
"When Quality Counts"
1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Quality Control Report

Client:	Pace Analytical Services	**WorkOrder:**	1610D49
Date Prepared:	10/27/16	**BatchID:**	128906
Date Analyzed:	10/28/16 - 10/31/16	**Extraction Method:**	SW3510C
Instrument:	GC11B, GC9b	**Analytical Method:**	SW8015B
Matrix:	Water	**Unit:**	µg/L
Project:	1277884; Rolls-Royce Engine Test Facility	**Sample ID:**	MB/LCS/LCSD-128906

QC Report for SW8015B w/out SG Clean-Up

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
TPH-Diesel (C10-C23)	ND	50	-	-	-
TPH-Motor Oil (C18-C36)	ND	250	-	-	-
Surrogate Recovery					
C9	624		625	100	74-107

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	1290	1130	1000	129	113	95-136	12.7	30
Surrogate Recovery								
C9	552	544	625	88	87	74-107	1.57	30

(Cont.)
NELAP 4033ORELAP

QA/QC Officer

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Quality Control Report

Client:	Pace Analytical Services	**WorkOrder:**	1610D49
Date Prepared:	10/28/16	**BatchID:**	128954
Date Analyzed:	10/29/16 - 10/31/16	**Extraction Method:**	SW3510C
Instrument:	GC11A, GC9a	**Analytical Method:**	SW8015B
Matrix:	Water	**Unit:**	µg/L
Project:	1277884; Rolls-Royce Engine Test Facility	**Sample ID:**	MB/LCS/LCSD-128954

QC Report for SW8015B w/out SG Clean-Up

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
TPH-Diesel (C10-C23)	ND	50	-	-	-
TPH-Motor Oil (C18-C36)	ND	250	-	-	-
Surrogate Recovery					
C9	607		625	97	74-107

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	1170	1230	1000	117	123	95-136	5.43	30
Surrogate Recovery								
C9	606	625	625	97	100	74-107	3.12	30

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1610D49 **ClientCode: KIFF**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
Scott Forbes
Pace Analytical Services
2795 Second Street, Ste. 300
Davis, CA 95616
(530) 297-4800 FAX: (530) 297-4808

Email: scott.forbes@pacelabs.com
cc/3rd Party:
PO: 1277884
ProjectNo: 1277884; Rolls-Royce Engine Test Facility

Bill to:
Accounts Payable
Pace Analytical Services
1700 Elm Street SE
Minneapolis, MN 55414
sierra.hubbard@pacelabs.com

Requested TAT: **5 days;**
Date Received: **10/28/2016**
Date Logged: **10/28/2016**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1610D49-001	MW-2	Water	10/25/2016 09:30	☐	A											
1610D49-002	MW-3	Water	10/25/2016 11:00	☐	A											
1610D49-003	MW-4	Water	10/25/2016 13:05	☐	A											
1610D49-004	MW-5	Water	10/25/2016 13:25	☐	A											
1610D49-005	MW-6	Water	10/25/2016 12:30	☐	A											
1610D49-006	MW-7	Water	10/25/2016 13:50	☐	A											
1610D49-007	MW-8	Water	10/25/2016 11:10	☐	A											
1610D49-008	MW-9	Water	10/25/2016 07:50	☐	A											
1610D49-009	MW-10	Water	10/25/2016 08:35	☐	A											
1610D49-010	MW-11	Water	10/25/2016 11:45	☐	A											
1610D49-011	MW-12	Water	10/25/2016 10:15	☐	A											
1610D49-012	MW-13	Water	10/25/2016 13:15	☐	A											
1610D49-013	MW-14	Water	10/25/2016 11:00	☐	A											
1610D49-014	MW-15	Water	10/25/2016 12:35	☐	A											
1610D49-015	MW-17	Water	10/25/2016 11:45	☐	A											

Test Legend:

1	TPH_W	2		3		4	
5		6		7		8	
9		10		11		12	

Prepared by: Briana Cutino

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1610D49 **ClientCode: KIFF**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
Scott Forbes
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Email: scott.forbes@pacelabs.com
cc/3rd Party:
PO: 1277884
ProjectNo: 1277884; Rolls-Royce Engine Test Facility

Bill to:
Accounts Payable
Pace Analytical Services
1700 Elm Street SE
Minneapolis, MN 55414
sierra.hubbard@pacelabs.com

Requested TAT: **5 days;**
Date Received: **10/28/2016**
Date Logged: **10/28/2016**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below) 1	2	3	4	5	6	7	8	9	10	11	12
1610D49-016	MW-18	Water	10/25/2016 12:35	☐	A											
1610D49-017	NPORDMW-3	Water	10/24/2016 12:00	☐	A											
1610D49-018	NPORDMW-4	Water	10/24/2016 10:25	☐	A											
1610D49-019	MW-1	Water	10/24/2016 12:45	☐	A											

Test Legend:

1	TPH_W	2		3		4	
5		6		7		8	
9		10		11		12	

Prepared by: Briana Cutino

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
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WORK ORDER SUMMARY

Client Name: PACE ANALYTICAL SERVICES
Client Contact: Scott Forbes
Contact's Email: scott.forbes@pacelabs.com

Project: 1277884; Rolls-Royce Engine Test Facility

Comments:

Work Order: 1610D49
QC Level: LEVEL 2
Date Logged: 10/28/2016

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1610D49-001A	MW-2	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	10/25/2016 9:30	5 days	Trace	☐	
1610D49-002A	MW-3	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	10/25/2016 11:00	5 days	Trace	☐	
1610D49-003A	MW-4	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	10/25/2016 13:05	5 days	Trace	☐	
1610D49-004A	MW-5	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	10/25/2016 13:25	5 days	Trace	☐	
1610D49-005A	MW-6	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	10/25/2016 12:30	5 days	Trace	☐	
1610D49-006A	MW-7	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	10/25/2016 13:50	5 days	Trace	☐	
1610D49-007A	MW-8	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	10/25/2016 11:10	5 days	Trace	☐	
1610D49-008A	MW-9	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	10/25/2016 7:50	5 days	Trace	☐	
1610D49-009A	MW-10	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	10/25/2016 8:35	5 days	Trace	☐	
1610D49-010A	MW-11	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	10/25/2016 11:45	5 days	Trace	☐	
1610D49-011A	MW-12	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	10/25/2016 10:15	5 days	Trace	☐	
1610D49-012A	MW-13	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	10/25/2016 13:15	5 days	Trace	☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

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WORK ORDER SUMMARY

Client Name: PACE ANALYTICAL SERVICES
Client Contact: Scott Forbes
Contact's Email: scott.forbes@pacelabs.com

Project: 1277884; Rolls-Royce Engine Test Facility
Comments:

Work Order: 1610D49
QC Level: LEVEL 2
Date Logged: 10/28/2016

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1610D49-013A	MW-14	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	10/25/2016 11:00	5 days	Trace	☐	
1610D49-014A	MW-15	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	10/25/2016 12:35	5 days	Trace	☐	
1610D49-015A	MW-17	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	10/25/2016 11:45	5 days	Trace	☐	
1610D49-016A	MW-18	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	10/25/2016 12:35	5 days	Trace	☐	
1610D49-017A	NPORDMW-3	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	10/24/2016 12:00	5 days	Trace	☐	
1610D49-018A	NPORDMW-4	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	10/24/2016 10:25	5 days	Trace	☐	
1610D49-019A	MW-1	Water	SW8015B (TEPHs) <TPH-Jet Fuel (C9-C18)>	2	VOA w/ HCl	☐	10/24/2016 12:45	5 days	Trace	☐	

NOTES: **- STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).**

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

Chain of Custody

1610D49

Pace Analytical®
www.pacelabs.com

Workorder: 1277884 **Workorder Name:** Rolls-Royce Engine Test Facili **Results Requested By:** ~~11/2/2016~~

Report / Invoice To

Scott M Forbes
Pace Analytical Davis
2795 Second Street
Suite 300
Davis, CA 95618
Phone (530) 297-4800
Email: scott.forbes@pacelabs.com

Subcontract To

Mc Campbell Labs P.O. 1277884

State of Sample Origin: CA

Due: standard TAT

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: HCL						Requested Analysis: TPH as Jet Fuel A											LAB USE ONLY
1	MW-2	10/25/2016 09:30	1277884002	Water							X											
2	MW-3	10/25/2016 11:00	1277884003	Water							X											
3	MW-4	10/24/2016 13:05	1277884004	Water							X											
4	MW-5	10/24/2016 13:25	1277884005	Water							X											
5	MW-6	10/24/2016 12:30	1277884006	Water							X											
6	MW-7	10/24/2016 13:50	1277884007	Water							X											
7	MW-8	10/24/2016 11:10	1277884008	Water							X											
8	MW-9	10/25/2016 07:50	1277884009	Water							X											
9	MW-10	10/25/2016 08:35	1277884010	Water							X											
10	MW-11	10/25/2016 11:45	1277884011	Water							X											
11	MW-12	10/25/2016 10:15	1277884012	Water							X											
12	MW-13	10/25/2016 13:15	1277884013	Water							X											
13	MW-14	10/25/2016 11:00	1277884014	Water							X											
14	MW-15	10/25/2016 12:35	1277884015	Water							X											
15	MW-17	10/25/2016 11:45	1277884016	Water							X											
16	MW-18	10/25/2016 12:35	1277884017	Water							X											
17	NPORDMW-3	10/24/2016 12:00	1277884018	Water							X											
18	NPORDMW-4	10/24/2016 10:25	1277884019	Water							X											
19	MW-1	10/24/2016 12:45	1277884020	Water							X											
20																						
21																						

Thursday, October 27, 2016 3:27:25 PM

FMT-ALL-C-002rev.00 24March2009

3.6 Wet Ice

22					
23					

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	Place	102716 1600		10/28/16 10:00	
2					
3					

Cooler Temperature on Receipt °C	Custody Seal Y or N	Received on Ice Y or N	Samples Intact Y or N

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Sample Receipt Checklist

Client Name:	**Pace Analytical Services**	Date and Time Received	**10/28/2016 10:00**
Project Name:	**1277884; Rolls-Royce Engine Test Facility**	Date Logged:	**10/28/2016**
		Received by:	Briana Cutino
WorkOrder №:	**1610D49** Matrix: Water	Logged by:	Briana Cutino
Carrier:	FedEx		

Chain of Custody (COC) Information

Chain of custody present?	Yes ☑	No ☐
Chain of custody signed when relinquished and received?	Yes ☑	No ☐
Chain of custody agrees with sample labels?	Yes ☑	No ☐
Sample IDs noted by Client on COC?	Yes ☑	No ☐
Date and Time of collection noted by Client on COC?	Yes ☑	No ☐
Sampler's name noted on COC?	Yes ☑	No ☐

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	NA ☑
Shipping container/cooler in good condition?	Yes ☑	No ☐	
Samples in proper containers/bottles?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes ☑	No ☐	NA ☐
Sample/Temp Blank temperature	Temp: 3.6°C		NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes ☑	No ☐	NA ☐
Sample labels checked for correct preservation?	Yes ☑	No ☐	
pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)?	Yes ☐	No ☐	NA ☑
Samples Received on Ice?	Yes ☑	No ☐	
	(Ice Type: WET ICE)		

UCMR3 Samples:

Total Chlorine tested and acceptable upon receipt for EPA 522?	Yes ☐	No ☐	NA ☑
Free Chlorine tested and acceptable upon receipt for EPA 218.7, 300.1, 537, 539?	Yes ☐	No ☐	NA ☑

Comments: